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Bridging the gap: evaluation of preoperative patients' education by comparing expectations and real-perioperative surgical experiences: a mixed-methods descriptive cross-sectional study

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Abstract

Background Educating patients regarding surgery is an important aspect of the preoperative process. It helps individuals answer their queries, reduce anxiety, and improve overall satisfaction with the surgical experience.

Objective To compare patients' expectations with their real-perioperative surgical experiences. Also, to evaluate the effectiveness of preoperative education and, thus, improve the doctor-patient relationship.

Methodology Through consecutive sampling, 65 adult patients were selected from the ENT department of Khyber Teaching Hospital. Preoperative education was provided to all the subjects using a 25-point pro-forma, and their queries were addressed. Postoperatively, all participants were interviewed regarding their expectations and real perioperative surgical experiences. The gaps were noted, and participants were asked about their preferences for addressing such gaps in future interactions. Postoperatively, patients were asked to give comments on how a certain part of preoperative education could have been better delivered.

Results Among the 65 patients, 28 (43.1%) were male, and 37 (56.9%) were female. The majority (38.5%) had a primary/secondary school education. Eight (12.3%) patients had ear surgery, 19 (29.2%) had nose surgery, and 38 (58.5%) had throat surgery. Almost 39 (60%) patients had preoperative fear/anxiety. After preoperative education, 17 (26.2%) patients experienced perioperative fear/anxiety, which was a significant reduction ($p=0.001$). Preoperative anxiety was greater in females ($M: F=8:13, p=0.00$), while perioperative anxiety was comparable among both genders after patient education ($M: F=5:12, p=0.18$). The greatest dissatisfaction was noted regarding the surgical schedule (33.8%), range of motion (16.9%), deep breathing exercises (13.8%), and preoperative fasting (12.3%). Most importantly, patients' comments were noted, when they were asked to suggest a better way to educate preoperatively in their respective area of dissatisfaction. Patients appreciated detailed explanations with practical

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demonstrations for range of motion exercises. One patient complained about no clear instructions on postoperative resumption of snuff.

Conclusion Preoperative patient education should be a two-way process involving active participation and continuous feedback. By educating patients properly through a multidisciplinary approach, healthcare providers can further enhance patient satisfaction, alleviate anxiety, and improve the overall quality of care.

Keywords Patient education, Patient expectations, Surgical counseling, Patient-centered care, Communication skills in healthcare, Quality of healthcare

Background

Patient education is essential for providing optimal patient care in all healthcare sectors. It leads to changes in knowledge, attitudes, and behavior, with the ultimate goal of improving therapeutic outcomes [1]. Effective patient education recognizes patients' needs and goes beyond knowledge delivery to instill major behavioral changes in patients [2]. Education during the preoperative phase helps to prepare patients for coming surgical experience by offering access to health information, postoperative psychosocial support, and the ability to relieve surgical anxiety [3].

Preoperative education included information about the surgical process, preoperative preparation, postoperative expectations, anesthesia, and prospective results [4]. Preoperative instruction has been shown to reduce postoperative problems, shorten hospital stay, and increase patient and family satisfaction [5].

The significance of preoperative education is consistent with broader healthcare programs such as shared decision making (SDM) and enhanced recovery after surgery (ERAS) protocols. SDM involves patients in their healthcare decisions, promoting a collaborative approach that improves patient engagement and satisfaction [6]. ERAS protocols use evidence-based perioperative care to reduce physiological stress during surgery, improve recovery periods, and shorten hospital stays [7]. Both SDM and ERAS stress the significance of preoperative education in preparing patients for surgery and improving outcomes [5, 7].

Preoperative education is a critical component of these patient-centered care paradigms. Healthcare practitioners can minimize fear, increase knowledge, and improve overall patient experiences by informing patients about what to expect before, during, and after surgery [2].

Despite its acknowledged benefits, many institutions continue to use obsolete preoperative techniques that may not properly serve patients' demands [4]. Traditional surgical care components, such as overnight fasting, can aggravate the stress response and impede postoperative recovery. Modern perioperative therapies seek to control the surgical stress response and mitigate its deleterious consequences, accentuating the significance of upgrading preoperative patient education strategies to match

current evidence-based standards [7]. Healthcare practitioners can play an important role in reinforcing patient education on treatment, which can boost patient confidence, their active involvement, and adherence with treatment plans [8]. Effective two-way communication between patients and physicians lowers knowledge asymmetry and promotes collaborative decision-making, boosting patients' confidence and trust in their doctors [9]. This trust is essential for successful preoperative education because patients who trust their healthcare professionals are more likely to participate and adhere to their treatment plans [8].

Our research focused on the interaction between several modifying factors, as stated in the Health Belief Model (HBM), and preoperative anxiety. Psychosocial and psychological factors play an important role in preparing patients for surgery, influencing their emotional well-being and physiological reactions. As previously hypothesized and verified by research, anxiety can modify the body's stress response, influencing immune function and postoperative recovery outcomes [10].

Preoperative patient education is a critical component of surgical care. It has the potential to greatly improve clinical outcomes and patient satisfaction. This investigation aimed to assess the effectiveness of preoperative education provided to patients. Areas with higher levels of dissatisfaction should be identified, and recommendations for future studies should be given. This study is unique because of its primary focus on the perceptions of patients after a thorough preoperative education session and the identification of which additional preoperative information the patient expects, be it a practical demonstration or a different choice of words for communication. Thus, the boundaries of patient satisfaction should be stretched in light of the guidance provided by the patients.

Methodology

Study design and sample

This descriptive cross-sectional mixed-method study aimed to assess patients' experiences with preoperative education and postsurgery satisfaction levels using both the qualitative and quantitative elements.

Table 1 Sociodemographic characteristics of the participants and features about their surgery (N=65)

Characteristics	N	%
Gender		
Male	28	43.1
Female	37	56.9
Age		
< 20 Years Old	15	23.1
21–30 Years Old	27	41.5
31–40 Years Old	14	21.5
41–50 Years Old	4	6.2
> 50 Years Old	5	7.7
Education		
No formal education	19	29.2
Primary/Secondary School	25	38.5
High School	18	27.7
Bachelors/Higher	3	4.6
Type of Surgery		
Nose	19	29.2
Ear	8	12.3
Throat	38	58.5
Length of Hospital Stay		
1 Day	64	98.5
More than 1 Day	1	1.5
Prior Hospital Experience		
Yes	22	33.8
No	43	66.2

Consecutive sampling was employed, and 65 patients were selected from the ENT department of Khyber Teaching Hospital, Peshawar, Pakistan from October 9th to November 2nd, 2023. The criteria included competent patients who consented to undergo surgery, while non-consenting individuals were excluded.

Data collection

The data were collected using the “Patient Data Collection Form” (PDCF), which was developed by researchers based on a thorough literature review [2]. The form comprised 25 questions focusing on preoperative education, patient demographics, and previous surgical experiences. During data collection, patients who met the inclusion criteria were informed about the purpose and procedure of the study. The researchers educated and interviewed the patients face-to-face. Comments provided by the patients were transcribed verbatim. The interview duration was approximately 10–15 min preoperatively and 3–5 min postoperatively for each patient. In addition to

Table 2 Preoperative and perioperative anxiety

Preoperative Anxiety	Reason	N	%
No		26	40
Yes		39	60
	Lack of Information	4	10.25
	Lack of Experience	16	41.02
	Both	19	48.71
Preoperative Anxiety			
No		48	73.8
Yes		17	26.2
	Lack of Information	4	23.5
	Lack of Experience	9	52.9
	Both	4	23.5

interviews, group discussions were held to facilitate a deeper understanding of patients’ perspectives.

Analysis

The transcribed data from interviews and group discussions were analyzed using thematic analysis techniques manually. Comments were judged and categorized based on the patients’ responses into three levels of satisfaction: satisfied, partially satisfied, and not satisfied. The thematic data derived from the qualitative analysis were then quantified as frequencies and percentages for each satisfaction category in each point of PDCF using SPSS software. Additionally, SPSS was used to analyze the descriptive data of the sample, providing an overview of demographic characteristics and other relevant variables. To evaluate the impact of the preoperative education on perioperative fear and anxiety, a chi-square test was applied.

Results

A cohort of 65 patients was included in this study, the descriptive and clinical details of which are provided in Table 1 while the various causes of anxiety in the preoperative and perioperative periods are described in Table 2.

Table 3 depicts a gender-based analysis regarding the impact of patient education on anxiety, showing a significant reduction in females as compared to males.

Satisfaction status in all the different domains of preoperative education is provided in Table 4. Figure 1 serves as a visual summary of the satisfaction status.

Some of the remarks given by patients are provided below; a curious remark was from a patient who said

Table 3 Comparing gender and preoperative anxiety

Variable		Any Peri-operative Fear or Anxiety n (%)		Total	Chi-Square	P value
		No	Yes			
Any Preoperative Fear or Anxiety No n (%)	No	25 (38.46)	1 (1.53)	26 (40)	11.16	0.001
	Yes	23 (35.38)	16 (24.61)	39 (60)		
Total		48 (73.84)	17 (26.15)	65 (100)		

Table 4 Findings of informing the participants about their surgery (N=65)

Preoperative Information And Education Findings	N	%
Type Of Surgery And Surgery Procedure/Method		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-
Treatment Options Other Than Surgery		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-
Performer Of Surgery		
Satisfied	50	76.9%
Partially Satisfied	10	15.4%
Dissatisfied	5	7.7%
Risks Of Surgery		
Satisfied	60	92.3%
Partially Satisfied	3	4.6%
Dissatisfied	2	3.1%
Day, Time And Duration Of Surgery		
Satisfied	41	63.1%
Partially Satisfied	2	3.1%
Dissatisfied	22	33.8%
Success Rate Of Surgery		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-
Postoperative Life (The Effect Of Surgery On Patient's Life)		
Satisfied	59	90.8%
Partially Satisfied	6	9.2%
Dissatisfied	-	-
Postoperative Employment Status, Changes In Work/ Home Life		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-
Postoperative Treatment, Follow-Up/Monitor Frequency		
Satisfied	64	98.5%
Partially Satisfied	1	1.5%
Dissatisfied	-	-
Postoperative Hospital Stay		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-
Postoperative Service/Intensive Care Process		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-
Preoperative Fasting		
Satisfied	55	84.6%
Partially Satisfied	2	3.1%
Dissatisfied	8	12.3%
Preparing For Surgery, Wearing Apron, Removing Jewelry, Nail Polish Or Make-Up, Transfer To The OT		
Satisfied	65	100%
Partially Satisfied	-	-

Table 4 (continued)

Preoperative Information And Education Findings	N	%
Dissatisfied	-	-
Type Of Anesthesia		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-
First Meal And Drink After Surgery		
Satisfied	60	92.3%
Partially Satisfied	4	6.2%
Dissatisfied	1	1.5%
Standing After Surgery		
Satisfied	59	90.8%
Partially Satisfied	5	7.7%
Dissatisfied	1	1.5%
Deep Breathing And Coughing Exercises/How And When To Do PEEP		
Satisfied	37	56.9%
Partially Satisfied	19	29.2%
Dissatisfied	9	13.8%
ROM (Positioning In Bed) Exercises		
Satisfied	36	55.4%
Partially Satisfied	18	27.7%
Dissatisfied	11	16.9%
Postoperative Pain And Treatment		
Satisfied	60	92.3%
Partially Satisfied	5	7.7%
Dissatisfied	-	-
First Bath After Surgery		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-
Postoperative Catheters/Drains And Precautions		
Satisfied	64	98.5%
Partially Satisfied	1	1.5%
Dissatisfied	-	-
Postoperative Safety Precautions, Fall, Armband, Hygiene And Hospital Rules		
Satisfied	63	96.9%
Partially Satisfied	2	3.1%
Dissatisfied	-	-
Post-Discharge Home Care Practices And Precautions		
Satisfied	59	90.8%
Partially Satisfied	6	9.2%
Dissatisfied	-	-
Follow-Up After Discharge		
Satisfied	65	100%
Partially Satisfied	-	-
Dissatisfied	-	-

there were no instructions regarding the usage of Nas-war/Snuff. Bringing to our notice to incorporate instructions regarding the use of narcotics/other drugs in future preoperative education protocols.

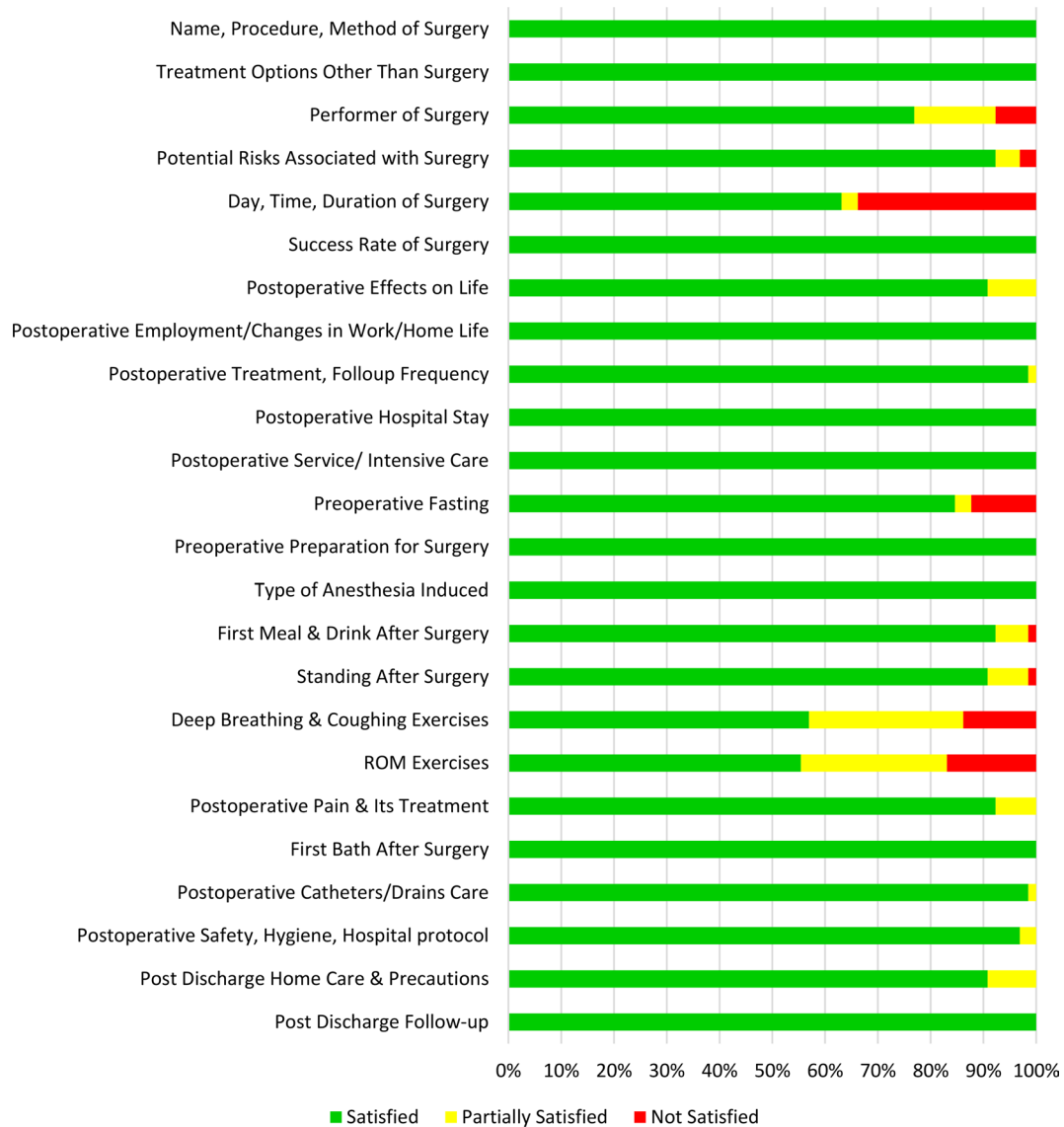


Fig. 1 Visual summary of satisfaction levels in the various areas of patients’ education. Note: Patient satisfaction levels with preoperative education and actual experience showing postoperative satisfaction in some aspects (treatment, follow-up, hospital stay) rated highest, while preoperative preparation and fasting instructions showed lowest satisfaction

Patient no. 17-Regarding ROM and deep breathing exercises, ‘I had pain and cough. I was informed about exercises, but a practical demonstration at that time would have been better.’

Patient no. 37-Regarding the induction of anesthesia, ‘everything went blurred. My heart beat raised. I was told that it will be like sleeping, but it was not’.

Patient no. 38-Post-Tonsillectomy ‘The surgery took longer than I was told. I felt pain while talking, which was not mentioned.’

Patient no. 39-Due to time mismanagement, ‘I had a fast of almost 10 hours. I was told to stand a few hours after surgery, but nobody told me that I would feel dizzy while doing so.’

Patient no. 42-Due to mismanagement regarding timing, ‘I had a fast of 11 hours, which was way too long than I was told. The whole surgery took more time than previously mentioned. Nothing was mentioned regarding change in voice which I am feeling.’

Patient no. 45-‘No one told me when I could resume smoking and take Naswar [Snuff] after surgery.’

Patient no. 46-‘When I woke up, I felt feverish with a burning sensation all over my face.’

Discussion

Informed consent includes information disclosure along with the recommendation of a plan of care, patient education, voluntary decision-making, and authorization to

proceed with the plan of care [11]. This research investigated the effect of structured preoperative education on patient anxiety levels, satisfaction with the information supplied, and perceived knowledge gaps among people undergoing surgery. The findings provide important insights into the efficacy of current preoperative education programs and suggestions for improvement.

Preoperative anxiety is a typical concern for surgical patients and has a substantial impact on their perioperative experience. Our findings revealed that a significant majority of patients (60%) experienced preoperative worry, which was mostly caused by a lack of information (10.25%), a lack of prior experience (41.02%), or both (48.71%). These findings highlight the value of personalized preoperative education in reducing anxiety by addressing individual patient concerns.

These results align with earlier research [7] and support the idea that well-informed patients are better prepared to deal with postoperative stressors. Effective patient education has also been found to reduce readmission and complication rates [12].

The study revealed a considerable gender gap in anxiety levels, with females being more likely to have preoperative anxiety than males (83.8% vs. 28.6%). This gender-specific variance in anxiety responses during surgical trips emphasizes the significance of personalizing educational efforts to meet individual psychological requirements. This conclusion is consistent with the findings of Kennedy and Parish (2021), who reported sex-related differences in postoperative stress responses [6]. However, this study revealed that although preoperative anxiety levels were greater in females, perioperative anxiety was significantly lower in females than in males [Table 3] ($p=0.001$). This clearly demonstrates the importance of adequate patient education in nullifying sex differences. Although these results support combat anxiety, there is no evidence to suggest that preoperative education has any effect on decreasing depression levels. There is a need to employ additional strategies to ensure emotional wellbeing [13].

While overall satisfaction with preoperative information was high (100%) for most factors, such as surgery type, treatment alternatives, success rates, and postoperative care instructions, other regions indicated lower levels of satisfaction. Dissatisfaction was particularly high with the time and duration of surgery (33.8%) and prior fasting instructions (12.3%). These findings are consistent with those of Forner et al. (2020), who emphasized the crucial link between information adequacy and patient satisfaction [5]. Educational interventions have also been noted to improve satisfaction levels among family members [13].

The findings of this study have multiple ramifications for clinical practice. First, improving the clarity and

comprehensiveness of preoperative teaching materials can greatly reduce anxiety and increase patient satisfaction. Second, a patient-centered approach that takes into account demographic aspects such as gender and educational background is critical for effectively tailoring educational interventions [4]. Patients commonly express concerns related to surgical procedures, including fears about equipment, anesthesia, surgical complications, and postsurgical outcomes [14]. Third, incorporating practical demonstrations and interactive sessions into preoperative education may address patient discontent with specific areas of care, such as posture exercises and postoperative protocols. The diverse ways patients approach their healthcare presents difficulties for public engagement efforts and healthcare providers, underscoring the importance of personalized and nuanced approaches to patient treatment [15].

Furthermore, continuing the review and revision of preoperative education methods are critical for meeting changing patient needs and expectations. Collaboration among healthcare practitioners, patients, and caregivers is critical to ensuring that instructional content remains current and accessible. Trust and confidence in healthcare professionals are important for patients, and miscommunication or a perceived lack of care can impact patient-professional relationships [14]. Understanding patients' expectations across three domains, namely, health outcomes, individual clinicians, and the healthcare system, is essential for the delivery of effective patient-centered care [16]. Patients often face challenges in adjusting to new hospital environments, leading to increased anxiety and worry, which underscores the importance of thorough preoperative education [14]. Research has shown that patients' understanding of provided information is often limited, hence making it more desirable to include both written and oral forms of informed consent [17].

Last, it is not just about healthcare providers' priorities because the work environment and institutional focus on task-centered care, rather than emphasis on patient-centered care, are significant barriers to addressing patients' needs [18]. Tran recently proposed the person-centered communication model of care (PCCMC), which involves establishing rapport, followed by information exchange, shared decision making and eventually discussing care outcomes [19]. Such models, though very effective in some settings, remain ineffective in settings where staff shortages, increased workloads, burnout and limited time hamper patient-centered communication [18]. However, communication skills training has been found to improve patient-centered communication without increasing consultation duration [20]. All these findings,

while highlighting the need for further studies, emphasize the need for efforts at both the institutional and individual levels.

Limitations

While the study offers useful insights, it is not without limits. The sample size was small and restricted to a single population, perhaps restricting generalizability. Furthermore, relying on self-reported measures and interviewees' interpretation may result in response bias and collector bias, respectively. Future studies should include larger, more diverse patient populations to validate these findings in a variety of healthcare settings. Longitudinal studies could also examine the long-term effects of preoperative education on patient outcomes after the procedure.

Conclusion

This study emphasizes the importance of systematic preoperative education for reducing anxiety, increasing patient satisfaction, and improving surgical results. Healthcare professionals can foster a supportive environment that allows patients to make informed decisions and actively engage in their treatment journey by addressing particular patient concerns and using evidence-based communication skills. Continued research and innovation in preoperative education are critical for enhancing patient-centered care and surgical outcomes.

Author contributions

ZA (Zeeshan Ali) and ZA (Zainab Ahsan) collected the data, wrote the initial draft, and also assisted in writing the final draft. NL designed the study and analyzed the data, provided feedback on the initial draft. ID provided feedback on all the steps and wrote the final draft. This final manuscript is read and approved by all the authors.

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Data availability

All the data presented and analyzed in this study is available and can be accessed by contacting the authors. The data in compliance with ethical standards has been anonymized so as to protect patient confidentiality.

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from the Institutional Research and Ethical Review Board of Khyber Medical College, Peshawar, Pakistan which issued approval #496/DME/KMC. All participants were thoroughly informed about the study's purpose, and informed consent was obtained from each participant. Participants were assured that their information would remain confidential. Researchers were trained to assist as needed. Postoperative interviews were conducted in a manner that respected the patients' recovery and privacy. By following these ethical guidelines, the study aimed to protect the dignity, rights, and well-being of all volunteers, thus ensuring the research's integrity and ethical conduct.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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