ORIGINAL ARTICLE

# Evaluation of Patient Satisfaction and Pre-Anesthesia Consultation Practices in a University Hospital: A Cross-Sectional Study

## Évaluation de la satisfaction du patient et des pratiques de consultation pré-anesthésique dans un hôpital universitaire : Une étude transversale

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**Abstract**

**Background**: The Pre-Anesthesia Consultation Clinic (PACC) plays a vital role in perioperative care, assessing the' health status of patients, optimizing comorbidities, and providing personalized information on anesthesia. In Tunisia, preoperative anesthesia consultation has been mandatory for all elective surgeries since 2015. This study aimed to evaluate patient satisfaction and the impact of consultation on preoperative anxiety.

**Methods**: We conducted a single-center cross-sectional observational study over one month (January 2025) in the PACC of a Tunisian university hospital. Adults classified as ASA I to III scheduled for elective surgery were included. Data were collected through structured interviews using a questionnaire that covered demographics, medical history, consultation process, complementary testing, clinic environment, and satisfaction, including anxiety evaluation.

**Results**: Out of 125 patients, 83.2% reported being satisfied with the consultation. Satisfaction was significantly associated with factors such as education level, type of surgery, clinic accessibility, waiting room crowding, staffing adequacy, respect for patient privacy, time spent with the physician, and the opportunity to ask and receive adequate answers to questions. Furthermore, 77.6% of patients reported reduced anxiety following the consultation. Younger age, regional anesthesia planning, inadequate privacy, and poor communication were significantly associated with persistent anxiety.

**Conclusion**: The pre-anesthesia consultation effectively contributes to patient satisfaction and reduction in anxiety. However, targeted improvements in patient education, environment, and communication are essential to enhance quality of care and patient-centered outcomes.

**Key words**: Evaluation, Satisfaction, Pre-anesthesia consultation, Cross-sectional study

**Résumé**

**Contexte** : La Clinique de Consultation Pré-Anesthésique (PACC) joue un rôle essentiel dans les soins périopératoires, évaluant l'état de santé des patients, optimisant les comorbidités et fournissant des informations personnalisées sur l'anesthésie. En Tunisie, la consultation préopératoire en anesthésie est obligatoire pour toutes les interventions chirurgicales électives depuis 2015. Cette étude visait à évaluer la satisfaction des patients et l'impact de la consultation sur l'anxiété préopératoire.

**Méthodes** : Nous avons mené une étude observationnelle transversale monocentrique sur un mois (janvier 2025) dans le PACC d'un hôpital universitaire tunisien. Les adultes classés ASA I à III programmés pour une chirurgie élective ont été inclus. Les données ont été collectées lors d'entretiens structurés à l'aide d'un questionnaire couvrant la démographie, l'historique médical, le processus de consultation, les tests complémentaires, l'environnement clinique et la satisfaction, y compris l'évaluation de l'anxiété.

**Résultats** : Sur 125 patients, 83,2 % ont déclaré être satisfaits de la consultation. La satisfaction était significativement associée à des facteurs tels que le niveau d'éducation, le type de chirurgie, l'accessibilité de la clinique, la surpopulation dans les salles d'attente, la suffisance du personnel, le respect de la vie privée des patients, le temps passé avec le médecin, ainsi que la possibilité de poser et d'obtenir des réponses adéquates aux questions. De plus, 77,6 % des patients ont rapporté une réduction de l'anxiété après la consultation. Un âge plus jeune, la planification d'une anesthésie régionale, un manque d'intimité et une mauvaise communication étaient significativement associés à une anxiété persistante.

**Conclusion** : La consultation pré-anesthésie contribue efficacement à la satisfaction des patients et à la réduction de l'anxiété. Cependant, des améliorations ciblées dans l'éducation des patients, l'environnement et la communication sont essentielles pour améliorer la qualité des soins et les résultats centrés sur le patient.

**Mots clés**: Évaluation, Satisfaction, Consultation pré-anesthésie, Étude transversale

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# Introduction

Pre-anesthesia consultation clinics (PACCs) are integral components of modern healthcare systems, designed to optimize patient readiness for elective surgeries and improve perioperative outcomes. By providing comprehensive assessments, personalized anesthesia plans, and adequate patient education, PACCs contribute significantly to patient safety and satisfaction [1–4]. Despite their benefits, challenges such as resource limitations, overcrowding, and insufficient staff hinder optimal functioning in many settings [5–7].
In Tunisia, PACCs became mandatory for elective procedures in 2015, highlighting the importance of pre-anesthetic evaluations conducted by anesthesiologists [6]. However, there are limited data on the quality and effectiveness of these services in local contexts. This study aimed to evaluate the current state of PACC practices in our university hospital, focusing on patient experience, satisfaction, and the impact of consultations on preoperative anxiety. In addition, we sought to identify potential gaps and propose recommendations for quality improvement

# Methods

## Study design

This is an observational, cross sectional, single-centre study conducted over one month (January 2025) in the Pre-Anesthesia consultation clinic at the University Hospital in Tunisia.

## Inclusion criteria

We included, after oral and written agreement, patients over 18 years of age. ASA I, II, or III class scheduled for Elective surgery after a pre-emotherapy evaluation performed at the clinic by an anesthetist doctor (resident or senior).

## Exclusion criteria

Patients under 18 years of age, patients in the ASA IV class or older, patients scheduled for urgent surgical operations, and pre-anesthesia evaluations at the bedside were excluded

## Data Collection

A questionnaire was developed for data collection and was manually filled out by direct interview with patients in the clinic after their consultation. The questionnaire used in this study was made considering the “SFAR” recommendations on “Quality Assurance”[10], it proposes quality indicators to assess practice. Other elements were considered based on a review of similar articles [11,12], and the questionnaire consisted of six parts.

1. Demographics of patients
2. Medical history
3. Complementary tests
4. The consultation process
5. The clinic environment
6. Quality of consultation and satisfaction of patients

For Satisfaction we used a yes or no question and a 5-point scale with possible answers as follows:(5): Very Satisfied, (4): Satisfied, (3): Neither satisfied nor dissatisfied, (2): Dissatisfied and (1) Very dissatisfied

## Statistical analysis

The statistical analysis was conducted using the software Statistical Package for Social Sciences (SPSS) version 25. Descriptive analysis was conducted on the entire population. The qualitative variables are expressed in percentages. Quantitative variables are expressed as mean +/- standard deviation. Comparative analysis of qualitative variables was performed by a Chi2 test or Fisher's exact test if the number was less than 5. The threshold of significance retained was $p < 0.05$.

# Results

## Descriptive study of the population

Total number of patients interviewed: 125 patients. The sex ratio was of 0.81. The average age of patients was 48 years (18-87). Most patients 60% (n=75) lived in rural areas, while 40% (n=50) lived in urban areas. The classification of patients by educational level showed that 67.2% had either basic or no formal education and 13% had university studies level.

## Medical history

Among the patients, 21.6% (n=27) were smokers, and all of them were male. In this study we found that 52% of patients had coexisting diseases, with 22.4% having diabetes, 23.2% having high blood pressure, and 10.4% having both diabetes and high blood pressure.
Type of surgery and anaesthesia: Elective surgeries were divided into major and minor procedures, with 60% of the planned operations classified as major surgeries. The choice of anesthesia technique is determined during the clinic visit, where it may be General, Regional, or a clearance for both, with the decision documented in the anesthesia file. a greater number of patients had regional anesthesia planned.

Newly discovered diseases or uncontrolled current diseases. Among the studied population, four patients were discovered to have new diseases, two were addressed to Cardiology clinic, one to Nephrology clinic and the other to Endocrinology clinic.

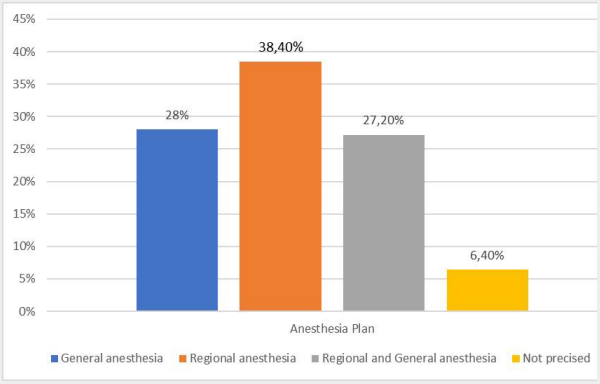



**Figure 1**. Anesthesia Plan

## Re-consultation

7.2% (n=9) of patients were re-consultations who couldn't be cleared for surgery due to incomplete files or were addressed to different clinics before receiving clearance. Delay between anesthesia consultation and operation day. Most patients 77.6% (n=97) didn't have a fixed date of operation while 22.4 % (n=28) had a delay of one to twenty days between the clinic consultation and the operation day.

## Complementary tests

Most complementary tests, 88%, were ordered by surgeons, while 7.2% were ordered by anesthesiologists and 4.8% were unspecified. The number of tests ordered is presented in Table 1.

**Table 1.** Number of complementary tests ordered

| Tests | Number ordered (%) |
|---|---|
| ECG | 87 (69.6) |
| Echocardiography | 35(28) |
| Chest Radiograph | 91(72.8) |
| Pulmonary Function | 0(0) |
| Completed Blood Count | 120(96) |
| Coagulation Studies | 118(94.4) |
| Serum Chemistries | 88(70.4) |
| Renal Function | 98(78.4) |

The qualitative evaluation of the course of the anaesthesia consultation was carried out based on specific questions concerning the course of the anaesthesia consultation. The results are shown in the following table 2.

## The clinic environment

Patients were asked about their experience in the clinic environment, starting with the waiting time. 52% of patients were seen within an hour of registration while 40.8% of patients had to wait between one and two hours. Additional results regarding time, location, staffing and privacy of patients are as follows in Table 3.

**Table 2.** Consultation process

| Questions | Yes N(%) |
|---|---|
| Did the anesthesiologist introduce himself to you? | 116(92.8%) |
| Was your medical history taken? | 125(100%) |
| Was the physical exam done? | 125(100%) |
| Were fasting instructions given and explained? | 117(93.6%) |
| Did you get information about anesthesia options and plan? | 71(56.8%) |
| Was there a chance to choose the anesthesia option? | 6(4.8%) |
| Did you get information about the possible reactions and side effects? | 14(11.2%) |
| Did you get information about the operation? | 103(82.4%) |
| Did you get information about how to prepare for surgery? | 116(92.8%) |
| Did you get information about postoperative complications? | 9(7.2%) |
| Did you get information about postoperative analgesia? | 1(0.8%) |
| Did you get information about postoperative nausea and vomiting? | 7(5.6%) |
| Did you get information about bleeding and transfusion options and complications? | 22(17.6%) |

**Table 3.** The clinic environment

| Questions | Yes N (%) |
|---|---|
| Did you feel that the location of the clinic was adequate and accessible? | 108(86.4%) |
| Did you feel that the appointment time and date were convenient? | 125(100%) |
| Did you feel that the waiting room was too crowded? | 56(44.8%) |
| Did you feel that there was insufficient staff? | 19(15.2%) |
| Did you feel that your privacy was respected? | 122(97.6%) |
| Did you feel you had enough time spent with the physician? | 116 (92.8%) |
| Did you feel you had a chance to ask questions? | 115 (92%) |
| Did you feel your questions were answered adequately? | 121 (96.8%) |
| Do you feel less anxious after the consultation? | 97 (77.6%) |
| Overall, were you satisfied with the preoperative consultation? | 104 (83.2%) |

## Overall satisfaction

Patients were asked to rate their level of satisfaction on a 5-point scale. Among them, 34 patients (27.2%) reported being very satisfied (score of 5), while 57 patients (45.6%) were satisfied (score of 4). A total of 20 patients (16%) expressed a neutral opinion, being neither satisfied nor dissatisfied (score of 3). Meanwhile, 9 patients (7.2%) indicated they were dissatisfied (score of 2), and 5 patients (4%) reported being very dissatisfied (score of 1).

Analytical study

We analyzed different factors in relation to overall satisfaction and post-consultation anxiety. The relationship between satisfaction and the other variables was as follows in Table 4.

**Table 4.** Univariate analysis of patients' demographics

| Demographics of patients | | Satisfaction, Yes n(%) | P value |
|---|---|---|---|
| Gender | Male | 32% | 0.756 |
| | Female | 40.8% | |
| Age category | 18 – 49 years | 32.8% | 0.395 |
| | ≥ 50 years | 40% | |
| Education level | No formal or primary education | 53.6% | 0.012* |
| | Secondary education or higher | 19.2% | |
| Living place | Rural | 47.2% | 0.071 |
| | Urban | 25.6% | |

The multivariate analysis revealed that several factors were significantly associated with higher patient satisfaction. Patients who underwent major surgery reported higher satisfaction (39.2%) compared to those who had minor procedures (33.6%, p=0.022). The clinic environment also played a critical role: 66.4% of patients who found the clinic location adequate and accessible were satisfied (p=0.017), and 64.4% of those who did not find the waiting room crowded reported satisfaction versus only 26.4% who did (p=0.002). Regarding the consultation process, 72% of patients who felt enough time was spent with the physician were satisfied, compared to only 0.8% who felt the time was insufficient (p<0.001). Similarly, 72.8% of those who had the opportunity to ask questions and felt their questions were adequately answered were satisfied, while satisfaction dropped to 0% among those who did not (p<0.001 and p=0.005, respectively). Anxiety-related variables also influenced satisfaction: 42.4% of patients who received anesthesia other than regional felt less anxious after the consultation (p=0.03), and 76.8% of those who felt their privacy was respected reported lower anxiety levels (p=0.01). These findings highlight the multifactorial nature of patient satisfaction, influenced by clinical, environmental, and interpersonal factors.

## Discussion

This study represents the first comprehensive evaluation of the pre-anesthesia consultation clinic (PACC) at our university hospital. By employing patient feedback alongside current practices, we aimed to assess the clinic's effectiveness in ensuring quality patient care and safety. Our findings align with the Donabedian model for quality of care, focusing on structure, process, and outcomes such as increased patient satisfaction, enhanced safety, and adherence to guidelines.

Our results reveal that the typical PACC patient is predominantly female (55.2%), over 50 years old (49.6%), from rural areas, and has limited formal education (67.2%). More than half of the patients had comorbidities, primarily diabetes (22.4%) and hypertension (23.2%). These demographic characteristics underscore the importance of tailoring patient education strategies to suit the expected population attending the clinic. Studies suggest that older patients and those with lower educational levels tend to have higher satisfaction rates due to lower expectations, emphasizing the need for personalized communication [14–16].

The American Society of Anesthesiologists (ASA) classification was assigned during consultations, highlighting its critical role in perioperative risk assessment. However, surgeons often underestimate ASA scores compared to anesthesiologists [18]. Notably, 60% of elective surgeries were classified as major procedures, necessitating more extensive preparation. Regional anesthesia was planned for most cases, reflecting its suitability for ambulatory surgery due to reduced hospitalization time and fewer complications [19,20].

Patient education remains a significant challenge in PACCs. While fasting instructions and preoperative preparation were adequately addressed (93.6% and 92.8%, respectively), detailed information regarding anesthesia options, side effects, postoperative complications, and analgesia plans was insufficient (<10% for several items). Tunisian regulations and SFAR recommendations emphasize the right to informed consent and detailed preoperative counseling [5,7,8]. Implementing standardized information leaflets or digital resources could enhance patient understanding and satisfaction [30].

Shared decision-making—a growing trend in modern healthcare—was rarely practiced, with only 4.8% of patients reporting a choice in their anesthesia technique. Encouraging active participation through shared decision-making not only improves patient satisfaction but also aligns with ethical obligations [28,29]. Revising national guidelines and laws to mandate comprehensive patient education would further promote adherence to best practices [31].

The clinic environment significantly influences patient satisfaction and anxiety levels. Despite convenient appointment times and adequate accessibility (86.4%), concerns persist regarding waiting room crowding (44.8%) and perceived staff insufficiency (15.2%). Longer waiting times, although not statistically significant in this study, are known to negatively impact perceived quality and satisfaction [33–36]. Optimizing scheduling systems and redesigning the waiting area could alleviate these issues, potentially increasing daily consultations to 15–20 without compromising quality.

Privacy emerged as another critical factor, with 97.6% of patients feeling respected during consultations. However, breaches in privacy affected both satisfaction and anxiety levels among those who felt uncomfortable. Ensuring private consultation spaces and reinforcing confidentiality protocols would further enhance patient trust.

Overutilization of routine preoperative tests persists

despite evidence suggesting minimal clinical utility [37,38]. In our study, 88% of tests were ordered by surgeons, leading to unnecessary costs and delays. Similar findings were reported by Trabelsi et al., where routine testing accounted for substantial financial burdens without altering perioperative management [42]. Adhering to international guidelines and promoting selective testing based on medical history and physical examination could optimize resource allocation and improve efficiency.

Overall satisfaction was high (83.2%), though it dropped slightly when measured using a Likert scale (72.8%). Factors influencing satisfaction included education level, type of surgery, clinic location, crowding, privacy, and adequacy of communication. Patients with higher education levels or scheduled for major surgeries expressed greater dissatisfaction, likely due to heightened expectations and anxiety [50]. Addressing these disparities through targeted interventions, such as extended consultation times or specialized clinics for complex cases, could bridge gaps in service delivery.

Preoperative anxiety affects up to 80% of patients and correlates strongly with inadequate information provision and perceived lack of privacy [50]. In our study, 77.6% of patients reported reduced anxiety after consultations, with younger patients and those receiving regional anesthesia showing less improvement. Providing concise yet thorough explanations, offering informational handouts, and facilitating psychological support for highly anxious individuals could mitigate these challenges [55].

Our satisfaction rate (72.8%–83.2%) aligns with local studies conducted in Tunisian hospitals [41,47,48] and international research evaluating perioperative services [11,12,49]. However, there remains room for improvement, particularly in addressing modifiable factors identified through univariate analysis. Systematic reviews highlight variability in patient satisfaction metrics across studies, underscoring the subjective nature of this outcome measure [51]. Future investigations should explore objective indicators of quality, such as adherence to guidelines and reduction in perioperative complications.

## Conclusions

This study demonstrates the effectiveness of pre-anesthesia consultation clinics in promoting patient satisfaction and reducing preoperative anxiety. However, improvements are needed in information provision, clinic accessibility, and staff allocation to ensure high-quality, patient-centered care. Continuous quality improvement initiatives are essential to address existing gaps and enhance perioperative safety.

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