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Effect of Advanced Nursing Management Guidelines on Nurses' Knowledge Regarding Emergency Obstetrical Care

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ABSTRACT
Background: In obstetric emergencies, nurses play a pivotal role in ensuring maternal and neonatal safety. Implementing advanced nursing management guidelines enhances nurses' preparedness and response capabilities, leading to improved patient outcomes. **Aim:** to assess the impact of advanced nursing management guidelines on nurses' knowledge regarding emergency obstetrical care.
Subjects and methods: Quasi-experimental design (pre and posttest) in Obstetrical and Gynecological Department in one of Ismailia city hospitals. The study included 50 nurses. Two sections of a self-administered questionnaire were used: 1st section involved personal data of the studied nurses. 2nd section included nurses' Knowledge regarding Obstetrical Emergencies. **Results:** a significant improvement in nurses' knowledge about obstetrical emergencies following the implementation of a guideline-based intervention (p = 0.000), except cardiopulmonary resuscitation (CPR), which dropped to 62%, indicating the need for reinforcement. **Conclusion:** Implementing of emergency obstetric guidelines had a significant improvement of nurse's knowledge who worked in the Emergency Obstetric and Gynecologic Department. **Recommendations:** Organize updated training program that focuses on advanced obstetric emergencies, especially in cardiopulmonary resuscitation, to ensure retention of vital skills.
Keywords: Advanced nursing management guidelines, Nurses Knowledge, Emergency, obstetrical care.

INTRODUCTION

Obstetrical emergencies are acute, life-threatening conditions that can emerge unexpectedly at any point during the entire perinatal period, spanning from conception through childbirth and extending into the postnatal phase. These critical situations inherently demand immediate and decisive medical interventions. A significant and persistent challenge in clinical practice is that many of these severe events simply cannot be reliably anticipated through routine antenatal screening protocols. The inherently stressful and rapidly evolving nature of such emergencies necessitates not only swift and accurate diagnosis but also highly coordinated and effective management by a multidisciplinary healthcare team to achieve the best possible clinical outcomes for both the mother and her child [(1)].

In 2020, a deeply concerning global statistic revealed that approximately 800 women perished daily from causes related to pregnancy and childbirth that were largely preventable. This tragic figure translates to the profound loss of a life every two minutes. The World Health Organization (WHO) issued a report confirming a staggering total of 287,000 maternal deaths worldwide for that year [(2)]. A critical analysis of these fatalities indicates a stark global disparity, with an overwhelming 95% of these maternal deaths occurring disproportionately in low-income and lower-middle-income countries. Reflecting this grave inequality, the maternal mortality ratio (MMR) in low-income nations stood at an alarming 430 per 100,000 live births, a stark contrast to the significantly lower rate of just 13 per 100,000 live births recorded in high-income countries [(2)]. This highlights a persistent and urgent global health challenge. Nearly 15% of all women in the world will have life-threatening problems during pregnancy, delivery, or the postnatal period. Direct causes, as postpartum hemorrhage, pregnancy-induced hypertension, or septic infections, account for most of the maternal mortality in poor countries. Additionally, over 40% of maternal deaths due to direct causes occur during the intrapartum period, with nearly 45 % occurring during the first 24 hours of birth [(3)].

World Health Organization divided Obstetrical emergencies to three stages: The first is pregnancy stage as maternal hemorrhage, pregnancy-induced hypertension with its complications, and premature rupture of membranes. The second is labor stage as amniotic fluid embolism, inversion or rupture of uterus, placenta accreta, prolapsed umbilical cord, and shoulder dystocia. The last stage is postpartum as postpartum hemorrhage and postpartum infection [(2)].

Lack of nurses' knowledge is an important cause of substandard care in emergencies. Emergency obstetric care is critical to reduce maternal and neonatal death and can be provided with skilled staff in health centers [(4)]. However, decreasing maternal mortality is a main public health priority that has risen to the top of health and development goals, as well as one of the Sustainable Development Goals (SDGs). Maternal mortality will be reduced through various methods, one of which is to make

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emergency obstetric care acceptable, inexpensive, and be provided to women and their families [5].

Nursing management guidelines are standardized guidelines or procedures that outline the steps and actions to be taken by nurses in specific clinical situations. These guidelines are developed based on evidence-based practice and are designed to ensure consistent and safe care for patients. Nursing guidelines provide nurses with clear instructions on how to assess, diagnose, treat, and manage various health conditions or situations. They help to streamline care delivery, promote efficiency, and enhance patient outcomes. By following nursing guidelines, nurses can provide high-quality care and contribute to the overall effectiveness of healthcare delivery [6, 7].

It is essential to provide training in obstetric emergency and newborn nursing care to enable responsible nurses to recognize, assess, and manage dangerous problems that arise during pregnancy, delivery, and the postpartum period. Training begins with the enhancement of competency-based knowledge and practical instruction by skilled birth attendants. Emergency obstetric care and early newborn care are considered effective approaches that enhance both competency and the quality of care [8].

A nurse's role should create awareness among women and their families about the danger signs during pregnancy and the significance of prompt, necessary, as well adequate emergency obstetric care. So, providing nurses with educational program regarding obstetrical emergencies during pregnancy is essential to enhance their competency and certify from providing safe and competent care to the women [9,10].

Significance of the study: In Egypt, the maternal mortality rate due to obstetric emergencies was 17 deaths per 100,000 live births [11]. During the process of giving birth, obstetrical emergencies can arise at any time. Hence, it is essential that all health professionals who care for women are skilled in precisely diagnosing obstetrical emergencies and managing them appropriately and promptly [1].

Emergency obstetric care (EmOC) is a research-based service that helps women deal with possible life problems that arise during pregnancy, labor, and the postnatal period [12]. The role of the nurse is vital for offering efficient care to women in routine and emergency conditions [13]. Few research was conducted on obstetrical emergencies. Thus, it becomes increasingly vital to develop a nursing management guideline to help nurses provide care to high-risk women by updating and upgrading their knowledge, as well as serving as a reference guide when needed. It should also be used and integrated through educational modalities, which is why this study was conducted.

This study aimed to evaluate the effect of advanced nursing management guidelines on nurses' knowledge regarding emergency obstetrical care.

Research objectives:

1. Assessment of baseline knowledge among nurses concerning emergency obstetrical care before the implementation of advanced nursing management guidelines.
2. Development and implementation of advanced nursing management guidelines tailored to enhance nurses' competencies in managing obstetric emergencies.
3. Evaluation of nurses' knowledge regarding emergency obstetrical care following the implementation of advanced nursing management guidelines.

Research Hypothesis: Nurses' knowledge regarding emergency obstetrical care will improve after implementation of advanced nursing management guidelines.

SUBJECTS AND METHODS

Research design: Quasi experimental (pre and post- test) research design was followed to fulfill the aim of the study.

Study setting: The study was conducted at Obstetrical and Gynecological Department in one of the Ismailia hospitals that provides health care services during antenatal, labor and postnatal periods for high risk mothers. The Obstetric and Gynecologic Unit services consists of reception room, room for care of woman during first stage of labor, vaginal delivery room, room for high risk pregnancy, room for postpartum care, Cesarean section room. These places provide services to women who are resident in Ismailia Governorate. Care is provided by obstetrician as well as nursing specialists, and diploma nurses who are responsible for giving nursing care.

Sample: A total of 50 nurses employed in the obstetrics emergency department of a hospital in Ismailia participated in the study.

Tools: To achieve the aim of the current study, one tool was utilized to collect data relevant to the study variables as follows:

Self-administered questionnaire: It was designed by the researcher after reviewing related literature. It assessed nurses' knowledge and consists of two parts:

Part (I): Personal data of the studied nurses as (age, educational level, career, years of experience, previous attendance of training program...etc.).

Part (II): Knowledge assessment tool:

This part was developed by the researcher from recent research and books related to obstetrical emergencies to assess nurses' knowledge regarding obstetrical emergencies used for pretest, post-test (immediate, follow-up and after 1 month), which was modified according to the pilot study. The questionnaire comprises 30 items, organized into six sections:

Section 1: General knowledge of obstetrical emergencies: This section included seven topics: definitions, classifications, contributing factors, necessary preparations for obstetrical emergencies …etc.

Section 2: Emergency tray preparation: This section covers three topics: Essential equipment, medications for the emergency tray, and the nurse's role in preparing the emergency tray.

Section (3): The nursing care component for obstetrical emergencies during pregnancy encompasses four key topics: Obstetrical emergencies during pregnancy and priorities of nursing care for specific conditions (Bleeding during pregnancy, convulsions during pregnancy, premature rupture of membranes)

Section (4): Nursing care for obstetrical emergencies during labor. It consisted of 7 topics (Obstetrical emergencies that occur during labor, priorities of nursing care for (Amniotic fluid embolism, inversion of the uterus, uterine rupture, placenta accreta, umbilical cord prolapse, and shoulder dystocia)

Section (5): Nursing care for obstetrical emergencies during postpartum period it consisted of 6 topics (Classification, priorities of nursing care for postpartum hemorrhage, puerperal sepsis and protection against puerperal sepsis during pregnancy ...etc.).

Section (6): Knowledge about cardiopulmonary resuscitation of the woman. It consisted of 3 topics (Definition, types, preparations that must be followed for cardiopulmonary resuscitation of the pregnant woman).

Scoring system: This part was scored through 3- points Likert scale, with (2) for completely correct, (1) for incompletely correct, and (0) for unknown. The total score for the knowledge was calculated by sum of the total score of all sections and ranged from (0 - 60).

- Good knowledge: ≥ 75% (45 ≤ 60)
- Average knowledge: 50 - < 75% (30< 45)
- Poor knowledge: < 50% (0 < 30)

Content validity and reliability: Tools of data collection were reviewed by a panel of 3 experts for clarity, relevance, applicability, and ease for implementation and according to their judgment modification was applied. The reliability was done by Cronbach's alpha and the internal consistency was 0.79.

Administration design: An official permission was taken before conducting the study from the Dean of Faculty of Nursing-Suez Canal University to the director of the selected hospital and delivered to the director of obstetrics emergency department, in order to obtain approval to conduct the study after explanation the title and purpose of the study.

Pilot study: The researcher conducted a pilot research that estimated as 10% (5) of the total sample of nurses (50) in order to assess the tool's applicability, clar ity, and feasibility as well as to gauge the amount of time required for data collection. Clarification and the removal of certain questions, such as "types of emergency obstetrics care and source of nurses' knowledge about obstetrical emergencies" were the essential changes. The primary study sample did not include nurses who participated in the pilot trial.

Field of work: The study was carried out from the beginning of October 2023 and completed at the end of July 2024 covering 10 months. The researcher attended the previously mentioned setting 2 days/week from 9 Am to 2 Pm, afternoon from 2 Am to 8 Pm or night shifts from 9 pm to 11 pm according to admitted emergency cases and researcher suitable time. The days divided into: **Hot days** (The hospital received emergency cases) Saturday, Monday, and Wednesday**, Cold days** (The hospital not received emergency cases) Sunday, Tuesday, Thursday, and Friday**.**

Preparatory Phase: The researcher took the official permission to proceed with the proposed study, prepare tools, booklets then initiate data collection process.

Booklet preparation: (Emergency obstetric guidelines: The researcher adapted nursing guidelines in a clear, simple Arabic language supported by figures after reviewing related literature (WHO, Books and researches in obstetric emergencies), and it consisted of:

- **Theoretical part included general** knowledge regarding obstetrical emergencies, preparation of the emergency tray, obstetrical emergencies during pregnancy (Bleeding during pregnancy, preeclampsia, eclampsia and premature rupture of membrane), labour (Amniotic fluid embolism, inversion or rupture of uterus, placenta accreta, umbilical cord prolapse and shoulder dystocia) and

postpartum period (postpartum hemorrhage and puerperal sepsis).

Assessment phase (pretest):

Personal data of the studied nurses was collected by the researcher through the distribution of a self-administered questionnaire **(Tool no. I part I)**. The time needed to complete the questionnaire was (5 – 10 minutes).

Knowledge Assessment (pretest) was started by the researcher to assess nurses' knowledge regarding obstetrical emergencies by distribution of a self-administered questionnaire **(Tool no. I part II)**. The researcher assessed nurses' knowledge during cold day to be easily available during the shift. Data was collected at the nurses' room that was quiet, tidy and well ventilated and electric source for laptop to show presentation and demonstrate live videos. During collection of data the researcher was available for any question and interpretation. It took about 20 to 30 minutes.

Implementation of the educational session:

The researcher delivered a theoretical session on obstetric emergencies, employing lectures and group discussions as teaching methods. Instructional materials included booklets and videos, complemented by hands-on training with real-life equipment such as oxygen masks, flow meters, humidifiers, Y-type blood administration sets, urinary catheters, and emergency trays.

The educational session conducted in Arabic to accommodate all educational levels (Diploma and Bachelor's Degree), the session provided comprehensive information on obstetric emergencies occurring during pregnancy, labor, and the postpartum period. It also covered the preparation of emergency trays and the procedures for cardiopulmonary resuscitation.

Nurses were organized into five groups based on their work conditions and readiness. Educational sessions were held twice a week (Either Sunday and Tuesday or Thursday and Friday) in the nursing room, each lasting between 60 to 120 minutes.

Evaluation phase (post-test):

In this phase, the researcher assessed the effectiveness of the nursing management guidelines by conducting evaluations at the following point:

Immediate evaluation (Post-Test): Shortly after the implementation of the guidelines, an immediate assessment was conducted in the same room to measure the nurses' knowledge acquisition.

Follow-up evaluation: A follow-up assessment was scheduled one-month post-implementation to evaluate the retention of knowledge regarding obstetrical emergencies among the nurses. This evaluation strategy aligns with established methods that utilize pre- and post-tests, along with follow-up assessments, to effectively measure changes in knowledge and skills resulting from educational interventions.

Ethical consideration: Common ethical principles in clinical research were adhered to during the study. An initial approval to carry out the proposed research was secured from the Research Ethical Committee, Faculty of Nursing, Suez Canal University, with the code 133/12/2021. In this study, participation was fully voluntary. Every participant had the right to either accept or decline involvement in the study. Ethical considerations include the following: Clarifying the aim and character of the research. Through data coding, anonymity and confidentiality were guaranteed. Additionally, these data was not reused in other studies without obtaining participant consent. All participants were entitled to exit the study whenever they wished. At the start of the interview, the researcher greeted the nurses, introduced herself, clarified the study's purpose and objectives, and obtained written consent for participation. The study adhered to the Helsinki Declaration throughout its execution.

Statistical analysis

Data were checked before being entered into the computer. The data were tabulated and analyzed using the Statistical Package for Social Sciences (SPSS version 20.0). Frequencies and percentages were examples of descriptive statistics that were used. Pearson correlation coefficients, the Chi-squared test, and the paired t-test were employed. When $p \leq 0.05$, a significant level value was taken into account. Additionally, when $p \leq 0.001$, a highly significant level value was taken into account.

RESULT

Table (1) illustrated that more than two third (68%) of studied nurses were ranged from 20 to less than 30 years old and about half of them (48%) were Technical institution graduates. Regarding current job, more than three quarters of the studied nurses (82%) were assigned as nurses. Moreover, more than half (58.0%) of them had less than 5 years of experience.

Table (1): Frequency distribution of personal data of respondents and factors affecting on nurses level of knowledge (no. = 50)

Variable	No.	%
Age		
20 - < 30 Yrs.	34	68.0
30 - < 40 Yrs.	12	24.0
40 - < 50 Yrs.	4	8.0
Educational level		
Secondary school	14	28.0
Technical institution	24	48.0
Bachelor degree	12	24.0
Career		
Bedside nurse	41	82.0
Supervisor nurse	9	18.0
Years of experience		
< 5 years	29	58.0
5 -10 years	11	22.0
>10 years	10	20.0

Table (2) highlighted a significant gap in emergency obstetrical training among nurses, with 64% had no training and only 8% attended more than three courses. The most common course attended was BLS & Obstetrical Emergencies (16%), while participation in Neonatal CPR (2%) and Critical Cases (8%) was notably low.

Table (2): Frequency distribution of training courses attended by respondents (n = 50)

Variable	No.	%
Number of Courses Attended		
None	32	64.0
One Course	10	20.0
Two Courses	4	8.0
More than 3 Courses	4	8.0
Type of Course		
BLS & Obstetrical Emergencies	8	16.0
Neonatal CPR & First Aid	1	2.0
CPR	1	2.0
Critical Cases	4	8.0
Neonates Care	1	2.0

According to table (3), the highest frequent reported factors that affected the nurse's performance were availability of equipment and excessive workload (82%, 80%) respectively.

Table (3): Frequency distribution of factors that negatively affecting the nurse's performance as reported by them (no. = 50)

Factors affecting the nurse's performance	No.	%
Unavailability of equipment (D.C, gloves, medication…etc.)	41	82.0
Hospital policy doesn't facilities nursing work	34	68.0
Excessive workload.	40	80.0
Lack of facilities (medical and non-medical equipment, such as diagnostic equipment, emergency equipment and personal protective equipment, ...etc.).	3	6.0
Inability to control stress.	9	18.0
Lack of supervision.	6	12.0
Non-compliance of services with workload.	12	24.0
Salary incompatibility with minimum wage.	25	50.0
Poor communication/ teamwork	10	20.0
Lack of non-financial rewards.	14	28.0
Inconvenience work environment.	25	50.0
Unavailability of continuing education.	15	30.0
Other factors that result in poor nurses' performance.	5	10.0

According to table (4) there was a highly statistically significant difference before, immediately after guidelines implementation regarding the studied nurse's general knowledge about obstetrical emergencies (p = 0.000). General knowledge about obstetrical emergencies of the studied nurses was improved after implementation of guidelines.

Table 4: Percentage distribution of nurses' general knowledge regarding obstetrical emergencies before, immediately after, and at follow up phase of guidelines implementation (no. = 50)

Variable	Pretest %	Immediately after %	Follow up %	X^2/ P - Value
Concept of obstetrical emergencies				
Unknown	30.0	-	-	A:17.647/.000** B:17.647/.000** C:--- / ---
Completely correct	70.0	100.0	100.0	
Classification of obstetrical emergencies				
Unknown	56.0	-	-	A:38.889/.000** B:38.889/.000** C: ---
Completely correct	44.0	100.0	100.0	
Factors leading to obstetrical emergencies				
Unknown	70.0	-	-	A:53.846/.000** B:34.766/.000** C: 6.383/ .012*
Incompletely correct	-	-	12.0	
Completely correct	30.0	100.0	88.0	
Preparations must be available for emergency obstetric care				
Incompletely correct	32.0	-	-	A:19.048/ .012* B:19.048/ .000** C: ---/ ---
Completely correct	68.0	100.0	100.0	
Priorities of nursing care for obstetrical emergencies				
Incompletely correct	56.0	-	4.0	A:38.889/ .000** B:32.19/ .000** C: 2.041/ .153
Completely correct	44.0	100.0	96.0	
Basic emergency obstetrical care				
Unknown	4.0	-	-	A:47.059/ .000** B:24.337/ .000** C: 8.696/ .003**
Incompletely correct	60.0	-	16.0	
Completely correct	36.0	100.0	84.0	
Comprehensive emergency obstetrics care				
Incompletely correct	30.0	-	6.0	A:17.647/ .000** B:9.756/ .000** C: 3.093/ .079****
Completely correct	70.0	100.0	94.0	

*Statistical significant at P < 0.05 **High statistical significant at P < 0.001 A: X2/ P - Value Pre / Immediately after, B: X2 P - Value Pre / Follow up, C: X2 P - Value Immediately after / Follow up

Table (5) stated that there was a highly statistically significant difference before, immediately after guidelines implementation regarding the studied nurse's general knowledge about preparation of the emergency tray (p = 0.000). General knowledge about preparation of the emergency tray of the studied nurses was improved after implementation of guidelines.

Table (5): Percentage distribution of nurses' general knowledge regarding preparation of the emergency tray before, immediately after, and at follow up phase of guidelines implementation (no. = 50).

Variable	Pretest %	Immediately after	Follow up %	X^2/ P - Value
preparation of the emergency tray				
Necessary equipment on emergency tray				
Unknown	-	-	-	A:44.928/ .000**
Incompletely correct	62.0	-	8.0	B:32.044/ 000**
Completely correct	38.0	100.0	92.0	C: 4.167/ .041*
Necessary drugs on emergency tray				
Unknown	2.0	-	-	A:28.205/ .000**
Incompletely correct	42.0	-	2.0	B:24.909/ .000**
Completely correct	56.0	100.0	98.0	C: 1.010/ .315
Nurse role during preparation of emergency tray				
Incompletely correct	30.0	-	-	A:17.647/ .000**
Completely correct	70.0	100.0	100.0	B:17.647/ .000**
				C: ---/ ---

*Statistical significant at P < 0.05 **High statistical significant at P < 0.001, A: **X2/ P -** Value Pre / Immediately after, B: **X2 P** - Value Pre / Follow up, C: **X2 P -** Value Immediately after / Follow up.

Table (6) stated that there was a highly statistically significant differences between pre- and post-test (immediately after) of the studied nurses' knowledge about obstetrical emergencies and its priorities during pregnancy (p = 0.000). Also, knowledge about obstetrical emergencies during pregnancy was improved after guidelines implementation.

Table (6): Percentage distribution of nurses' knowledge about nursing role of obstetrical emergencies during pregnancy and its priority before, immediately, and follow up phase after Guidelines implementation (n=50)

Variable	Pretest %	Immediately after %	Follow up %	X2/ P - Value
Obstetrical emergencies during pregnancy				
Unknown	4.0	-	-	A:16.279/.000**
Incompletely correct	24.0	-	-	B:16.279/.000**
Completely correct	72.0	100.0	100.0	C: ---/---
Priorities of nursing care for bleeding during pregnancy				
Unknown	2.0	-	-	A:49.254/.000**
Incompletely correct	64.0	-	4.0	B:42.255/.000**
Completely correct	34.0	100.0	96.0	C: 2.041/.153
Priorities of nursing care for convulsions of pregnancy				
Unknown	4.0	-	-	A:49.254/.000**
Incompletely correct	62.0	-	4.0	B:42.269/.000**
Completely correct	34.0	100.0	96.0	C: 2.041/.153
Priorities of nursing care for premature rupture of membrane				
Unknown	2.0	-	-	A:47.059/.000**
Incompletely correct	62.0	-	8.0	B:34.079/.000**
Completely correct	36.0	100.0	92.0	C: 4.167/.041*

*Statistical significant at P < 0.05 **High statistical significant at P < 0.001, A: X2/ P - Value Pre / Immediately after**,** B: **X2** P - Value Pre / Follow up, C: X2 P - Value Immediately after / Follow up.

Figure (1) cited in author's own work based on collected survey data.

The graphical presentation showed that all nurses achieved 100% good knowledge, demonstrating the guidelines' effectiveness immediately after implementation. Follow-up phase; knowledge retention remained high (98-100%) in most areas, but CPR knowledge declined to 62%. The differences before and after implementation were highly significant ($p < 0.001$).

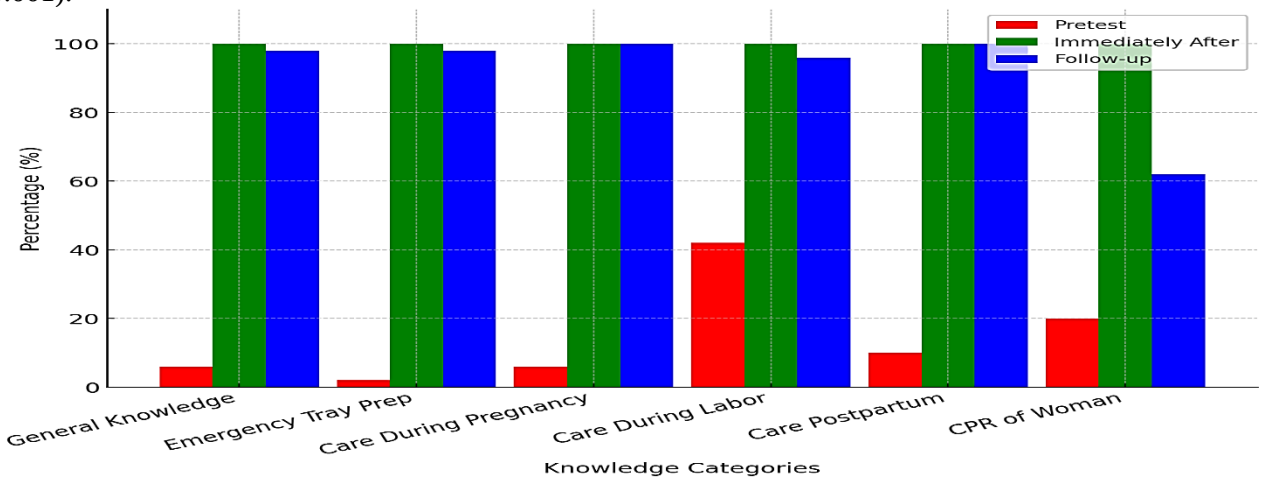

Figure (1): Comparison of nurses' knowledge levels across phases (no. = 50).

Table (7) revealed that there was a highly statistically significant differences between pre- and post-test (immediately after) with an improvement of knowledge regarding nurses' knowledge about priorities of nursing care for obstetrical emergencies during postpartum period ($p \leq 0.001$).

Table (7): Percentage distribution of nurses' knowledge about priorities of nursing care for obstetrical emergencies during postpartum period before, immediately after, and at follow up phase of guidelines implementation (no. = 50)

Variable	Pretest %	Immediately	Follow up %	X2/ P - Value
Obstetrical emergencies that occur during postpartum period				
Unknown	4.0	-	-	A:9.890/.007**
Incompletely correct	14.0	-	-	B: 9.890/.007**
Completely correct	82.0	100.0	100.0	C: ---/---
Priorities of nursing care for postpartum hemorrhage				
Unknown	4.0	-	-	A:51.515/.000**
Incompletely correct	64.0	-	-	B:51.515/.000**
Completely correct	32.0	100.0	100.0	C: ---/---
Nursing intervention needed to protect woman from postpartum hemorrhage				
Unknown	2.0	-	-	A:47.059/.000**
Incompletely correct	62.0	-	2.0	B:43.468/.000**
Completely correct	36.0	100.0	98.0	C: 1.010/.315
Priorities of nursing care for puerperal sepsis				
Unknown	2.0	-	-	A:31.579/.000**
Incompletely correct	46.0	-	-	B:31.579/.000**
Completely correct	52.0	100.0	100.0	C: ---/---
Protection against puerperal sepsis during pregnancy				
Unknown	8.0	-	-	A:47.059/.000**
Incompletely correct	56.0	-	2.0	B:43.481/.000**
Completely correct	36.0	100.0	98.0	C: 1.010/.315
Protection against puerperal sepsis during labor				
Unknown	10.0	-	-	A:49.254/.000**
Incompletely correct	56.0	-	-	B:49.254/.000**
Completely correct	34.0	100.0	100.0	C: ---/---

*Statistical significant at $P < 0.05$ **High statistical significant at $P < 0.001$, A: X2/ P - Value Pre / Immediately after, B: X2 P - Value Pre / Follow up, C: X2 P - Value Immediately after / Follow up.

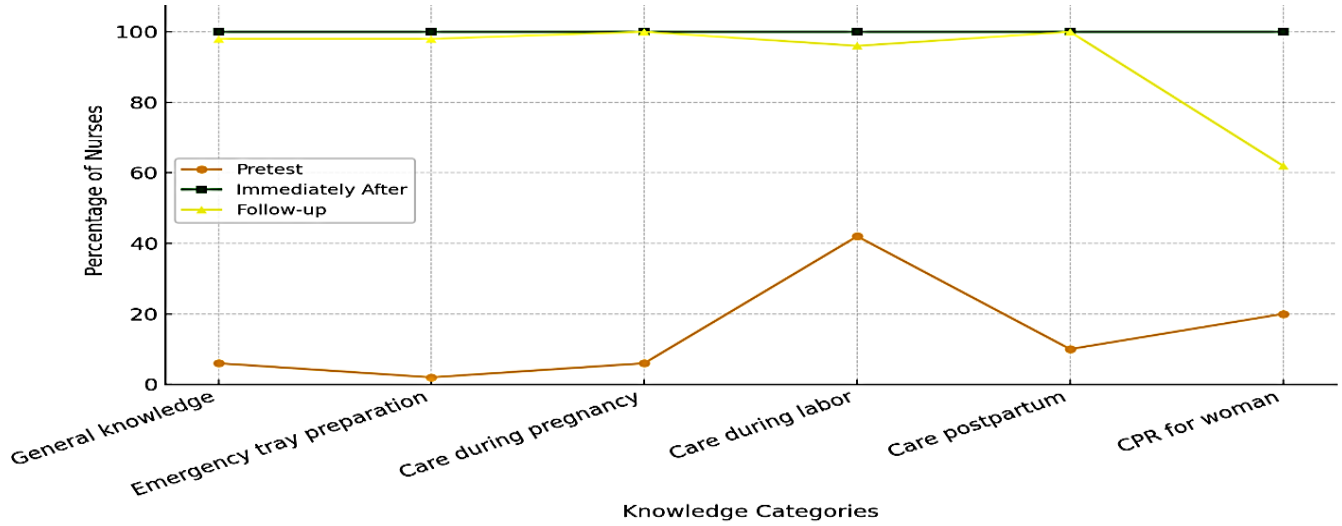

Figure 2: Trend of Nurses' Knowledge on obstetrical emergencies (no. = 50).

Figure (2) cited in author's own work based on collected survey data. Nurses' knowledge levels drastically improved after guideline implementation, reaching 100% in most areas. Knowledge retention with some decline: Most categories maintained high knowledge levels in the follow-up phase, except CPR, which dropped to 62%.

Figure (3) cited in author's own work based on collected survey data**.** It illustrated that prior to the implementation of the guidelines, over 25% of nurses' possessed good knowledge concerning obstetrical emergencies. Following the implementation, all nurses (100%) demonstrated good knowledge, a level that was sustained during the follow-up phase (p=0.000).

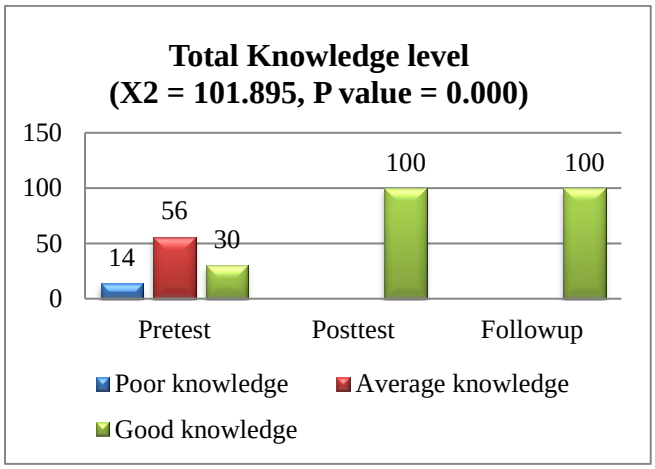

Figure (3): Percentage distribution of the studied nurses according to their total knowledge level about obstetrical emergencies before, immediately after, and at follow up phase of management guidelines implementation.

DISCUSSION

This study aimed to assess the impact of advanced nursing management guidelines on nurses' knowledge regarding emergency obstetrical care. The findings demonstrated that prior to the intervention, nurses had varying levels of understanding, with gaps in managing critical situations such as postpartum hemorrhage, eclampsia, and shoulder dystocia.

Regarding factors that negatively affecting the nurse's performance, the present study results stated that the major factors were unavailability of equipment and excessive workload.

The results demonstrated strong consistency with the findings reported by **Sari *et al.*** [14]. Their research, which was meticulously conducted in Indonesia, aimed to comprehensively assess the various factors significantly impacting nurse performance within a medical ward setting. Their investigation critically identified and reported that the two primary factors detrimentally affecting performance were, sequentially, excessive workload and a prevalent lack of adequate facilities. This convergence of findings underscores the pervasive influence of these operational challenges on nursing effectiveness across different geographical contexts.

Conversely, the findings of the present study stand in notable disagreement with the conclusions drawn by **Lee & Kim** [15]. Their investigation focused specifically on the profound impact of various nursing stress factors on the turnover intention observed among hospital nurses. They reported that, within their study population, stress emanating directly from patients and their families emerged as the single most influential factor, demonstrating the greatest impact (standardized beta coefficient $\beta = 0.27$, $p<.001$). From the perspective of the current researcher, this observed divergence in findings might plausibly be attributed to significant

differences in the clinical working environment. Specifically, the discrepancy could stem from a potentially exacerbated imbalance where a decreased number of available nursing personnel is confronted with a concurrently increased number of patients, leading to heightened workload demands and potentially shifting the predominant sources of stress within the nursing profession.

The present study's findings indicate that over half of the participating nurses possessed inadequate knowledge concerning obstetrical emergencies. This deficiency is likely attributed to the lack of educational and training programs focused on emergency situations within their units. Implementing structured educational interventions has been shown to significantly enhance nurses' knowledge and skills in managing obstetric emergencies. Therefore, establishing regular training programs is essential to improve nursing care in such critical situations.

The significant increase in knowledge acquisition observed during the post-guideline instruction assessment is highly likely attributable to the immediate and synergistic impact of the structured theoretical sessions. These didactic sessions were powerfully reinforced through the strategic provision of a comprehensive and engaging colorful booklet, alongside the utilization of diverse and interactive audiovisual materials. Such multimodal educational approaches are widely recognized within pedagogical frameworks for their inherent capacity to significantly enhance information retention and exert a demonstrable positive influence on the cognitive processes involved in the acquisition of new knowledge among healthcare professionals, specifically nurses.

This particular outcome stands in strong congruence with the findings reported by El-**Khawaga *et al.*** [16]. Their significant study, conducted in Egypt, meticulously evaluated the effect of a tailored educational program on nurses' performance concerning the critical management of bleeding in late pregnancy. Importantly, their research conclusively reported a statistically significant increase in the overall knowledge level of the studied nurses regarding complex obstetric conditions such as placenta previa and placental abruption. This improvement was evident both immediately following the educational intervention and sustained after the full implementation of the program, demonstrating a clear and statistically significant difference when compared to their knowledge levels prior to the program's initiation.

Conversely, the findings of the present study appear to diverge from those presented by **Babelgaith *et al.*** [17], who rigorously investigated the impact of diabetes continuing education on the knowledge and clinical practice of diabetes care among healthcare professionals in Yemen. In their research, nurses exhibited no statistically significant change in their diabetes knowledge scores from the pre-test to the post-test assessment (p = 0.52), indicating a lack of measurable improvement. This observed discrepancy or variance between the two studies may plausibly be elucidated by fundamental differences in the nature of the study populations. For instance, the nurses in **Babelgaith's** cohort might have possessed inherently higher baseline educational levels or had more extensive prior exposure to relevant and specialized training courses, which could have diminished the observable impact of their specific educational intervention.

CONCLUSION

Based on the findings of the present study, it was concluded that the nurses' knowledge was improved after implementing advanced emergency obstetric guidelines in Emergency Obstetric and Gynecologic Department. So, the hypothesis was accepted.

RECOMMENDATION

Based on the findings of this study, the following recommendations were suggested to improve nurses' knowledge and skills in managing obstetric emergencies:

- Apply advanced emergency obstetric guidelines for all nurses in Obstetrics and Gynecology Units to improve their knowledge and practical skills about obstetric emergencies.
- Conducting research with a larger sample size across multiple hospitals to assess nurses' knowledge and practices concerning obstetrical emergency care, thereby enhancing the generalizability of the findings.
- Promote ongoing training, especially in cardiopulmonary resuscitation, to ensure retention of vital skills.
- Use periodic evaluation programs after training to monitor performance and ensure that information is not lost.
- Relying on interactive teaching methods such as simulation and practical training to ensure that skills are effectively consolidated.

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REFERENCES

1. **Leta M, Assefa N, Tefera M (2022):** Obstetric emergencies and adverse maternal-perinatal outcomes in Ethiopia; A systematic review and meta-analysis. Frontiers in Global Women's Health, 3: 942668.
2. **World Health Organization (2024):** Maternal mortality. Available from: https://www.who.int/news-room/fact-sheets/detail/maternal-mortality
3. **-Kuppusamy P, Prusty R, Kale D (2023):** High-risk pregnancy in India: Prevalence and contributing risk factors - a national survey-based analysis. Journal of Global Health, 13: 04116.
4. **Acharya K, Subedi R, Dahal S (2021):** Basic emergency obstetric and newborn care service availability and readiness in Nepal: Analysis of the 2015 Nepal Health Facility Survey. PLoS One, 16 (7): e0254561.
5. **Solnes M, Kvernflaten B, Meguid T (2023):** Towards renewed commitment to prevent maternal mortality and morbidity: learning from 30 years of maternal health priorities. Sexual and Reproductive Health Matters, 31 (1): 2174245.
6. **American Nurses Association (2023):** What is evidence-based practice in nursing? Available from: https://www.nursingworld.org/content-hub/resources/workplace/evidence-based-practice-in-nursing/
7. **Vetter M, Zavotsky K (2024):** Advancing Evidence-Based Practice in Nursing and Healthcare. Elsevier Health Sciences. Available from: https://books.google.com.eg/books?hl=en&lr=&id=cz4tEQAAQBAJ&oi=fnd&pg=PT21&dq=7.%09Nevada+State+University+(2024):+Evidence-based+practice+in+nursing:+Improving+patient+outcomes.+&ots=0JTnE8PJEy&sig=MyFC1BSVipx24-HtKp2llTIE6D4&redir_esc=y#v=onepage&q&f=false
8. **Charles A, Helen A, Helen N (2021):** Emergency Obstetric Care and Newborn Care Training for Skilled Health Personnel. A Manual for Facilitators. Manual. Emergency Obstetric Care and Quality of Care Unit, Liverpool, UK. Available at: https://www.lstmed.ac.uk/sites/default/files/LSTM_EmONC_FACILITATOR_FINAL_052021%20%281%29
9. **Nkhwalume L, Mashalla Y (2021):** Health care workers experiences in emergency obstetric care following implementation of an in-service training program: case of 2 Referral Hospitals in Botswana. African Health Sciences, 21: 51-58.
10. **Mukuru M, Kiwanuka S, Gibson L (2021):** Challenges in implementing emergency obstetric care (EmOC) policies: perspectives and behaviours of frontline health workers in Uganda. Health Policy and Planning, 36 (3): 260-272.
11. **The World Bank (2023):** Maternal mortality ratio - Egypt, Arab Rep. Available from: https://data.worldbank.org/indicator/SH.STA.MMRT?locations=EG
12. **Zewde H (2022):** Quality and timeliness of emergency obstetric care and its association with maternal outcome in Keren Hospital, Eritrea. Scientific Reports, 12 (1): 14614.
13. **Spiby H, Stewart J, Watts K (2022):** The importance of face to face, group antenatal education classes for first time mothers: A qualitative study. Midwifery, 109: 103295.
14. **Sari D, Saputera B, Saleh M (2020):** Factors affecting nurse performance in medical ward. Indian Journal of Public Health Research and Development, 11 (3): 1479-1483.
15. **Lee E, Kim J (2020):** Nursing stress factors affecting turnover intention among hospital nurses. International Journal of Nursing Practice, 26 (6): e12819.
16. **El-Khawaga D, ElAbeden M, Abou Romia F (2022):** Effect of educational program on nurses' performance regarding bleeding in late pregnancy. Tanta Scientific Nursing Journal, 26 (3): 119-138.
17. **Babelgaith S, Almetwazi M, Wajid S (2021):** Impact of diabetes continuing education on knowledge and practice of diabetes care among health care professionals in Yemen. Journal of Pharmaceutical Research International, 33 (28A): 221-230.