

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

**Eman Hassan Abu-Almagd¹, Dalal Mohamed Khalil Eshra²
& Howida Abo- Ellife Mohamed³**

*¹Lecturer at Armed Forces Medical Services School,
Armed Forces Medical Services–Royal Army of Oman.*

²Professor of Maternal and Newborn Health Nursing,

³Assistant Professor of Maternal and Newborn Health Nursing,

^{2,3}Faculty of Nursing, Menoufia University.

Abstract: Background: Despite the global push for natural childbirth, Cesarean sections have become the most common surgery worldwide; the rate has dramatically risen in Egypt. Women who are recommended to undergo CS must accept the procedure and be satisfied with it. **Purpose:** This study was conducted to assess the effect of instructional technology on studied nurses' performance and satisfaction of women undergoing cesarean section. **Method:** quasi-experimental design was used; for nurses (one group pre and post-test), for women (pre-intervention group & post-intervention group) design was utilized to conduct this study. **Instruments:** Three instruments were used (interviewing questionnaire for nurses, Observational Checklist for nurses and constructed interview questionnaire for studied women) **Results:** After conducting the instructional technology program, studied nurses had a higher level of knowledge (81%) and achieved better performance (80%) with higher statistically significant difference compared with pre intervention (5% and 65%). **Conclusion:** The instructional technology program improved nurses' knowledge and practices regarding CS and it was reflected on achieving a higher level of satisfaction among studied women. **Recommendations** Instructional technology should be integrated into the training programs to ensure that studied nurses stay updated with the latest advancements in CS procedures and technologies to achieve maternal satisfaction.

Key words: *Cesarean Section, Instructional Technology, Maternal Satisfaction*

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

Introduction

Pregnancy is considered a normal physiological process, but sometimes due to many factors, an intervention is needed to accomplish the process of labor and delivery (Lupu et al., 2023). Today, cesarean surgery is a major life-saving surgical obstetric procedure, whereby a baby is delivered through incisions in the mother's abdomen and uterus. It is highly effective in saving the lives of both the mother and the infant; however, it is recommended only for medically indicated causes (Pandey et al., 2023). Recent decades, there has been a global rise in the number of caesarean deliveries. The factors contributing to this trend remain largely unclear and subject to debate among researchers (Millizia et al., 2022). The decision to perform a caesarean delivery is often influenced by various factors such as the obstetrician's personal beliefs and experience, the specific characteristics of the patients, the protocols followed within the hospital environment, the growing use of labor induction, the legal implications, and, lastly, the mother's ability to request a caesarean section without a medical indication (Sorrentino et al., 2022).

In recent years, the use of instructional technology in healthcare settings has gained significant attention due to its potential to enhance patient care and improve healthcare professionals' performance (Da Silva et al., 2023). According to (Mustafa et al., 2022) Continuous education and training are crucial for healthcare professionals to remain current in their field and deliver

evidence-based care to their patients. With the rapid advancement of technology, it is essential for healthcare professionals to keep themselves updated on the latest instruments and techniques in their field (Thibault, 2020).

Presently, the inclusion of digital technologies has become increasingly necessary, as they have opened up new opportunities for healthcare professionals to engage in continuous education and training (Miranda & Tolentino, 2023). Online courses, virtual simulations, and other interactive learning instruments enable professionals to learn at their own pace and convenience (Darwish et al., 2022).

According to (Burnett-Zieman et al., 2021) women who receive pre, intra and post CS care from skilled health professionals has yielded significant global reductions in maternal and newborn morbidity and mortality. This will be achieved through positive elements of experiential quality of care, including communication quality, trusting relationships, providing accurate and timely health information and deliver high-quality counselling services to women during these periods. Women satisfaction with services is often used as a proxy measure for quality of care provided by health care workers (Burnett-Zieman et al., 2021).

Significance of the study:

The use of caesarean sections in childbirth is increasing globally, with it now accounting for over 1 in 5 births

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

(WHO, 2021). This trend is expected to continue, with nearly a third of all births projected to be by caesarean section by 2030. According to (WHO, 2021) Egypt is one of five countries where caesarean sections outnumber natural deliveries, with 72% of births in the country being by C-section in 2021. Caesarean sections are important for saving lives in certain situations, and it is crucial for nurses to have the necessary skills and knowledge to provide optimal care for both the mother and newborn (Millizia et al., 2022). Effective communication and interpersonal skills exhibited by nurses are key factors in maternal satisfaction, as they help build trust and understanding between the nurse and mother (Sarhan et al., 2022). However, there is a lack of research on the correlation between nursing training programs and maternity nurses' knowledge and performance, as well as women's satisfaction, specifically at Menoufia

Purpose of the study

To assess the effect of instructional technology on studied nurses' performance and satisfaction of women undergoing cesarean section.

Research hypotheses:

- 1) Studied nurses are expected to have a higher knowledge score on posttest than pretest regarding care of women undergoing CS after implementing instructional technology.
- 2) Studied nurses are expected to achieve a higher performance level on posttest than pretest regarding

care of women undergoing CS after implementing instructional technology.

- 3) Woman undergoing CS who obtains care by nurses who receive instructional technology is expected to achieve a higher satisfaction score on posttest than women on pretest.

Operational definition of variables:

1) Instructional technology: -

In this research, a flipped classroom approach was implemented, combining online resources and interactive activities with traditional classroom methods.

2) Nursing Performance: -

In this study, the operational application of nurses' skills in CS (e.g pre-surgical education, women's preparation before surgery and preparation for women before discharge) was examined using observational checklists and questionnaires.

3) Women satisfaction: -

In this study, it is operationally defined as the degree of convergence between patients' expectations of ideal care and their perception of the care they receive. Measured through pre and post questionnaires regarding maternal satisfaction.

Methods

Research Design:

A quasi-experimental (pre and posttest) was used.

Setting:

The current study was conducted at Obstetrics and Gynecological

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

department, Al-Shouhadaa hospital affiliated to the Ministry of Health and Population, in Menoufia Governorate, Egypt. It was in the third floor with 20 bed capacity.

Sampling:

A convenient sample of 20 nurses and 150 women undergoing CS.

Sample size:

- 1) **Nurses:** All nurses (20 nurses) who were working in the previously mentioned study setting providing care to women undergoing CS were recruited in the study.
- 2) **Women:** The researchers utilized sample size calculator software to determine the appropriate number of participants. The total population consisted of 240 women who underwent cesarean deliveries annually at Al-Shouhadaa hospital. With a confidence level of 95% and a confidence interval of 5, the estimated sample size was 148. To ensure representativeness, the sample size was increased to 150. Consequently, a purposive sample of 150 women was randomly assigned to either the pre-intervention group (75 women) or the post-intervention group (75 women) for the instructional technology intervention. Solvin formula was utilized to determine the sample size as follows:

$$n = N / (1 + Ne^2)$$

Where: n = Number of samples, N = Total population and e = Error tolerance (level). (0.05)

Instruments:

Three instruments were used for data collection:

Instrument one: A self-administered interview questionnaire

The researcher developed this questionnaire after a review of literature (Wali et al., 2020) to assess the effect of "instructional technology" on studied nurses' knowledge and performance related to CS.

This instrument was divided in to two parts:

- **Part 1:** Socio demographic characteristics of nurses as name, age, educational level, years of clinical experience and qualifications, etc.
- **Part 2:** Studied nurses' knowledge regarding (CS). It contained 6 items that contain questions related to nurses' knowledge about CS. All questions were multiple choice questions.

Scoring system:

Each correct answer was given 1 score. While each incorrect answer was scored zero. The total knowledge score was calculated by summation of scores for the "know item". The scores were converted into percent: Higher scores reflected higher levels of knowledge and performance.

- **Good:** $\geq 75\%$ of total knowledge score.
- **Fair:** 75% - 50% of total knowledge score.
- **Poor:** if the percent score was less than 50%.

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

Instrument two: - Observational Checklist for studied nurses' practices related to care of Women undergoing CS:

It was developed by the researcher to measure nurses' performance regarding CS intervention after a review of related literature for (Sayed et al., 2022). It consists of 44 items. divided into two main parts:

- 1) **Part 1: Intervention before CS:** It consists of 19 items. divided into three domains: preparations (7 items), pre surgical education (5 items), and women's preparation before surgery (7 items).
- 2) **Part 2: Intervention after CS:** It consists of 25 items. divided into four domains: preparations before nursing intervention (5 items), immediate post-partum nursing intervention (10 items), Nursing intervention to prevent complications (5 items) and preparation for the women before discharge (5 items).

Each step was rated as done (1 score) and not done (zero).as 50.w
Total score

Instrument three- A constructed interview questionnaire for studied women:

It was developed by the researcher based on pertinent literature (Ozkan & Bal ,2019) to measure studied woman's satisfaction with nursing intervention. It contained 36 questions scored from 1 to 5. The highest score indicates very satisfied and the lowest score indicates

very dissatisfied. It included three parts:

- 1) **Part 1:** - Socio demographic characteristics of women such as name, age, educational level, occupational status, and marital status, etc.
- 2) **Part 2:** - Obstetrical history of maternal cases such as age of menarche, age of marriage, age of first pregnancy, number of gravidas, paras, previous methods of delivery including normal vaginal delivery and CS, etc.
- 3) **Part 3:** - Women satisfaction with intervention. It included extent of freedom they were given on the ward, the extent of privacy they were given by nurses and how quickly nurses responded to their requests, etc.).

Scoring system

According to Hesai et al., (2020), this questionnaire was provided with questions based on a Likert scale ranging from strongly satisfied (5) to strongly dissatisfied (1) It contained 6 subscales.

Very dissatisfied (1), Dissatisfied (2), Neutral (3), Satisfied (4), Very satisfied (5). The scale is scored between 36 and 180 points. The women were classified into two levels of satisfaction; "Low Satisfaction (\leq 60th percentile)" and "High Satisfaction ($>$ 60th percentile) (Hesai et al., 2020).

Validity

For validity assurance, the three instruments were reviewed by Jury of three experts at the Maternal and Newborn Health Nursing department

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

and two experts in Obstetrics and Gynecology Medicine. The modifications were done to ascertain their relevance and completeness.

Ethical considerations

An official approval was obtained from the Ethical Research Committee in the Faculty of Nursing, Menoufia University on 21 / 6 /2021. A written consent was obtained from nurses and women who participated in the study. An initial interview was done to inform participants (nurses & women) about the purpose, benefits of the study and explain that participation in the study was voluntary and the participants could withdraw from the study at any time without penalty.

Pilot study:

It was carried out on 10% of the sample (2 nurses and 15 women) after the instruments were developed and before starting the data collection to test the practicability, applicability and to estimate the needed time to fill the instruments. No necessary modifications were done.

Procedure: -

The current study was carried out in four phases:

- An official permission to carry out the study was obtained from the director of Al-Shouhadaa hospital after submitting an official letter from the Faculty of Nursing explaining the purpose of the study, the benefits to studied nurses, and the method of data collection.
- The data were collected over a period of 6 months from the beginning of August, 2022 to the

end of January, 2022 in the Al-Shouhadaa hospital.

- At the beginning of the interview, the researcher greeted the studied nurses, introduced herself, explained the purpose of the study and the nature of the study and took a written consent from them in order to participate in the study
- Nurses were asked to fulfill the CS intervention knowledge questionnaire. Afterwards their practices were assessed using an observational checklist. Prior to the instructional technology intervention, maternal satisfaction scores were assessed for 75 women using a maternal satisfaction questionnaire.
- Instructional technology was developed according to the assessed needs of studied nurses and women undergoing CS. It was constructed to improve studied nurses' knowledge and performance concerning CS intervention.
- A flipped classroom was used in combination of online learning to provide theoretical knowledge about CS intervention in addition to traditional teaching approach in the teaching room of hospital to apply procedures related to CS intervention
- Participants were divided into four subgroups, with each group consisting of five nurses. They received an instructional technology program that included both theoretical and practical components. The program was delivered using various teaching methods such as discussion,

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

demonstration, re-demonstration, role-play, and supportive materials like videos, PowerPoint presentations, and booklets to help achieve the objectives. Each nurse attended 4 sessions within 8 hours eight hours. Two hours were dedicated to reviewing the materials and videos, two hours were allocated for the theory part, which covered topics such as definition, types, indications, and complications of CS, and four hours were dedicated to the clinical part which involved explanations on how to perform pre- and post-CS assessments.

- The evaluation was conducted immediately after the intervention (post-test), and a follow-up was conducted after 3 months of intervention. The researcher evaluated the effect of the instructional technology program on studied nurses' knowledge and practices using instruments one, two and three.

Statistical Design:

The data collected was organized, categorized, analyzed and tabulated by using the suitable statistical methods including the statistical package of social science (SPSS version 22.0).

Results

Table 1: represents percentage distribution of nurses according to their socio-demographic characteristics. As evident from the table, more than half (60%) of studied nurses were <25 to < 35 years old. While more than half of them (55%) had Associate Degree in nursing or Technical Nursing degree.

Additionally, more than one third of them (35%) had Less than 5 years of experience. Moreover, less than half (45%) of studied nurses had previous training programs.

Table 2: clarifies distribution of studied nurses according to their knowledge about CS. There were very highly statistically significant differences among studied nurses pre, post and follow-up tests regarding their knowledge about incidence, risk factors, indications and complications of CS ($P < 0.001$). There were statistically significant differences among nurses on pre, post and follow-up tests regarding their knowledge about definition and types of cesarean section ($P < .05$).

Figure 1: presents distribution of studied nurses according to their total knowledge scores regarding CS on pre, post, and follow-up tests. Only 50% of studied nurses had high scores of knowledge on pre-intervention but after intervention 85% of them had high scores of knowledge and 80% of them had high scores of knowledge on follow-up.

Figure 2: illustrates distribution of studied nurses according to their total level of practice regarding care of women undergoing CS during pre, post and follow-up tests. About 55% of studied nurses had moderate level of performance regarding comprehensive care of women undergoing CS pre intervention. But on posttest, the majority of studied nurses 90% had high performance level regarding comprehensive care of women undergoing cesarean section.

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

Table 3: clarifies the correlation between total knowledge score and total practice score of studied nurses. There was very highly statistically significant positive correlation between total knowledge level and total performance level of studied nurses ($P<.001$). When the knowledge increased the performance of studied nurses improved.

Figure 3: reveals the distribution of studied women according to their satisfaction scores on pre and post intervention. About 66.7% of women had moderate level of satisfaction pre intervention, while 88% of studied women had high level of satisfaction post intervention.

Table (1): Percentage Distribution of Studied Nurses according to Social Characteristics (n = 20)

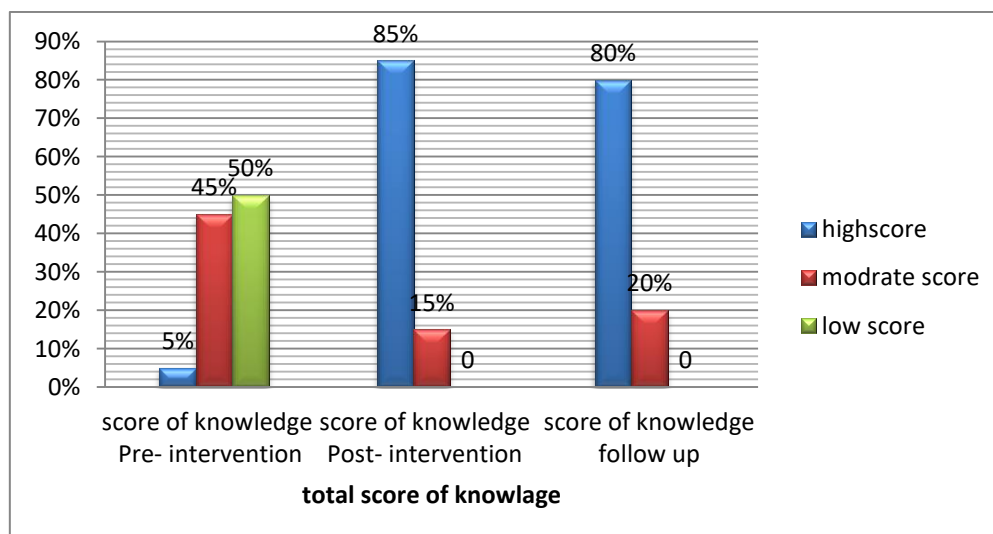
Personal data	No.	%	Mean
Age			
- Less than 25	3	15.0	2.1053
- 25 to less than 35	12	60.0	
- 35 to less than 45	4	20.0	
- More than or equal to 45	1	5.0	
Studied nurses' educational level			
- Secondary Nursing Diploma	1	5.0	
- Associated Degree in Nursing or Technical Nursing	11	55.0	
- Bachelor degree in Nursing Science	3	15.0	
- Specialized Diploma in Nursing Science	3	15.0	
- Master and above	2	10.0	
Years of experience			
- Less than 5 years	7	35.0	2.2000
- 5 to less than 10 years	5	25.0	
- 10 to 18 years	5	25.0	
- More than or equal to 19 years	3	15.0	
Previous training programs			
- Yes	9	45.0	
- No	11	55.0	

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

Table (2): Distribution of the Studied Nurses according to their knowledge answers regarding CS.

Studied variables	Pre-intervention		Post-intervention		Follow up		P value
	No.	%	No.	%	No.	%	
Definition of a CS							
- correct	16	80.0	20	100.0	20	100.0	.018*
- incorrect or (I don't know)	4	20.0	0	0	0	0	
Incidence of CS							
- correct	7	35.0	20	100.0	20	100.0	.001**
- incorrect or (I don't know)	13	65.0	0	0	0	0	
Types of cesarean section							
- correct	13	65.0	20	100.0	18	90.0	.013*
- incorrect or (I don't know)	7	35.0	0	0	2	10.0	
Maternal health risk factors for cesarean section							
- correct	3	15.0	20	100.0	19	95.0	.001**
- incorrect or (I don't know)	17	85.0	0	0	1	10.0	
Most common indication for CS							
- correct	4	20.0	18	90.0	18	90.0	.001**
- incorrect or (I don't know)	16	80.0	2	10.0	2	10.0	
Most common complications of CS							
- Correct	8	40.0	20	100.0	19	95.0	.001**
- incorrect or (I don't know)	12	65.0	0	0	1	10.0	

Figures (1): - Distribution of the studied nurses according to their total knowledge scores regarding CS pre, post, and follow up intervention.



Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

Figures (2): - Distribution of studied nurses according to their total level of care for women undergoing CS during pre, post and follow- up tests.

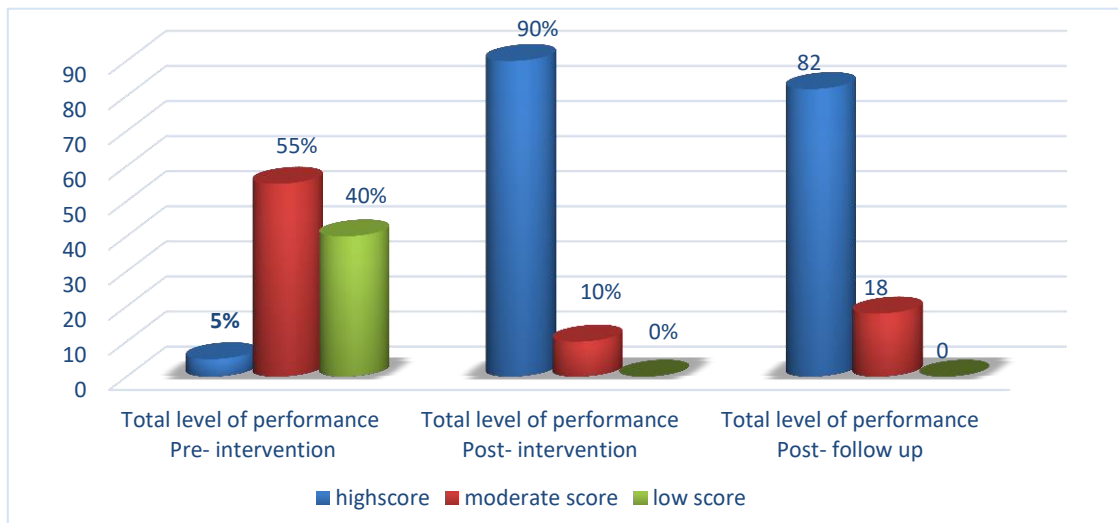
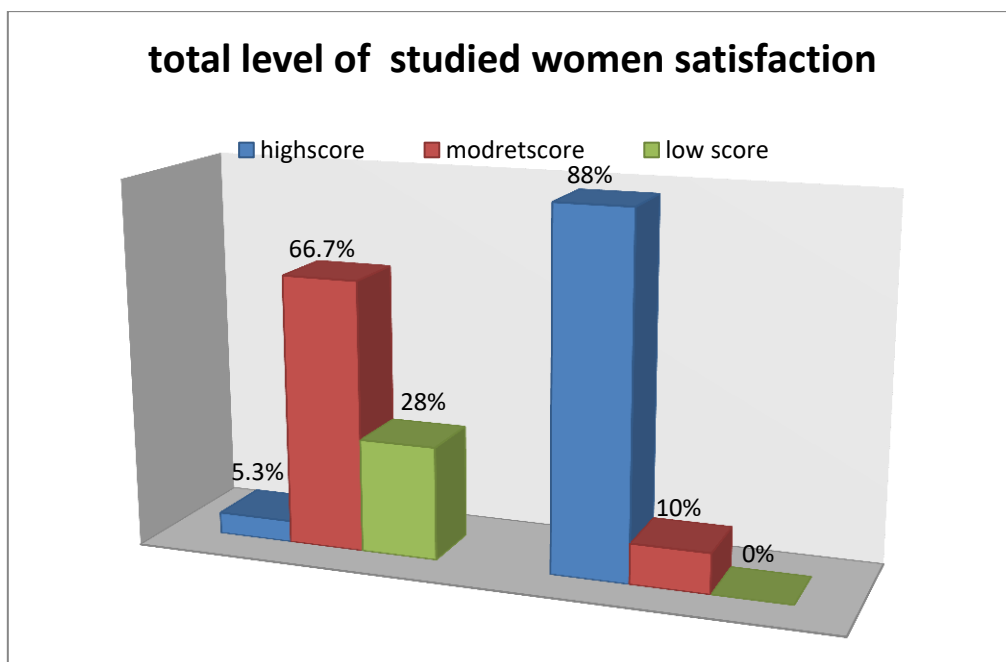


Table (3): Correlation between total knowledge Scores and total practice Scores of Studied nurses (n=20)

	Total Practice	
	(N=40)	
	R	P value
Total knowledge	1.000**	.000

Figures (3): - Distribution of studied women according to their satisfaction of care scores on pre and post intervention.



Discussion

Nurses play a vital role in providing care and support to women undergoing CS. Nurses' performance directly impact the overall experience and satisfaction of mothers (Amasha et al., 2020)

Regarding nurses' knowledge about cesarean section, the current study revealed only 5.0 % of studied nurses had high knowledge about CS and its management. This result comes in agreement with Fathy & Tolba, (2021) who showed that slightly less than three quarters of studied sample had inadequate knowledge regarding CS and its management before implementing nursing management intervention but after implementing nursing management their knowledge improved. Also Sayed et al., (2022) added that more than half of the studied sample had incorrect knowledge regarding to complications & reasons for CS respectively and more than three quarters of studied sample had incorrect knowledge about nursing care for caesarian section.

These findings were supported by Hussien et al., (2021) who carried out a quasi-experimental (pre post-test) to assess the "Impact of enhanced recovery pathway application outcomes on nurses and women undergoing cesarean section" in a rural area in Egypt and found that nurses' knowledge of all aspects of the CS had improved which enhanced women recovery. From the researcher's perspective, nurses' poor knowledge on pretest could be attributed to more than half of nurses did not receive training courses related to CS nursing intervention.

These finding disagree with Abuo Shabana et al.,(2016), who conducted a descriptive study to "explore nurses' practical skills post-cesarean section" reported that the majority of nurses had correct knowledge about care provided post-cesarean section. From the researcher's perspective, this may be

because in the same study he revealed that more than sixty of their studied nurses had six to ten years of experience. Also, more than eighty percent of them were attained training course about nursing care provided post cesarean section.

Regarding nurses' performance in caesarean section care, there was highly statistically significant difference between pre and post intervention for nurses regarding practical skills of caesarean section care. This result comes in agreement with Sayed et al., (2022) who revealed that nearly two thirds of the studied sample had incorrect practical skills within Two hours post caesarean section and more than half of the studied sample had incorrect practical skills about nursing care for caesarean section. Also, these results agree with El-Khawaga et al., (2019) who revealed that there was highly significant between total practices of studied nurses and their knowledge. In addition, Kamau, (2019) who reported that good level of knowledge among nurses was more encountered among those nurses with competent level of practice.

Furthermore, Said et al., (2022) and Fathy& Tolba (2021) revealed that there was highly statistically significant improvement of nurse practices post implementation. Also, these findings are consistent with Farahat et al., (2018), who studied "the effect of Clinical Audit on the quality of postoperative nursing care provided to women undergoing CS at Woman's Health Hospital" in Egypt and reported that there was a significant improvement in nurses' practices related to monitoring vital signs, palpating fundus and surgical site care after implementing educational strategy.

In accordance with El-Sharkawy et al., (2020), study findings proved a significant improvement of all nurses' practices post educational sessions regarding post-operative physical

Undergoing CS

assessment of women undergoing cesarean section. This result comes in agreement with Said et al., (2022) who revealed that after implementation, total practices score regarding postpartum care were improved compared to pre-implementation. Also, Abd Elrhman et al., (2022) as noticed in their study, less than two thirds of the studied nurses had unsatisfactory level of total practice related to postpartum and newborn care. While, more than one-third of them had satisfactory level of total practice related to post-partum and newborn care. Visual aids such as charts, graphs, and diagrams Regarding the correlation between total knowledge and total practice of staff nurses, the present study demonstrated that there was highly statistically significant positive correlation between total knowledge and total practice of staff nurses. In other words, When the knowledge increased the practice of staff nurses improved. This result comes in agreement with Fathy & Tolba, (2021) who demonstrated a statistically significant relationship between total knowledge score and total practices score at post-intervention. Also, it was consistent with El sharkawy et al., (2020). Abd Elrhman et al., (2022) and El-Khawaga et al. (2019) who showed a strong positive correlation between knowledge and practice scores were generated.

Regarding satisfaction of women having CS with health care provider interaction, on posttest women showed higher level of satisfaction than on pretest. This result comes in agreement with Amasha, et al., (2020) who found that more than half of women expressed their full satisfaction with health care providers welcome on admission and orientation basic postpartum treatment and postnatal care. However, Mohammed et al., (2020) reported that women were satisfied with their care during labor and delivery. Also Mocumbi et al., (2019) most mothers reported being satisfied with care during

childbirth without any intervention and would recommend that a family member to deliver at the same facility. Specifically, the majority were satisfied with the interaction with the healthcare providers.

Conclusion

In conclusion, the current study found that the use of instructional technology had a positive impact on studied nurses' performance and satisfaction when caring for women undergoing cesarean section. The implementation of instructional technology, provided nurses with the necessary knowledge and skills to, effectively and confidently care for these women. This resulted in improved knowledge about cesarean section and this answers hypothesis I. In addition, improved their performance in all areas and that answers hypothesis II. Additionally, the use of instructional technology increased women' satisfaction levels and this answers hypothesis III. Overall, the findings suggest that incorporating instructional technology into maternity nursing education and practice can enhance nurses' performance and women satisfaction.

Recommendation

Based on the findings of the current study, several recommendations are proposed. Firstly, it is recommended that instructional technology be incorporated into the training programs for nurses who specialize in cesarean section procedures. This integration should specifically target the enhancement of their knowledge, skills, and confidence in providing care to women undergoing this type of surgery. Secondly, it is important to provide ongoing education and training to ensure that these nurses remain up-to-date with the latest advancements in cesarean section procedures and technologies. Additionally, further research should be conducted to assess women's satisfaction in different healthcare settings.

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

References:

- Abd Elrhman Ali, H., Metwally Mohamed, S., & Abd Elhameed Attia Alla, N. (2022). Assessment of Nurses Knowledge and Practice Regarding Postpartum Period at Abshaway central Hospital. *Egyptian Journal of Health Care*, 13(4), 270-280.
- AbuoShabana, K., Reda A., Samia I., & Sally A., (2016): Exploration of nurses' practical skills post cesarean section, *Mansoura Nursing Journal (MNJ)*, vol.3 No.1;183-197
- Amasha, H. A., Abdel-Haleem, S. A., & Gamal, A. M. (2020). Assessing The Competence of Nurses in Rendering Postpartum Care and its Effect on Women's Satisfaction. *The Malaysian Journal of Nursing (MJN)*, 11(4), 99-110.
- Burnett-Zieman, B., Abuya, T., Mwangi, D., Wanyugu, J., Warren, C. E., & Sripath, P. (2021). Community-based postnatal care services for women and newborns in Kenya: an opportunity to improve quality and access? *Journal of global health*, 11, 07006. <https://doi.org/10.7189/jogh.11.07006>
- Da Silva, C. A., Almeida, R. P. P., Abrantes, A. F., Azevedo, K. B., Vicente, B., Carvalheira, F., ... & Mestre, T. (2023). Rethinking the Continuous Education and Training of Healthcare Professionals in the Context of Digital Technologies. In *Handbook of Research on Instructional Technologies in Health Education and Allied Disciplines* (pp. 105-129). IGI Global.
- Darwish, A., Mustafa, M., Youness, E., & Al-Harazi, B. (2022). Enhanced Recovery after Cesarean Section (CS) versus Conventional Care in a Lower Middle-Income Country: A Randomized Controlled Trial. *Open Journal of Nursing*, 12(12), 831-841.
- El Sharkawy, A. T., Ali, F. K., & Araby, O. A. (2020). The Effect of Simulation-Based Educational Program on Maternity Nurses' Performance regarding Obstetrical Emergencies during Pregnancy. *Evidence-Based Nursing Research*, 2(4), 14-14.
- El-Khawaga, D., Ahmed. M., & Elwelely, M. (2019): Effect of Implementation of a Teaching Program about Immediate Postpartum Care on Nurses' Knowledge and Practice. *Tanta, Scientific Nursing Journal*, Article 5, Volume 16, Issue 1, Spring, PP 95-112
- Farahat, M., Mahmoud, M., & Mahmoud, G. (2018): Clinical Audit on Quality of postoperative Nursing Care provided to women undergoing Cesarean Section at Woman's Health Hospital, Assuit University, *Assiut Scientific Nursing Journal*, Vol, (6) No, (13) April 2018, 11-19.
- Fathy, A. M., & Tolba, H. (2021). Effect of Designed Post-Operative Nursing Management Protocol on Nurses' Performance Regarding Care of Women Undergoing Cesarean Section. *Assiut Scientific Nursing Journal*, 9(27), 156-169.
- Hsai, N. M., Matsui, M., Ng, C. F. S., Khaing, C. T., Imoto, A., Sayed, A. M., ... & Moji, K. (2020). Satisfaction of pregnant women with antenatal care services at women and children hospital in south okkalapa, Myanmar: a facility-based cross-sectional study triangulated with qualitative study. *Patient preference and adherence*, 2489-2499.

Undergoing CS

- Hussien. N., Seif. E., & Mohamed. S., (2021): Impact of Enhanced Recovery Pathway Application Outcomes on Nurses and Women Undergoing Cesarean Section, *Egyptian Journal of Health Care*, EJHC Vol. 12. no.4;422-442.
- Kamau, M. (2019). Assessment of Mothers' Satisfaction with Immediate Post Natal Care at Kenyatta National Hospital Maternity Unit (Doctoral dissertation, University of Nairobi).
- Lupu, V. V., Miron, I. C., Raileanu, A. A., Starcea, I. M., Lupu, A., Tarca, E., ... & Fotea, S. (2023). Difficulties in adaptation of the mother and newborn via cesarean section versus natural birth—A narrative review. *Life*, 13(2), 300.
- Millizia, A., Adi Rizka, & Wizar Putri Mellaratna. (2022). Patient Satisfaction Level of Enhanced Recovery after C-Section at Abby Maternal and Child Hospital Lhokseumawe. *Eureka Herba Indonesia*, 4(1), 171-175. <https://doi.org/10.37275/ehi.v4i1.60>
- Miranda, J. P. P., & Tolentino, J. C. G. (2023). Bibliometric and Network Analyses of Information and Communications Technology Utilization in Health Education. In *Handbook of Research on Instructional Technologies in Health Education and Allied Disciplines* (pp. 55-79). IGI Global
- Mocumbi, S., Högberg, U., Lampa, E., Sacoor, C., Valá, A., Bergström, A., ... & Sevene, E. (2019). Mothers' satisfaction with care during facility-based childbirth: a cross-sectional survey in southern Mozambique. *BMC pregnancy and childbirth*, 19(1), 1-14.
- Mohammed. M., Ibrahim. W., & Moula. A., (2020): The Effect of Designed Educational Program on Midwives Knowledge and Practice Regarding Post Natal Sepsis Management in Governmental Hospitals, *Saudi Journal of Nursing and Health Care*, 3(1): 22-27.
- Ozkan, S. A., & Bal, M. D. (2019). Maternal Satisfaction in Normal and Caesarean Birth: A Cross-Sectional Study. *International Journal of Caring Sciences*, 12(2), 1017.
- Pandey, A. K., Raushan, M. R., Gautam, D., & Neogi, S. B. (2023). Alarming Trends of Cesarean Section—Time to Rethink: Evidence from a Large-Scale Cross-sectional Sample Survey in India. *Journal of Medical Internet Research*, 25, e41892.
- Said, S. A. E., Elbana, H. M., & Salama, A. M. (2022). Effect of Educational Guideline on Nurses Performance Regarding Postnatal Care of Mothers and Neonates. *SAGE Open Nursing*, 8, 23779608211070154.
- Sarhan, A. M., Zaitoun, M. M., & Atia, S. L. (2022). Assessing Maternal Satisfaction with Cesarean Delivery at Zagazig University Hospital in Egypt. *The Egyptian Journal of Hospital Medicine*, 88(1), 3703-3709.
- Sayed Mosaad, F., Ragb Abo Shabana, K., & Metwaly Mohamad, S. (2022). Evaluate Knowledge & Practice of Nurses Regarding Care of Women with Cesarean Section. *Egyptian Journal of Health Care*, 13(4), 997-1009.
- Sorrentino, F., Greco, F., Palieri, T., Vasciaveo, L., Stabile, G., Carlucci, S., Laganà, A. S., & Nappi, L. (2022). Cesarean Section on Maternal Request—Ethical and Juridic Issues: A Narrative Review. *Medicina*

Effect of Instructional Technology on Maternity Nurses' Performance and Satisfaction of Women Undergoing CS

- (Kaunas, Lithuania), 58(9), 1255.
<https://doi.org/10.3390/medicina58091255>
- Thibault, G. E. (2020). The future of health professions education: emerging trends in the United States. *FASEB BioAdvances*, 2(12), 685.
- Wali, A. A. E. D., Taher, A., & Abd-El-Fatah, S. M. (2020). Awareness, knowledge, and attitude of Egyptian women toward cesarean delivery: a cross-sectional survey. *Journal of South Asian Federation of Obstetrics and Gynaecology*, 12(4), 203-208.
- WHO (2021). Rising rates suggest increasing numbers of medically unnecessary, potentially harmful procedures AT:
<https://www.who.int/news/item/16-06-2021-caesarean-section-rates-continue-to-rise-amid-growing-inequalities-in-access>.