



Evaluation of Anxiety Levels of Patients Before Colon Surgery

Kolon Ameliyatı Öncesi Hastaların Anksiyete Düzeylerinin Değerlendirilmesi

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ABSTRACT

Aim: Preoperative anxiety is a phenomenon which gradually intensifies starting from the date of operational planning and which lasts until the operation. This study is intended to assess our patients' anxiety levels before colon surgery.

Method: The prospective study included 36 patients who were operated for colon cancer in our clinic between November 2014 and January 2015 study group (SG). All patients were assessed using the Spielberger's State-Trait Anxiety Inventory (STAI) and asked about the reasons they were concerned about surgery. The control group (CG) consisted of 30 medical staff at the hospital who volunteered to take part in the research, were mentally and physically healthy, and did not smoke or use drugs, alcohol or psychoactive substances.

Results: Twelve of the 36 patients who took part in the study were female, the remaining 24 patients were male, and the average age was 57.4±0.3 years. Mean STAI TX-1 score was 53.30±18.60 for the SG and 32.76±5.18 for the CG, and there was a statistical difference between the two groups (p<0.05). Mean STAI TX-2 score was 50.24±7.83 for the SG and 39.28±2.43 for the CG (p<0.05). Higher levels of anxiety were observed particularly in patients of advanced age who had comorbid diseases and high income and education level. The most common causes of anxiety were fear of requiring stoma surgery, possibility of postoperative chemotherapy, and not being able to wake up after the operation.

Conclusion: It is important to know patients' anxiety levels before any surgery so that they can be informed about these issues. In routine practice, patients with preoperative anxiety in clinics can be provided with the necessary support. In addition to this study, we are also conducting ongoing research on the effects of severity of anxiety on the postoperative period.

Keywords: Anxiety, colon surgery, State-Trait Anxiety Inventory

ÖZ

Amaç: Anksiyete, kaygı, boğulma hissi, bulantı, sıkıntılı durum anlamına gelmektedir. Ameliyat öncesi anksiyete, operasyon planlama tarihinden başlayarak giderek yoğunlaşan bir şekilde devam eden, ameliyat anına kadar süren bir fenomendir. Genel olarak çok rahatsız edici bir durum olarak tanımlanabilir. Bu çalışmamızda kolon ameliyatı öncesi hastalarımızın anksiyete düzeylerini değerlendirmeyi amaçladık.

Yöntem: Kasım 2014-Ocak 2015 tarihleri arasında kliniğimizde kolon kanseri nedeniyle ameliyatı olan 36 hasta prospektif çalışmaya alındı. Tüm hastalara Spielberger Durumluk-Süreklilik Kaygı Ölçeği [State-Trait Anxiety Inventory (STAI)] uygulandı. Çalışma grubu (ÇG) ve ameliyatla ilgili endişe nedenleri sorgulandı. Kontrol grubu (KG); çalışmaya katılmayı kabul eden, ruhsal ve bedensel olarak sağlıklı, ilaç, sigara, alkol ve psikoaktif madde kullanmayan 30 gönüllü hastanede çalışan sağlık personeli arasından oluşturuldu.

Bulgular: Çalışmaya aldığımız 36 hastanın 12'si kadın, 24'ü erkekti ve yaş ortalaması 57,4±0,3 yıl idi. STAI form TX-1 uygulanan ÇG için 53,30±18,60, KG için 32,76±5,18 olup iki grup arasında istatistiksel fark vardı (<0,05). STAI form TX-2 uygulanan ÇG için 50,24±7,83, KG için 39,28±2,43 olup iki grup arasında istatistiksel fark vardı (<0,05). Özellikle yandaş hastalığı olan, ileri yaşta olan, yüksek ekonomik ve eğitim düzeyi olan hastalarda anksiyetenin arttığı gözlemlendi. En sık rastlanan endişe nedenleri; ameliyat sonrası barsağın karına bağlanması-stoma açılması, ameliyat sonrası kemoterapi görme ihtimali ve ameliyat sonrası uyanmamak olarak belirtilmiştir.

Sonuç: Ameliyat öncesi anksiyete düzeyinin bilinmesi, hastaların bu konularda aydınlatılması açısından önemlidir. Rutin uygulamada kliniklerde ameliyat öncesi dönemde anksiyetesi olan hastalara destek verilmesi sağlanabilir. Anksiyete şiddetinin ameliyat sonrası döneme olan etkilerini araştırma konusunda başka bir çalışmamız devam etmektedir.

Anahtar Kelimeler: Anksiyete, kolon ameliyatı, Durumluk-Süreklilik Kaygı Ölçeği



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Introduction

Anxiety, which patients describe as feeling unable to breathe, worry, nausea, and unease, is reported in 10-30% of all hospital patients.¹ Preoperative anxiety has been shown to begin the moment patients decide to undergo surgery, and continue progressively until the time of surgery.^{1,2} Patients generally describe it as a very uncomfortable state. Patients who will undergo a surgical procedure may develop many anxieties, such as concern about being under general anesthesia, fear of not waking up after surgery, anxiety about remaining disabled, fear of postoperative pain, concern about losing control of their bodies, fear of sexual loss, and fear that they will not be able to return to work postoperatively. About 60-80% of patients scheduled for surgery are reported to have preoperative anxiety.^{2,3,4,5} With colon surgeries, these common preoperative anxieties are further compounded by additional fear of spousal rejection, worry about the necessity of an ostomy, and fear of leakage and smell from the ostomy, as well as various psychiatric disorders including withdrawal, desire to be alone and social isolation, and even depression.^{5,6} Listening to a patient's fears and anxieties increases their ability to cope with them. Furthermore, being aware of a patient's preoperative fears and anxiety and addressing them by educating and informing the patient before the operation is the first step in psychologically preparing them for surgery.^{4,5} Currently, the most commonly used test for measuring anxiety is the State-Trait Anxiety Inventory (STAI) developed by Spielberger et al.⁷ We aimed in this study to evaluate patients' anxiety levels before colon surgery using the STAI.

Materials and Methods

Thirty-six patients who were scheduled to undergo colon surgery for either benign or malignant causes in the İzmir Katip Çelebi University, Atatürk Training and Research Hospital, Clinic of General Surgery between November 2014 and January 2015 were included in the study [study group (SG) n=36]. The control group (CG) comprised 30 psychologically and physically healthy volunteers who were willing to participate in the study, did not use drugs, cigarettes, alcohol, or psychoactive substances, and were recruited from among hospital staff and relatives of the patients.

The study was approved by the hospital's ethics committee (approval no: 84).

Patients were interviewed privately in the clinic to assess their preoperative anxiety levels. General characteristics such as age, sex, education level, comorbid diseases, marital status, occupational status, and monthly income were recorded.

The STAI includes two different scales, one measuring state anxiety (form 1) and the other measuring trait anxiety (form 2), each comprising 20 items. In this study, we used the Turkish adaptation of the original X form of the STAI (STAI TX-1 and 2). The state anxiety scale determines how an individual feels at certain times and in specific situations, while the trait anxiety scale determines how a person feels independent of any particular situation or circumstances. The study participants were read the STAI TX-1 questionnaire to assess their state anxiety and the STAI TX-2 questionnaire to assess their trait anxiety. The researcher implementing the inventory marked the statements that best corresponded to the answers given by the participants for state anxiety level (form 1). After the questionnaire, the points were summed manually to calculate the participants' STAI scores.

Validity and reliability studies of the Turkish adaptation of the STAI were conducted by Öner and Le Compte.⁸

SPSS 16.0 (version 16.0, Chicago, Illinois, USA) software was used for statistical analyses. The Mann-Whitney U test was used to evaluate age, sex, marital status, comorbid disease, educational status, occupational status, and income level. Student's t-test was used to compare STAI TX-1 and 2 results of the SG and CG. P levels <0.05 were accepted as statistically significant.

Results

The demographic characteristics of the 36 patients in the SG are shown in Table 1. The mean age of the SG was 61.6±12.4 years. Fourteen patients were less than 60 years old, and 22 patients were over 60 years old. Comparison of STAI 1 and 2 scores between age groups showed that patients under 60 had more anxiety than those over 60. The difference between the age groups was statistically significant (p<0.05) (Table 1).

SG comprised 56% females. Females showed slightly higher levels of anxiety compared with males, but the difference was not statistically significant (Table 1).

The most common comorbid diseases in the SG were chronic obstructive lung disease, diabetes mellitus, and coronary artery disease. Patients with comorbid diseases had significantly more anxiety than those without comorbid disease (p<0.05) (Table 1).

Twenty-six (72.2%) of the patients were married, 27 (75%) were secondary school/university graduates, and 15 (42%) were at a middle-income level. Single, secondary school/university graduated, and high-income participants had statistically higher anxiety levels than others within their groups (p<0.05) (Table 1).

The most common concerns related to colon surgery were requiring stoma surgery postoperatively (33%),

possibility of requiring postoperative chemotherapy (22%), and not being able to wake up after surgery (14%). Other sources of anxiety included postoperative nausea/vomiting, postoperative pain, postoperative scarring, postoperative disability, bleeding during defecation, fear of death, sexual dysfunction, and infection of the surgical site (Table 2).

Comparison of STAI 1 and 2 anxiety values in the SG and CG revealed that SG patients had significantly higher anxiety scores ($p < 0.05$) (Table 3).

Discussion

Anxiety is a universal response to perceived danger or any other situation which makes an individual uncomfortable.¹

Table 1. Patients' demographic characteristics and State-Trait Anxiety Inventory 1 and 2 scores

	n	STAI 1-2±SD (n=36)	p*
Age (years)			<0.05
<60	14	28.65±11.05	
>60	22	15.64±7.02	
Sex			NS
Male	16	18.64±7.56	
Female	20	21.45±10.02	
Comorbid disease			<0.05
(-)	10	16.06±3.23	
(+)	26	28.03±10.23	
Marital status			<0.05
Married	26	22.56±13.37	
Single	6	28.08±3.35	
Divorced	4	16.66±8.45	
Education level			<0.05
None/Primary school	9	22.05±34.52	
Secondary school/university	27	34.67±12.78	
Occupational status			NS
Unemployed	2	15.76±12.98	
Homemaker	3	17.65±23.01	
Self-employed	3	17.54±45.49	
Employed (government or private sector)	10	27.05±14.90	
Retired	18	23.67±9.89	
Economic status			<0.05
High (>1300 TL)	9	27.65±34.09	
Middle (850-1300 TL)	12	18.23±36.87	
Low (<850 TL)	15	13.34±43.78	

STAI: State-Trait Anxiety Inventory, SD: Standard deviation, NS: Not significant

*Mann-Whitney U test

In other words, anxiety is an unpleasant emotional state involving nervousness, unease, worry, and apprehension, accompanied by physiological manifestations.^{1,2}

Patients who will undergo surgery generally worry about anesthesia, risk of death, being disabled, having pain, losing control of one's body, and losing sexual or professional competence.^{3,4} Studies have reported that 60-80% of patients are anxious preoperatively.⁹ Higher anxiety levels have been noted in women than men, in patients brought to surgery by their relatives and friends compared to those coming alone, in patients who will undergo cardiac and vertebral surgeries compared to other types of surgery, in younger patients versus older patients, and in those with negative previous experiences with anesthesia.^{9,10} Anxious patients require higher doses of anesthetic agent during induction of anesthesia. Some studies have shown that thoroughly informing patients preoperatively resulted in lower levels of preoperative and postoperative anxiety, less postoperative pain, and faster recovery.⁹ The leading causes of patient anxiety are lack of prior knowledge about the procedure to be performed,

Table 2. Distribution of sources of anxiety regarding colon surgery

Source of anxiety	n (%)
1 Postoperative pain	2 (5.6)
2 Postoperative connection of the bowel to the abdomen via a stoma	12 (33)
3 Postoperative nausea and vomiting	3 (8.3)
4 Possibility of requiring chemotherapy postoperatively	8 (22)
5 Postoperative scarring	1 (2.8)
6 Postoperative disability	1 (2.8)
7 Inability to sleep postoperatively	5 (14)
8 Bleeding during defecation	1 (2.8)
9 Fear of death	1 (2.8)
10 Sexual dysfunction	1 (2.8)
11 Infection of the surgical site	1 (2.8)
Total	36

Table 3. Comparison of the State-Trait Anxiety Inventory 1 and 2 forms in the study and control groups

	SG (n=36)	CG (n=30)	p*
STAI form TX-1	53.30±18.60	32.76±5.18	<0.05
STAI form TX-2	50.24±7.83	39.28±2.43	<0.05

STAI: State-Trait Anxiety Inventory, SG: study group, CG: control group

*Student's t-test

the patient's personal characteristics, age, sex, education level, socioeconomic status, and type of surgery to be performed.¹¹ Just as patients' preoperative anxiety can negatively affect postoperative recovery, it can also cause higher rates of complications. Most important for the patient is to learn the sources of their anxiety.^{11,12} Before colon surgery, these common preoperative anxieties are further compounded by the addition of fear of spousal rejection, worry about the opening of an ostomy, and fear of leakage and smell from the ostomy, as well as various psychiatric disorders including withdrawal, desire to be alone and social isolation, and even depression.^{5,6,13} In the present study, the most common concerns related to colon surgery were that they would need stoma surgery, that they might require postoperative chemotherapy, and that they would not be able to wake up after the operation. Stoma-related problems, changes in body image and quality of life, decreased self-esteem, and lifestyle changes all necessitate adaptation to having and living with a stoma. Postoperative adaptation to a stoma can be a prolonged process.^{14,15} In their studies, Brown and Randle¹⁶ determined that stomas have a negative impact on an individual's quality of life. Other sources of anxiety for the patients in our study included postoperative nausea/vomiting, postoperative pain, postoperative scarring, postoperative disability, bleeding during defecation, fear of death, sexual dysfunction, and infection of the surgical site.

The STAI developed by Spielberger et al.⁷ is a widely used scale for assessing anxiety. The STAI is portrayed in the literature as the gold standard in measuring preoperative anxiety.^{9,15} We utilized the STAI 1 and 2 in our study. The patients in our SG had a mean state anxiety score of 53.30 ± 18.60 and mean trait anxiety score of 50.24 ± 7.83 . The patients in our SG had significantly higher anxiety levels compared to our CG. Our results are consistent with the literature.^{3,7,17}

Moerman et al.¹⁸ evaluated the relationship between gender and anxiety and found that women had significantly higher anxiety. In our analysis of gender and STAI 1 and 2 scores, women had slightly higher anxiety levels than men, but the difference was not statistically significant.

Preoperative anxiety is known to be associated with an individual's comorbid diseases.¹⁷ In concordance with the literature, patients in the present study with comorbid diseases had significantly higher anxiety scores than those without comorbid disease.

While there are some studies in the literature reporting that anxiety increases in proportion to education level, others have reported that preoperative anxiety is not associated with education level.^{9,15,19} In our study, patients who were single, had secondary school/university education, and

had good income levels showed statistically higher anxiety scores than other patients within their groups.

Patients scheduled for colon surgery have anxiety, fear, decreased body image, and various emotional states like depression, independent of sex.¹² Preoperative education can reduce these feelings, and may contribute to patients' recovery and improved quality of life.⁶ Healthcare professionals can improve patients' quality of life through interventions to alleviate preoperative and postoperative anxiety of patients and their relatives, provide emotional support, identify possible psychiatric problems early, and provide psychiatric consultation.^{5,9}

In brief, preoperative anxiety is especially high in patients who are older, have comorbid diseases, are single, have high economic status or high education level. Knowing the sources of preoperative anxiety is crucial for helping patients be aware of and cope with this issue. Support can be provided to patients with preoperative anxiety in the clinic as a part of routine practice. We are currently conducting another study investigating the effects of anxiety severity in the postoperative period.

Ethics

Ethics Committee Approval: The study was approved by the İzmir Katip Çelebi University Ethics Committee (Approval no: 84), Informed Consent: All patients included in the study provided informed consent forms.

Peer review: External and internal peer-reviewed.

Author Contributions

Surgical and Medical Practices: Hatice Dayılar, Erdinç Kamer, Concept: Hatice Dayılar, Erdinç Kamer, Design: Hatice Dayılar, Erdinç Kamer, Data Collection or Processing: Hatice Dayılar, Gülay Oyur, Analysis or Interpretation: Hatice Dayılar, Aybala Sarıççek, Literature Search: Hatice Dayılar, Fevzi Cengiz, Writing: Hatice Dayılar, Erdinç Kamer, Mehmet Hacıyanlı.

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