The Effectiveness of Implementing an Obstetric Triage Training on Maternity Nurses' Clinical Competence and Satisfaction

Amany Aly Ahmed[1*], PhD; Moustafa AbdelKhalek Abdellah[2], MD; Mai Mostafa Elsayed Hegazy[3] PhD; Howida M. Awed[4] PhD & Amal K. Khalil[5] PhD.

1)Assistant professor of Obstetrics, Gynecology & Reproductive Health Nursing, Faculty of Nursing, Sohag University and Associated Prof. Faculty of applied Health Science, Pharos University, Egypt**.**

2)Professor Faculty of Medicine; Dean, Faculty of applied Health Science, Pharos University, Egypt.

3)Faculty of Medicine, Menoufia University, Egypt.

4)Assistant professor of Maternal and Newborn Health Nursing, Faculty of Nursing, Menoufia University, Egypt.

5)Assistant professor of Maternal and Newborn Health Nursing, Faculty of Nursing, Menoufia University, Egypt.

Abstract

Background: Obstetric triage is a vital clinical process that enables maternity nurses to prioritize care based on the severity of maternal conditions, thereby reducing delays and improving outcomes. The **purpose** of this study was to assess the effectiveness of implementing an obstetric triage training program on the maternity nurses' clinical competence and satisfaction. A quasi-experimental one-group pretest-posttest **design** was conducted among 46 maternity nurses at Menoufia University Hospital. Data were collected using three **tools**: Structured questionnaire, an observational triage practice checklist, and a nurses' satisfaction survey. **Results** statistically significant improvements across all measured outcomes. The proportion of nurses with good knowledge increased from 2.2% to 84.8%, competent practice rose from 13% to 78.3%, and overall satisfaction improved from 67.4% to 100% ($p < 0.001$ for all). **Conclusion:** The training program significantly enhanced maternity nurses' performance and satisfaction. **Recommendations:** Integration of obstetric triage education into hospital protocols and nursing curricula is strongly recommended to ensure standardized, high-quality maternal emergency care.

Key Words: Obstetric Triage, Nurses' Performance, Educational Intervention, Satisfaction

Introduction:

Maternal mortality remains a critical global public health issue, particularly in low- and middle-income countries. According to the World Health Organization (2018), approximately 830 women die daily from preventable causes related to pregnancy and childbirth. In Egypt, maternal morbidity and mortality remain major challenges, with nearly 2,900 women and girls dying annually due to pregnancy-related complications, and many more experiencing long-term health consequences (Gad et al., 2023; WHO, 2018). These alarming figures underscore the urgent need for timely, accurate, and efficient maternity care services.

One key strategy to improve maternal outcomes is the implementation of effective obstetric triage systems. Obstetric triage refers to the rapid, systematic assessment of pregnant women to prioritize care based on the severity of their clinical condition. It serves as a gateway to timely and appropriate medical intervention and plays a pivotal role in minimizing delays in emergency care and preventing adverse maternal and fetal outcomes (Lindroos, Sengpiel, & Elden, 2021; Long, 2021). A well-functioning triage system ensures that critically ill patients receive immediate attention, while stable cases are managed effectively, thus optimizing healthcare resources and staffing.

The primary purpose of implementing an obstetric triage system is to ensure that high-risk pregnant women receive appropriate and timely care. Delays in accessing suitable medical attention remain a contributing factor to both maternal and fetal mortality. Therefore, triage personnel must be able to accurately distinguish women who require only basic care—directing them to a waiting area or fast-track unit—from those with severe conditions who should be immediately transferred to the emergency

department for rapid and advanced management (Lindroos, et al., 2021; Forna et al., 2023; Kenyon, 2021).

Despite the acknowledged importance of obstetric triage, many healthcare systems—especially in resource-constrained settings—still lack standardized protocols and adequately trained personnel. Gaps in nurses' knowledge and practical skills may lead to delays in care, misdiagnoses, and compromised maternal-fetal outcomes (Elmashad, Gouda, & Fadel, 2020; Duko et al., 2019). These challenges are further compounded by increased workloads, workforce shortages, and limited access to continuing professional development.

Nurses working in triage settings are often required to make rapid, high-stakes decisions. Therefore, core competencies in clinical assessment, prioritization, communication, and decision-making are essential (Butler et al., 2023). Leading professional organizations, such as the Emergency Nurses Association, advocate for mandatory triage training to ensure safe and effective emergency care. Furthermore, evidence suggests that simulation-based and structured training programs significantly enhance triage performance among maternity nurses (Elmashad et al., 2020; Mohammed Mostafa, Emam, & Youness, 2023).

Building on this essential role, the main focus of the education program is to equip nurses with the knowledge and skills they need to foster a positive and effective attitude in the obstetric emergency department. This encompasses job training, career education, and technical education. A nursing education program refers to a structured course of study designed to enhance a nurse's knowledge and abilities or to prepare them for the nursing profession (Baltaji et al., 2023)

In Egypt, although Emergency Obstetric Units (EmOU) have been implemented in all university hospitals, consistent application of triage practices remains limited due to insufficient training and the absence of standardized national guidelines. This gap highlights the urgent need to evaluate the effectiveness of educational interventions aimed at improving maternity nurses' performance and satisfaction, ultimately contributing to safer maternal care (Belizán et al., 2021; Naz et al., 2022).

Significance of the study:

Although Emergency Obstetric Units (EmOU) have been established in university hospitals across Egypt, many maternity nurses still lack standardized training in obstetric triage protocols. This gap results in inconsistent triage implementation, delayed responses to obstetric emergencies, and adverse maternal and neonatal outcomes. Several Egyptian studies have linked inadequate triage knowledge and limited practical training among nurses to preventable maternal deaths and neonatal complications (Gad et al., 2023; Duko et al., 2019).

The current study holds significance as it provides evidence-based insights into the effectiveness of a structured triage training program specifically tailored for maternity nurses within a university hospital context. By evaluating improvements in nurses' knowledge, practical performance, and satisfaction, this research seeks to bridge the gap between theoretical instruction and clinical application. The findings are expected to inform hospital administrators and nursing educators in developing sustainable training strategies and contribute to national efforts aimed at reducing maternal morbidity and mortality through enhanced nursing competencies.

For maternity nurses to manage patients effectively in emergency situations, a solid understanding of obstetric triage is essential. Their ability to make rapid and accurate clinical decisions is directly tied to their knowledge base. When appropriately implemented, triage training can significantly improve the effectiveness and efficiency of maternity care. Among the most impactful educational approaches is structured training, particularly for healthcare professionals involved in emergency maternal care (Naz et al., 2022). Accordingly, this study was designed to assess the impact of obstetric triage training on nurses' performance and satisfaction.

The Aim Of The Study

To assess the effectiveness of implementing an obstetric triage training program on the maternity nurses' clinical competence and satisfaction.

Research hypothesis:

1.**H1:** Maternity nurses who receive structured obstetric triage training will demonstrate a statistically significant improvement in their knowledge of obstetric triage principles compared to their pre-intervention scores.

2.**H2:** Maternity nurses who receive structured obstetric triage training will exhibit a statistically significant improvement in their practical performance during triage situations compared to their pre-intervention scores.

3.**H3:** Maternity nurses who receive structured obstetric triage training will report a statistically significant increase in their level of satisfaction with their roles and responsibilities in emergency maternity care compared to their pre-intervention score

Method

Design: a quasi-experimental (one group pre/post-test) design was utilized

Setting: the study was conducted in Emergency and Obstetric Unit at Menoufia University Hospital, a tertiary referral center located in Menoufia Governorate, Egypt. The hospital provides maternity care to a wide range of high-risk obstetric cases from across the region.

Sample:

A convenient sample of 46 maternity nurses was selected from Obstetric unit, including labor rooms, inpatient maternity wards, and operating theaters. Each two nurses with rotation working at emergency unit for obstetric cases. Non-random sampling was used due to the limited number of eligible nurses within the setting.

Tools.

Three tools were utilized for data collection:

I- A structured questionnaire:

The tool was developed by the researchers after reviewing related literature (Moudi, et al., 2020; Lindroos, et al., 2021; McCarthy et al., 2022)**.** It was used to assess and collect data related to two main parts:

Part (1); Maternity Nurses' Socio-demographic characteristics:

It is related to Socio-demographic characteristics of the studied maternity nurses (age, sex, educational level, work experience, and occupation)

Part (2); Maternity Nurses' knowledge: used to assess nurses' knowledge regarding obstetric triage. It consisted of fourteen open-ended questions regarding the obstetric triage covering (definition, goal, types, benefits, challenges, nurse's role; maternal triage index (MFT), triage colors codes, acuity levels, and integration in care)

Scoring system: responses were rated as 2 = accurate and complete answers, 1 = accurate and incomplete answers, and 0 = wrong or don't know responses. Total scores were categorized as:

- **Good knowledge**: ≥75% (22–28 points)
- **Fair knowledge**: 50–74% (14–21 points)
- **Poor knowledge**: <50% (0–13 points)

II-Observational Triage Practice Checklist:

Designed by the researchers based on literature (e.g., Mulowooza et al., 2021), this checklist assessed nurses' triage clinical practice. The checklist included steps related to: initial assessment, prioritization accuracy, communication and documentation

performance was rated as competent/incompetent based on predefined criteria.

- **Scoring:**
  - 2 = correctly done
  - 1 = incorrectly done
  - 0 = not done

Final scores were classified into:

- Competent: >75% (≥66 points)
- Incompetent: 50–74% (44–65 points)
- Not done: <50% (0–43 points)

III-Nurses' Satisfaction Survey:
An adapted version of the "Nursing Work Satisfaction Scale" (Awad, 2020) was used to measure nurses' satisfaction regarding role clarity, preparedness for emergencies, and perceived training effectiveness.

- **Scoring:** Responses to 7 items were rated as:
  - 1 = Satisfied
  - 2 = Unsatisfied
- ***Higher total scores*** reflected greater satisfaction with the training and perceived role in obstetric triage

Validity of the instruments:

The questionnaire was formulated and cross-checked for its content validity by three experts (two experts in Maternal and Newborn Health Nursing department, one expert in Obstetrics & Gynecology department). They were judged the items for completeness and clarity (content validity) and modifications were made.

Reliability of the instrument

Test–retest reliability was applied by the researchers for testing the internal consistency of the instruments. It was done through the administration of the same instruments to the same participants under similar conditions on two or more occasions. Scores from repeated testing were compared and some questions were modified. Cronbach's reliability for tool (I) knowledge (0.94), tool (II) practice (0.951), and tool (III)satisfaction (0.870).

Administrative Approval: An approval from the Committee of Research and Ethics, Faculty of Nursing, Menoufia University, was obtained on May 5, 2023. Official letters were obtained from the Dean of the Faculty of Nursing at Menoufia University and delivered to the director of the obstetric department of the University Hospital, Menoufia Governorate, to carry out the study. Official permission was obtained to carry out the study from the director of the above-mentioned setting.

Ethical Considerations:

Ethical approval was obtained from the Research Ethics Committee at the Faculty of Nursing, Menoufia University (Approval No. 956). All participants were informed of the study's purpose and procedures, and written informed consent was obtained. Nurses were informed of their voluntary participation and anonymity was maintained.A written permission was obtained from the Dean of the Faculty of Nursing to the director of Menoufia University Hospital. All studied nurses were informed that the information they provided during the study would be kept confidential and used only for statistical purposes. Considering the ethical aspects of scientific research, respecting all cultural, spiritual and religious beliefs for nurses. Maintaining the confidentiality and dignity of the nurses. Avoiding any harm to the nurses. All the nurses who participated gave their informed consent to take part in the study after being told about it. Each nurse informed that participation in the study was voluntary with ability to withdraw, as well as the opportunity to freely refuse participation. They were free to ask any question about the study details. The use of locked sheets with code numbers in place of the nurse's names helped to maintain confidentiality.

Pilot study:

A pilot study was conducted on a subgroup 10 maternity nurses to assess clarity, simplicity, and applicability of the study tools. Based on the findings, minor revisions were made to the tools, including the clarification and simplification of certain items. Due to a limited sample pool, the pilot participants were included in the final study sample, bringing the total number of participants to 46 maternity nurses.

Study Fieldwork

Procedure

The study was conducted over a six-month period, from May 1 to October 31, 2023, and followed four main phases: Pre-Intervention**,** Assessment, Implementation, and Evaluation. The researchers were present in the study setting three days per week (Sunday, Monday, and Wednesday) from 9:00 AM to 12:00 PM

Pre-Intervention Phase:

During this phase, the researchers conducted a thorough review of current literature related to obstetric triage to develop the training content and data collection tools. Educational materials, including an Arabic-language booklet and illustrative posters, were created to suit nurses' various educational backgrounds. The materials covered essential topics such as triage principles, maternal triage index (MTI), levels of urgency, and case prioritization. Additionally, administrative approvals were obtained from:(the Faculty of Nursing, Menoufia University, the Director of the Menoufia University Hospital, the Research Ethics Committee (Approval No. 956). Participants were informed about the study's purpose and procedures and signed written informed consent forms

Assessment phase:

Researchers visited the Obstetrics' and Gynecology Department at Menoufia University hospital twice per week (Monday-Wednesday) from 9AM - 1PM, and met each maternity nurse individually. After introducing themselves and explaining the study, each nurse completed structured interviewing (sociodemographic& knowledge) questionnaire (15 minutes), followed by an observation of their triage performance in the skills lab using checklist (25-30 minutes). this phase aimed to assess nurses' baseline knowledge, skills, and satisfaction prior to implementing the training program.

Implementation phase (conducting obstetric triage training program)

The obstetric triage training program was delivered over four structured sessions per group, adapted to nurses' work schedules and conducted in Arabic. the program included: **two theoretical sessions** (each 40-60 minutes): focused on core obstetric triage concepts, maternal triage index, acuity levels, and clinical decision- making. **two practical sessions** (each 2 hours): included role playing and clinical scenarios covering urgent and emergency obstetric conditions (e.g., antepartum hemorrhage, postpartum hemorrhage, preeclampsia). the total sample (n=46) was divided into three groups to ensure optimal engagement: (Group A:15 nurses, Group B:15 nurses, and Group C:16nurses). Teaching methods included lectures, group discussions, visual aids, demonstrations and re-demonstrations. Positive reinforcement and motivation were applied to enhance participation.

Supportive material (obstetric triage guideline):

It was designed to enhance nurses' knowledge and practices regarding obstetric triage, which had a positive effect on their practice and quality of care. It was designed by the researchers in the form of a handout (booklet) using simple Arabic language and different illustrative pictures in order to facilitate understanding its contents. It consists of two parts. **The first part** includes knowledge about obstetric triage. **The second part** is examples of nursing care plans for three different common cases of obstetric emergencies (antepartum hemorrhage, postpartum hemorrhage, and pre-eclampsia). Concerned with providing the nurses with the essential information about obstetric triage (history of triage, definition, types of triage,

colors of triage, levels of triage, triage nurse characteristics, nurse role in triage, component of the MTFI scale, action according to severity, prioritization of cases, time out of triage, examples of nurse care plan according to MFTI)

Evaluation phase:

two weeks after the completing the training program, the post-intervention was conducted. Completed the same knowledge questionnaire was reassessed using observational triage checklist during real clinical shifts by blinded observers. Completed the satisfaction survey again. The aim of this phase was to assess changes in maternity nurses' knowledge, practice, and satisfaction following the intervention. That took from 25-30 minutes.

Limitations:

- The study was conducted in a single tertiary hospital which may limit the generalizability of the findings to other healthcare settings.

- The sample size was relatively small and selected purposively, which may introduce sampling bias.

- The study did not include follow-up assessments to assess long-term knowledge or skill retention post-intervention.

Statistical Design:

Data were coded, entered, and analyzed using IBM (SPSS) version 25. The following statistical procedures were employed:

Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize participant's demographic characteristics and outcome measures.

Paired t-tests were conducted to compare pre- and post-intervention scores for knowledge and satisfaction.

Chi-square tests were used to assess changes in levels of triage practice competency.

Pearson correlation were calculated to assess relationships between knowledge, practice, and satisfaction scores post-intervention.

A p-value of <0.05 was considered statistically significant for all analysis.

Results:

Table 1 presents the sociodemographic characteristics of the participating maternity nurses (n=46). The majority (76.1%) were aged 20 to less than 30 years. Regarding education level, 52.2% held diplomas from nursing institutes, while 37% had bachelor's degree. Nearly half (45.8%) of the nurses had less than 3 years of clinical experience. Only 21.70% of participants had previously received training related attend training to obstetric triage.

Table 2 demonstrates a significant improvement in knowledge levels following the intervention. In the pretest, 78.3% had a poor knowledge level, which dropped to 0% posttest. The percentage of nurses with good knowledge increased dramatically from 2.2% in the pretest to (84.8) had a level in the posttest. The mean knowledge from 8.76 (pretest) to 24.89 (posttest), with a statistically significant difference (t-test=20.334, p value 0.000).

Table 3 shows a substantial enhancement in nurses' triage practice performance. In the pretest, only 13% of nurses demonstrated competent practice, which increased to (78.3%) in the posttest. The mean practice score rose from 5.24± 4.16 (pretest) to 12.3478±2.05 (posttest), reflecting a statistically significant improvement (t-test=13.177, p value 0.000).

Table 4 highlights a marked increase in nurses' satisfaction levels after the training. In the pretest, 32.6% of participants were, while post-intervention ,100% While 67.4% of them were satisfied in pretest compared to all of them 100% expressed satisfaction. The mean satisfaction score increased from 5.24±4.16 to the 12.35±2.05 in pre- and post-intervention, a

statistically significant change, (t-test=4.666, p value 0.000).

Table 5 reveals significant positive correlations between knowledge, practice and satisfaction scores post-intervention. Specifically: knowledge scores and practice scores (r =0.662, p=0.000); knowledge satisfaction scores (r =0.6614, p=0.000).

Table 6 also shows a significant positive correlation between practice total satisfaction scores; practice and satisfaction scores: (r =2.304, p=0.000).

Table (1): Demographic Characteristics of Studied Maternity Nurses (N =46)

Demographic Characteristics	No.	%
Age		
20 to less than 30	35	76.1
30 to 40	6	13.0
More than 40	5	10.9
Educational level		
Nursing diploma school	4	8.7
Institute of Nursing	24	52.2
Bachelor Degree	17	37.0
Post Graduate	1	2.2
Position		
Assistant nurse	3	6.5
Professional nurse	20	43.5
Nursing	22	47.8
Nursing supervisor	1	2.2
Years of experiences		
Less than 3 year	22	47.8
3-<5 years	7	15.2
5-10	5	10.9
More than 10years	12	26.1
Residence		
Rural	35	76.1
Urban	11	23.9
Previous Training course		
Yes	10	21.7
No	36	78.3

Table (2): Total Knowledge level among Studied Maternity Nurses in Pretest and Posttest (N=46)

Total Knowledge Level	Pretest		Post test	
	No	%	No	%
Poor	36	78.3	0	0
Fair	9	19.6	7	15.2
Good	1	2.2	39	84.8
Mean Score	**8.7609±4.80363**		**24.8913±2.97567**	
t-test (p- value)	**t=20.334 , (p=.000)**			

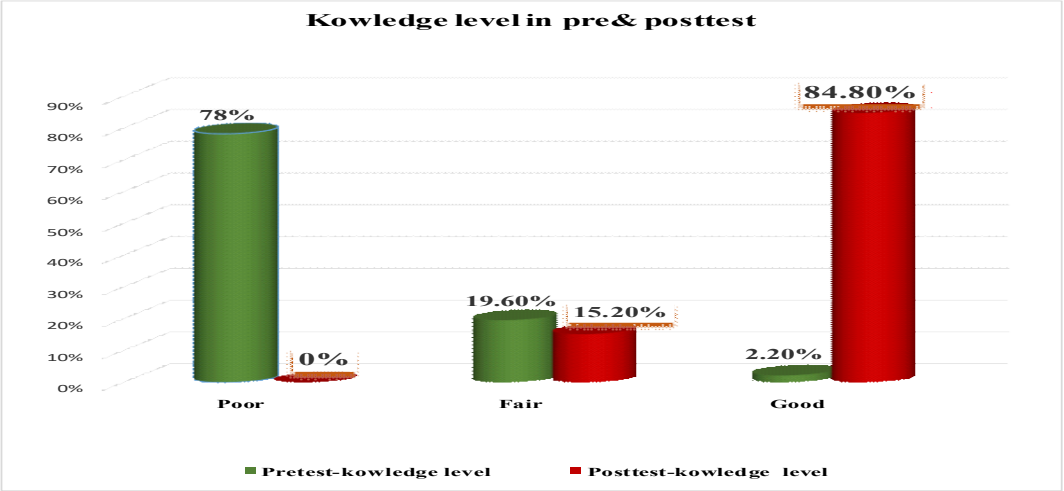

Figure 1. Maternity Nurses Knowledge Level

Table (3): Total Practice Level among Studied Maternity Nurses in Pretest and Posttest (N =46)

Total Practice Level	Pretest		Post test	
	No	%	No	%
Not Done	28	60.9	0	0
Incompetent Practice	12	26.1	10	21.7
Competent Practice	6	13.0	36	78.3
Mean Score	5.2391±4.16432		12.3478±2.04632	
t-test (p- value)	t=13.177 , (p=.000)			

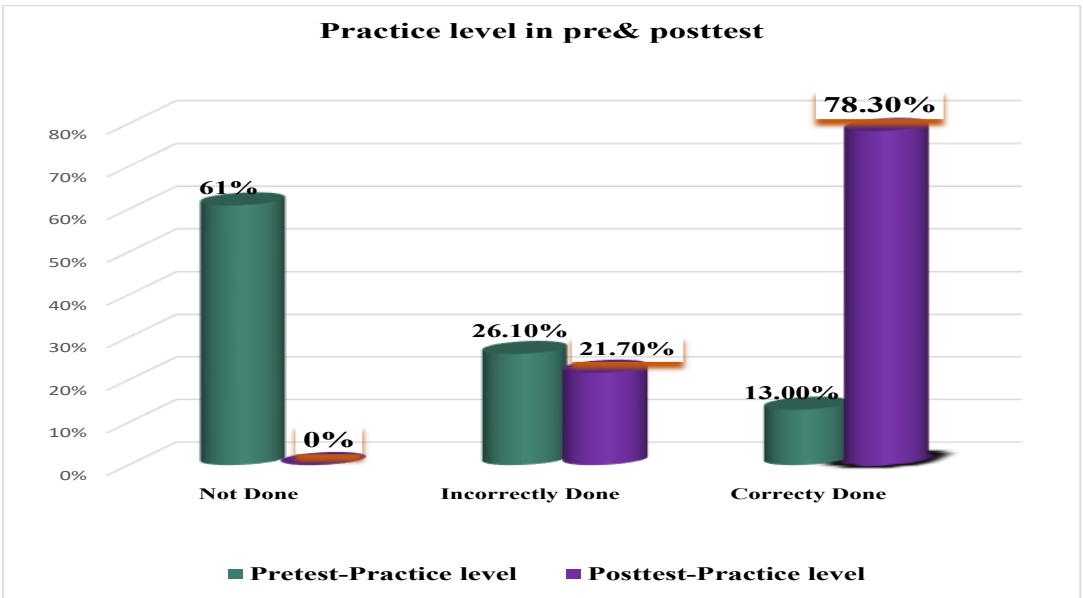

Figure 2. Maternity Nurses' Practice Level

Table (4): Total Satisfaction Level Among Studied Maternity Nurses in Pretest and Posttest (N =46)

Total Satisfaction Level	Pretest		Post test	
	No	%	No	%
Unsatisfactory	15	32.6	0	0
Satisfactory	31	67.4	46	100
Mean Score	5.2391±4.16432		12.3478±2.04632	
t-test (p- value)	t = 4.666 , (p=.000)			

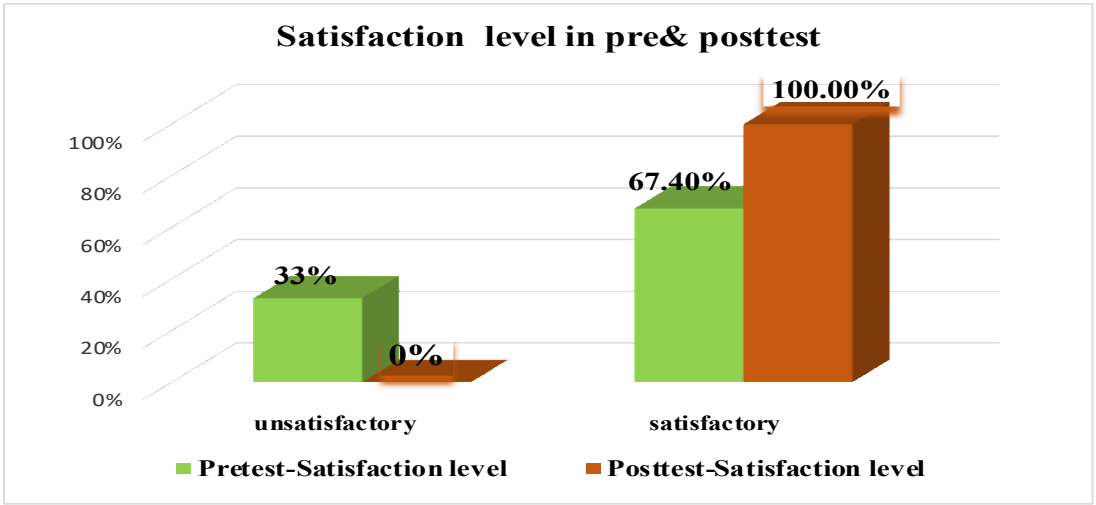

Figure 3. Maternity Nurses' Satisfaction Level

Table (6): Correlation Between Total Practice Scores, Total Satisfaction Scores of Studied Maternity Nurses in Posttest (N =46)

Variables	Correlation (r)	p- value
Practice vs Satisfaction Scores	2.304	0.001**

**. Correlation is significant at the 0.01 level (2-tailed

Discussion

Obstetric triage has emerged as a vital advancement in perinatal care over the past decade, particularly in addressing delays and insufficiencies in maternal emergency services. In lower-middle-income countries (LMICs), including Egypt, traditional care models often rely on a first-come, first- served basis, which may result inadequate petiotization, delayed assessment, and suboptimal outcomes (Rashidi et al., 2020). The structure application of triage protocols is therefore essential to ensure timely and appropriate responses to obstetric emergencies.

Regarding demographic characteristics, the majority of participants in the current study were aged 30 years or younger, aligning with Mohammed Mostafa et al. (2023),who reported that 40.6% of obstetric nurses in their study were between 20–25 years. Conversely, Hesham et al. (2022) found olderage groups more prevalent, suggesting institutional or regional variations in workforce demographics. From the researcher's perspective, the younger age profile in this study may reflect high staff turnover and the recruitment of newly graduated nurses in university-affiliated hospitals, which highlights the need for foundational training in obstetric triage.

In terms of education, over half of the participating nurses had completed their education at a nursing institute, which is consistent with Lindroos et al. (2023) who observed a similar pattern in their qualitative study in Sweden. However, this contrasts with Mohammed Mostafa et al. (2023) and Elmashad et al. (2020), where the majority held nursing diplomas. These discrepancies may reflect differences in national education systems. In Egypt, technical nursing education remains more common than university-level programs, necessitating tailored training interventions to bridge the knowledge and skill gaps.

The current findings indicated that nearly half of the nurses had less than three years of clinical experience, emphasizing their limited exposure to complex obstetric emergencies. Duko et al. (2019) similarlyreported that 49.2% of nurses in their Ethiopian study had under three years of experience. This highlights a global trend of novice staff entering emergency care settings and underlines the necessity of structured orientation and continuous training.

Less than one-quarter of the nurses had received prior training in obstetric triage, which is in line with findings by Mohammed Mostafa .et al(2023) .Thisindicates a notable training gap in many healthcare institutions. From the researcher's viewpoint, this reinforces the value of integrating triage education into both undergraduate curricula and continuing professional development programs. From the researcher's perspective, these findings underscore the critical role of targeted, evidence-based educational programs in bridging knowledge gaps among maternity nurses. Such interventions are essential to ensure nurses are adequately prepared to manage complex clinical scenarios and deliver high-quality obstetric care.

The current study demonstrated a marked improvement in knowledge levels post-intervention. Similar improvements were .reported by Hesham et al. (2022),where knowledge scores rose significantly after structured training. Mohammed Mostafa et al .(2023)also found comparable results. These findings confirm that targeted educational programs can effectively enhance nurses' theoretical understanding of obstetric triage, ultimately supporting safer clinical decision-making. From the researcher's perspective, the contradiction may stem from variations in institutional training policies, regional differences in access to continuing education, or differences in sample characteristics. The low percentage of nurses with prior training in the current study underscores the need for implementing standardized, accessible triage training to equip nurses with the competencies necessary for effective maternal emergency care.

Nurses' satisfaction with their roles in obstetric triage significantlyincreased post-training. This aligns with Mayberger et al (2022),who reported improved satisfaction following the implementation of the Maternal Fetal Triage Index. From the researcher's perspective, increased satisfaction may reflect improved confidence, role clarity, and perceived competence—factors critical to staff retention and performance in high-stress maternity environments. From the researcher's perspective, the marked increase in satisfaction after training highlights the importance of well-structured, competency-based educational interventions. Such training not only equips nurses with the necessary skills and knowledge but also fosters a more positive and empowered clinical workforce capable of handling obstetric emergencies with confidence.

The study identified a strong positive correlation between knowledge and practice scores, supporting findings by Mohammed Mostafa et al. (2023) and Elmashad et al. (2020) This confirms that as nurses' theoretical understanding improves, their clinical performance becomes more accurate and effective. The researcher believes that this underscores the value of integrating simulation-based education into triage training to reinforce knowledge and enhance skill retention. From the researcher's perspective, these consistent findings emphasize the critical link between knowledge acquisition and clinical competence. Therefore, strengthening nurses' theoretical understanding through targeted training directly enhances their practical skills, ultimately leading to safer and more effective maternal care.

Statistically significant correlations were also found between knowledge, practice, and satisfaction scores. These results are consistent with Mayberger et al. (2022) whoobserved that improved triage training not only enhanced performance but also positively influenced nurses' satisfaction. From the researcher's perspective, this suggests that when nurses are empowered with appropriate knowledge and skills, their engagement and confidence improve, leading to better patient care outcomes. From the researcher's perspective, such findings highlight the crucial role of integrating theoretical knowledge with hands-on simulation training to enhance clinical competence. This synergy not only supports evidence-based practice but also contributes to improved maternal outcomes through more accurate and timely triage decision-making.

Concerning the correlation between the posttest total knowledge scores, total practice scores, and total satisfaction scores of the maternity nurses under study, the results revealed statistically significant positive associations. Specifically, a significant positive correlation was found between posttest satisfaction scores and total practice scores, while a highly statistically significant positive correlation was observed between posttest satisfaction and total knowledge scores. These findings are consistent with those reported by Mayberger et al. (2022), who identified similar statistically significant positive associations among knowledge, practice, and satisfaction scores following obstetric triage training. This suggests that as nurses' knowledge increases, their practical performance and satisfaction levels also improve. From the researcher's perspective, these results reinforce the importance of comprehensive educational programs that not only enhance cognitive and clinical skills but also foster a sense of professional satisfaction. Such programs are essential for promoting confidence, competence, and sustained engagement in high-acuity maternity care settings.

Conclusion:

The Implementation of a structured Obstetric Triage training program led to improvements in maternity nurses' knowledge, clinical performance, and satisfaction levels. These finding demonstrate the program's effectiveness in enhancing nurses' over all competency in managing obstetric emergencies. Consequently, integrating such training into routine practice is essential to improve the quality of care and ensure better maternal and neonatal outcomes in emergency setting.

Recommendation:

Based on the study findings, the following recommendations are proposed:

- Integrate structured obstetric triage training programs into hospital orientation and continuing education for all maternity nurses.
- Develop and implement national standardized obstetric triage protocols to ensure consistency across healthcare settings.
- Promote interdisciplinary collaboration among obstetricians, midwives, and nurses to improve triage effectiveness.
- Ensure the availability of adequate resources, equipment, and staffing to support efficient triage practices.
- Establish ongoing evaluation and quality improvement mechanisms to assess and refine triage procedures.
- Encourage nurses to engage in triage-related research and stay updated with current evidence-based practice

References:

Awad Moawad Elmashad, H. A., Gouda, A. M., & Fadel, E. A. (2020). *Effect of implementing simulation obstetric triage training on nurses' knowledge and practices*. *International Journal of Nursing Didactics, 10*(2)

Baltaji, S., Noronha, S. F., Patel, S., & Kaura, A. (2023). Obstetric emergencies. *Critical Care Nursing Quarterly, 46*(1), 66–81.

Belizán, J. M., Gibbons, L., & Cormick, G. (2021). Maternal mortality reduction: A need to focus actions on the prevention of hypertensive disorders of pregnancy. *International Journal for Equity in Health, 20*(1), 1–6.

Butler, K., Anderson, N., & Jull, A. (2023). Evaluating the effects of triage education on triage accuracy within the emergency department: An integrative review. *International Emergency Nursing, 70*, 101322. https://doi.org/10.1016/j.ienj.2023.101322

Duko, B., Geja, E., Oltaye, Z., & Belayneh, F. (2019). Triage knowledge and skills among nurses in emergency units of a specialized hospital in Hawassa. *BMC Research Notes, 12*, 757. https://doi.org/10.1186/s13104-019-4792-x

Elmashad, H. A. M., Mohamed, A., Gouda, I., & Fadel, E. A. (2020). Effect of implementing simulation obstetric triage training on nurses' knowledge and practices [Master's thesis, Mansoura University, Egypt].

Forna, F., Gibson, E., Seda, P., Miles, A., Sobers, G., Ward, I., & Koplan, K. (2023). A Cocoon pregnancy care model to reduce maternal morbidity and mortality. *NEJM Catalyst Innovations in Care Delivery, 4*(2), CAT-22.

Gad, M. S., Abosalem, M. E., Shaheen, A. E., Elshafey, O. S. M., & Anter, M. E. (2023). Prevalence and risk factors of maternal mortality in Menoufia Governorate: A 5-year period prevalence study. *Menoufia Medical Journal, 36*(2), Article 15. https://doi.org/10.59204/2314-6788.1079

Hesham, M. A., Elsheikh, A., & Abed-Elhamid, N. (2022). Application of triage protocol to improve quality of care in emergency unit at maternity hospital. *Egyptian Journal of Health Care, 13*(1), 84–98. https://doi.org/10.21608/ejhc.2022.214079

Kenyon, S. (2021). Midlands maternity triage system goes digital for nationwide use. University of Birmingham.https://www.birmingham.ac.uk/research/applied-health/news/2021/03/midlands-maternity-triage-system-goes-digital-for-nationwide-use.aspx

Lindroos, L., Korsoski, R., Öhman, M. O., Elden, H., Karlsson, O., & Sengpiel, V. (2021). Improving assessment of acute obstetric patients – Introducing a Swedish obstetric triage system. *BMC Health Services Research*, 21(1), 1207. https://doi.org/10.1186/s12913-021-07210-9

Lindroos, L., Sengpiel, V., & Elden, H. (2023). *Obstetric emergency triage – A new mindset in obstetric emergency care in Sweden* (Doctoral dissertation, University of Gothenburg). GUPEA. https://gupea.ub.gu.se/handle/2077/77768

Long, E. (2021). Implementation of maternal fetal triage index to improve nurse knowledge and timeliness in obstetric triage: A pilot project, p.960.

Mayberger, J., Cera, J., Rowland, S., Struwe, L., & Barnason, S. (2022). Implementation of the Maternal Fetal Triage Index to improve obstetric triage. *Nursing for Women's Health, 26*(4), 269–277. https://doi.org/10.1016/j.nwh.2022.04.003

McCarthy, M. F., Pollock, W. E., & McDonald, S. J. (2022). Implementation of an obstetric triage decision aid into a maternity assessment unit and emergency department. *Women and Birth, 35*(3), e275–e285. https://doi.org/10.1016/j.wombi.2021.08.004

Mohammed Mostafa, S. M., Emam, E. A. R., & Youness, E. M. (2023). Effect of implementing triage training program on obstetric nurses' performance. *Minia Scientific Nursing Journal, 13*(1), 36–44.

Moudi, A., Iravani, M., Najafian, M., Zareiyan, A., Forouzan, A., & Mirghafourvand, M. (2020). Obstetric triage systems: A systematic review of measurement properties (clinimetric). *BMC Pregnancy*

and Childbirth, 20(1), 1–11. https://doi.org/10.1186/s12884-020-03126-w

Mulowooza, J., Santos, N., Isabirye, N., Inhensiko, I., Sloan, N. L., Shah, S., ... & Walker, D. (2021). Midwife-performed checklist and ultrasound to identify obstetric conditions at labour triage in Uganda: A quasi-experimental study. *Midwifery, 96*, 102949. https://doi.org/10.1016/j.midw.2021.102949

Naz, S., Saleem, S., Shamsul Islam, Z., Bhamani, S., & Sheikh, L. (2022). Obstetric triage improvement process using the Donabedian model of quality care: A quality improvement initiative. *BMJ Open Quality, 11*(2), e001483. https://doi.org/10.1136/bmjoq-2021-001483

Rashidi Fakari, F., & Simbar, M. (2020). Explaining challenges of obstetric triage structure: A qualitative study. Nursing open, 7(4), 1074–1080. https://doi.org/10.1002/nop2.478

World Health Organization. (2018). *Maternal mortality: Key facts***.** Retrieved from https://www.who.int/news-room/fact-sheets/detail/maternal-mortality