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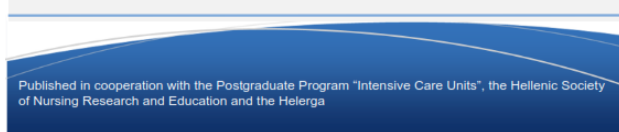
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RESEARCH ARTICLE

PREOPERATIVE ANXIETY AND SATISFACTION WITH INFORMATION PROVIDED BY NURSING STAFF AND ANESTHESIOLOGISTS IN ONCOLOGICAL PATIENTS

George Intas¹, Ioannis Tsolakoglou², Chrysa Papadaki³, Pantelis Stergiannis⁴

1. RN, MSc, MHSc, PhD, Senior Manager of Nurses, General hospital of Nikaia
2. RN, MSc, MHSc, PhD, General hospital Agios Pavlos
3. RN, MSc, University General Hospital of Heraklion PAGNI
4. Assistant professor, Faculty of Nursing, National and Kapodistrian University of Athens

Abstract

Background: A surgical procedure is accompanied by some degree of perioperative risk, which creates a state of anxiety. The aim of this study was to investigate the correlation between preoperative anxiety and satisfaction with the provided information by nursing staff and anesthesiologists in oncological patients.

Method and Material: This cross-sectional study was conducted among adult oncology patients scheduled for surgery at a large university hospital in the Peloponnese. Participants were randomly selected to form the study population. The time of study was between November 2023 and February 2024. Data collection was done with the State Anxiety Inventory (STAI) and the Information Satisfaction Questionnaire (ISQ). The statistical analysis of the data was done with the statistical program SPSS v. 25.0.

Results: The study sample consisted of 100 patients with a mean age of 50.3 ± 16 years. The majority of participants expressed a preference for receiving comprehensive information and for being actively involved in decisions regarding their care. They also reported that they had been provided with the best possible information. In terms of anxiety, Most participants (over half) were found to have moderate levels of anxiety, while approximately two in ten exhibited elevated anxiety. Older age ($p = 0.003$) and lower stress levels ($p = 0.033$) were significantly associated with higher satisfaction regarding the information provided.

Conclusions: Patient satisfaction with the provided information by the nursing staff and the anesthesiologists reduces pre-surgical anxiety.

Keywords: Satisfaction, information, preoperative anxiety, oncology surgery, healthcare professionals.

Corresponding Author: Intas George, Email: intasgeo@yahoo.gr

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INTRODUCTION

Hospitalization, regardless of illness, is known to cause anxiety to the patient undergoing a procedure.¹ Surgery, whether major or minor, is often perceived as a significant and potentially life-threatening event that necessitates substantial psychological adjustment. The preoperative period is a highly stressful phase that elicits specific emotional, cognitive, and physiological responses in patients. Anxiety during this time is influenced by multiple factors.²

Preoperative anxiety is a challenge in the preoperative care of patients. Most patients who are waiting for a scheduled surgery experience anxiety, which is largely widely accepted as an expected reaction. Anxiety is defined as an unpleasant state of worry or tension, often accompanied by abnormal hemodynamic responses resulting from sympathetic, parasympathetic, and endocrine activation. It typically emerges once surgery is scheduled and intensifies, reaching peak levels at the time of hospital admission. For many patients, the day of surgery is perceived as one of the most threatening experiences of their lives.³ The degree to which each patient exhibits preoperative anxiety related to impending experiences depends on many factors. These include age, gender, type and severity of the scheduled surgery, any previous surgical experience as well as personal sensitivity to stressful situations.³ Some degree of anxiety is a natural reaction to unpredictable and potentially threatening circumstances that are characteristic of the preoperative period, especially for the patient who has no other surgical experiences.⁴ Studies have shown that high levels of preoperative anxiety can lead to increased postoperative analgesic care, prolonged hospital stay, a significant contribution to adverse perioperative outcomes, and reduced patient satisfaction.^{5,6,7} Interventions to reduce preoperative anxiety include pharmacological treatment, information provision, distraction, and relaxation procedures.⁸ The aim of this study was to investigate the correlation between pre-surgery anxiety and patient satisfaction with provided information by nursing staff and anesthesiologists.

MATERIALS AND METHODS

Study Type

A cross-sectional study was conducted.

Study Sample

Participants were selected by random sampling among patients who met the inclusion criteria from November 2023 to February 2024. The inclusion criteria were age 18 years or older, all type of cancer, and Greek speaking. The study population consisted of patients of the Surgical Oncology clinic of a University Hospital in Greece. Specifically, the study included preoperative oncology patients who were adults and would undergo a scheduled oncology surgery. Patients who were not oncological, patients who underwent emergency surgery, and those who had not yet encountered the clinic's medical and nursing staff were excluded from the study. The measurements for anxiety and satisfaction took place a day before surgery.

Data Collection Tool

Data were collected by the Information Satisfaction Questionnaire (ISQ) and State – Trait Anxiety Inventory (STAI). The Information Satisfaction Questionnaire was created by Thomas et al in 2004 and measures cancer patients' satisfaction with 5 categories of information provision: illness, side-effects, treatment, lifestyle and logistics. The ISQ score range between 0 (very poor satisfaction) and 24 (Excellent satisfaction).⁹

The STAI is a widely used self-report anxiety assessment instrument. which separates anxiety as a state (A-State) from anxiety as a description of personality (A-Trait). It consists of 40 self-report items on a 4-point Likert scale. The STAI score range between 20 (low to mild level of anxiety) and 80 (high level of anxiety).¹⁰

Ethics

To ensure the anonymity of the sample and to protect the personal data of the participants, the name, surname or any other data that could be used to identify a participant, were not recorded. This study was approved by Scientific Committee of the hospital (no. pr. 27813), while all participants in the study signed a consent form.

Statistical Analysis

The statistical analysis of the data was performed using the IBM SPSS 25.0 program. Descriptive characteristics of the 10 study participants were estimated, while 95% confidence intervals (95%CI) were calculated for statistical comparability purposes using bootstrap techniques. The r-Pearson & χ^2 correlation

methods were used to test and correlate the scores or categorical distributions of the questionnaires. Linear regression coefficients (beta) were also calculated through hierarchical multiple linear regression. The relationship between the State-Trait Anxiety Inventory (STAI) scores of the 100 participating patients or their relatives and the Information Satisfaction Questionnaire (ISQ) and their specific characteristics was assessed in two independent regression models. The significance level was set at 0.05.

RESULTS

The study involved 100 people aged 50.3 ± 16 years, of whom 59 were women and 41 were men. Ninety-seven of the participants knew the type of their disease. Regarding the information that patients would like to have, 68% preferred all the available information and to take part in the decisions regarding their disease and the course of their health. Sixty-nine of the participants believe that the existing provision of information could not be improved. Table 1 presents the participants' responses to the Information Satisfaction Questionnaire, where 60% report that they are very Satisfied with the "Information about their disease", e.g. diagnosis, outcome, aggressiveness, surgery, genetic risk" and 69% in "Information about the side effects of the disease and surgery".

In all, forty-five of participants reported anxiety at the current time of the study, 46% worry about possible misfortunes and 39% worry in general. On the contrary, 49% do not feel arousal and 46% do not feel excitement and agitation.

The mean score on the Information Satisfaction Questionnaire was 16.7 ± 4.9 . Of them, 51% of participants were found to have "good" satisfaction and 29% "excellent".

The mean score on the State-Trait Anxiety Inventory was 49.5 ± 10.8 . Sixty-two of participants were found to have "moderate" anxiety and 17% "increased" anxiety.

The increased level of satisfaction ($r = -0.296$, $p = 0.003$) and the lower levels of anxiety ($r = -0.213$, $p = 0.033$) were found to be significantly associated with older participants. Table 2 shows that anxiety is not significantly associated with gender and age (1st model, $p > 0.05$). However, in the 2nd regression model, the addition of the Information Satisfaction score appears to have a

significant negative correlation with reducing the Anxiety score ($\beta = -0.52$, $p = 0.023$). Consequently, the increase in the Information Satisfaction score may predictably lead to a reduction in the temporary anxiety of patients.

DISCUSSION

In the present study, the levels of preoperative anxiety as measured by the STAI questionnaire scale were medium, which is associated with the level of oncology patients' satisfaction with the provided information by the medical and nursing staff and the anesthesiologist before the operation. This positive correlation has been demonstrated in several previous studies. For example, in the study by Jafar & Khan patients who received detailed information from the medical personnel before the operation, showed low rates of anxiety and a higher degree of satisfaction.¹¹ A cross-sectional study on 387 patients found that there was a moderate level of satisfaction in patients with perioperative anesthesia services. The level of satisfaction was increased when anesthesiologists visited oncology patients before the operation.¹² Evidence has demonstrated a positive impact of preoperative nurse-patient conversations on anxiety and satisfaction among individuals undergoing major visceral surgery. Patients who engaged in such conversations experienced approximately 50% lower anxiety levels prior to surgery.¹³

One to three patients report anxiety regarding anesthesia before hospital admission. A study revealed that prevalence of anxiety was significantly associated with patient age, female sex, and surgical specialty. Anxiety was associated with impaired overall patient satisfaction, especially regarding the dimensions "information and involvement in decision-making".¹⁴

The results of the present study show an absolute positive and strong correlation between patient satisfaction and preoperative anxiety. This shows that the higher the level of information provided, the better the level of satisfaction of the patients and therefore the less preoperative anxiety they experience. According to Patelarou et al, information significantly reduces anxiety levels, and for this reason, patient information should be an integral part of their preoperative care. Patelarou et al also emphasized the criticality of communication at an interprofessional level between all members of the medical team, nurses and the

anesthesiologist, in providing information to the patient, indicating, among other things, that information that contributes to patient satisfaction has beneficial effects not only for the patient himself, but also for the interdisciplinary medical team as well as a financial benefit for the healthcare provider.¹⁵

In a study by Eli et al., (2013), in a sample of 621 patients, the researchers observed particularly positive results in the satisfaction of oncology patients and the reduction of their anxiety, after viewing videos regarding their disease and the upcoming surgery.¹⁶

In another study by Kalogianni et al., (2015), in a sample of 395 patients in cardiac surgery clinics, it was shown that informing and educating patients at a preoperative level significantly reduced transient anxiety as measured by the STAI questionnaire. At the same time, it was found that the satisfaction of patients from preoperative information and education is also associated with a reduction in complications in the postoperative stage.¹⁷

It is important that healthcare professionals not focus solely on the medical information provided to patients while neglecting their feelings of fear and their need for support, as these aspects should not be marginalized. In a related study conducted on 387 patients who were about to undergo cardiac surgery, it was shown that when healthcare professionals gave priority only to information related to medical issues, marginalizing the patients' emotions, this resulted in no reduction in their preoperative anxiety.¹⁸

Limitations of Study

A significant limitation was the small sample size due to the special circumstances of the Covid 19 pandemic. Another limitation is the method we collected data. The answers that participants gave at questionnaires may be subjective. In this sense, the results of the research depend to a very large extent on these subjective perceptions.

CONCLUSIONS

Patient satisfaction with provided information by the nursing staff and the anesthesiologists reduces the pre-surgical anxiety. The results of this study revealed a positive and strong correlation of oncology patient satisfaction as a predictive variable for predicting the level of anxiety in view of their upcoming surgery.

Patient satisfaction is related to the level of information provided by the nursing staff and the anesthesiologist. In order to enhance the patient's perioperative satisfaction, it is suggested that nursing staff and anesthesiologists must improve their communication skills and provide information to oncology patients related to their disease and its management.

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ANNEX

TABLE 1. Participant responses to the Information Satisfaction Questionnaire.

	Unsatisfied	Neither	Satisfied	Very satisfied
Explanation of your illness eg diagnosis, outcome, aggressiveness, genetic risk	0%	10%	30%	60%
Information on side effects eg How would treatment affected you, explanation of early and late side effects)	2%	5%	24%	69%
Types of treatments available (e.g. options available / relative benefits/ clinical trials)	6%	43%	43%	8%
Advise on lifestyle eg diet, exercise, complementary medicine, support groups	8%	14%	46%	32%
Other practical day-day issues eg parking, transport, follow up plans	9%	39%	35%	17%
Overall information provided (summarises all information given)	4%	13%	62%	21%

TABLE 2. Multiple linear regression of the relationship of scores of STAI with the ISQ and their demographic characteristics.

	Anxiety		
	1st Model		2nd Model
<i>Risk Factors</i>	β (95%CI)	p-value	β (95%CI)
Gender (1:Males, 2:Females)	3.90 (-0.97, 8.76)	0.115	3,92 (-0,84, 8,68)
Age (years)	0.05 (-0.10, 0.20)	0.527	0,01 (-0,15, 0,15)
Information Satisfaction Questionnaire	--		-0,52 (-0,96, -0,07)
R ² adjusted	0.005		0.048