

Obstacles to Provision of Emergency Obstetric Care among Maternity Nurses

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ABSTRACT

Background: Increasing women's access to and use of facilities for childbirth is a critical national strategy to improve maternal health outcomes

Aim: The aim of this study was to assess maternity nurses' knowledge and practices regarding emergency obstetric care and identify the obstacles to providing such care among maternity nurses.

Setting: The study was conducted at the maternity department at El Fayoum University hospital and El Fayoum Nabawy El Mohandes (public hospital in Fayoum) at El Fayoum city.

Design: Descriptive design study was utilized.

Sampling: A convenient sample included 47 maternity nurses was included in the study.

Tools of data collection: Self-administered questionnaire, an observational checklist, and an obstacles assessment sheet to collect data.

Results: The results indicated that slightly less than half of the sample had incomplete satisfactory knowledge regarding obstetrical emergencies. Moreover, more than half of the studied nurses demonstrated incompetent practice in handling obstetrical emergencies. Additionally, more than three-quarters of the sample agreed that administrative support was the main obstacle to providing emergency obstetric care. The study found a highly statistically significant and positive correlation between knowledge and practice, indicating that better knowledge was associated with improved practice. Furthermore, there was a highly statistically significant and negative correlation between obstacles and both knowledge and practice, suggesting that increased obstacles were associated with decreased knowledge and practice.

Recommendation: Based on the findings, it is recommended to develop awareness programs for nurses to enhance their knowledge regarding obstetrical emergencies.

Introduction

Obstetrical emergencies are life threatening medical condition that occurs during pregnancy, labor, or the post- partum period. There are a variety of obstetrical emergencies of pregnancy that can threaten the well-being of both mother and child. The five major global causes of maternal death are severe bleeding; infections, unsafe induced abortion, hypertensive disorders of pregnancy (eclampsia) and obstructed labor yet many of these deaths are preventable (*Ibrahim et al., 2021*).

Reducing maternal mortality is the first target of Goal of the Sustainable Development Goals. It aims to reduce the global maternal mortality ratio (MMR) to <70 by 2030. MMR Widely considered as one of the most robust indicators of the Functioning of the health system in any geographic area. In 2017 around 295,000 women died globally during pregnancy or childbirth (*Keshri & Garg., 2021*).

More than half of maternal and newborn deaths result from complications during childbirth and are preventable. Managing existing or emerging complications in health facilities with adequate capabilities and staff to deliver available interventions for mothers and babies has been found to reduce an estimated 71% of newborn deaths, 33% of stillbirths, and 54% of maternal deaths.⁴ By all standards, effective evidence-based interventions at birth exist, but context may change their effectiveness. (*Serbanescu et al., 2022*)

Key words:
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Alpha Cronbach Reliability Analysis of the Used Tool

Items	Alpha Cronbach	F	P-value
• Total knowledge	0.811	24.162	<0.001*
• Total obstacles	0.754	20.562	<0.001*
• Total practice	0.862	23.494	<0.001*

This table show Reliability in knowledge, obstacles and practice when Alpha Cronbach was >0.5.

- Regarding tool II (practices assessment checklists) the researcher assessed each nurse while providing emergency obstetric care this tool takes about 3 hours.

III- 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.

IV-Statistical item:

Upon completion of data collection, data was computed and analyzed using Statistical Package for the Social Science (SPSS), version 24 for analysis. The P value was set at 0.05. Descriptive statistics tests as numbers, percentage, mean \pm standard deviation (\pm SD), was used to describe the results. Appropriate inferential statistics such as "F" test or "t" test was used as well.

RESULTS

Table (1): clarifies that less than half (42.6%) of the studied nurses were in the age group 20-29 years and regarding current job, most of the studied nurses (91.5%) were assigned as nurse. Moreover, more than half (51%) of them had <5years of experience. And less than half (48%) of them had only one training courses.

Figure (1): clarifies that slightly less than half (40.4%) of the studied nurses had unsatisfactory knowledge regarding obstetrical emergencies.

Table (2): shows that 68.1%, 59.6%, 53.2%, 61.7% and 57.4% of nurses have incompetent practices regarding competent care during obstetrical emergencies, preparation of the emergency tray, women resuscitation, nursing management of bleeding during pregnancy and management of preeclampsia (convulsion during pregnancy), as well as total practices level was incompetent level for more than of the half of the studied nurse.

Table (3): shows that most of the studied nurses (87.7%) agree with increasing workload and high burn out as an obstacle to provision of emergency obstetric care and a few nurses (4.3%) disagree with perceived poor living conditions.

Table (4): clarifies that about (78.7%) of sample agree with administrative support, and a few nurses (4.3%) disagree with perceived insufficient drug supply system.

Figure (2): shows that (66%) of the studied nurses agree with organization' obstacles, also (59.6%) of the studied nurses agree with nurses' obstacles.

Ethical considerations:

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee and take written approval for conducting the study of the per mentioned setting. Participation in the study was voluntary and subjects were given complete full information about the study and their role before signing the informed consent. 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 accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs were respected.

II- Operational item:

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 to examine the clarity of questions and time needed to complete the study tools. Based on the results, modification will be done (if necessary). Subjects included in the pilot study will be excluded from the study if major modifications are required.

Field work:

- The researcher attended the previous mentioned study setting for 3 months from the period December /2022 to March/2023, 3 days per week alternatively from 9 am to 2 pm.
- The researcher introduced herself to maternity nursing staff then; the approval of the maternity nurses was obtained orally before study and after explaining the purpose of the study.
- Sampling was started and expected to be completed until reach predetermined sample size.
- Then the researcher started the assessment for the knowledge and practice sometimes individually and other time in group according to the nurse's free time.
- The researcher rotated in morning and afternoon shifts to meet all nurses in the unit.
- The researcher completed the tools I, III, (A Structured interview questionnaire, Obstacles assessment sheet) with the maternity nurses in the first meeting and take about 35 minutes.

obstetric care and Years of experience when p-value <0.001*.

Table (7) shows that there was highly statistically significant and positive correlation between knowledge and practice with $r= 0.857$ and p-value was <0.001* and there was highly statistically significant and negative correlation between Obstacles with knowledge and practice with $r= -0.905 / -0.817$ respectively and p-value was <0.001*

Table (5): show that there was highly statistically significant between total knowledge with age, Level of education, Current Job, Information about emergency obstetric care and Years of experience when p-value <0.001*.

Table (6) shows that there was highly statistically significant between total practice with age, Level of education, Current Job, Information about emergency

Table (1) Distribution of the maternity nurses according to their demographic characteristics (n=47)

Items	No.	%
Age		
• 20-29yrs	20	42.6
• 30-39yrs	14	29.8
• 40-49yrs	8	17
• 50-59yrs	5	10.6
Mean±SD	36.42±4.39	
Level of education		
• Diploma nurse	14	29.8
• Technical nurse	19	40.4
• Bachelor nurse	10	21.3
• Postgraduate	4	8.5
Current Job		
• Nurse	43	91.5
• Supervisor	4	8.5
Years of experience		
• <5yrs	24	51.1
• 5-10yrs	14	29.8
• >10yrs	9	19.1
Mean±SD	6.75±3.2	
Do you have any information about emergency obstetric care		
• Yes	16	34
• No	31	66
If yes, source of information about emergency obstetric care	N=16	
• Colleagues	23	48.9
• Mass media	4	8.5
• Training courses	20	42.6
• Self-learning	22	46.8
• Books &Magazines	2	4.3
Did you attend training courses about emergency obstetric care	N=25	
• Yes	25	53.2
• No	22	46.8
If yes, how many courses did you attend		
• One course	12	48
• Two courses	5	20
• Three courses	2	8
• >3 courses	6	24
Since when you attend the training courses		
• One year	14	56
• Two years	2	8
• 3years	2	8
• >3years	7	28

Figure (1) Distribution of the nurses according to their Total knowledge about obstetrical emergencies.

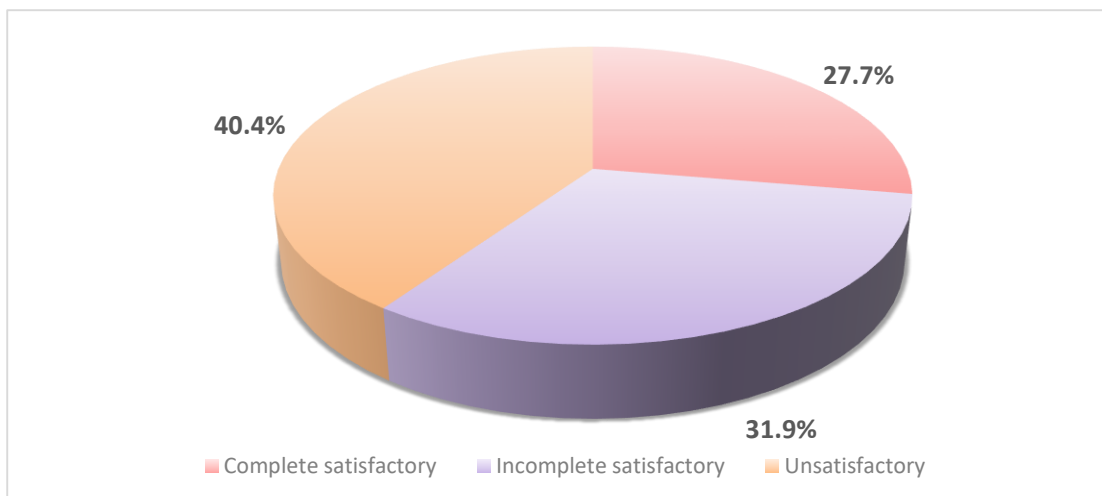


Table (2) Distribution of the nurses according to level of practice regarding obstetrical emergencies.

Items of practice	Competent		Incompetent	
	No.	%	No.	%
• Competent care during obstetrical emergencies	15	31.9	32	68.1
• Preparation of the emergency tray	19	40.4	28	59.6
• Women resuscitation	22	46.8	25	53.2
• Nursing management of bleeding during pregnancy	18	38.3	29	61.7
• Management of preeclampsia (convulsion during pregnancy)	20	42.6	27	57.4
Total practice	19	40.4	28	59.6

Table (3) Distribution of Nurses' perceived obstacles related to characteristics of the nurses regarding emergency obstetric care.

Items	Agree		Neither		Disagree	
	No.	%	No.	%	No.	%
• Acute shortage of trained personnel	37	78.7	8	17.0	2	4.3
• Demoralized personnel and perceived lack of cognition	35	74.5	8	17.0	4	8.5
• High personnel turnover	36	76.6	9	19.1	2	4.3
• Increasing workload and high burn-out	41	87.2	4	8.5	2	4.3
• High levels of staff absenteeism	33	70.2	8	17.0	6	12.8
• Perceived poor living conditions and poor remuneration for personnel	37	78.7	8	17.0	2	4.3
• Poor level of coordination among key EMOC personnel resulting in delays to provide emergency services.	26	55.3	15	31.9	6	12.8
• Lack of knowledge about emergency obstetric care.	28	59.6	13	27.7	6	12.7
• Incompetent practice during obstetrical emergencies.	38	80.9	7	14.8	2	4.3

Table (4) Distribution of Nurses' perceived obstacles related to characteristics of the organization regarding emergency obstetric care.

Items	Agree		Neither		Disagree	
	No.	%	No.	%	No.	%
• Absence of administrative support	37	78.7	8	17.0	2	4.3
• Inefficient drug supply system	35	74.4	10	21.3	2	4.3
• Inefficient referral system	31	66.0	12	25.5	4	8.5
• Poor allocation of limited resources	37	78.7	8	17.0	2	4.3
• Poor data collection and monitoring system	30	63.8	11	23.4	6	12.8
• Lack of essential installation, supplies and medications	33	70.2	8	17.0	6	12.8
• Poor harmonization and coordination of EMOC training curriculum nationally	37	78.7	6	12.8	4	8.5
• Weak / incomprehensive training curriculum	29	61.7	14	29.8	4	8.5

Figure (2) Distribution of total maternity nurses' perceived obstacles related to characteristics of nurses and organization regarding emergency obstetric care among the studied sample.

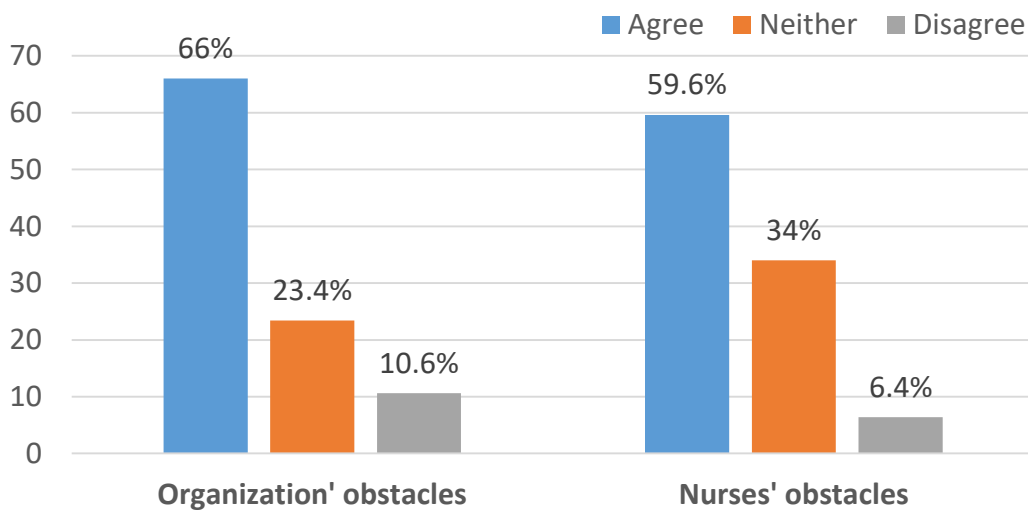


Table (5) Relation between demographic characteristics of nurses and their knowledge.

Items	Total knowledge					
	Satisfactory		Unsatisfactory		Chi-square	
	No.	%	No.	%	X ²	P-value
Age						
• 20-29yrs	0	0.0	20	100.0	29.288	<0.001*
• 30-39yrs	5	35.7	9	64.3		
• 40-49yrs	7	87.5	1	12.5		
• 50-59yrs	5	100.0	0	0.0		
Level of education						
• Diploma nurse	0	0.0	14	100.0	29.424	<0.001*
• Technical nurse	4	21.1	15	78.9		
• Bachelor nurse	9	90.0	1	10.0		

• Postgraduate	4	100.0	0	0.0		
Current Job						
• Nurse	13	30.2	30	69.8	7.715	0.005*
• Supervisor	4	100.0	0	0.0		
Years of experience						
• <5yrs	0	0.0	24	100.0	27.887	<0.001*
• 5-10yrs	10	71.4	4	28.6		
• >10yrs	7	77.8	2	22.2		
Do you have any information about emergency obstetric care						
• Yes	11	68.8	5	31.3	11.153	<0.001*
• No	6	19.4	25	80.6		
Did you attend training courses about emergency obstetric care						
• Yes	12	48.0	13	52.0	3.237	0.072
• No	5	22.7	17	77.3		

Table (6) Relation between demographic characteristics of maternity nurses and their practice

Items	Total practice					
	Done		Not done		Chi-square	
	No.	%	No.	%	X ²	P-value
Age						
• 20-29yrs	0	0.0	20	100.0	28.834	<0.001*
• 30-39yrs	7	50.0	7	50.0		
• 40-49yrs	7	87.5	1	12.5		
• 50-59yrs	5	100.0	0	0.0		
Level of education						
• Diploma nurse	1	7.1	13	92.9	30.032	<0.001*
• Technical nurse	4	21.1	15	78.9		
• Bachelor nurse	10	100.0	0	0.0		
• Postgraduate	4	100.0	0	0.0		
Current Job						
• Nurse	15	34.9	28	65.1	6.443	0.011*
• Supervisor	4	100.0	0	0.0		
Years of experience						
• <5yrs	0	0.0	24	100.0	33.423	<0.001*
• 5-10yrs	12	85.7	2	14.3		
• >10yrs	7	77.8	2	22.2		
Information about emergency obstetric care						
• Yes	11	68.8	5	31.3	8.081	0.004*
• No	8	25.8	23	74.2		

Did you attend training courses about emergency obstetric care						
• Yes	12	48.0	13	52.0	1.272	0.259
• No	7	31.8	15	68.2		

Table (7) Correlation between knowledge, Obstacles, and practice

Items	Total knowledge		Total Obstacles	
	r	P-value	r	P-value
• Total Obstacles	-0.905	<0.001*		
• Total practice	0.857	<0.001*	-0.817	<0.001*

According to Bongban et al., more than half of the nurses had 1-10 years of experience, with an average work experience of 10.5 years (ranging from 1 to 41 years).

Additionally, the result of the present study illustrated that slightly less than half of the studied nurses didn't attend any training courses regarding obstetrical emergencies. This result agrees with **Munabi - Babigumiraet al., (2017)** who studied "*factors that influence the provision of intra partum and postnatal care by skilled birth attendants in low-and middle - income countries, a qualitative evidence synthesis*" and reported that nurses were not always given sufficient training during education or after begun clinical work which increase stress and make them less efficient in their work.

Regarding the total nurses' knowledge scores related to obstetrical emergencies, the findings of the present study indicated that slightly less than half of the nurses surveyed had unsatisfactory knowledge in this area. Several factors may contribute to this outcome, including the absence of training programs focusing on obstetrical emergencies in the emergency department, a lack of refresher programs concerning the management of obstetrical emergencies, and a limited number of nurses who attended such training programs. It is important to address these factors and implement comprehensive training programs to enhance nurses' knowledge and skills in managing obstetrical emergencies. By providing regular training opportunities and refreshers, healthcare institutions can improve the preparedness and competence of nurses when faced with obstetrical emergencies in the clinical setting.

This result is similar to a study performed by **(Zeinabet al., (2017))** who studied "*Effect of an instructional package on nurses' performance regarding obstetrical emergencies*" on 40 nurses that found that less than three quarters of the studied nurses had poor knowledge regarding obstetrical emergencies before the implementation of instructional package.

In addition, **Garcia et al., (2018)** who conducted a study to evaluate "*Teaching Guatemalan traditional birth attendants about obstetrical emergencies at Guatemala*" including 191 nurses, this study shows that almost one half of nurses had poor knowledge regarding obstetrical emergencies.

Discussion

The present study was aimed to study and assess the obstacles facing maternity nurses while providing emergency obstetric care in addition to assessing maternity nurses' knowledge and practices regarding obstetrical emergencies.

The finding of the current study will be presented under four main sections: characteristics of the studied nurses, nurses' knowledge regarding obstetrical emergencies, nurses' practices regarding obstetrical emergencies, obstacles to provision of care.

As regards characteristics of the studied nurses, the results of the present study showed that half of the studied nurses were in the age group of 20-29 years with a mean age of 36.42±4.39 years. This result is similar with **Elagamy, (2020)** who studied "*Effect of Intrapartum Clinical Pathway Application on Maternity Nurses' Performance and Women Satisfaction*" on 60 staff nurses and found that almost one half in the same age group.

Regarding educational qualification of the studied nurses, the result of the current study showed that to half (40.4%) of the studied nurses were technical nursing graduates. This result is contracted with a study conducted by **brahim and Abdel-Menim, (2016)** who studied "*Improving maternity nurses' performance regarding prevention and control of postpartum hemorrhage*" The study was conducted at obstetrics and gynecology departments affiliated to Benha University Hospital and Benha Teaching hospital. Sample: total sample of 64 maternity nurses and found that more than three quarters of them had nursing diploma.

Concerning years of experience of the studied nurses, the result of the current study revealed that more than half of the studied nurses had 5 years of experience (mean year of 6.75±3.2years), this result is similar to **Mansour et al., (2019)** who studied "*Effect of Maternity Nurses Knowledge and Practices Regarding the Medication Errors on Laboring Women Safety in Labor Unit*" on 36 nurses and found that less than half had less 5 years experiences

The findings of this study appear to contradict the results of the study conducted by **Bongban et al. (2016)** titled "Emergency obstetrics knowledge and practical skills retention among hospital and clinic staff following advanced life support obstetrical training in Cameroon."

As regards nurses' practices regarding pregnant woman resuscitation, the result of the present study showed that most of the nurses had incompetent practice regarding woman resuscitation; this result could be related to lack of training courses regarding advanced cardiac life support measures.

This result comes in the same line with **El Sharkawy et al., (2020)**. Who studied *"The Effect of Simulation-Based Educational Program on Maternity Nurses' Performance regarding Obstetrical Emergencies during Pregnancy"* this study is conducted at the clinical obstetrics' skill lab of the faculty of nursing, Benha University. And found that the minority of nurses completely done pregnant woman resuscitation.

As regards nurses' practices regarding bleeding management during pregnancy, the result of the present study showed that less than two thirds of the nurses had incompetent practice regarding nursing management of bleeding during pregnancy that was highly correlated with their lack of knowledge and nearly half of them were completely unaware about obstetrical emergencies during antenatal, natal, postnatal periods and subsequently its related care.

This result is similar with **Emam, (2018)**. Who studied *"Maternity Nurses Performance Regarding Late Ante Partum Hemorrhage: An Educational Intervention"* This study was conducted in obstetrics and gynecology departments at Benha University Hospital on 64 maternity nurses and found that the majority had incompetent practice regarding late antepartum hemorrhage.

As regards nurses' obstacles: increasing workload and high burnout, the present study showed that the majority of the studied nurses perceived it as an obstacle to provision of optimal emergency care, this result may be related to problems with hiring, and increasing number of clients that did not correlated to the number of nurses.

This result comes in the same line with **Munabi-Babigumira et al., (2017)** who studied *"Factors that influence the provision of intra partum and postnatal care by skilled birth attendants in low-and middle-income countries: a qualitative evidence synthesis"* found that insufficient training during their education or after they had begun clinical work and inadequate staffing of facilities could increase the workloads of skilled birth attendants, make it difficult to provide supervision and result in mothers being offered poorer care.

Concerning acute shortage of trained personnel this result show that more than three quarters of the studied nurses perceived it as an obstacle to provision of emergency obstetric care this result may be correlated to lack of training courses, absence of specialization and increasing number of emergency cases, also increased health workers' workloads compromise their ability to provide care. A lack of specialists or experienced staff could lead to problems with supervision and situations where emergency obstetric care was not provided or was provided by less qualified staff.

This result come in the same line with **(Morgan et al., (2018)**, who studied *Barriers and facilitators to the provision of optimal obstetric and neonatal emergency care and to the implementation of simulation-enhanced*

Regarding the total nurses' practice scores related to obstetrical emergencies, the findings of the present study indicated that more than half of the surveyed nurses demonstrated incompetent practice in this area. This result could be attributed to a lack of knowledge among nurses, which in turn affected their practical application of skills and protocols related to obstetrical emergencies. This result is supported by **Abdelhakm and said., (2017)** who studied *"Developing nursing management protocol for maternity nurses regarding emergency obstetric care"* this study was conducted in the obstetrics and gynecology emergencies department at Benha university hospital including 40 nurses and found that more than three quarters of the studied nurses had unsatisfactory practices regarding emergency obstetrics care. It is crucial to address the knowledge gap among nurses through comprehensive and ongoing education and training programs. By enhancing their knowledge base, nurses can improve their understanding and implementation of best practices in obstetrical emergency care. Providing opportunities for skill development, scenario-based training, and regular updates on evidence-based guidelines can help bridge the gap between knowledge and practice, leading to improved patient outcomes in obstetrical emergencies.

As regards nurses' practices regarding performance of competent care during obstetrical emergencies, the result of the present study showed that more than of the nurses had incompetent practice regarding performance of competent care during obstetrical emergencies, that was highly correlated with their lack of knowledge and nearly half of them were completely unaware about obstetrical emergencies during antenatal, natal, postnatal periods and subsequently its related care.

The observed phenomenon of nurses displaying incompetent practice in obstetrical emergencies could be attributed to several factors. One explanation is the belief among nurses that they are not authorized to take independent actions in emergency cases, leading them to rely solely on doctors to make decisions and take necessary actions. This perception may result in neglecting their essential role in providing life-saving measures during obstetrical emergencies. This result is consistent with **Nada et al., (2011)** who studied *"Quality of care for obstetric emergencies in 4 general hospitals in Egypt"* found that the delay in the initial assessment and time spent from initial assessment until intervention started has negative effect on the care offered to the patient.

Additionally, the lack of specific training courses focusing on emergency obstetrics, improper job descriptions, and shortages of nursing staff can contribute to the problem. The absence of specialized training may leave nurses ill-prepared to handle obstetrical emergencies effectively. Improper job descriptions may fail to clearly define the responsibilities and scope of practice for nurses in emergency situations, further hindering their ability to provide timely and appropriate care. The shortage of nursing staff can lead to increased workloads and involvement in non-nursing duties, diverting their attention and limiting their capacity to respond effectively to obstetrical emergencies.

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- mentorship in primary care facilities in Bihar, India: a qualitative study, and found that nearly one quarter agree with shortage of trained personnel. Regarding relation between studied nurses' total knowledge and practice scores and demographic characteristics of the studied nurses, the finding of the current study illustrated that there was highly statistically significant between total knowledge and practice with all parameters of sociodemographic characteristics except attend training courses, p-value <0.001*.
- This result is in the same line with Abdelhakm and Said, (2017) who studied "Developing nursing management protocol for maternity nurses regarding emergency obstetric care" and found that there was a positive statistically significant between total knowledge and practice with their age, Level of education, Current Job, Information about emergency obstetric care and Years of experience when p-value <0.001*.
- Regarding correlation between knowledge and practice, this study illustrated that there was highly statistically significant and positive correlation between knowledge and practice with $r = 0.857$ and p-value was <0.001* This finding was similar to AlShatarat et al., (2022) who studied "Triage knowledge and practice and associated factors among emergency department nurses" on 147 nurses that found that there was a significant positive relationship between triage knowledge and practice ($r = 0.486$, $P < 0.01$).
- Regarding correlation between obstacles with knowledge and practice, the present study illustrated that there was highly statistically significant and negative correlation between Obstacles with knowledge and practice with $r = -0.905$ / -0.817 respectively and p-value was <0.001* This result comes in the same line with Abdel-Sammad, (2022) who found that there was highly statistically and negative significant correlation between total barriers with total knowledge and practice scores when p-value <0.001**

Conclusion

Based on the results of the present study, it could be concluded that there was highly statistically significant and positive correlation between knowledge and practice and that there was highly statistically significant and negative correlation between Obstacles with knowledge and practice. In addition, the studied nurses have unsatisfactory knowledge and incompetent practices regarding obstetrical emergencies. Also there are many obstacles that interfere with provision of care, there were the research questions were answered

Recommendations

In the light of the present study findings, the researchers recommended that: - Developing awareness programs for nurses to enhance their knowledge regarding obstetrical emergencies.

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