

RESEARCH ARTICLE (ORIGINAL) 

The Impact of Implementing a Preoperative Nursing Consultation: A Pre-Experimental Study

Impacto da Implementação de uma Consulta Pré-Operatória de Enfermagem: Um Estudo Pré-Experimental

Impacto de la implantación de una consulta de enfermería preoperatoria: un estudio preexperimental


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Abstract

Background: Surgical procedures trigger high levels of anxiety in patients who are undergoing surgery. Nurses play a crucial role in reducing anxiety by providing information during the preoperative period.

Objective: To evaluate the effect of preoperative nursing consultations on levels of anxiety, knowledge, and satisfaction among patients scheduled for general surgery.

Methodology: A pre-experimental study with a pretest-posttest design was conducted with 37 patients during the preoperative period of scheduled general surgery. Data were collected using the State-Trait Anxiety Inventory by Spielberger, the Preoperative Information Assessment Scale, and a consultation satisfaction assessment scale.

Results: After the intervention, there was an improvement in preoperative information levels ($p < 0.001$). Anxiety levels decreased after the consultation, though they increased slightly between then and hospitalization. Overall, 89% of the patients rated the consultation as *very good*.

Conclusion: The preoperative nursing consultation positively impacted patients' levels of anxiety, information, and satisfaction.

Keywords: nursing; preoperative care; elective surgical procedures; office nursing; anxiety; health knowledge, attitudes, practice

Resumo

Enquadramento: A experiência cirúrgica desencadeia elevados níveis de ansiedade nos clientes submetidos a cirurgia. A intervenção do enfermeiro no pré-operatório é fundamental no fornecimento de informações com impacto na diminuição da ansiedade.

Objetivo: Avaliar o impacto de uma consulta pré-operatória de enfermagem no nível de ansiedade, nível de informação e satisfação do cliente submetido a cirurgia geral programada.

Metodologia: Estudo pré-experimental com desenho pré-pós, com 37 clientes no pré-operatório de cirurgia geral programada. Para a recolha de dados utilizou-se o inventário de ansiedade traço-estado de Spielberger, a escala de informação pré-operatória e uma escala de avaliação da satisfação.

Resultados: Após a intervenção, verificou-se uma melhoria do nível de informação pré-operatória ($p < 0,001$). Em relação ao nível de ansiedade, houve uma diminuição após a consulta, ainda que desde essa altura até ao momento do internamento se tenha verificado um ligeiro aumento. Globalmente, 89% dos clientes classificou a consulta como *muito boa*.

Conclusão: A consulta pré-operatória de enfermagem teve impacto positivo no nível de ansiedade, informação e satisfação dos clientes.

Palavras-chave: enfermagem; cuidados pré-operatórios; cirurgia eletiva; consulta de enfermagem; ansiedade; conhecimentos, atitudes e práticas em saúde

Resumen

Marco contextual: La experiencia quirúrgica desencadena altos niveles de ansiedad en los pacientes sometidos a cirugía. La intervención del enfermero en el periodo preoperatorio es fundamental para proporcionar información que incida en la disminución de la ansiedad.

Objetivo: Evaluar el impacto de una consulta de enfermería preoperatoria sobre el nivel de ansiedad, el nivel de información y la satisfacción de los pacientes sometidos a cirugía general programada.

Metodología: Estudio preexperimental con diseño pre-post, con 37 pacientes en el periodo preoperatorio de cirugía general programada. Para la recogida de datos se utilizaron el inventario de ansiedad estado-rasgo de Spielberger, la escala de información preoperatoria y una escala de evaluación de la satisfacción.

Resultados: Tras la intervención, se produjo una mejora en el nivel de información preoperatoria ($p < 0,001$). En cuanto a los niveles de ansiedad, se produjo un descenso tras la consulta, aunque desde entonces hasta la hospitalización se registró un ligero aumento. En general, el 89% de los pacientes calificaron la consulta como *muy buena*.

Conclusión: La consulta preoperatoria de enfermería tuvo un impacto positivo en el nivel de ansiedad, información y satisfacción de los pacientes.

Palabras clave: enfermería; cuidados preoperatorios; cirugía electiva; consulta de enfermería; ansiedad; conocimientos, actitudes y prácticas de salud

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Introduction

Providing information to surgical patients during the preoperative period is crucial because it lowers their anxiety and reduces postoperative complications. However, the quality of preoperative education that patients receive largely depends on nurses' knowledge and experience. Therefore, it is vital to strengthen training, adjust staffing levels, and offer standardized guidelines and teaching materials in clinical settings to ensure a safe working environment (Bazezew et al., 2023).

Patients often provide different information for preoperative preparation when they are admitted to the hospital for surgery, which can compromise the entire anesthetic and/or surgical procedure. Patients also express anxiety about the immediate postoperative period and uncertainty about hospital discharge and postoperative recovery at home. Additionally, the short length of hospital stays limits nurses' contact with patients, particularly during the preoperative period (Breda & Cerejo, 2021).

A preoperative nursing consultation is a complex and autonomous intervention involving several activities primarily aimed at getting to know the patient and informing them about their surgical procedure while considering their needs and expectations (Mendes & Ferrito, 2021). According to Fernandes et al. (2024), nurses must be able to provide patients with information and knowledge during the preoperative period to make them feel like an integral part of the treatment process. This involves prioritizing patients' individual needs and providing them with guidance in a structured and systematized way. Despite the importance of preoperative nursing consultations for surgical patients, little research has been conducted to prove their added value and influence on patient preparation for surgery and coping with the surgical experience. With this in mind, the purpose of this study is to evaluate the effect of a preoperative nursing consultation on the levels of anxiety, knowledge, and satisfaction of patients undergoing scheduled general surgery.

Background

Preoperative preparation is essential for optimizing surgical outcomes. It involves several aspects, including the indication for surgery, clinical history, physical examination, surgical risk assessment, usual medication, anesthetic approach, antibiotic prophylaxis, and specific preparations, as well as postoperative care (Santos et al., 2024). The type of surgery and the extent of preoperative knowledge can influence anxiety levels, with better-informed patients typically experiencing less anxiety (Longo et al., 2023).

Preoperative anxiety can affect anesthetic management, postoperative pain intensity, postoperative anxiety, and analgesic consumption, as well as lead to increased postoperative morbidity and even mortality (Hinkle & Cheever, 2020). Anxiety, pain, health education and knowledge, satisfaction, and organizational and institutional issues are important preoperative indicators and predictors of possible

complications associated with the surgical process that can be modified by nursing interventions (Fernández et al., 2023).

Thus, perioperative nurses must possess the knowledge and skills necessary to assess, diagnose, plan, intervene, and evaluate the outcomes of their interventions (Bazezew et al., 2023). Nurses involved in preoperative preparation must assess and prepare patients considering their physiological, emotional, and psychological reactions to surgery (Mukantwari et al., 2021).

Throughout the surgical process, nurses assess patients, collect, organize, and prioritize data, establish nursing diagnoses, identify expected patient outcomes, and evaluate results and patient responses (Rothrock, 2021).

Therefore, nursing consultations are a key element of the entire preoperative preparation process, enabling an individualized approach to address patients' information needs and manage their anxiety (Breda & Cerejo, 2021).

Research question

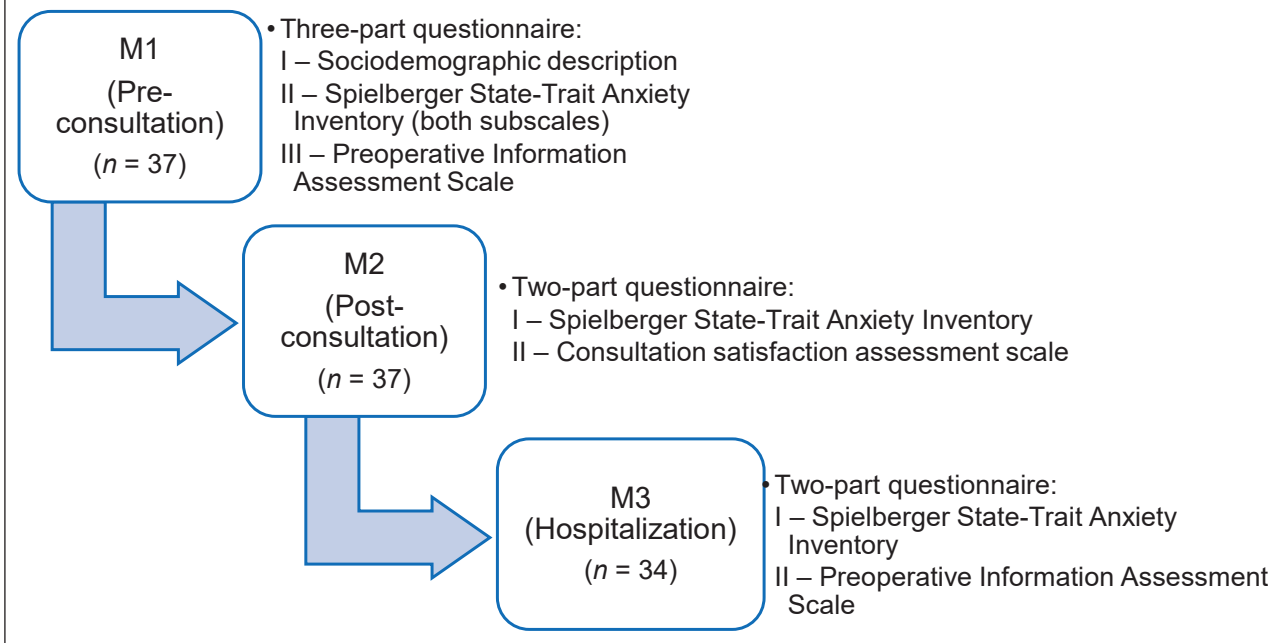
What is the impact of a preoperative nursing consultation on the levels of anxiety, information, and satisfaction of patients undergoing scheduled general surgery?

Methodology

A pre-experimental study with a one-group pretest-posttest design was conducted at a central hospital in central Portugal. It included three assessment time points: M1 (pre-consultation), M2 (post-consultation), and M3 (hospitalization). Data were collected from November 2023 to February 2024, following the approval from the Ethics Committee (process no. 138/18).

The study sample was formed using the non-probability convenience sampling method and consisted of patients in the preoperative period of scheduled general surgeries (hernioplasties, thyroidectomies, and cholecystectomies). The consultation structure followed the model validated by Gonçalves et al. (2024). A guide was created to serve as the basis for training six nurses who were part of the implementation team. The head nurse of the department and the principal investigator selected these nurses, taking into account criteria such as academic and professional training, years of professional experience in the perioperative context, and communication skills.

The preoperative nursing consultation took place once a week in an outpatient setting and lasted a mean of 45 minutes. The week before surgery, a nurse from the implementation team called patients to schedule the face-to-face consultation. A total of 37 patients participated in the three-month data collection period. Thirty-four of these patients completed the questionnaire at the third assessment time point, which occurred during hospitalization. The remaining three patients had their surgeries canceled. A data collection questionnaire was used at each of the three assessment time points. The structure of these questionnaires is shown in Figure 1.

Figure 1*Assessment time points and data collection instruments*

The sociodemographic questionnaire included questions about age, gender, education level, employment status, marital status, number of people in the household, expected visits during hospitalization, previous surgical experience, and time spent on the waiting list. The Spielberger State-Trait Anxiety Inventory is a self-administered questionnaire consisting of two subscales: one to measure trait anxiety and the other to measure state anxiety. The version used was translated and adapted for the Portuguese population by McIntyre and McIntyre (1995). Each subscale contains 20 items, and each item receives a score from 1 to 4 points (1 point = *not at all*; 2 points = *a little*; 3 points = *somewhat*; 4 points = *a lot*). For the absence of anxiety items, the score weights are inverted. For the trait anxiety subscale, the inverted items are 1, 3, 6, 7, 10, 13, 14, 16, and 19. For the state anxiety subscale, the inverted items are 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20. A higher number of points indicates a higher level of anxiety. Each subscale showed high internal consistency, with a Cronbach's alpha of 0.89.

The Preoperative Information Assessment Scale was developed and validated by Gonçalves and Cerejo (2020). Through 15 items, it allows for assessing the patient's information level regarding surgery. Each item is scored as follows: 0 points = *not at all informed*; 1 point = *little informed*; 2 points = *too informed*; and 3 points = *sufficiently informed*. The higher the final score, the better informed the patient is. This study used an adapted version of the scale that included a 16th item: "I am informed about the type of operation I am going to undergo." The internal consistency, as measured by Cronbach's alpha, was considered excellent ($\alpha = 0.94$).

For this study, a consultation satisfaction assessment scale with ten items was developed by the researchers. Six of these items are related to the importance of the consultation and how it went. Patients responded to these

items on a Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). The remaining four items are related to the nurse who conducted the consultation and the consultation environment. Patients responded to these items on a scale ranging from one (*very bad*) to five (*very good*). According to the model used, the consultations were recorded and documented in the Sclínico® information system used at the hospital.

On the day of the consultation, all ethical and legal procedures were followed, and informed consent was obtained from the patients.

Statistical analysis was conducted using IBM SPSS Statistics software, version 29.0, considering a p-value of less than .05 to be statistically significant.

Measures of absolute and relative frequency, mean, and standard deviation were used for descriptive statistical analysis according to the data analyzed.

Before carrying out inferential statistics, the Shapiro-Wilk test was used to analyze normality, as the sample size was less than 50 participants. The results showed that the data did not have a normal distribution ($p < 0.05$). Consequently, nonparametric tests were applied. Friedman's test was used to compare means for paired samples of the state anxiety variable (assessed at all three time points), and Wilcoxon's test was used for the preoperative information variable (assessed at two time points).

Results

Sample Description

The sample consisted of 37 participants ranging in age from 28 to 85 years old, with a mean age of 60.68 years ($SD = 15.32$). The sample was balanced in terms of gender, with 51.4% men and 48.6% women.

In terms of education level, 37.8% of participants finished primary school, and 24.3% had a university degree. Regarding employment status, 48.6% of participants were employed, and 45.9% were retired.

Most participants were married or in a *de facto* union (51.4%), 18.9% were single, 16.2% were divorced or separated, and 13.5% were widowed.

Overall, 73.0% of participants reported previous surgical experience, while 27.0% had never undergone surgery.

Preoperative Anxiety

Regarding the assessment of preoperative anxiety (state anxiety), the mean was 37.76 ($SD = 10.70$) at the time point before the consultation (M1), with a range of 42 points. After the nursing consultation, state anxiety levels significantly decreased, with a mean of 30.92 points and a standard deviation (SD) of 9.99 ($Z = -4.551$; $p < 0.001$). At the time of hospitalization, anxiety levels rose slightly, reaching a mean of 34.47 ($SD = 7.89$) points. Nevertheless, this level was still below that assessed before the consultation. Overall, the differences in anxiety levels at the three time

points were statistically significant ($\chi^2 = 16.909$, $p < 0.001$; Table 2). Of the three time points, only the difference between the pre-consultation and hospitalization time points was not statistically significant ($Z = -1.704$; $p = 0.088$; Table 2).

Preoperative Information

The level of preoperative information was assessed at only two time points: before the consultation and at the time of hospitalization. It was determined that the results could be biased if the assessment occurred immediately after the information was provided (i.e., after the consultation). Therefore, before the consultation, patients' perceived level of information was very low, with an overall mean of 10.84 ($SD = 11.77$) points on a scale ranging from 0 to 48 points. A few days after the nursing consultation, upon hospital admission, the patients' level of information improved substantially, with a statistically significant increase compared to the pre-consultation assessment time point ($Z = -4.981$, $p < 0.001$). This increase was reflected in the mean, which rose to 33.74 points ($SD = 8.61$; Table 1).

Table 1

Sample description regarding preoperative anxiety and information across the three assessment time points

	M1 (n = 37) (M ± SD)	M2 (n = 37) (M ± SD)	M3 (n = 34) (M ± SD)	Test
State Anxiety	37.76 ± 10.70	30.92 ± 9.99	34.47 ± 7.89	$\chi^2 = 16.909$; $p < 0.001$ ⁽¹⁾
Preoperative information	10.84 ± 11.77		33.74 ± 8.61	$Z = -4.981$; $p < 0.001$ ⁽²⁾

Note. M1 = Pre-consultation; M2 = Post-consultation; M3 = Hospitalization; M = mean; SD = Standard Deviation.

⁽¹⁾ Friedman Test; ⁽²⁾ Wilcoxon Test.

Table 2

Comparison of differences in preoperative anxiety across the three assessment time points

State Anxiety	Test ⁽¹⁾
M1 ⇔ M2	$Z = -4.551$; $p < 0.001$
M1 ⇔ M3	$Z = -1.704$; $p = 0.088$
M2 ⇔ M3	$Z = -2.301$; $p = 0.021$

Note. M1 = pre-consultation; M2 = post-consultation; M3 = hospitalization.

⁽¹⁾ Wilcoxon Test.

Satisfaction with the Nursing Consultation

Regarding the assessment of patient satisfaction, 91.9% of participants "totally" agreed that the consultation was important, demonstrating the value placed on this interaction with the nursing team.

In terms of emotional impact, 75.7% of patients said the consultation helped them feel less anxious about surgery, highlighting the importance of this intervention in managing preoperative anxiety.

The results regarding the nurses' competence and friend-

liness were extremely positive. Competence was rated "very good" by 94.6% of participants, and friendliness received a similar rating of 97.3%.

On a scale from 1 to 5 points, only the item "I believe the information I received during the nursing consultation will help me prevent complications" had a mean below 4.50, while the others were above this value. Overall, the consultation was rated with a mean of 4.89 points on this same scale (Table 3).

Table 3*Sample description regarding satisfaction with the preoperative nursing consultation (n = 37)*

	<i>M</i>	<i>SD</i>
I think it is important to have the consultation.	4.92	0.27
The nursing consultation helped me feel less anxious.	4.73	0.50
I believe the information I received during the nursing consultation will help me to prevent complications.	4.43	0.83
I understood everything the nurses told me during the consultation.	4.92	0.27
The subjects covered met my expectations.	4.68	0.47
I had the opportunity to express my doubts and ask questions.	4.84	0.44
Friendliness and helpfulness of the nurses.	4.97	0.16
Competence and professionalism of the nurses.	4.95	0.22
Consultation environment.	4.95	0.22
Overall rating of the consultation.	4.89	0.31

Note. *M* = Mean; *SD* = Standard deviation.

Discussion

Patients undergoing surgery often exhibit high anxiety and low information levels in the preoperative period, which can negatively impact surgical outcomes. This study evaluated how a preoperative nursing consultation affects patients' levels of anxiety, information, and satisfaction when they are scheduled for general surgery.

Before the nursing consultation, the mean score for preoperative anxiety was 37.76. This level of anxiety is consistent with the uncertainty and fear often associated with the preoperative period, particularly among patients who have little information about what to expect during the surgical process. Following the consultation, there was a significant reduction to a mean score of 30.92. The mean reduction of almost seven points demonstrates that the consultation played a pivotal role in alleviating anxiety by offering clear information and mitigating the uncertainty related to the surgical procedure. At the time of hospitalization, anxiety levels rose slightly to a mean of 34.47 points but did not reach pre-consultation levels, suggesting that the consultation had a lasting effect on anxiety reduction. The slight increase may be associated with the proximity of the surgery and expectations or experiences related to the hospital stay.

Aydal et al. (2023) also concluded in a randomized controlled study that preoperative nursing consultations are an effective method for reducing patients' anxiety levels. In this context, preoperative education provided by nurses reduces anxiety, speeds up the recovery process, reduces analgesic consumption, and decreases the length of hospital stay and health costs while increasing patient satisfaction. It also provides nurses with the opportunity to offer individualized care.

Similarly, Hernández et al. (2021) emphasized the significance of nursing interventions in managing preoperative anxiety. They proposed that personalized educational and informational interviews can substantially reduce anxiety

levels in patients awaiting surgery. They also emphasized the need for continuous training and professional competence among perioperative nurses to implement these interventions effectively.

Regarding preoperative information assessment, results show a significant knowledge gap among patients before the nursing consultation, with a mean score of 10.84 out of 48. At the time of hospital admission, and therefore after the consultation, the mean score increased considerably to 33.74. These results suggest that the nursing consultation effectively transmitted important information, helping to fill the knowledge gaps perceived by patients before the intervention.

In a systematic review of the literature, Longo et al. (2023) concluded that preoperative education significantly reduces postoperative pain, anxiety, and length of hospital stay. They also reported improvements in sleep, mental state, adherence to the therapeutic regimen, and patient knowledge and expectations. These findings support the authors' recommendation to integrate structured preoperative education into nurses' clinical practice to optimize patient outcomes.

Therefore, it is important to tailor information provision to individual needs, as these can vary depending on factors such as gender and the type of surgical procedure. In the preoperative period, the nurse's approach should prioritize the individual assessment of patients' knowledge and expectations (Koivisto et al., 2020).

This study assessed patient satisfaction with the nursing consultation in different dimensions. The majority of participants (91.9%) totally agreed that the consultation was important. The friendliness and competence of the nursing team also contributed to the high level of satisfaction. These results highlight the positive impact of interpersonal interactions on the overall perception of care quality.

A study by Ferreira et al. (2022) found similar results regarding satisfaction with outpatient preoperative nursing consultations for cataract surgery in all variables assessed.

Tucker et al. (2022) concluded in their study that preoperative educational strategies, particularly multimedia ones, can increase patient understanding and satisfaction. The value placed on preoperative nursing education, particularly in responding to patients' information needs, clarifying doubts, and promoting adherence to the therapeutic process, underscores the importance of implementing teaching plans, especially regarding postoperative recovery (Fernandes et al., 2024).

This study has a few limitations. First, the sample size was small ($n = 37$). Several factors contributed to the small number of participants, including the difficulty of finding a physical space in the outpatient setting that would allow for more than one nursing consultation per week and the difficulty of allocating the necessary human resources for implementation. Additionally, the absence of a control group in this type of study prevents comparisons between groups that received and did not receive the intervention, thus limiting the ability to generalize the obtained results. Finally, an assessment of the level of information retention and integration was not carried out immediately after the consultation, because it was considered that an immediate evaluation might not necessarily be indicative of these outcomes.

Conclusion

A preoperative nursing consultation offers a valuable chance to prepare patients and their families or significant others for surgery. The structured communication of relevant information and the development of a trusting relationship facilitate the involvement of patients and their families in the surgical care plan.

This study analyzed the impact of a preoperative nursing consultation on patients' levels of anxiety, information, and satisfaction when undergoing scheduled general surgery. The results showed that the consultation significantly reduced patients' anxiety levels after the consultation and upon hospital admission. It also substantially improved their level of preoperative information. Furthermore, the vast majority of patients considered the consultation important and rated it as *very good*, which is an excellent indicator of the quality of care provided.

Thus, properly structured and planned preoperative nursing consultations have a positive impact on patients while highlighting the autonomous component of nurses' professional actions and promoting their social recognition among the population.

This intervention is an important strategy to implement in any surgical context where patients are being prepared for surgery, regardless of the specialty. However, randomized controlled studies are necessary to accurately evaluate the effects of preoperative education provided through nursing consultations.

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Writing – original draft: Gonçalves, M. A.

Writing – review & editing: Gonçalves, M. A., Pereira, M. A., Machado, N. J.

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