

Preoperative Patient Education: Perceptions and Actual Practice among Nurses Working in Surgical Units

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Abstract

Introduction: Preoperative education is an essential nursing task that can be affected by the nurses' perception. Patients may be receiving insufficient vital information before surgery. However, the essential information that should be provided to patients undergoing surgery is not fully addressed.

Objective: To assess the essential elements of preoperative information as perceived by the surgical nurses.

Methods: This was a cross-sectional study. A convenience sample of 224 registered nurses who were working at surgical units was recruited from two hospitals. A preoperative teaching questionnaire was used.

Results: Details about the operation (4.39 ± 0.61) and preoperative preparation (4.36 ± 0.61) were the most important domains of preoperative education as perceived by nurses. The results show significant differences between the perceived and actual preoperative educational practice across all domains except the preoperative preparation.

Conclusions: The delivery of preoperative education could be affected by nurses' perceptions. Efforts to facilitate the implementation of effective education as perceived by nurses should be conducted by minimizing potential barriers.

Keywords

education, information, nurse, preoperative, perceptions, practice, surgical units

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Introduction

Patient education is one of the substantial elements of providing the best patient care in all healthcare sectors. It is a systematic process that leading to changes in knowledge, attitudes, and behavior (Tadesse et al., 2023). Patient education is also a method of identifying the patient's needs and improving clinical outcomes (Simonsmeier et al., 2022). Education is not limited to providing information and advice; it must go beyond this to result in a significant change in the patient's behavior.

Globally, over 300 million major operations are performed annually (Dobson, 2020). Preoperative patient education is one of the fundamental areas of care provided for patients who will undergo surgery. It is achieved by providing the patient with access to health information, psychosocial support, and the chance to learn certain skills before surgery (Burgess et al., 2019, Tadesse et al., 2023). Preoperative education in relation to health information refers to different aspects of the information provided to patients before surgery, including details of the procedure,

preoperative preparation or environment, postoperative expectations, anticipated sensations, details of anesthesia, and possible outcomes (Kruzik, 2009; Mordiffi et al., 2003).

Surgery cancellations and postoperative-related complications, such as prolonged pain, might be associated with the effectiveness of preoperative education. Laufenberg-Feldmann found that approximately half of patients undergoing back surgery report moderate pain for at least 6 months after their operation (Laufenberg-Feldmann et al., 2016). Furthermore, some patients may fast for a long period of time before surgery. This prolonged duration of preoperative fasting could influence vulnerable groups of patients, such as the elderly and pediatric patients

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(El-Sharkawy et al., 2021). Effective education helps patients to have acceptable preoperative preparation, understand their health status, reduce anxiety levels, control pain effectively, participate in self-management, and achieve optimal outcomes (Simonsmeier et al., 2022).

Growing evidence has demonstrated the benefit of preoperative education in relieving patients' anxiety and pain as well as improving self-care ability and intervention adherence (DeLano, 2017; Gonçalves et al., 2017; Jones et al., 2022). Additionally, several studies suggest that preoperative teaching may reduce postoperative complications, such as hospital length of stay and increasing satisfaction for patients and families (Forsmo et al., 2018; Kruzik, 2009; Ramesh et al., 2017).

Despite the importance of preoperative nursing education, nurses may not be able to provide adequate preoperative information to the patient. This could be a challenge for nurses in some specific areas or situations. Healthcare professionals are sometimes unable to provide adequate preoperative education because patients can only stay for a short period, or patients might be transferred into other units. Other factors may relate to the health educators themselves, such as their limited time and high workloads (Almashi et al., 2020; Mitchell, 2017). Prompt assessment and provision of adequate information to prepare the patient psychologically, in addition to the physical preparation for the procedure/operation, can be another challenging area (Mitchell, 2017). Importantly, Cao et al. (2018) indicated that nurses' perceptions and personal beliefs and values could strongly influence their judgements and behaviors regarding patients' and families' education. Limited international studies have assessed nurses' views regarding essential preoperative elements (Brumfield et al., 1996; Dalayon, 1994; Furtado et al., 2022; Lee & Lee, 2013; Mitchell, 2017; Mordiffi et al., 2003; Tse & So, 2008; Yount et al., 1990). Among these studies, there were some discrepancies in nurses' perceptions about what is considered essential information of preoperative education, the best method of delivering education and factors influencing the amount of information provided to patients. In a recent study by Mitchell (2017) in the UK, the details about the operation were ranked as a top essential element of preparative information as perceived by nurses. Studies conducted by Lee & Lee (2013), Mordiffi et al. (2003) and Tse & So (2008), which were all conducted in East Asia, found that nurses rated anesthesia information as the most essential preparative information to be provided for their patients. Cultural factors or healthcare systems could have influenced nurses' perceptions regarding preoperative education since the same instruments were used in these studies. However, previous studies were in agreement in what is considered a less important preoperative educational area. Studies have reported that information about the operating environment was scored less essential information as perceived by nurses working in different surgical units (Lee & Lee, 2013; Mitchell, 2017; Mordiffi et al., 2003; Tse & So, 2008). Providing

preoperative information, which may be influenced by nurses' perceptions of what should be provided, will definitely impact nursing care.

Providing preoperative education to patients is an essential nursing task; however, the exact information that should be provided for patients before any surgery is not well addressed. Most of these prior studies were conducted in Western countries and East Asia. Only one study was reported in the Middle East, Kuwait, approximately two decades ago (Dalayon, 1994). There is a need to assess nurses' perceptions in different settings as cultural backgrounds, norms, and personal values can influence nurses' perceptions. Thus, it is crucial to assess nurses' perceptions of the essential preoperative teaching components, which will help design education policies and programs aligned with culture and nurses' educational role beliefs. The study aims to assess the essential elements of preoperative educational information perceived by nurses working in surgical units and compare their perceptions and actual practice regarding preoperative education.

Methods

Design

A descriptive cross-sectional study design was used.

Participants and Settings

A convenience sample of registered nurses who were working at surgical units was recruited. Convenience sampling is a type of nonprobability or nonrandom sampling that ensures that members of the target population meet inclusion and exclusion criteria (Etikan et al., 2016). Data were collected from two tertiary hospitals in the Jeddah region, Kingdom of Saudi Arabia. The inclusion criteria for this study were male and female registered nurses who were working in different surgical units, such as day surgery units, general surgical departments, orthopedics departments, obstetrics departments, and gynecology departments. The exclusion criteria were head nurses, assistant nurses, pull-out nurses from other departments, nurses working in the operating room (intraoperative care), medical and emergency departments, and nursing students.

The estimated population size of participants in the selected area (two hospitals) was 419 nurses. By considering the response distribution among them as 50% (to obtain the largest sample size), using a margin of errors of 5% and a confidence level of 99%, the sufficient sample size was 201 nurses using the EPI Info StatCal programme.

Data Collection Procedure

In the current study, data collection was conducted using a self-administered method between March 2020 and May

2020. After obtaining ethical approval, the researcher explained the research aims and methods for the head nurses of general surgery, day surgery units, orthopedic surgery obstetrics, and gynecology to facilitate approaching the participants. The participants were provided with a study information form and a brief verbal explanation about the study. Every return of the completed questionnaire was considered an implied consent form to participate in the study. Participants were assured that all their responses would be kept anonymous and confidential. All participants had the right to refuse to participate at any time, and involvement did not affect their work in any way.

Measurements

The preoperative teaching questionnaire (PTQ) was used to assess the essential elements of preoperative information as perceived by nurses (Mordiffi et al., 2003). It involves 73 items with five domains: essential elements of preoperative information (32 items), adequacy of information delivered by nurses (5 items), preferred and actual methods of preoperative education (11 items), factors affecting nurses' provision of preoperative education (23 items), and nurses' satisfaction with the amount of preoperative information provided (two items). For this study, we included only the first domain in our analysis to achieve the study aims. Other information will be published somewhere else.

The questions related to assessing the essential elements of preoperative information were asked in a form that assessed to what extent the importance of each item was to provide the information to the patients. Responses were rated on a 5-point Likert-type scale, with ratings of 1 meaning unimportant to 5 indicating extreme importance. The perceived and actual mean practice scores were calculated based on the 5-point Likert scale; the higher scores, the higher the possible scores for each domain. Permission was obtained from the main author to use the instrument for this study. The content validity of the PTQ was demonstrated using a panel of nurse experts (Mordiffi et al., 2003). The internal consistencies of the PTQ were scored using Cronbach's alpha and scored higher than 0.70 in prior studies (Lee & Lee, 2013; Mordiffi et al., 2003; Tse & So, 2008). The time expected to complete the instrument was 10 to 15 min. Demographic data and work-related data were also collected. These included age, sex, educational level, years in service, and working department.

Ethical Consideration

Ethical approval of the study was obtained from the Research Ethical Committee of the Faculty of Nursing at King Abdulaziz University and the Institutional Review Board

(IRB) of hospitals (IRB number is H-02-J-002). The data was non-identifiable, and confidentiality was maintained.

Data Analysis

The data were entered and analyzed using IBM SPSS Statistics, Version 21.0 (IBM Corp, Armonk, NY). The accuracy of data entry was ensured by checking 20% of entered data against the printed questionnaire. Few missing data (< 1%) found and replaced by mean of responses. Normality of data was also assessed using the Shapiro–Wilk test, and $p \leq 0.05$ was considered nonparametric. Descriptive statistics are presented as numbers, percentages, means, and standard deviations as appropriate. The comparison between preoperative domains (perceived vs actual) was examined using the Wilcoxon signed-rank test. A p -value ≤ 0.05 was considered statistically significant.

Results

Demographic and Work-Related Characteristics

A total of 224 nurses were recruited in this study. A summary of the characteristics of the study participants is shown in Table 1. The age ranged from 20 to 49 years of age, and 44.6% were in the middle age group (30–39 years). The majority of the participants were females (93.8%). The

Table 1. Distribution of Nurses' Demographic and Work-Related Characteristics, N = 224.

Study variables	n (%)
Age	
20–29 years	85 (37.9%)
30–39 years	100 (44.6%)
40–49 years	39 (17.4%)
≥ 50 years	0 (0.00%)
Gender	
Male	14 (06.3%)
Female	210 (93.8%)
Educational level	
Diploma	61 (27.2%)
Bachelor	163 (72.8%)
Master	0 (0.00%)
Years in service in surgical units	
<1 year	39 (17.4%)
1–5 years	98 (43.8%)
6–10 years	51 (22.8%)
11–15 years	25 (11.2%)
16–20 years	11 (04.9%)
Current working area	
Day care	24 (10.7%)
General surgery	151 (67.4%)
Orthopedic	27 (12.1%)
Obstetrics and gynecology	22 (09.8%)

study shows that most participants held a bachelor's degree (72.8%), and 38.8% had at least 5 years of service experience. More than two-thirds (67.4%) of participants were working in a general surgery unit.

Nurses' Perception Regarding Essential Elements of Preoperative Information

The preoperative information deemed essential by nurses is presented in Table 2. The top three important parts of information about the details of the operation ranked by nurses were name or type of operation (92%), benefits of operation (90.2%), and the effects of the operation (89.3%). When nurses were asked about preoperative preparation, the most important preparation education elements were related to medication, removal of dentures and prostheses (e.g., contact lenses), and fasting time (91.5%, 90.6%, 90.2%). Nurses also believe that informing patients about the need to stay in the recovery room for observation and later returning to the ward are essential areas of education related to the operating theater environment.

The top three essential parts of information about postoperative expectations as perceived by nurses were related to dressings (87.1%), food (83.9%), and drainage tubes (83%). In addition, nurses rated the essential preoperative information regarding the details of anesthesia as follows: information about the risks of anesthesia (86.6%), effects of anesthesia (84.8%), and whether the patient would be awake or asleep during the surgery (84.4%).

Comparison Between Perceived and Actual Practice in Essential Elements of Providing Preoperative Information

The perceived essential elements of preoperative information and actual practice of preoperative information delivery reported by nurses are shown in Table 3. Among the five preoperative domains of education, details about the operation (4.39 ± 0.61, 86.2%) and preoperative preparation (4.36 ± 0.61, 85.3%) were the most important domains as perceived by nurses. In actual practice, nurses mostly focused on education about preoperative preparation (4.32 ± 0.78, 83.9%) and postoperative expectations (4.08 ± 0.87, 75.9%).

The findings also indicate that there were highly significant differences between the perceived and actual preoperative educational practice across all domains except the preoperative preparation domain.

Discussion

The focus of this study was to assess the essential elements of preoperative information provided to patients undergoing surgery as perceived by nurses who are working in Saudi Arabia. This study is considered a basis for future studies,

especially in Saudi Arabia to assess nurses' perceptions regarding essential elements of preoperative education, as it offers preliminary results on this matter.

Table 2. Nurses' Perception About Essential Elements of Preoperative Information (N = 224).

Items	Mean ± SD	n (%) ^a
Details of the operation		
Name or type of operation	4.63 ± 0.63	206 (92.0%)
Benefits of operation	4.49 ± 0.67	202 (90.2%)
Effects of the operation	4.50 ± 0.68	200 (89.3%)
Risks of the operation	4.49 ± 0.70	199 (88.8%)
Operation successful percent	4.41 ± 0.73	191 (85.3%)
Complications of operation	4.38 ± 0.82	191 (85.3%)
Specific time of operation	4.23 ± 0.84	179 (79.9%)
Estimated cost of the operation	4.21 ± 0.93	175 (78.1%)
Duration of the operation	4.17 ± 0.89	171 (76.3%)
Preoperative operation preparation		
Taking medications	4.56 ± 0.65	205 (91.5%)
Removing jewelry, dentures contacts lenses, etc.	4.55 ± 0.66	203 (90.6%)
Fasting 8 h before operation	4.49 ± 0.67	202 (90.2%)
Taking a shower on the morning of the operation	4.30 ± 0.82	187 (83.5%)
Sedation that will be needed	4.29 ± 0.79	187 (83.5%)
The operating theater attire	4.31 ± 0.79	186 (83.0%)
Emptying the bladder	4.20 ± 0.89	175 (78.1%)
Shaving the operative site	4.21 ± 0.88	175 (78.1%)
Operating theater Environment		
Staying in the recovery room for observation	4.43 ± 0.72	197 (87.9%)
Sending from recovery room to the ward	4.44 ± 0.73	197 (87.9%)
Receiving the patient at the operating theater	4.29 ± 0.87	185 (82.6%)
Moving safely to the operating bed for the operation	4.24 ± 0.89	180 (80.4%)
Transferring to the waiting room to meet the anesthetic doctor	4.18 ± 0.91	174 (77.7%)
Postoperative expectation		
Presence of dressings	4.37 ± 0.72	195 (87.1%)
Food can be taken orally	4.36 ± 0.81	188 (83.9%)
Presence of drainage tubes	4.30 ± 0.80	186 (83.0%)
When patient is able to walk	4.28 ± 0.82	184 (82.1%)
When stitches can be removed	4.18 ± 0.79	178 (79.5%)
Time of stay in the hospital	4.16 ± 0.85	176 (78.6%)
Details of anesthesia		
Risks of anesthesia	4.41 ± 0.76	194 (86.6%)
What are the after effects of anesthesia	4.40 ± 0.76	190 (84.8%)
Whether patient will be awake or asleep during the surgery	4.25 ± 0.78	189 (84.4%)
Management of postoperative pain	4.34 ± 0.75	188 (83.9%)

^aEach percentage was calculated based on 5-point Likert scale ranging from (1) not important to (5) extremely important, the higher the percentage, the higher the importance of each preoperative information.

Table 3. Comparison Between Essential Elements of Preoperative Information as Perceived by Nurses and Their Actual Information Given to the Patient.

Preoperative education domains	Perceived practice		Actual Practice		Z-Score	p-value ^b
	Mean ± SD	n (%)	Mean ± SD ^a	n (%)		
Operation details	4.39 ± 0.61	193 (86.2%)	3.89 ± 1.01	153 (68.3%)	-6.732	<0.001 **
Preoperative preparation	4.36 ± 0.61	191 (85.3%)	4.32 ± 0.78	188 (83.9%)	-0.382	0.702
Operating theater Environment	4.31 ± 0.73	187 (83.5%)	3.84 ± 1.03	148 (66.1%)	-6.086	<0.001 **
Postoperative expectations	4.27 ± 0.68	184 (82.1%)	4.08 ± 0.87	170 (75.9%)	-2.799	0.005 **
Anesthesia details	4.34 ± 0.67	189 (84.4%)	3.73 ± 1.14	141 (62.9%)	-7.024	<0.001 **

^aActual mean practice score was calculated based on the 5-point Likert scale ranging from (1) none of what I could possibly give to (5) all of what I could possibly give, the higher score, the higher of what could possible give for each domain.

^bp-value has been calculated using Wilcoxon signed-ranks test.

**Significant at $p < 0.05$ level.

The findings of this study revealed that the three most important essential domains of preoperative information perceived by nurses were details about the operation, preoperative preparation and anesthesia. Nurses believe that the name or type of operation, benefits of the operation, and effects of the operation are among the important details that should be provided to the patients. This finding supports the finding of Mitchell (2017) in the United Kingdom, who found that surgical nurses indicated information about procedures/operations as the most prominent areas where they provided valuable information to the patient. Information on the preoperative preparation was rated as second essential preoperative information. Furthermore, during preoperative operation preparation, most nurses are inclined to believe that information regarding patients taking medications, removing jewelry, denture contact lenses, etc., and fasting 8 h before the operation is the most essential. This result may be because preoperative preparation, such as checking fasting time and giving preoperative medications, is delegated to nurses and considered a part of their routine work.

Furthermore, details about anesthesia were rated as the third essential preoperative information perceived by most nurses. The study also found that surgical nurses emphasized information about the risks and effects of anesthesia preoperatively. Since exposure to surgical procedures and general anesthesia increases patients' anxiety levels, stress and fear, reassuring patients is a priority of nurses, accomplished through explaining the procedure and providing preoperative information regarding anesthesia (Mitchell, 2010). Interestingly, details of anesthesia were the most prominent teaching component among nurses in Hong Kong (Lee & Lee, 2013). This could reflect that nurses' backgrounds could influence the nurses' perception regarding preoperative information; however, this area needs more investigation. Nurses from Asian might have different perceptions compared to those from other backgrounds, such as Western countries or Middle Eastern nurses. The nurses' backgrounds could be influenced by such factors as the educational system, which may affect their perceptions regarding certain nursing practices (Swart et al., 2015).

Our results also indicated that nurses' actual practice in providing preoperative information was centered on preoperative operation preparation, followed by postoperative expectations. This might be related to the fact that preoperative and postoperative details, such as checking fasting time, giving preoperative medications, and caring for drains and wound care, are a considerable part of nurses' clinical practice. These findings are consistent with another study in which nurses rated the preoperative preparation and postoperative expectations as the most educational information given to the surgical patients (Lee & Lee, 2013).

Importantly, when comparing nurses' perceptions regarding preoperative information and their actual practice of giving preoperative information, the results of this study showed a significant difference across all domains except the domain of preoperative operation preparation. This may reflect the consensus of nurses regarding preoperative operation preparation as essential nursing responsibility. Preoperative preparation is usually explained to patients through preoperative teaching in routine practice, which illustrates the agreement between what nurses believe and what they practice. Moreover, most information related to preoperative operation preparation is usually listed on the operation checklist, which is considered objective data that can be measured by nurses such as removing jewelry or contacts lenses. A closer look at the results reveals that, in general, nurses have a high perception regarding preoperative information that should be given before the operation compared to what they actually do. This difference may be due to the lack of a comprehensive checklist that ensures all educational items that must be given before operations are given beyond preoperative operation preparation. Although over 50 percent of the nurses agreed about all elements in each dominance of preoperative information, some specific items were rated lower than others. These, for example, include the duration of the operation, the estimated cost of the operation, transferring to the waiting room to meet the anesthetic doctor, and the length of stay in the hospital. Nurses might believe these elements of preoperative education are

important but should not be part of their tasks. This may also explain lower rates in their actual practice.

Limitation

This study has some limitations. This study used self-reported measures to compare nurses' perceptions and their actual practice regarding preoperative education, which may not be an accurate reflection of their practice. In addition, regardless of whether the sample was drawn from two different hospitals, the generalizability of the study could be an area of concern due to the small sample size.

Relevance to Nursing Practice, Educations, or Research

Nurses are in a unique position to provide preoperative education which may influence the patients' outcomes. Assessment of nurses' perceptions and their actual practice is important to ensure the best nursing care practice. This highlights the importance of defining what is considered an essential part of preoperative education elements and should be delivered by whom. Consequently, there is a need to develop a comprehensive checklist of essential elements of preoperative education and determine the healthcare professionals responsible for it. This will guarantee better interprofessional communication and provide complete preoperative education. Creating uniform standards, improving ongoing nursing education, and providing frequent supportive supervision all play a crucial role in raising the standard of preoperative patients' care (Tadesse et al., 2023). This will help the head nurses and educators to make sure the assigned nurse has completed all preoperative education.

Furthermore, there is room for further research to investigate nurses' perceptions of what they believe is part of their duty and the obstacles to conducting comprehensive preoperative education.

Conclusion

Providing preoperative education to patients is an essential nursing task. Delivery of preoperative education could be affected by nurses' perceptions of what information should be involved. Their perceptions may have a direct effect on their performance regarding preoperative information. There are discrepancies between nurses' perceptions and their actual practice in the delivery of preoperative information. In this study, higher perceptions were identified compared to the actual practice regarding the delivering of preoperative information.

Factors that may be hinder nurses from delivery preoperative education in their actual practice should be explored. More effort to facilitate the implementation of effective education as perceived by nurses should be conducted by minimizing potential barriers.

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Author Contributions

All Authors have approved the content of the manuscript. Hayfa Almutary: Conceptualization, methodology, validation, writing—original draft preparation, writing—reviewing and editing, visualization, investigation, and supervision. Ashwaq Almashi: Conceptualization, data curation, investigation, formal analysis, and writing—original draft preparation.


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