

Research Article

Patient Awareness, Satisfaction and Associated Factors Related to Preoperative Nursing Care among Adults Undergoing Major Surgeries at Selected Tertiary Care Hospitals in Sri Lanka

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Abstract

Background: The preoperative phase is a critical period during which nursing care significantly influences surgical outcomes. Despite growing global interest in patient-centered perioperative care, no published evidence exists examining patient awareness and satisfaction with preoperative nursing care in Sri Lanka. This study aimed to assess the level of awareness and satisfaction regarding preoperative nursing care among adult patients undergoing major surgery and to identify factors associated with these outcomes in selected tertiary care hospitals in the Colombo District of Sri Lanka.

Methods: A descriptive cross-sectional study was conducted among 430 postoperative adult patients at the surgical wards of the National Hospital of Sri Lanka and Colombo South Teaching Hospital from May 2024 to February 2025 using consecutive sampling. Data were collected on postoperative day two using a pre-tested, content-validated, interviewer-administered questionnaire. Awareness was assessed using 32 items on surgical preparation, procedural knowledge, and postoperative expectations. Patient satisfaction was measured using a five-point Likert scale with ten items. Data were analyzed using descriptive statistics and Chi-square tests.

Results: Among participants, 244 (56.7%) were male, and most were aged 50–65 years (36.5%). Mean awareness was 57.62% (SD: 17.77), with 224 (52.1%) demonstrating low awareness. Major awareness gaps included jewelry removal (83.3% unaware), nail polish removal (94.2%), and underwear removal (77.4%). Mean satisfaction was 80.79 (SD: 10.85), with 318 (74%) reporting high satisfaction. Highest satisfaction scores were identified for nocturnal nursing care (mean: 4.25) and nurse–patient communication (mean: 4.21). Awareness was significantly associated with gender, marital status, income, surgery type, illness duration, patient expectations, current health status, healthcare workers in the family, and caregiver availability ($p < 0.05$). Satisfaction was significantly associated with gender, illness duration, and patient expectations ($p < 0.05$).

Conclusions: Although most patients reported high satisfaction with preoperative nursing care, important awareness gaps regarding personal preparation procedures remain. Targeted educational interventions, standardized preoperative education protocols, and improved nurse–patient communication are needed to enhance preoperative care quality in Sri Lankan hospitals.

Keywords: Awareness, Preoperative Nursing Care, Patient, Satisfaction, Sri Lanka

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Introduction

Surgery constitutes one of the most consequential medical interventions in a patient's life, profoundly influencing overall health, well-being, and quality of life (Thoma et al., 2008). The perioperative period encompassing pre-, intra-, and postoperative phases represents a continuum of clinical care that begins from the moment surgery is decided and extends through full recovery (Davrieux et al., 2019). Within this continuum, the preoperative phase is arguably the most amenable to nursing intervention, offering a critical window for patient preparation, education, and anxiety reduction.

Preoperative nursing care encompasses a broad scope of responsibilities, including patient assessment, physical preparation, psychological support, and structured education regarding the surgical procedure and postoperative expectations (Turunen et al., 2017). Nurses serve as coordinators of this preparatory process, attending to the individual needs of patients and their families while mitigating surgical risk and promoting recovery (Malley et al., 2015). Evidence consistently demonstrates that effective preoperative education reduces anxiety, improves pain management, facilitates early mobilization, reduces postoperative complications, and shortens hospital stay (Chaudhary & Shankar, 2016; Masry, 2019). Patient awareness, the extent to which individuals understand their medical condition, planned interventions, associated risks, and self-care responsibilities, is a key determinant of surgical outcomes (Rajala et al., 2018). Deficits in preoperative awareness

have been directly linked to surgical cancellations, postoperative complications, and impaired recovery. In one study, 793 out of 5,415 planned surgical procedures were cancelled due to inadequate patient preparation, underscoring the clinical and operational significance of this issue (de Lorenzo-Pinto et al., 2019).

Patient satisfaction with nursing care is recognized as one of the most sensitive indicators of healthcare quality. It reflects the degree of concordance between patient expectations and the care received, encompassing dimensions of communication, responsiveness, emotional support, privacy, and education (Johansson et al., 2002; Trinh et al., 2019). Satisfaction is also a measurable determinant of adherence to medical advice and post-discharge self-care compliance, with implications for long-term outcomes (Mulugeta et al., 2019).

While a substantial body of international literature exists on preoperative patient awareness and satisfaction, the evidence base is heavily skewed toward high-income and certain African settings. Sri Lanka, a lower-middle-income country with a public healthcare system serving a large surgical volume, remains unstudied in this domain. Evidence from Sri Lankan public hospitals suggests that patient satisfaction indicators remain underutilized relative to developed nations, with nurse behaviour and doctor–patient relationships identified as key determinants of care quality (Bandara et al., 2024). Yet within this setting, no published evidence exists examining patient awareness or satisfaction specific to preoperative nursing care. Tertiary institutions in the

Colombo District bear the highest surgical burden in the country's universal free healthcare system. Within this context, nurses constitute the primary interface between patients and the healthcare system during the perioperative period, making their role in patient education and psychological support particularly critical. Despite the well-documented association between preoperative nursing care quality and surgical outcomes, no published evidence exists in Sri Lanka examining how well patients understand or are satisfied with the preoperative nursing care they receive. This absence of local evidence constrains the capacity of nurse educators, hospital administrators, and policymakers to design targeted, context-appropriate improvements in preoperative nursing practice. Furthermore, the importance of patient-centred nursing care, encompassing individualized education, responsive communication, and emotional support, is increasingly recognized as a determinant not only of patient satisfaction but of clinical outcomes, including recovery time and complication rates. Generating evidence from Sri Lankan tertiary care settings is therefore essential to inform the development of structured preoperative education protocols and to advocate for adequate nurse-to-patient staffing ratios in high-volume surgical units. The National Hospital of Sri Lanka performs over 14,000 and Colombo South Teaching Hospital over 3,000 major surgeries annually, a volume that amplifies the population-level impact of any deficiency in preoperative care (National Hospital of Sri Lanka [NHSL], 2024; Colombo South Teaching Hospital [CSTH], 2024). This

study sought to address this evidence gap by assessing awareness and satisfaction with preoperative nursing care and identifying associated sociodemographic and clinical factors among adult patients undergoing major surgery at selected tertiary care hospitals in Colombo District, Sri Lanka. The findings are intended to inform evidence-based improvements in preoperative nursing protocols within the Sri Lankan healthcare context.

Methods

Study design and setting

A descriptive, cross-sectional study design was employed. Data were collected between May 2024 and February 2025 at two tertiary care hospitals in the Colombo District: the National Hospital of Sri Lanka (NHSL) the country's largest teaching hospital and tertiary referral center, with 3,404 beds, 21 operating theatres, and over 1,000 major surgeries per month and the Colombo South Teaching Hospital (CSTH) in Kalubowila, with 1,110 beds and approximately 300 major surgeries per month (NHSL, 2024; CSTH, 2024). These two hospitals were selected as they are the only non-specialized general surgery hospitals among the six government teaching hospitals in the Colombo District.

Study population and eligibility

The study population comprised adult post-operative patients who had undergone major elective surgeries. Patients were included if they were aged 18 years or above, had undergone major surgery, and were able to provide informed consent in a stable clinical

condition on postoperative day two. Patients were excluded if they had undergone emergency, obstetric, cardiothoracic, neurosurgical, or nephrology surgeries (given admission to ICU/HDU), if they had known mental health conditions, were intubated or unconscious postoperatively, or had participated in the pre-testing phase.

Sample size and sampling

The total annual population of eligible surgeries across both hospitals was 17,633 (NHSL: 14,559; CSTH: 3,074). Using the Yamane formula (Yamane, 1967) with a 5% margin of error and 10% non-response adjustment, a sample of 430 was calculated. Samples were allocated proportionally: 355 from NHSL (82.6%) and 75 from CSTH (17.4%). Recruitment at CSTH was conducted from Wards 10, 11, 12, 19/20, 23, 24, 25, 26, and 27, which had the highest volume of elective major surgeries. At NHSL, wards 52, 53, 57, 28, 30, 64, 22, 65, 66, 06, 18, 19, 20, 21, and 39 are included. Ward-level sample allocation was proportional to each ward's contribution to the total surgical caseload. Consecutive sampling was used; all patients who met the inclusion criteria were enrolled until the required sample size was reached.

Data collection instrument

A pretested, interviewer-administered, content-validated questionnaire in Sinhala, Tamil, and English was used. The instrument comprised three sections:

Part A collected sociodemographic and surgery-related variables and preoperative anxiety, including gender, age, marital status, ethnicity, monthly income, education, type of

surgery, duration of illness, surgery waiting time, surgical history, patient expectations (scored 1–10), current health status, presence of healthcare workers in the family, and primary caregiver availability at home.

Preoperative anxiety was measured using the validated Amsterdam Preoperative Anxiety and Information Scale (APAIS), which comprises six items assessing anxiety related to anaesthesia and surgery as well as the need for information, each rated on a five-point scale. Preoperative anxiety was included as an independent variable given its well-established association with patient information-seeking behavior and satisfaction in perioperative care (Moerman et al., 1996). APAIS scores were dichotomized (≥ 11 = clinically anxious; < 11 = non-anxious) and examined for associations with awareness and satisfaction outcomes using Chi-square analysis. APAIS was administered on postoperative day two alongside the awareness and satisfaction tools, using retrospective recall of preoperative anxiety, taking into consideration that postoperative day two recall of preoperative anxiety is considered acceptable. This approach is used in perioperative research when prospective preoperative data collection is logistically constrained and has precedent in the literature.

Part B assessed awareness across 32 items spanning three domains: surgical preparation (drug discontinuation, preoperative medications, vital signs monitoring, investigation reports, bowel preparation, personal hygiene, and attire), procedural knowledge (surgery type, fasting,

date/time/duration, and surgical site), and postoperative expectations (diet, pain management, wound care, exercise, drain/catheter care, infection prevention, follow-up, and home care). Each awareness item was scored on a binary scale (Aware / Not Aware / Not Applicable), as the primary objective was to assess whether patients had received and understood key preoperative information, rather than to measure the degree of knowledge. This binary format is consistent with validated tools used in similar perioperative awareness studies (Alito et al., 2020; Rajala et al., 2018).

Part C assessed satisfaction using a five-point Likert scale (1 = Not satisfied at all to 5 = Very satisfied) across ten domains: adequacy of nursing care, responsiveness to questions, health education, nocturnal care, nurse–patient communication, nurse–family communication, caring attitude, emotional support, privacy, and respect for personal preferences.

Content validity was assessed by two subject-matter experts: a consultant surgeon and a consultant orthopaedic surgeon. Pre-testing was conducted on 30 patients (15 per hospital) from wards subsequently excluded from the main study.

Data collection procedure

Data were collected on postoperative day two, ensuring patients had a complete recall of preoperative care while being clinically stable. Written informed consent was obtained prior to each interview. Face-to-face interviews lasted approximately 20–25 minutes. Simultaneous recruitment was conducted at both sites by two research sub-

teams following a standardized data collection protocol to ensure consistency.

Statistical analysis

Continuous variables were summarized as means and standard deviations; categorical variables as frequencies and percentages. Data normality was confirmed through histogram inspection and assessment of skewness and kurtosis. Awareness and satisfaction levels were computed as composite scores.

The awareness score was derived by summing the number of “Aware” responses across all applicable items, divided by the total number of applicable items for each participant, yielding a score expressed on a scale of 0–100. Items marked “Not Applicable” were excluded from both numerator and denominator.

The satisfaction score was computed as the arithmetic mean of all ten domain scores, each rated on a five-point Likert scale, and expressed on a scale of 20–100. Both composite scores were subsequently dichotomized at their respective mean values (awareness: 57.62; satisfaction: 80.79) into low and high categories for inferential analyses.

Chi-square tests were applied to assess associations between independent variables and the dichotomized awareness and satisfaction outcomes. Crude odds ratios (OR) with 95% confidence intervals (CI) were computed.

Data were analyzed using IBM SPSS Statistics version 27. A p-value of less than 0.05 was considered statistically significant.

Ethical considerations

Ethical clearance was obtained from the Ethics Review Committee (ERC) of the Faculty of Medicine, University of Colombo (EC/24/073). Institutional permission was granted by the NHSL and CSTH authorities. All participants provided written informed consent. Participation was entirely voluntary, anonymous, and could be withdrawn at any time without penalty. Patient data were stored in password-protected files and retained for five years before deletion. No third-party data sharing occurred.

Results

Socio-demographic and clinical characteristics

All 430 enrolled patients completed the interview (response rate: 100%). Table 1 summarizes the sociodemographic and clinical profiles. The majority of participants were male (56.7%), with the age group being 50–65 years (36.5%). Most participants were Sinhalese (81.9%), married (74.4%), and held G.C.E Ordinary Level qualifications as their highest educational attainment (35.3%). In terms of monthly income, 42.1% earned over LKR 50,000. Orthopedic surgery was the most common surgical type (26.0%), followed by gastrointestinal (21.4%), urology (14.2%), and gynecology (14.0%). Most patients (55.1%) had experienced their illness for months prior to surgery. The majority waited less than one month for surgery (70.2%), and 92.8% had a primary caregiver available at home. Pre-operative anxiety (APAIS score ≥ 11) was present in 186 (43.3%) participants, with a mean APAIS total anxiety subscale score of 10.4 (SD: 3.2).

Awareness of preoperative nursing care

Table 2 presents item-level awareness findings. Awareness was highest for fasting (99.1%), allergy history-taking (98.8%), surgery date, time, and duration (96.5%), surgical site (95.3%), and surgery type (85.6%). Conversely, marked deficits were found for personal preparation measures: removal of nail polish (94.2% unaware of rationale), jewelry removal (83.3%), wearing surgical attire (77.9%), underwear removal (77.4%), pre-operative bathing rationale (55.6%), and pre-operative drug administration rationale (56.5%). Knowledge regarding postoperative follow-up (67.9% unaware) and home care practices (71.6% unaware) was also considerably limited.

Descriptive analysis of the total awareness score yielded a mean of 57.62% (SD: 17.77; range: 15.63%–100%). After dichotomization at the mean, 224 participants (52.1%) demonstrated low awareness and 206 (47.9%) demonstrated high awareness.

Satisfaction with preoperative nursing care

The detailed item-level satisfaction ratings are presented in Table 3. Most participants rated their nursing care experiences favourably, with mean scores predominantly exceeding 4.0 on a five-point scale. The highest-rated domains were nocturnal nursing care (mean: 4.25, SD: 0.71), clarity of nurse–patient communication (mean: 4.21, SD: 0.61), and adequacy of answers to patient questions (mean: 4.19, SD: 0.73). Relatively lower scores were observed for health education adequacy (mean: 3.72, SD: 0.89) and nurse–family communication

Table 1: Sociodemographic and clinical characteristics of study participants (n = 430)

Variable	Category	Frequency	Percentage (%)
Gender	Male	244	56.7
	Female	186	43.3
Age group (years)	18–33	73	17.0
	34–49	112	26.0
	50–65	157	36.5
	66–80	73	17.0
Marital status	> 80	15	3.5
	Married	320	74.4
	Single	89	20.7
	Widowed	15	3.5
	Divorced/separated	6	1.4
Ethnicity	Sinhalese	352	81.9
	Tamil	43	10.0
	Muslim	32	7.4
	Burgher	3	0.7
Education	GCE O/L	152	35.3
	GCE A/L	121	28.1
	Grade 6–10	66	15.3
	Diploma/Degree/PG	43	10.0
	Grade 1–5 or none	48	11.2
Monthly income (LKR)	> 50,000	181	42.1
	50,000-10,000	168	39.1
	< 10,000	81	18.8
Surgery type	Orthopaedic	112	26.0
	Gastrointestinal	92	21.4
	Urology	61	14.2
	Gynaecology	60	14.0
	Vascular	48	11.2
	Endocrine	36	8.4
	Plastic	21	4.9

Table 1: Sociodemographic and clinical characteristics of study participants (n = 430) (Cont.)

Variable	Category	Frequency	Percentage (%)
Preoperative anxiety	Yes (APAIS ≥ 11)	186	43.3
	No	244	56.7
Duration of illness	Hours	35	8.1
	Days	109	25.3
	Months	237	55.1
	Years	49	11.4
Surgery waiting time	< 1 month	302	70.2
	>1–3 months	77	17.9
	>3–6 months	39	9.1
	> 6 months	12	2.8
Prior surgical history	No prior surgery	170	39.5
	Prior major surgery	161	37.4
	Prior minor surgery	99	23.0
Caregiver at home	Yes	399	92.8
	No	31	7.2
Healthcare worker in family	Yes	108	25.1
	No	322	74.9

APAIS, Amsterdam Preoperative Anxiety and Information Scale; GCE A/L, General Certificate of Education Advanced Level; GCE O/L, General Certificate of Education Ordinary Level; LKR, Sri Lankan Rupee; PG, Postgraduate

(mean: 3.72, SD: 0.91), with 9.6% and 11.9% of patients expressing dissatisfaction in these domains, respectively. The overall mean satisfaction score was 80.79 (SD: 10.85; range: 44–100; median: 80; mode: 80). After dichotomization at the mean, 318 participants (74.0%) exhibited high satisfaction and 112 (26.0%) demonstrated low satisfaction.

Factors associated with awareness of preoperative nursing care

Table 4 presents Chi-square analysis results for factors associated with awareness. Gender was a significant factor, with male patients demonstrating lower awareness

compared to female patients (OR: 0.636, 95% CI: 0.433–0.933, $p = 0.020$). Married patients had lower awareness than unmarried patients (OR: 1.702, 95% CI: 1.093–2.650, $p = 0.018$). Monthly income below LKR 50,000 was associated with lower awareness compared to higher earners (OR: 2.106, 95% CI: 1.427–3.109, $p < 0.001$). Illness lasting less than one month was associated with lower awareness relative to longer durations (OR: 1.810, 95% CI: 1.203–2.723, $p = 0.004$). Patients expecting lower quality nursing care (score $< 5/10$) had markedly lower awareness (OR: 3.367, 95% CI: 1.090–

Table 2: Item-level awareness of preoperative nursing care (n = 430)

Domain / Item	Aware frequency (%)	Unaware frequency (%)	Not applicable frequency (%)
<i>Procedural knowledge</i>			
Surgery type	368 (85.6)	62 (14.4)	—
Fasting requirement	426 (99.1)	4 (0.9)	—
Surgery date, time, and duration	415 (96.5)	15 (3.5)	—
Surgical site	410 (95.3)	20 (4.7)	—
<i>Personal preparation</i>			
Pre-operative drug administration	187 (43.5)	243 (56.5)	—
Monitoring vital signs	317 (73.7)	113 (26.3)	—
Investigation reports	243 (56.5)	187 (43.5)	—
Bowel preparation	157 (36.5)	92 (21.4)	181 (42.1)
Anticoagulant management	111 (25.8)	71 (16.5)	248 (57.7)
Tube feeding requirement	66 (15.3)	71 (16.5)	293 (68.1)
Removal of jewelry	72 (16.7)	358 (83.3)	—
Removal of dentures	130 (30.2)	300 (69.8)	—
Removal of underwear	97 (22.6)	333 (77.4)	—
Removal of nail polish	25 (5.8)	405 (94.2)	—
Rationale for bathing	191 (44.4)	239 (55.6)	—
Wearing surgical attire	95 (22.1)	335 (77.9)	—
Allergy history-taking	425 (98.8)	5 (1.2)	—
<i>Postoperative expectations</i>			
Effects of surgery on life	232 (54.0)	198 (46.0)	—
First oral intake	360 (83.7)	70 (16.3)	—
Pain management	325 (75.6)	105 (24.4)	—
Postoperative treatment	264 (61.4)	166 (38.6)	—
Excretion management	270 (62.8)	160 (37.2)	—
Wound care and self-care	289 (67.2)	141 (32.8)	—
Postoperative exercises	210 (48.8)	220 (51.2)	—

Table 2: Item-level awareness of preoperative nursing care (n = 430) (Cont.)

Early mobilization	284 (66.0)	146 (34.0)	—
Care of catheters/drains	210 (48.8)	131 (30.5)	89 (20.7)
Infection prevention	312 (72.6)	118 (27.4)	—
Follow-up care	138 (32.1)	292 (67.9)	—
Home care practices	122 (28.4)	308 (71.6)	—
Keeping a bystander	320 (74.4)	110 (25.6)	—
Ward meal times	322 (74.9)	108 (25.1)	—
Recommended diet	131 (30.5)	299 (69.5)	—

Table 3: Item-level satisfaction with preoperative nursing care (n = 430)

Satisfaction Item	Not satisfied at all Frequency (%)	Not satisfied Frequency (%)	Neutral Frequency (%)	Satisfied Frequency (%)	Very satisfied Frequency (%)	Mean (SD)
Adequacy of nurses' answers to questions	2 (0.5)	8 (1.9)	45 (10.5)	228 (53.0)	147 (34.2)	4.19 (0.73)
Nocturnal nursing care	1 (0.2)	9 (2.1)	34 (7.9)	224 (52.1)	162 (37.7)	4.25 (0.71)
Health education by nurses	8 (1.9)	33 (7.7)	99 (23.0)	221 (51.4)	69 (16.0)	3.72 (0.89)
Prompt response to patient calls	0 (0.0)	17 (4.0)	46 (10.7)	224 (52.1)	143 (33.3)	4.15 (0.76)
Clarity of nurse–patient communication	1 (0.2)	1 (0.2)	36 (8.4)	260 (60.5)	132 (30.7)	4.21 (0.61)
Nurse–family communication	3 (0.7)	48 (11.2)	94 (21.9)	206 (47.9)	79 (18.4)	3.72 (0.91)
Caring attitude of nurses	0 (0.0)	8 (1.9)	53 (12.3)	239 (55.6)	130 (30.2)	4.14 (0.69)
Emotional support	3 (0.7)	21 (4.9)	81 (18.8)	227 (52.8)	98 (22.8)	3.92 (0.82)
Privacy consideration	2 (0.5)	11 (2.6)	42 (9.8)	252 (58.6)	123 (28.6)	4.12 (0.72)
Respect for personal preferences	1 (0.2)	14 (3.3)	64 (14.9)	267 (62.1)	84 (19.5)	3.97 (0.70)

Table 4: Factors associated with awareness of preoperative nursing care (n = 430)

Variable	Low awareness Frequency (%)	High awareness Frequency (%)	Crude OR (95% CI)	p value
Gender: Male	139 (57.0)	105 (43.0)	0.636 (0.433–0.933)	0.02
Marital status: Married	156 (48.8)	164 (51.2)	1.702 (1.093–2.650)	0.018
Monthly income < LKR 50,000	149 (59.8)	100 (40.2)	2.106 (1.427–3.109)	< 0.001
Duration of illness < 1 month	89 (61.8)	55 (38.2)	1.810 (1.203–2.723)	0.004
Type of surgery (overall)	—	—	—	0.019
Patient expectation score < 5	14 (77.8)	4 (22.2)	3.367 (1.090–10.40)	0.026
Current health: poor/fair	68 (64.8)	37 (35.2)	0.502 (0.318–0.792)	0.003
Healthcare worker in family: Yes	43 (39.8)	65 (60.2)	0.515 (0.331–0.803)	0.003
Caregiver at home: Yes	201 (50.4)	198 (49.6)	0.353 (0.154–0.808)	0.011

OR Odds Ratio; LKR Sri Lankan Rupees

Table 5: Factors associated with satisfaction with preoperative nursing care (n = 430)

Variable	Low satisfaction Frequency (%)	High satisfaction Frequency (%)	Crude OR (95% CI)	p value
Gender: Male	76 (31.1)	168 (68.9)	0.531 (0.337–0.835)	0.006
Duration of illness < 1 month	95 (66.0)	49 (34.0)	1.826 (1.171–2.846)	0.007
Patient expectation score < 5	15 (83.3)	3 (16.7)	16.237 (4.604–57.26)	0.001

OR Odds Ratio; CI Confidence Interval

10.40, $p = 0.026$). Poor or fair current health status was negatively associated with awareness (OR: 0.502, 95% CI: 0.318–0.792, $p = 0.003$). Having a healthcare worker in the family was associated with higher awareness (OR: 0.515, 95% CI: 0.331–0.803, $p = 0.003$), as was having a caregiver available at home (OR: 0.353, 95% CI: 0.154–0.808, $p = 0.011$). Surgery type ($p = 0.019$) also showed a significant association, with urology patients demonstrating notably higher awareness (OR: 0.35). Age, ethnicity, education, preoperative anxiety, surgery waiting time, and prior surgical history did not reach statistical significance ($p > 0.05$).

Factors associated with satisfaction with preoperative nursing care

Three variables showed statistically significant associations with satisfaction (Table 5). Male gender was associated with lower satisfaction compared to female gender (OR: 0.531, 95% CI: 0.337–0.835, $p = 0.006$). Illness duration of less than one month was associated with lower satisfaction (OR: 1.826, 95% CI: 1.171–2.846, $p = 0.007$). A patient expectation score below 5 was strongly associated with low satisfaction (OR: 16.237, 95% CI: 4.604–57.26, $p = 0.001$). Age, marital status, ethnicity, income, education, surgery type, preoperative anxiety, waiting time, prior surgical history, health status, healthcare worker in family, and caregiver availability were not significantly associated with satisfaction.

Discussion

This study provides the first empirical account of patient awareness and satisfaction concerning preoperative nursing care in Sri

Lanka, contributing original evidence from a setting previously absent from the literature. The findings reveal a nuanced picture: while overall satisfaction was high and many clinical care procedures were well communicated, critical gaps in patient understanding of personal preparation practices persist.

Awareness of preoperative nursing care

The mean awareness score of 57.62% indicates that, overall, just over half of patients had adequate awareness of preoperative nursing care. This figure is consistent with findings from Ethiopia, where only 36.6% of adult surgical patients received good-quality perioperative information (Alito et al, 2020), and aligns with broader literature suggesting that physical preparation routines often overshadow patient education (Lee & Lee, 2013).

Awareness was markedly high for procedural items directly communicated by nurses, such as fasting instructions (99.1%), allergy history-taking (98.8%), surgery date and site (96.5% and 95.3%, respectively), demonstrating that nurses effectively convey clinically critical pre-operative information. However, the rationale behind personal preparation measures was poorly understood. Only 5.8% of patients knew why nail polish was to be removed, 16.7% understood the reason for jewelry removal, and 22.6% understood underwear removal. This pattern echoes earlier findings that surgical patients are often instructed to comply with procedures without receiving explanatory information, resulting in passive acceptance

rather than informed participation (Blöndal et al, 2022).

Such gaps have direct clinical implications. Knowledge of the reason for premedication (understood by only 43.5% of recipients) is important for adherence and anxiety management. Understanding the rationale for bowel preparation, fasting, and personal hygiene contributes to procedural compliance and infection risk reduction (Bopp et al., 2011; Currie et al., 2011). The observed gaps may partly be explained by high nurse-to-patient ratios at high-volume tertiary institutions, which limit the time available for individualized patient education (Murdock, & Griffin, 2013).

Postoperative education covering follow-up care (67.9% unaware) and home care (71.6% unaware) was also notably deficient. Evidence suggests that inadequate postoperative information leads to unexpected pain, fatigue, and poor self-care capability after discharge (Chaudhary & Shankar, 2016), making this an important target for improvement.

Satisfaction with preoperative nursing care

The overall satisfaction rate of 74.0% compares favorably with some studies, notably the 68.7% reported in Western Amhara, Ethiopia (Alemu et al., 2023) and 61.9% in Sohag, Egypt (Findik et al, 2010), and aligns closely with the 74% reported from Gondar University Comprehensive Specialized Hospital in Ethiopia (Simegn et al., 2021). However, it falls below figures reported from Addis Ababa public hospitals (84.6%) (Deressa et al., 2022), China

(95.65%) (Du et al., 2018), and Ethiopia's University of Gondar (98.1%) (Gebremedhn et al., 2017).

The highest satisfaction scores were for nocturnal care (4.25/5) and nurse–patient communication clarity (4.21/5), indicating that nurses in these institutions performed well in their core interpersonal and clinical duties. Emotional support (3.92/5) and family communication (3.72/5) received comparatively lower scores. This is consistent with international evidence identifying family communication and health education as priority areas for improvement in perioperative nursing (Lake et al., 2017; Hepner et al., 2004). Interpersonal aspects of care, including kindness, responsiveness, and privacy, were well regarded, mirroring findings from multiple international studies that place relational dimensions of nursing care at the core of patient satisfaction (Ferreira et al., 2023; Hermansyah et al., 2026).

Associated factors

The association of gender with both awareness and satisfaction is a notable finding. Female patients demonstrated higher awareness and satisfaction than male patients, a pattern also reported in previous studies (Maurice-Szamburski et al., 2013) and potentially linked to greater healthcare engagement and health literacy among women in South Asian contexts.

Monthly income emerged as a significant determinant of awareness, with lower-income patients demonstrating less understanding of preoperative care. This may reflect lower health literacy, reduced access

to preparatory health information, or less assertive health-seeking behavior in lower socioeconomic groups, findings consistent with Ethiopian and international evidence (Alito et al., 2020; Dessalegn et al., 2022).

The strong association between patient expectations and both outcomes underscores the role of expectation management in perioperative care. Patients with lower expectations scored substantially lower on both awareness and satisfaction, suggesting a cyclical relationship: lower expectations may reduce engagement with nursing education, limiting awareness, while unmet or unformed expectations reduce satisfaction with care received (Trinh et al, 2019; Ataro et al., 2014).

The presence of a healthcare worker in the family was positively associated with awareness, plausibly because patients with medically informed social networks receive supplementary preparation. Similarly, caregiver availability at home was associated with higher awareness, possibly reflecting greater receptivity to education when patients anticipate structured post-discharge support.

Duration of illness was inversely related to awareness and satisfaction. Patients with shorter illness durations often present more acutely and may have had less time to engage with nursing education and less familiarity with hospital procedures, resulting in lower awareness and satisfaction.

Implications

The findings of this study must be interpreted within the specific structural realities of Sri Lanka's tertiary healthcare system. The NHSL and CSTH collectively manage over

17,000 major surgical admissions annually, placing them among the highest-volume government surgical units in South Asia. This exceptionally high patient load, combined with constrained nursing resources, creates conditions in which the time available for individualized preoperative education is inherently limited. The awareness gaps identified in this study particularly around personal preparation measures such as nail polish removal, jewelry removal, and surgical attire, are plausibly attributable, at least in part, to this systemic time pressure rather than solely to nurses' willingness or competence. Addressing these gaps therefore requires not only improvements in individual nursing practice but also organizational and policy-level interventions that create enabling conditions for patient education. Cultural expectations regarding healthcare communication further shape this context: in Sri Lanka, as in many South Asian societies, patients often adopt a passive role and defer to clinical authority without actively seeking explanations for procedures. Culturally sensitive communication strategies that explicitly invite questions and verify patient comprehension are therefore important adaptations for the Sri Lankan perioperative nursing environment.

The findings support several concrete recommendations for clinical nursing practice. Structured preoperative education should be formally integrated into the surgical admission workflow, using standardized checklists covering all key awareness items to ensure consistent delivery across nurses and shifts. Nurse-patient communication training should emphasize explanatory communication: nurses should

be equipped not only to instruct patients on what to do, but to explain the rationale behind each preparation measure. Multilingual patient education materials including visual aids and pictorial guides in Sinhala, Tamil, and English should be developed and provided at the bedside to reinforce verbal education. Family-inclusive communication should be prioritized, given the relatively low satisfaction scores observed for nurse–family communication; engaging caregivers in preoperative education sessions may improve patient preparedness and post-discharge self-care compliance. Finally, continuous professional development programmes for perioperative nurses should incorporate competency-based modules on patient education, communication, and health literacy assessment.

At the policy level, this study's findings provide an evidence base for targeted interventions within Sri Lanka's public healthcare system. The Ministry of Health and hospital administrations at the NHSL and CSTH should incorporate preoperative patient education standards into institutional perioperative nursing policies, establishing minimum requirements for information delivery prior to elective major surgery. Nurse staffing ratios in high-volume surgical wards merit urgent review, as time constraints represent a structural barrier to education delivery that cannot be addressed through training alone. Quality assurance mechanisms, including periodic patient satisfaction audits and preoperative awareness surveys, should be institutionalized as routine components of perioperative care governance. The sociodemographic disparities in awareness

and satisfaction observed in this study underscore the need for equity-sensitive approaches to patient education, particularly targeting lower-income patients and those presenting acutely, to ensure that improvements in preoperative care quality are equitably distributed across the surgical population.

Strengths and limitations

This study is the first of its kind in Sri Lanka, conducted across two high-volume tertiary institutions with a robust sample size ($n = 430$), a 100% response rate, and a content-validated, multilingual instrument. The choice to interview patients on postoperative day two optimized recall while ensuring clinical stability.

However, several limitations warrant consideration. The cross-sectional design precludes causal inference. Exclusion of ICU-admitted patients and patients undergoing emergency, cardiothoracic, neurosurgical, and nephrology procedures limits applicability to these populations. Self-reported awareness may be subject to recall and social desirability bias. The APAIS was administered postoperatively alongside the other study instruments, requiring participants to retrospectively recall their preoperative anxiety state. Although the short recall interval of approximately 48 hours reduces memory decay, postoperative experiences such as surgical outcome and pain may have influenced participants' recollection of their preoperative emotional state, potentially introducing recall bias. Additionally, the use of consecutive (non-probability) sampling, while pragmatic in a clinical setting, may introduce selection bias

and limit the statistical generalizability of findings beyond the study wards and hospitals. Findings should therefore be interpreted as representative of patients presenting to high-volume government teaching hospitals in the Colombo District rather than all Sri Lankan surgical populations. Future longitudinal and multicenter studies are needed to establish causal pathways and improve generalizability across Sri Lanka's diverse healthcare context, and should administer the APAIS prospectively on the day of admission to obtain temporally valid anxiety measurements.

Conclusions

This study demonstrates that, while most adults undergoing major surgery at government teaching hospitals in the Colombo District reported high satisfaction with preoperative nursing care, significant deficits in patient awareness, particularly regarding personal preparation procedures, persist. Three variables (gender, duration of illness, and patient expectations) were consistently associated with both awareness and satisfaction, whereas additional sociodemographic and clinical factors were associated with awareness alone.

To improve the quality of preoperative nursing care, health authorities and nurse educators should prioritize the implementation of standardized, structured preoperative education protocols that explicitly address the rationale behind all nursing procedures. Visual aids, multilingual educational materials, and interactive nurse-led sessions should be incorporated to promote patient engagement. Nurse-to-

patient staffing ratios merit review to ensure adequate time for patient education. Training programmes should enhance nurses' communication skills, particularly for health education delivery and family-inclusive communication. Given the significant role of patient expectations, individualized goal-setting conversations prior to surgery may help align expectations with realistic care delivery standards.

Future research should evaluate the effectiveness of educational interventions on awareness and satisfaction outcomes, examine preoperative care quality at hospitals outside the Colombo District, and investigate the long-term impact of preoperative nursing care quality on surgical recovery and patient outcomes in the Sri Lankan context.

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Conflict of interest

The authors declare that they have no conflicts of interest.

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