كلية التـــمريض
Faculty of Nursing

KNOWLEDGE AND PRACTICE OF PREOPERATIVE EDUCATION AMONG NURSES IN SELECTED SURGERY UNITS IN A TEACHING HOSPITAL

**A Research Project presented
to the Faculty of Nursing
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**In partial Fulfillment of the requirements for
the Degree Bachelor of Science in Nursing**

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APPROVAL SHEET

This thesis, entitled **'SURGERY NURSES' KNOWLEDGE AND PRACTICE OF PREOPERATIVE EDUCATION'** has been prepared and submitted by **FATIMA ALZAHRA MUNIM ALORFY**, **and LAMIA GAMAL ABD ALMAJED ALGERYNI** in partial fulfillment of the requirement for the degree of Bachelor of Science in Nursing, has been examined and is recommended for acceptance and approval for Oral examination.

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DEDICATION

Thanks to Allah.

To our dear parents who have always been a source of inspiration and support at every step. To our family and friends who stood with us in moments of joy and success.

ACKNOWLEDGMENT

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SURGERY NURSES' KNOWLEDGE AND PRACTICE OF PREOPERATIVE EDUCATION: BASIS OF TRAINING PROGRAM

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ABSTRACT

Introduction: Preoperative Education prepares patients for the forthcoming surgical intervention, alleviates uneasiness, enhances surgical team collaboration, and reduces the likelihood of complications, thus improving health outcomes. Therefore, it is crucial to determine the level of knowledge and practice of surgery nurses on preoperative teaching as a basis for hospital training.

Methods: This was a cross-sectional survey research design. A convenience sample of 42 from a target population of 45 morning shift surgery nurses from different units of the selected hospital were the participants of the study. An adapted preoperative questionnaire with 16 items of knowledge and 14 items of practice was translated to Arabic, validated, and approved as reliable for its operational for data gathering. Descriptive and Inferential statistics were used to analyze the data of the study.

Results: Findings of the study revealed that the highest number of participants were females, N=24 (57.14%), mostly N=19 (45.23%) were within 26-35 years old, N=27 (64.28%) were Nursing Diploma graduates, with N=14 (33.33%) with 11-15 years of work experience, and N=35 (83.33%) from General surgery department. In terms of their level of knowledge, with the participants' mean average of 29 or 78.58%, their knowledge level is verbally interpreted as moderate, just the same as their level of practice. With a mean average of 35.29 or 81.03%, the verbal interpretation is moderate. The bivariate analysis revealed a significant correlation between knowledge and practice, with a P-value of 0.004.

Conclusions: There were more female than male nurses in the surgery units. Mostly were 26-35 years old, more than half were Diploma Nursing graduates, less than half had 11-15 years of experience, and more than three-fourths were from the general surgery department. The knowledge and practice level of the participants is verbally interpreted as moderate, and there is a significant correlation between the knowledge and practice of preoperative teaching of the participants.

Recommendations: It is recommended that the knowledge and practice level of surgery nurses on preoperative teaching be improved to provide quality patient care and prevent complications. Emphasis on the importance of preoperative teaching to reduce patients' anxiety before surgery, as well as the prevention, familiarization, and management of postsurgical conditions, is imperative. Lastly, in terms of practice, surgery nurses should conduct health teaching about anesthesia, including family members, use effective teaching materials, and let the patient return to demonstrate deep breathing and coughing techniques.

INTRODUCTION

Preoperative education (POE) is not just a preparation for surgery — it's the first step toward a safer recovery and empowered patient care, an essential task of surgical nurses. POE prepares patients for the forthcoming surgical intervention, alleviates uneasiness, enhances surgical team collaboration, and reduces the likelihood of complications, thus improving health outcomes (1). Also known as preoperative teaching (POT), patients are taught what to expect, reducing fear and uncertainty, and significantly lowering anxiety levels (2).

Evidence proved that preoperatively educated patients ambulated earlier and had better pain control, which improves recovery and compliance (3). Reasons include understanding postoperative instructions on deep breathing and early mobilization made patients recover faster. The very reason is that it reduces risks such as aspiration, infection, and delayed healing, thus lowering complication rates (4). Stated, POE reduces the complication rate among patients whose nurses provided comprehensive teaching. Patients become more independent and have faster hospital discharge (5). Not to be underestimated, higher satisfaction scores were found among patients who received preoperative teaching (6). It explains that being informed made patients feel more confident and respected, so without POT, several disadvantages occur. To mention, the patient may experience panic, especially those for major surgeries (1). Then, post-operative aspiration, delay in surgery, and patients taking contraindicated medications and food before surgery (4). Without POE, patients are less likely to perform exercises or monitor their wounds properly (6). A study revealed that patients feel unprepared and then face post-operative complications, which prolong hospital stays and increase their readmissions (2). Patients were also found to be

dissatisfied with nursing care, as they feel neglected and confused about their role in their very own recovery. Another problem to face is the patient's mistrust and complaints (7). In such conditions, the delivery of healthcare no longer meets its intended purpose.

In Libya, no studies were found regarding the topic. Fulfillment of this study creates a springboard for the development of educational activities and enhancement of policies related to POE, thereby impacting the quality of nursing care. Moreover, this study stands as a development of the nursing literature in the Libyan health care context and serves as a reference for further research regarding this topic.

Statement of the Problem.

To promote health and patient well-being, the level of knowledge and practice of POE was assessed among surgery nurses in selected surgery units of one university teaching hospital in Tripoli, Libya.

Research Questions:

1. What is the demographic profile of the participants of the study?

2. What are the knowledge and practice levels of the participants on the preoperative teaching when grouped according to profile variables?

3. Is there a correlation between the participants' level of knowledge and practice on pre-operative teaching?

4. Based on the result of the study, what specific program enhancement supports the improvement of knowledge and practice of the participants regarding POT?

Theoretical Framework

There are 5 stages that a nurse will go through to develop competence and expertise.

Benner's 5 stages of nurse development — Novice — Advanced Beginner — Competent — Proficient — Expert

Benner believed that experience is essential to nursing because it allows a nurse to expand their knowledge and to provide holistic and competent care to patients; therefore she developed the Novice to Expert model.

(http://www.ehow.com/about_5561876_nursing_models_theories.html)

Figure 1. Patricia Benner's Stages of Nurse Development

Preoperative patient education (PPE) or preoperative education (POE), otherwise known as preoperative teaching (POT), is one of the key nursing competencies that develops as a nurse moves through the fundamental theoretical knowledge and clinical practice. Benner describes Novice nurses as being bound to rules and having little situational awareness, and Advanced Beginners as having some recognition of patterns in care, but still needing supervision.

This study is grounded in Patricia Benner's Skill Acquisition Theory. The theory describes the progression of nursing competence through five levels: Novice, Advanced Beginner, Competent, Proficient, and Expert. It underlines that nurses acquire and build their clinical knowledge and skills over time (4A, 4B, 4C). This development is tied to education, practice, and reflection on their practice. As illustrated in the findings, the nurses' knowledge and practice of preoperative patient education reached a moderate level of 78.58% and 78.90%, respectively. In line with Benners' theory, the participants are in the competent stage. This can mean that the surgery nurses understand the concepts and

are motivated to carry out the preoperative teaching, but may not have the full experience, nor the self-assurance, to do so independently. Translating the knowledge and practice scores to Benner's stages allows researchers and educators to understand the participants' clinical development, tailor a training program, and track growth across both knowledge and practical domains.

Therefore, the study's recommendations will be based on the low-scoring items for both the knowledge and practice of POE among surgery nurses, emphasizing the standard model of Benner to enhance the level of knowledge and practice on POE.

Literature Review

Preoperative teaching (POT) or preoperative education (POE) is an intervention conducted before surgery that aims to improve patients' knowledge, health behaviors, and outcomes [4]. Nurses' knowledge of POT must include fasting rules, medication management, breathing exercises, wound care, pain control, and signs of complications. This implies that nurses' cognitive understanding of the content, timing, objectives, and rationale for preoperative patient teaching is imperative to post-operative patient outcomes. This same study reinforced that adequate knowledge enables nurses to provide accurate, evidence-based instructions. With this standard, knowledge of POE reduces patient anxiety. Thus, it improves adherence to preoperative and postoperative instructions, which also contributes to fewer complications and faster recovery. This explanation proves that higher nurse knowledge is associated with improved patient preparedness, better pain control, earlier ambulation, reduced postoperative complications, and higher patient satisfaction (1). Therefore, any nursing action to reduce or inhibit the assessment and improvement of nurses' POE knowledge may perpetuate gaps in patient teaching and

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increase perioperative risks. That will result in lower patient satisfaction and hinder the design of targeted educational interventions (7).

Practice of preoperative education (POE) is defined as the observable and reported behaviors by which nurses deliver preoperative teaching to patients. This includes, but is not limited to, assessment of learning needs, use of teach-back, provision of written or multimedia materials, and documentation of teaching (2). The same study quoted that 'good practice ensures consistent delivery of essential information, verifies patient understanding, reduces perioperative errors, and supports recovery and adherence to instructions. However, it can be inconsistent across nurses and units due to workload, time pressures, lack of materials, and absence of standardized protocols. Also, self-reported practice may overestimate actual bedside behavior (6). The practice of POE, which is consistent with high-quality teaching, reduces anxiety, improves postoperative pain management and wound care. This is beside the fact that it shortens hospital stays and increases patient satisfaction. If the practice of POE is not evaluated, different ways may prevent the identification of implementation gaps. In that case, it will fail institutions to design effective training, protocols, or resource allocations, which can lead to suboptimal patient outcomes (5).

The responsibilities and behaviors of nurses in preparing patients for surgery include assessment, teaching, coordination with surgical and anesthesia teams, and documentation (8). As nurses are often the primary point of contact, they can tailor education to individual needs. Nurses provide continuous reinforcement and advocate for patient safety. In this light, role ambiguity, inadequate staffing, limited time, and lack of clear job descriptions can reduce their consistency in doing their job. This is also a reason for a shift of responsibility away from nursing (9). This will prompt the patient to be unsatisfied and

anxious as to whether they are entitled to good health, trusting the healthcare team, or the opposite, which may prove otherwise. So nurses are very important for the development, implementation, and progress of POT or POE. One study underscores the effectiveness of nurse-led preoperative education, especially when enhanced by technology like virtual reality. It highlights nurses' pivotal role in preparing patients, reducing anxiety, and advocating for safety—while also pointing to the need for systemic support to overcome barriers in traditional teaching environments (10). One study in Rwanda found gaps in nurses' knowledge and systemic barriers to effective teaching. Their findings imply the need for structured training and policy support to enhance preoperative education (11). Another study revealed that nurses often perceive preoperative education as essential but lack standardized protocols. To further their findings, the study noted that discrepancies exist between perceived importance and actual practice. Their call for clearer guidelines and ongoing education to bridge the gap should be emphasized (2). These confirm that nurses' knowledge and proactive engagement in preoperative teaching are vital for patient safety, emotional readiness, and surgical recovery.

Hypotheses

Ho$_1$. There is no significant correlation between knowledge and practice of preoperative teaching among the participants of the study.

Significance of The Study:

This study remains valuable for various branches and practice areas of nursing science for different reasons.

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Nursing Education. The study revealed the evidence of the need to provide continuing education, workshops, and training, particularly for POT. Readiness of nurses, confidence, and motivation for POE through training modules and preoperative checklists or guidelines will be enhanced.

Nursing Administration. This study will inform nursing managers and hospital administrators to assist in the preparation of policies, along with the strategic distribution of organizational resources. Also, the development of protocols and guidelines to highlight the importance of organizational support in preoperative teaching.

Nursing Practice. The study highlights the importance and contribution of surgery nurses as patient educators, advocates, and fundamental players in ensuring the safety of the patient and the recovery process. Individualized POT as patient-centered care, to produce well-informed and well-prepared patients for surgery.

Nursing Research. Aside from an addition to the scant literature on preoperative education in Libya, this study serves as baseline data locally and internationally. It can also be used for comparative and prospective studies on surgical patient education. This study is interdisciplinary in nature, connecting nursing, anesthesia, surgery, patient psychology, and surgical outcomes.

Definition of Terms:

For this study, the following terms are operationally defined.

Knowledge. Refers to the items and scores obtained by surgery nurses as the participants of the study from an adapted structured questionnaire that measures understanding of the importance of preoperative education principles and guidelines.

Practice. This refers to the surgery nurses' self-rated responses on the study's survey Practice of POE items that measured their frequency of conducting preoperative education with patients.

Preoperative Education. Refers to the set of information and instructions provided by surgery nurses to patients before surgery, as evaluated through nurses' reported practices and knowledge assessment tools.

Surgery Nurses. Refers to the registered nurses working in different surgical wards of the selected hospital of the study, who are directly responsible for educating and preparing patients for surgical procedures.

METHODOLOGY Research Design

A quantitative cross-sectional, purely descriptive research design was employed in this study to determine the knowledge and practice of the surgery nurses on preoperative education. The data from many surgery nurses were collected at a single point in time. In cross-sectional research, the variables were gathered through the survey questionnaire, without influencing them (12).

Samples and sampling technique

The universal population was the total of the surgery nurses (N=84) working at specific units of Cardiology, Pediatric, General, and Vascular Surgery in a selected hospital in Tripoli, Libya. Inclusion criteria include surgery nurses working during the 8 am-2 pm shift, present during the data collection from August to September 2025, and willing to participate in the study. Day shift nurses who were absent during the data collection, and on the 2 pm-10 pm and 8 pm- 8 am shifts, were excluded. From the target population of

N=45 nurses, those who met the inclusion criteria, a combination of convenience and purposive sampling techniques as employed in this study. This reached the actual sample size of N=42 nurses, who completed the study questionnaire, while others refused due to their busy schedule, and one returned an incomplete questionnaire. This yields a response rate of 93%, a very high response rate minimizing non-response bias, enough to enhance the reliability of the findings and support the validity of the classification of knowledge and practice levels of the participants of the study (13).

Local of the Study

The Tripoli University Teaching Hospital (TUTH), formerly named Tripoli Medical Center (TMC), is the largest and most advanced hospital in Libya. It provides a wide range of specialized medical services and is known for its cardiology, oncology, and surgical treatments. It serves as a teaching hospital, training the country's future healthcare professionals (14). **Labeled as the most advanced hospital in Libya,** TUTH serves a high volume of surgical patients, making it a prime location for assessing and improving preoperative care standards, consistent with informed preoperative education practices (15).

Data gathering instrument

A researcher-designed survey questionnaire was used to gather data for the study, which was originally written in English and then translated into Arabic. The first part of the questionnaire determines the profile characteristics of the participants, such as age, gender, and educational level, years of experience, and department assigned, in a structured format. This is followed by the second part, which consists of items of Knowledge and Practice of Preoperative Education, with binary answers of 'yes' and 'no', with only one

correct answer. Each item had a score of '1' for the proper response and '0' for the incorrect response. Given the 16 statements on knowledge of POE, the highest score was 16, and the lowest was 0. The same with Practice items of POE, of 14 items, wherein the perfect score was 14 and the lowest was 0. Scores were then classified as inadequate, moderate, and adequate, and were aligned with Benners' stages of Clinical competence. The Knowledge and Practice items were adapted from a specific study that utilized various literature sources on perioperative registered nurses (4).

For clarity, reliability, and comprehensibility of the questionnaire, three (3) experts in surgery and one (1) academic validator were asked to comment and approve the translation of English to Arabic of the items of knowledge and practice of POE (16).

Data Gathering

Data were collected from the first week of August to the second week of September 2025, during the researchers' semestral break. This was done after a communication letter was obtained from the Dean of the college and was received by the administration of the selected hospital, facilitating the data gathering. The overall nurse supervisor of all surgery units provided master lists of nurses working for both shifts, for a total of N=84. The researchers provided the questionnaires to all accessible nurses who met the inclusion criteria, indicating an interview to complete participants' data for each research tool.

Statistical Treatment

The collected data were encoded in Microsoft Excel and SPSS Version 24 for statistical treatment. Descriptive statistics to inform frequency and percentage levels were used, as well as the mean. Inferential statistics, specifically the Pearson product-moment correlation, were used to test the null hypothesis 1 and research question 3. The data were then presented in the form of figures and tables. To show the degree of knowledge and

practice of preoperative teaching of the participants, aligned with Benners' model as a qualitative standard of clinical competence, the classification was guided by the following:

Range of Scores	Classification	Benners' Stages of Competence
0	No knowledge or practice	Novice
65% and below	Inadequate	Advanced Beginner
66-85%	Moderate	Competent
86-95%	Adequate	Proficient
96% and above	Excellent	Expert

Ethical considerations

All study respondents accessed the informed consent written on top of the questionnaire to participate in data gathering. The study was approved by the Faculty of Nursing Research Coordinator and the Dean to conduct the study. Respect for persons, as the participation was entirely voluntary, confidential, anonymous, and privacy was observed during the research process, including beneficence and justice, to safeguard their human rights.

RESULT

To answer research question 1, the following is presented.

Table 1. Gender Distribution of the Participants   (N=42)

Profile variable	Category	Frequency	%
Gender	Male	18	42.86
	Female	24	57.14
	Total	**42**	**100**
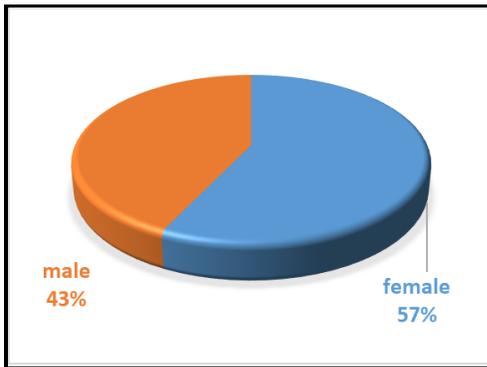
Figure 2. Gender Distribution of the Participants   (N=42)

Above Figure 2 and Table 1 show that among N=42 participants, there were F=18 or 42.86% males and F=24 or 57.14% females.

Table 2. Age Distribution of the Participants of the Study (N=42)

Profile variable	Category	Frequency	%
Age in Years	<25	5	11.90
	26_35	19	45.23
	36_45	17	40.47
	>46	1	2.38
	Total	**42**	**100**
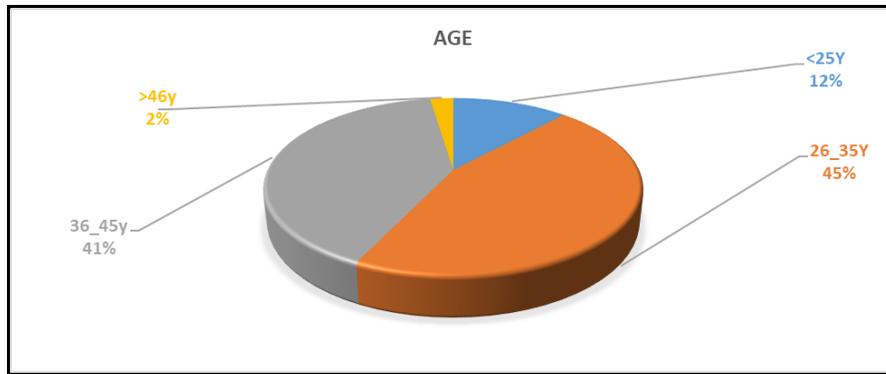
Figure 3. Age Distribution of the Participants (N=42)

Shown in Table 2 and Figure 3 are the participants distributed according to the Age variable. The highest number of participants is within the age range of 26-35 years old, with F=19 or 45.23% while the age of more than 46 years old has the lowest number of participants with F=1 or 2.38%.

Table 3. Distribution of Participants according to Educational Level (N=42)

Profile variable	Category	Frequency	%
	Diploma	27	64.28
Educational Level	H Diploma	14	33.33
	BSN	1	2.38
	Total	**42**	**100**
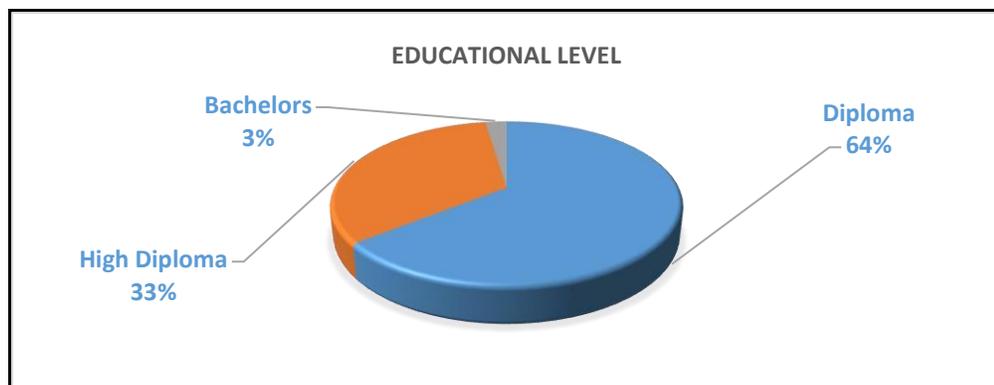
Figure 4. Distribution of Participants according to Educational Level (N=42)

Table 3 and Figure 4 reveal the participants' distribution according to their educational level. Diploma nursing graduates have the highest number of study participants with F=27 or 64.28% while Bachelor of Science in Nursing graduates have F=1 or 2.38%.

Table 4. Participants' distribution according to Work Experience (N=42)

Profile variable	Category	Frequency	%
	1-5Y	10	23.80
Work Experience	6-10Y	8	19.04
	11-15Y	14	33.33
	>16Y	10	23.80
	Total	42	100

Figure 5. Distribution of Participants according to Work Experience (N=42)

Table 4 and Figure 5 detail the distribution of participants according to their work experience in years. Most of the participants, F=14 or 33.33% indicated that their experience was within 11-15 years of experience, while the least number of participants had 6-10 years of experience, with F=8 or 19%.

Table 5. Distribution of Participants according to Department Unit (N=42)

Profile variable	Category	Frequency	%
Department Unit	Cardiac	3	7.14
	Pediatric	2	4.76
	General	35	83.33
	Vascular	2	4.76
	Total	**42**	**100**
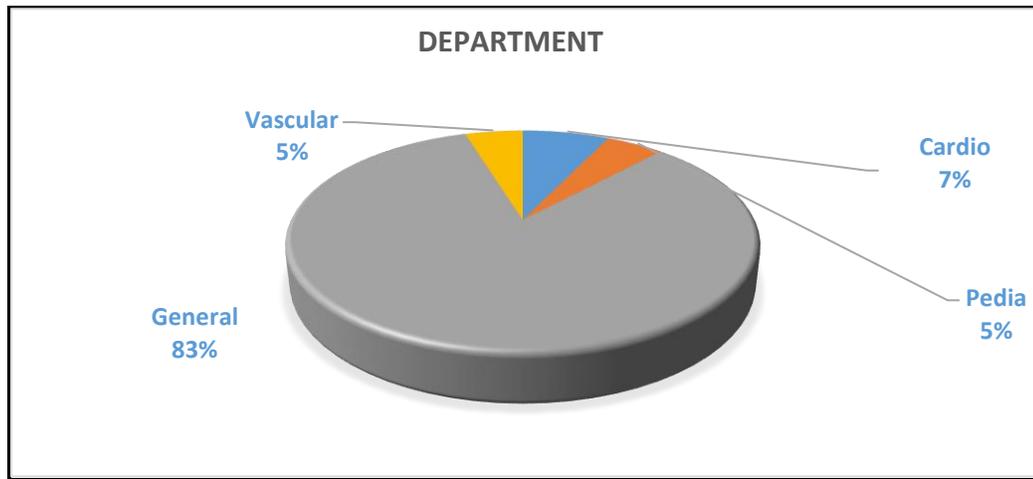
Figure 6. Distribution of Participants according to Department (N=42)

Table 5 and Figure 6 show the distribution of participants according to the Department they work in. The highest number of participants belongs to the General Surgery department with F=35 or 83.33% while the least number of participants are working in the Vascular department with F=2 or 4.76%.

To answer research question number 2, the following tables are presented.

Table 6. Average Mean of Knowledge and Practice of the participants when grouped according to Age (N=42)

Gender	Mean Knowledge	Mean Practice
Female	77.38	78.21
Male	75.55	79.84
Total Average Mean	**76.44**	**78.90**

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Table 6 shows the mean average of Knowledge and Practice of the participants. In knowledge scoring, females scored slightly higher in knowledge (77.38) than males (75.55). Males scored higher in practice (79.84) compared to females (78.21). The total average knowledge score is 76.44, and the practice score is 78.90.

Table 7. Mean Knowledge and Practice of the participants   grouped according to Age (N=42)

Age in Years	Mean Knowledge (%)	Mean Practice (%)
<25	83.33	76.67
26_35	65.79	75.22
36_45	84.31	74.75
>46	66.67	50.00
Total	**75.025**	**69.16**

Table 7 shows that in knowledge, the age group of 36–45years old scored the highest (84.31%), followed closely by <25Y (83.33%). The age group 26–35 years old had the lowest average knowledge score (65.79%), despite having the largest number of participants. The overall mean knowledge across all age groups is 75.03%. In terms of practice, the age group of <25years had the highest practice score (76.67%), slightly ahead of 26–35years (75.22%). On the other hand, the single participant in the >46Y group had the lowest practice score (50.00%). The overall mean practice across all participants is 69.16%.

Table 8. Mean Knowledge and Practice of the Participants grouped according to Educational Level (N=42)

Educational Level	Mean Knowledge (%)	Mean Practice (%)
Diploma	75.60	77.10
Higher Diploma	77.90	79.30
Bachelor	100.00	100.00
Total Average Mean	**84.5**	**85.46**

Table 8 shows that the Bachelor's degree holders achieved a perfect score (100%), indicating complete mastery of the knowledge assessed. Higher Diploma holders scored slightly better (77.90%) than Diploma holders (75.60%), showing a progressive increase in knowledge with higher education. The overall average knowledge score is 84.5%, suggesting a generally strong theoretical understanding across all educational levels.

Again, Bachelor's degree holders scored 100%, reflecting excellent practical application of their knowledge. Higher Diploma holders (79.30%) performed better than Diploma holders (77.10%), mirroring the trend seen in knowledge scores.

The overall average practice score is 85.46%, slightly higher than the knowledge average, indicating that participants may be more confident or skilled in practice than theory.

Table 9. Mean Knowledge and Practice when participants are grouped according to Years of Experience (N=42)

Years of Experience	Mean Knowledge (%)	Mean Practice (%)
1-5	68.33	75.42
6-10	70.83	77.08
11-15	76.19	72.92
>15	84.52	73.21
Total	**74.96**	**74.65**

Table 9 clearly shows that Knowledge increases with experience: There's a clear upward trend in knowledge scores as experience increases. From 68.33% (1–5 years) to 84.52% (>15 years), this suggests that longer professional exposure enhances theoretical understanding. The highest knowledge score is among those with >15 years of experience, indicating accumulated expertise over time. On the other hand, the practice scores are highest in the 6–10 year group (77.08%), slightly above the 1–5 year group (75.42%). Interestingly, practice scores decline slightly after 10 years of experience: 11–15 years: 72.92%, 15 years: 73.21%. This may suggest that while knowledge continues to grow with experience, practical application may plateau or slightly decline, possibly due to role shifts (e.g., from hands-on roles to supervisory or administrative positions).

Table 10. Mean Knowledge and Practice of the participants when grouped according to Department (N=42)

Department	Mean Knowledge (%)	Mean Practice (%)
Cardiology	55.56	72.22
Pediatric surgery	75.00	77.08
General	77.62	75.12
Vascular	66.67	66.67
Total	**68.71**	**72.77**

Table 10 shows that the General Department leads in knowledge (77.62%), suggesting a moderate theoretical understanding among staff. Pediatric Surgery shows the most balanced and high-performing profile, with both knowledge and practice above 75%. Cardiology presents a concerning gap: knowledge is the lowest (55.56%), while practice is relatively high (72.22%). This may indicate reliance on routine or experience rather than updated theoretical understanding. Vascular Department shows parity between knowledge

and practice (66.67%), but both are below the overall average—suggesting room for improvement in both domains. Overall, practice scores (72.77%) are higher than knowledge scores (68.71%). This may reflect a trend of practical competence outpacing theoretical grounding.

Table 11. Correct Responses of the participants to the Knowledge of POE

Knowledge items	F	%
1. Perioperative nurses should schedule preoperative education sessions for patients	33	78
2. Preoperative patient teaching is the responsibility of nurses working in departments.	32	76
3. Preoperative patient education increases patients' anxiety before surgery	**18**	**42.5**
4. Preoperative education reduces postoperative complications	34	80.9
5. Preoperative teaching only helps patients during the preoperative period	**18**	**43.85**
6. Teaching patients about fasting before surgery is part of preoperative education	40	95.23
7. Preoperative patient teaching includes information about medications used perioperatively.	37	88.09
8. Preoperative education involves explanations of the different types of anesthesia used during surgery	30	71.42
9. Preoperative teaching includes information about the perioperative environment (before, during, and after surgery).	35	83.33
10. Postoperative pain management is part of preoperative education	34	80.9
11. Preoperative patient Education includes instructions on deep breathing and coughing exercises after surgery	**28**	**66.6**
12. Preoperative education involves teaching patients the importance of early mobility and ambulation after surgery	37	88.09
13. Preoperative education provides information about skin preparation on the day of surgery	**26**	**61.9**
14. Patients should be advised not to bring personal belongings on the day of surgery	38	90.47
15. Preoperative information should not be limited to surgical patients, but should involve their families	38	90.47
16. Preoperative patient education will minimize postoperative problems in surgical patients	37	88.09
Average Total Mean	**35.94**	**78.96**

Legend: F=frequency count, % = Percentage

Table 11 provides the picture of the average frequency of correct responses per item, which is 35.94, indicating a qualitative description by Benners as moderate understanding of participants on POE. The average percentage score is 78.96%, reflecting a generally moderate level of knowledge regarding preoperative education among the surveyed group. Items with lower scores (e.g., anxiety-related misconceptions, limited scope of teaching, deep breathing, coughing exercises, and information on the importance of skin preparation on the day of surgery) suggest areas for targeted clarification and reinforcement in training programs.

Table 12. Correct Responses of the Participants on Practice of POE (N=42)

Practice items	F	%
1. Do you teach patients undergoing surgery within a specific time before surgery	39	92.85
2. Do you teach your patients about fasting (NPO) time before undergoing surgery?	42	100
3. Do you educate your patients about perioperative medications?	37	88.09
4. Do you explain to your patients the types of anesthesia to be used during surgery?	**21**	**50**
5. Do you teach your patients regarding the perioperative environment before surgery?	32	76.19
6. Do you explain to the patient before surgery about the management of postoperative pain?	34	80.95
7. Do you teach patients about personal hygiene, such as bathing, shaving, or trimming hair at the surgical site on the day of surgery?	36	85.71
8. Do you teach your patients undergoing surgery to leave valuables and remove all jewelry, such as dentures, glasses, contact lenses, prostheses, makeup, nail polish, hairpins, or hairpieces, before going into the operating room?	40	95.23
9. Do you teach your patients differently from how you teach their family members?	**23**	**54.76**
10. Do you use teaching materials when providing preoperative patient teaching?	26	61.90

11. Do you inform surgical patients about postoperative activity restrictions?	35	83.33
12. Do you instruct preoperative patients about postoperative deep breathing and coughing exercises?	**27**	**64.28**
13. Do you verify the preparedness of patients before surgery, such as confirming fasting status, removal of jewelry, and appropriate clothing?	41	97.61
14. Do you keep a record of the education provided to patients?	31	73.86
Average Total Mean	**35.29**	**81.03**

Table 12 shows the average frequency of practice per item is 35.29, indicating consistent engagement in preoperative education activities. The average percentage score is 81.03%, reflecting a strong overall adherence to recommended preoperative teaching practices. Items with lower scores (e.g., anesthesia explanation and family-specific teaching) highlight areas for improvement in communication and inclusivity. Highperforming items (e.g., fasting instructions, valuables removal, and preparedness verification) suggest strong procedural compliance.

To answer the research question 3, the figure below is presented.

Table 13. Correlation Table for Knowledge and Practice of the Participants

Metric	Value
Pearson r	0.82
Degrees of Freedom (df)	8
p-value	0.004
Critical r ($\alpha = 0.05$)	±0.632
Significance	☑ Significant ($p < 0.05$)

Table 13 shows that the **Pearson correlation coefficient (r = 0.82)** indicates a **strong positive relationship** between knowledge and practice scores. The **p-value (0.004)** confirms that this correlation is **statistically significant** at the 0.05 level. Since

the calculated **r** exceeds the **critical value (±0.632)**, we **reject the null hypothesis** and conclude that there is a meaningful correlation between knowledge and practice. **This result reveals that since r ≈ +1 →** strong positive correlation (as knowledge increases, practice increases), **r ≈ 0 →** no correlation, **r ≈ -1 →** strong negative correlation (as knowledge increases, practice decreases). In this case, the result was **r ≈ 0.82**, indicating a **strong positive correlation** between knowledge and practice scores across matched items.

DISCUSSION

The demographic profile of the participants in this study reflects a predominantly female workforce (57.14%), consistent with global nursing trends where women comprise the majority of the profession. The slight gender differences might reflect variations in learning styles, access to practical opportunities, or confidence in applying knowledge. It could inform targeted interventions—like boosting practical exposure for females or reinforcing theoretical foundations for males.

The age distribution, with 45.23% of participants aged 26–35, suggests a relatively young and potentially adaptable workforce, positioned at a critical stage for professional development and skill consolidation. Younger participants tend to have higher knowledge scores, suggesting stronger theoretical understanding. Practice scores are fairly consistent across most age groups, except for the >46 years group, which shows a notable drop—though this is based on only one participant. The 26–35 years group, despite being the largest, shows lower knowledge but maintains competitive practice, possibly indicating more hands-on experience than formal knowledge.

Educationally, the dominance of diploma-level qualifications (64.28%) aligns with findings from two studies that reported similar trends in Ethiopian surgical units, where diploma nurses formed the bulk of the workforce. This has implications for the depth and scope of preoperative education delivery, as higher educational attainment has been associated with improved patient teaching practices and theoretical understanding (2, 6). The Bachelor group stands out with perfect scores, possibly due to more comprehensive training, exposure, or experience. The incremental improvement from Diploma to Higher Diploma to Bachelor's suggests that advanced education enhances both theoretical understanding and practical competence. The small gap between knowledge and practice in Diploma and Higher Diploma groups may indicate areas where practical training could be strengthened to match theoretical knowledge. Another study found that higher education and clearer job roles improved nurses' teaching performance, similar to the effect of education level in this study. This is in line with the findings of the present study (17).

Work experience data revealed that 33.33% of participants had 11–15 years of experience, indicating a mature cohort with substantial clinical exposure. This experience level is crucial, as studies found that nurses with more years in practice demonstrated stronger preoperative teaching behaviors, although knowledge did not always scale linearly with experience (2,4). The result of the study reinforces the value of long-term professional engagement in building expertise. Practice proficiency peaks earlier (6–10 years), possibly reflecting a period of optimal hands-on involvement. The slight drop in practice scores beyond 10 years may indicate a shift in job responsibilities or reduced direct clinical engagement. The overall averages reflect a balanced competency level across the workforce, with room for targeted training to sustain practical skills in more experienced professionals.

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As for the department the participants are working in, a targeted Training for cardiology is imperative. This is because of the significant gap between knowledge and practice, which suggests a need for continuing education or refresher courses to align clinical actions with current evidence-based knowledge. To support for Vascular Team, balanced but moderate scores imply that both knowledge and practice could benefit from structured improvement initiatives. Leveraging Strengths in General and Pediatric Surgery, these departments could serve as models or mentors for others, especially in integrating knowledge into practice. Institutional Strategy may consider periodic assessments to monitor trends and tailor interventions department-wise to close gaps and elevate overall standards.

The moderate levels of knowledge (78.58%) and practice (81.03%) observed in this study are consistent with the literature. A study emphasized that while nurses often perceive preoperative education as essential, actual practice may fall short due to systemic constraints, lack of standardized protocols, or limited continuing education. The moderate scores suggest that while foundational understanding and engagement exist, there remains room for improvement in both conceptual clarity and procedural consistency (2). Such can be confirmed that innovative educational methods led by skilled nurses improve patient readiness, reinforcing the importance of strong nursing practice and training (18).

The opposite of the result of this study can be found among Chinese respondents, with the key findings of the study, which revealed that only 40% of nurses consistently educated patients (19). Just the same study with a different result from the present study revealed that 38.5% of nurses are with good practice, significantly lower than the 78.9% in the current study (1). Another Chinese study revealed that despite an intervention on education, only minor practice improvement despite moderate knowledge (20). However,

a study found that low competence levels among nurses during their evaluative study (21). To quote further studies with different results from the present study, a study reported good knowledge among nurses but limited practice due to inadequate training and lack of institutional support, aligning with the present study (6), just like the another study which found that most nurses had adequate knowledge of POE but did not always apply it in practice — confirming a knowledge–practice gap similar to the present study (2) .

Most notably, the statistically significant correlation between knowledge and practice (r = 0.82, p = 0.004) reinforces the theoretical premise that enhanced knowledge directly influences clinical behavior. This finding echoes the work of a previous study (4), which demonstrated that targeted educational interventions improved both knowledge and practice among surgical nurses. The strength of this correlation underscores the importance of investing in structured, evidence-based training programs to bridge gaps and elevate standards.

CONCLUSION

There were more female than male nurses in the surgery units. Mostly were 26-35 years old, more than half were Diploma Nursing graduates, less than half had 11-15 years of experience, and more than three-fourths were from the general surgery department. The knowledge and practice level of the participants is verbally interpreted as moderate, and there is a significant correlation between the knowledge and practice of preoperative teaching of the participants.

RECOMMENDATION

The study specifically recommends the following activities to enhance knowledge and practice on POE. First, the c**urriculum enhancement**, wherein institutions should consider integrating more robust preoperative education modules into diploma and continuing education programs. Second, t**argeted training** with POE-focused workshops addressing low-performing areas (e.g., anesthesia explanation, family-inclusive teaching) could yield measurable improvements. Third is d**epartment support**, since, given the dominance of general surgery nurses, department-specific protocols and mentorship could help standardize best practices. Last but not least, the p**olicy development**, specifically addressing the hospital administrations, should formalize preoperative education guidelines to ensure consistency and accountability.

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