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ORIGINAL ARTICLE

The Effects of Perceptions of Illness on Anxiety Specific to Surgery Levels of Patients Who Are Planned for Open Heart Surgery: A Descriptive and Correlational Study from Turkey

Açık Kalp Ameliyatı Planlanan Hastaların Ameliyata Özgü Kaygı Düzeylerinin Hastalık Algıları Üzerine Etkisi: Türkiye'den Tanımlayıcı ve İlişkisel Bir Çalışma

Hazal Onbaşıoğlu[1], Sevcan Avcı Işık[2]

[1]Department of Nursing, Gazi University Medical Faculty Hospital, Ankara, Turkey
[2]Department of Nursing, Başkent University Faculty of Health Sciences, Ankara, Turkey

Abstract

Objective: To determine the effect of illness perception on surgery-specific anxiety levels among patients scheduled for open heart surgery.

Method: This study was conducted as a descriptive and correlational study in the cardiovascular surgery intensive care unit and ward of a university hospital in the capital city of Turkey in 2022. The study data were collected through the personal information form, illness perception questionnaire (IPQ), and anxiety specific to surgery questionnaire. The study sample consisted of 92 patients who met the research criteria. T-tests, analysis of variance, pearson correlation, and regression tests were used in the analysis of the study.

Results: The timeline (acute/chronic), consequence, and uncontrolled bodily attributions of IPQ positively affect surgery-specific anxiety (beta=0.429; beta=0.178; beta=0.246; p=0.05). 63.7% of the variation in the IPQ is explained by these dimensions.

Conclusion: There was a positive and significant relationship between patients' perceptions of illness and surgery-specific anxiety levels. It is important for nurses to evaluate patients' perceptions of their preoperative illness and anxiety. More effective support can be provided by focusing on individual perceptions and anxiety levels of patients during presurgical counseling.

Keywords: Cardiac surgical procedure, illness perception, anxiety, nursing

Öz

Amaç: Açık kalp ameliyatı planlanan hastaların ameliyata özgü kaygı düzeylerinin hastalık algıları üzerine etkisini belirlemektir.

Yöntem: Çalışma, 2022 yılında Türkiye'nin başkentinde bulunan bir üniversite hastanesinin kardiyovasküler cerrahi yoğun bakım ünitesi ve servisinde tanımlayıcı ve ilişkisel olarak yürütülmüştür. Çalışma verileri kişisel bilgi formu, hastalık algısı ölçeği (HAÖ) ve ameliyata özgü kaygı ölçeği aracılığıyla toplanmıştır. Çalışma örneklemi araştırma kriterlerini karşılayan 92 hastadan oluşmuştur. Çalışmanın analizinde t-testleri, varyans analizi, pearson korelasyon ve regresyon testleri kullanılmıştır.

Bulgular: HAÖ'nün zaman çizelgesi (akut/kronik), sonuç ve kontrol edilemeyen bedensel atıfları ameliyata özgü kaygıyı olumlu yönde etkiler (beta=0,429; beta=0,178; beta=0,246; p=0,05). HAÖ'deki değişimin %63,7'si bu boyutlarla açıklanmaktadır.

Sonuç: Hastaların hastalık algıları ile ameliyata özgü kaygı düzeyleri arasında pozitif ve anlamlı bir ilişki olduğu bulunmuştur. Hemşirelerin hastaların hastalık algılarını ve olumsuz algılardan kaynaklanan kaygılarını ameliyat öncesi dönemde değerlendirmeleri önemlidir. Ameliyat öncesi danışmanlık süreçlerinde hastaların bireysel algılarına ve kaygı düzeylerine odaklanılarak daha etkili destek sağlanabilir.

Anahtar Kelimeler: Kardiyak cerrahi işlemi, hastalık algısı, anksiyete, hemşirelik

Corresponding Author:
Sevcan Avcı Işık, sevcanhunter@gmail.com

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Introduction

Cardiovascular diseases (CVD) in Turkey are an essential life-threatening disease despite improvements in prevention and treatment activities (1,2). CVDs are a group of disorders of the heart and blood vessels, consisting of coronary artery disease, hypertension, cerebrovascular disease, rheumatic heart disease, peripheral artery disease, congenital heart disease, heart failure, and cardiomyopathies. It has been reported that approximately 19.1 million deaths worldwide in 2020 will be due to CVD (2). CVD has been reported as one of the two leading causes of death in the United States since 1975, with 1 in 4 deaths, and it is still ranked as the leading cause of death (3). According to 2022 statistics, 342.3% of deaths due to CVDs in Turkey were due to ischemic heart disease, 23.5% to other heart diseases, 19.2% to cerebrovascular diseases, and 9.9% to hypertensive diseases (1).

Different treatment methods for CVD include medication, percutaneous coronary intervention, and surgery (2,4). Various techniques are used for the surgical treatment of cardiovascular diseases. Open heart surgery is one of the most commonly used techniques (5-7). In patients who receive treatment/care and follow-up in the intensive care unit after open heart surgery, serious health problems such as pain, infection, bleeding, atrial fibrillation, acute renal failure, pulmonary problems, ventricular dysfunction requiring inotropic support, stroke, gastrointestinal problems, anxiety, depression, delirium, and early sleep disorders can be observed (5,7-9). Cardiac surgery is a stressful life experience associated with physical and psychological disorders, such as fear, depression, and pain. Although traditional approaches focus primarily on surgical and anesthetic techniques, somatic comorbidities, diet, and physical activity, increasing evidence indicates the importance of psychological preparation for improving postoperative outcomes in cardiac surgery (10,11).

The individual's perception of the illness affects his/her views and perceptions about the treatment, coping behaviors, course of treatment, and the development and control of complications. In this respect, it is stated that the perception of illness is the most important factor affecting treatment (12-14). Patients' perceptions of their illness change in direct proportion to the anxiety and stress they experience. If patients think their illness is chronic, difficult to heal, difficult to treat, and cannot manage this process well, they may experience anxiety (14,15). In the study of Thagizadeh et al. (16) in Iran to determine the perception of illness and cardiovascular risk factors in patients with myocardial infarction who underwent percutaneous coronary intervention. It has been observed that patients' negative perceptions of their illness can lead to psychological consequences, such as stress, anxiety, and depression.

Due to the vital meaning and importance of the heart, the fact that the heart will be intervened in the individuals' life causes fear of death in patients and increases the anxiety state before and after cardiac surgery. To make presurgical preparations for open-heart surgery, patients are hospitalized a few days before. This process may create a more stressful waiting period for patients than the preparation phase (9,11,17-19).

Nurses are those who stay with patients for the longest time before, during, and after surgery, plan their physical, psychological, and social needs, and implement interventions related to this process. While nurses evaluate patients holistically in the presurgical period, it is necessary to evaluate patients' perceptions and concerns about their illness and plan their education and information regarding these perceptions. The implementation of these interventions is important for preventing the development of complications in the postoperative period. Patients' perceptions of the illness may be necessary for the training given by nurses in the presurgical period to be effective (20,21). In the literature review, very few similar studies have evaluated the effect of patients' and nurses' perceptions of the illness in the preoperative period on the level of anxiety specific to surgery and nurses' perceptions (22,23). This study was conducted to determine the effect of illness perceptions of patients scheduled for open-heart surgery on their levels of anxiety specific to surgery.

Main Points

- This study found that the surgery-specific anxiety levels of patients scheduled for open heart surgery were affected by their perception of the disease.
- It was determined that individuals with a positive perception of illness experienced less anxiety.
- In clinical practice, it is important for nurses to evaluate patients' anxiety and perceptions of the surgical process and plan their care accordingly.

Material and Method

Study Design

This descriptive and correlational study was conducted to determine the effect of illness perceptions of patients who were planned for open-heart surgery on their levels of anxiety specific to surgery levels.

Settings and Participants

The research was carried out between 30.01.2022 and 30.11.2022 in the cardiovascular surgery intensive care unit and service of a university hospital in Turkey's capital. Patients scheduled for open-heart surgery are usually admitted to the cardiovascular surgery service one or two days in advance. In cases where there is no place in the cardiovascular surgery service or patients need to be closely followed before surgery, patients can also be hospitalized in the cardiovascular surgery intensive care unit. An average of 150 coronary artery bypass grafting (CABG) and heart valve surgeries are performed annually in the hospital where the study was conducted.

The study population consists of patients who are planning for open-heart surgery in our hospital. The study sample consisted of patients in the population who met the criteria for participation in the study and were informed about the study, among patients who were admitted to this hospital at least 1 day before the date of surgery and planned.

As a result of the literature review, the minimum sample size for the study was calculated by an expert. G*Power analysis was used for sample selection. The minimum size of the samples to be included in the study was calculated based on the number of patients in the last year. When the test power was taken as 80% and the confidence level as 95%, the minimum sample size to cover the entire study was 90 patients. A total of 105 patients were reached in the preoperative period, but 93 volunteered to participate in the study. When the validity of the questionnaires was evaluated, the study was completed in 92 patients because one patient did not complete the questionnaire.

Inclusion criteria for the research sample;

- Eighteen years and older,
- CABG and heart valve surgery,
- Turkish language literacy,
- First-time open heart surgery,
- Patients who voluntarily participated in the study were included.

Exclusion criteria for the research sample;

- Those who were planned for open-heart surgery due to heart transplantation, trauma, tumor, etc., patients who did not complete the questionnaires.

Data Collection

In the study, data were collected using the personal information form, the illness perception questionnaire (IPQ), and the anxiety specific to surgery questionnaire (ASSQ).

Personal İnformation Form

The personal information form was prepared using the literature to determine the socio-demographic characteristics of the patients who will participate in the study and their characteristics related to the illness (15,18,21,24). A form was created with questions to determine the participants' socio-demographic characteristics, such as age, gender, income levels, health habits, and illness processes. The form comprises 13 questions in total. There are 9 socio-demographic questions and 4 disease-related questions in the form. There are questions related to the disease, such as previous surgery, duration of the disease that caused the surgery, presence of open heart surgery in the family, and presence of chronic disease.

Illness Perception Questionnaire

The IPQ was developed in 1996 by Weinman et al. (25) identified important areas requiring renewal in the dimensions of the IPQ, which was renewed in 2002. The Turkish adaptation, validity, and reliability study was performed by Kocaman et al. (24). IPQ; consists of three dimensions: Identity, opinions about the illness, and causes of illness.

The identity dimension is evaluated by the patient associating the illness's symptoms with the illness. Fourteen basic symptoms (pain, burning in the throat, nausea, difficulty breathing, weight loss, fatigue, joint stiffness, burning in eyes, wheezing, headaches, stomach complaints, sleep difficulties, dizziness, loss of strength) are questioned. The dimension of opinions on the illness includes seven subdimensions. These were named timeline (acute/chronic), consequences, personal control, treatment control, illness coherence, timeline cyclical, and emotional representations. In the content of the subdimensions, the person's beliefs about the severity of their illness and its possible effects on their physical, social, and psychological functioning; personal control, the patient's perception of control over the duration and treatment of the illness; treatment control, the patient's confidence in the treatment; illness coherence, how much the person understands or comprehends their illness; emotional representations assess emotional impacts from illness. The illness cause dimension consists of 4 sub-dimensions. Psychological attributions, risk factors, immunity, accident, and chance. When the subdimensions are examined; in personal attributions, the individual considers his behavior, mood, personal characteristics, and the effect of body resistance as the cause of illness; external attributions, attributing the cause of the illness to the outside, attributing to external factors; and lifestyle attributions predict one's lifestyle as the cause of illness. Uncontrollable bodily attributions include attributing the cause of illness to variables that the patient cannot control; chance refers to seeing a bad chance or chance as the cause of illness. Total points are not taken in the evaluation of the scale, and each sub-dimension is evaluated over the average (24).

The internal reliability of all subdimensions of the IPQ was high, and Cronbach's alpha values ranged from 0.60 to 0.85. In the test-retest group, the internal validity of all subdimensions of the IPQ was high, and the Cronbach's alpha values were 0.65-0.93 (24). In this study, Cronbach's alpha values varied between 0.63 and 0.86.

Anxiety Specific to the Surgery Questionnaire

Karanci and Dirik (26) developed the ASSQ in 2003. The ASSQ is a scale that is applied to adult patients who will undergo surgery, without time limit. The scale comprises 10 items in total. The items are intended to measure pain and fear of dying during surgery, as well as anxiety of complications and limitations that may occur after surgery. ASSQ score is obtained due to the sum of the responses given to all

items. Only item 8 is rated in reverse before being added. The scores to be obtained from the scale range from 10 to 50. High scale scores reflect concerns about experiencing high levels of pain, dying during surgery, and complications and limitations that may occur after surgery. Karanci and Dirik (26) found the Cronbach's alpha value of the scale to be 0.79. In this study, the Cronbach's alpha value was found to be 0.80.

Lists containing the surgery dates of patients who met the research criteria were obtained daily from the responsible nurses. The patients participating in the study were visited in the patient rooms of the cardiovascular surgery intensive care unit and service one day before the planned operation date by the researcher. Patients were informed verbally and in writing about the study, and consent forms were filled out by each patient. The questionnaires were answered by the patients in the ward in the patient rooms and by the patients in the intensive care unit in the arena. It took approximately 20-30 minutes for the questionnaires to be answered by the patients.

Statistical Analysis

The data analysis was performed using the Statistical Package for the Social Sciences 21.0 package and was performed at a 95% confidence level. The kurtosis and skewness coefficients were examined to determine the conformity of the scores to the normal distribution. According to the scale values, the kurtosis and skewness coefficients of each value were between -3 and +3, and the scores showed a normal distribution. The variation in scale scores based on demographic characteristics was examined using t-tests and one-way ANOVA. Pearson's correlation coefficient was employed to assess the relationship between variables, while the regression test was utilized to analyze the corresponding effects. $P<0.05$ was considered significant. Multiple linear regression analysis was performed to evaluate the effect of illness perception on surgery-specific anxiety. In the multiple linear regression analysis, after the normality assumption was provided for the subdimensions of ASSQ and IPQ, they were included in the regression model using the enter method. The valid model was created by taking the variables for which the one-way ANOVA statistics showed significance at the p=0.001 level for each scale. It was determined that there was no multicollinearity [variance inflation factor (VIF): 1.2-2.3 (N)] or autocorrelation (DurbinWatson: 1.796) problem in the models obtained for each scale, and the standard residuals were between [-3 +3] in the 95% confidence interval, thus meeting the regression analysis conditions (27).

Ethical Considerations

The study was approved by the Medical and Health Sciences Research Board and Ethics Committee of the Başkent University (desicion no: 22/06, date: 26.01.2022). Necessary permissions were obtained from the chief physicians of the hospital where the research would be conducted. Permission to use the scales was obtained from the authors who determined the validity and reliability of the scales used in the study. Written informed consent was obtained voluntarily from the patients who planned to be included in the study by providing written and verbal information about the subject and that their names would be kept confidential. This research was conducted in compliance with the guidelines of the Declaration of Helsinki (2013 revision). Permission for use was obtained from those who performed the validity and reliability of the IPQ and ASSQ scales.

Results

The mean age of the patients participating in the study was 59.57 years; 33.7% were under the age of 55 years and over the age of 65 years, 66.3% were male, 85.9% were married, 43.5% were primary school graduates, 44.6% lived in a province, and 35.9% were working. 47.8% of the patients stated that their income was less than their expenses, 51.1% smoked, and 75% of them did not use alcohol. 48.9% of the patients stated that had a chronic illness, 31.5% had a previous operation, 68.4% had the illness that caused this surgery for more than 1 year, and 37% had a family history of open heart surgery (Table 1).

Symptoms experienced by patients since the beginning of the illness; fatigue 78.3%, 66.3% breathlessness; 63% pain; 54.3% dizziness; 53.3% were determined as headaches and loss of strength. 57.6% of the patients thought that the symptoms of pain, 55.4% of the symptoms of fatigue, 52.2% of the feelings of dizziness and wheezing, and 50% of the symptoms of difficulty in breathing were related to their current illness (Table 2). The patients participating in the study stated that the most common cause of illness was overwork and that the least accident or injury 27.2-56.5%.

İllness symptoms subdimension mean score was found to be 4.72±2.86. The mean scores of the subdimensions of opinions about the illness were as follows; timeline (acute/chronic) 17.49±5.84; consequence 19.37±4.53; personal control 16.17±4.23; treatment control 11.45±3.71; time cyclical 10.08±2.39; emotional representations 19.66±4.49; illness coherence was found to be 7.85±3.05. In the subdimension of the causes of illness, the mean scores are; personal attributions 21.87±5.64; external attributions 10.40±3.14; lifestyle attributions 8.23±2.79; uncontrolled bodily attributions 9.23±2.32; and chance factor was found as 3.21±1.25 (Table 3).

Most of the patients, respectively; they worry that they will have a lot of pain after the operation they will (3.65±1.15). They believe that they will get rid of all their pains and problems after the operation (3.52±1.08). They frequently think of dying (3.21±1.32). It was determined that they felt anxiety because of this. The mean ASSQ score was 23.37±7.46 (Table 4).

When the relationship between the ASSQ, the IPQ, and age was examined, there was a weak positive correlation between the ASSQ and illness identity (r=0.230); a strong

Table 1. ***Demographic and Illness Characteristics of the Patients (n=92)***			
Demographic and illness characteristics		**n**	**%**
Age	≤55	31	**33.7**
	56-65	30	32.6
	>65	31	**33.7**
The average age =59.57±11.33 Min: 28; max: 83			
Gender	Female	31	33.7
	Male	61	**66.3**
Marital status	Married	79	**85.9**
	Single	13	14.1
Education status	Only literate	15	16.3
	Primary school	40	**43.5**
	Secondary education	8	8.7
	High school	21	22.8
	Bachelor's and above	8	8.7
Living place	Province	41	**44.6**
	District	39	42.4
	Town/village	12	13.0
Working status	Yes	33	35.9
	No	59	**64.1**
Income rate	Income less than expenses	44	**47.8**
	Income equals expenses	38	41.3
	Income more than expenses	10	10.9
Smoking status	Yes	47	**51.1**
	No	45	48.9
Alcohol use status	Yes	23	25.0
	No	69	**75.0**
Chronic disease status	Yes	45	48.9
	No	47	**51.1**
Prior surgery status	Yes	29	31.5
	No	63	**68.5**
Duration of the disease causing the surgery	1 year and less	29	31.6
	More than 1 year	63	**68.4**
Having a relative who has undergone open heart surgery in the family	Yes	34	37.0
	No	58	**63.0**
Min=minimum, Max=maximum			

positive correlation between timeline (acute/chronic) (r=0.673); a moderate positive relationship between emotional representations (r=0.539); a moderate positive relationship between the consequence (r=0.496); a moderate positive relationship between treatment control (r=0.341); a moderate positive relationship between personal attributions (r=0.483); a weak positive correlation between external attributions (r=0.223); and a moderate positive relationship (r=0.384) between uncontrolled bodily attributions. A weak positive correlation between age and personal attributions (r=0.219); a weak positive correlation between uncontrolled bodily attributions (r=0.220) (Table 5).

The model established to examine the effect of the IPQ subdimensions on the ASSQ is significant ($p<0.05$). When the results are examined, the timeline (acute/chronic); consequence and uncontrolled bodily attributions positively affect the ASSQ (beta=0.429; beta=0.178; beta=0.246 $p<0.05$). 63.7% of the variation in the IPQ is explained by these dimensions (Table 6).

Discussion

The concept of illness perception refers to how illness experiences are understood by the individual. The perceptions of patients about their illness are very important for the course of the illness and the process of treatment adherence (13,28,29).

Table 2. ***Illness-identity Dimension Illness Symptoms (n=92)***		
Symptoms	**This symptom has been present since the beginning of the illness (%) Yes***	**This symptom is related to my illness (%) Yes***
Pain	**63.0**	**57.6**
Burning throat	29.3	15.2
Nausea	28.3	19.6
Breathlessness	**66.3**	**50.0**
Weight loss	30.4	27.2
Fatigue	**78.3**	**55.4**
Stiff joints	22.8	10.9
Sore eyes	18.5	6.5
Wheezing	51.1	**52.2**
Headaches	**53.3**	38.0
Upset stomach	40.2	10.9
Sleep difficulties	44.6	34.8
Dizziness	**54.3**	**52.2**
Loss of strength	**53.3**	41.3
*=*More than one option is marked*		

Table 3.
Distribution of Patients' Mean Scores on the Illness Perception Questionnaire (n=92)

Illness perception questionnaire			
		Min-max	**Mean ± SD**
Identity		0-10	4.72±2.86
Opinions on the illness	Timeline (acute/chronic)	6-30	17.49±5.84
	Consequence	10-30	19.37±4.53
	Personal control	7-26	16.17±4.23
	Treatment control	5-22	11.45±3.71
	Timeline cyclical	3-15	10.08±2.39
	Emotional representations	7-30	19.66±4.49
	Illness coherence	3-15	7.85±3.05
Illness causes	Personal attributions	7-34	21.87±5.64
	External attributions	4-20	10.40±3.14
	Lifestyle attributions	3-14	8.23±2.79
	Uncontrollable bodily attribution	3-15	9.23±2.32
	Chance	1-5	3.21±1.25

Min=minimum, Max=maximum, SD=standard deviation

In this study, the mean scores of the sub-dimensions of the IPQ were 4.72±2.86 in the illness identity (symptoms) sub-dimension; in the opinions about the illness sub-dimension, the highest emotional representations sub-dimension, illness coherence sub-dimension, in the probable causes of illness sub-dimension, the highest personal attributions sub-dimension were found in the lowest chance sub-dimension. In a study investigating illness perception in men and women after open heart surgery; being female was associated with an increased likelihood of worse illness perception on the items timeline [odds ratio (OR): 2.06; 95% confidence interval (CI): 1.25-3.41], personal control (OR: 2.07; 95% CI: 1.24-3.43), identity (OR: 1.96; 95% CI, 1.17-3.28), understanding (OR: 1.80; 95% CI: 1.06-3.05), and emotional response (OR: 2.09; 95% CI: 1.27-3.46). Length of stay was associated with an increased likelihood of worse illness perception in the items personal control (OR: 1.08; 95% CI: 1.01-1.16) and concern (OR: 1.09; 95% CI: 1.01-1.17) (13). As a result of Bayad's (22) study on detecting illness perception and anxiety in preoperative surgery patients, the highest IPQ was 8.77±1.94 in the sub-dimension of illness coherence, and the lowest was 2.24±2.45. It was observed that the findings of the studies examined in the literature review were similar to our study (15,16,22,23). It can be said that the patients participating in this study perceived their illness as negative and chronic due to their thoughts and behaviors and did not see the source of their illness as luck.

Although anxiety is important for all patient groups, it can be particularly important for patients hospitalized in surgical clinics. The fear of death, being disabled, feeling pain, losing body control, not getting the necessary care, negative social life, falling in economic status, reaching a life-threatening diagnosis, not being enough for himself and his family, staying away from loved ones and activities, and sexual competence may lead to the development of fears such as loss of operability. When the surgery is open-heart surgery, the psychological effects of the surgery can be experienced more intensely. It has been reported that preoperative anxiety negatively affects surgery, anesthesia, and postoperative recovery (18,30-32).

In this study, the patients' ASSQ score was 23.37±7.46 stated that the thoughts of dying frequently come to my mind (3.21±1.32). In a study evaluating preoperative anxiety in patients undergoing heart surgery; a moderate level of anxiety was noted in these patients (19). As a result of another prospective study evaluating the depression and anxiety of patients who will undergo CABG surgery, the anxiety level of the patients was determined as (8.12±5.44) (33). In a study by Sigdel et al. (34) in which anxiety was evaluated in Nepalese adult patients awaiting heart surgery in 2020, preoperative anxiety was found in 58.5%. In a study examining the effect of preoperative individualized education on anxiety and pain severity in patients after open-heart surgery, patients reported the most common sources of anxiety to be lack of information, being away from family, risk of death, and pain (20). The results support the literature review findings.

In surgical patients, perceptions of the illness in the preoperative period affect preoperative anxiety, postoperative pain, complications, healing, and treatment compliance. In this context, the perception of illness is an important factor that affects the treatment process for patients (14,15,23). Timeline (acute/chronic), consequence,

and uncontrollable bodilistic attributions, which are dimensions of IPQ, positively affect the ASSQ. These dimensions explain 63.7% of the variation in the IPQ. In a study conducted by Bayad (22) on preoperative surgery patients, when the relationship between anxiety and perception of illness was evaluated; A positive correlation was found between the level of being affected by the illness, the level of anxiety, the level of emotional involvement, and the total score of the IPQ and the anxiety score, and a weak-moderate correlation was found between the treatment coherence and the anxiety score in the negative direction (22). Patients with high anxiety stated that their illness affected their lives more. Patients with high anxiety about their illness also have higher levels of emotional involvement, and their belief in treatment decreases. In the regression analysis of a different study, preoperative anxiety levels were found to be high in patients with a high perception of serious illness before surgery (23). It was determined that as the anxiety level increased, the perception of illness also increased negatively. Moreover, as the negative perception of illness increased, the level of anxiety also increased. No other study has examined the relationship between illness perception and anxiety before open heart surgery. When examining studies from different fields; in a study examining the relationship between illness perception, anxiety, and depression in tuberculosis patients; negative illness perceptions were clearly related to reports of mood symptoms (35). The results of the mediation analysis of a study examining the role of illness perception in the relationship between gastrointestinal symptoms and

Table 4.
Mean Scores for Anxiety Specific to Surgery Questionnaire Mean Scores (n=92)

	Min-max	M ± SD
1. Thoughts of dying frequently come to mind.	1-5	3.21±1.32
2. If something happens to me, my family and children will remain helpless.	1-5	2.57±1.43
3. I am afraid that I will not be able to regain consciousness after the surgery.	1-5	3.11±1.24
4. I worry that I may die during the operation due to bleeding or other reasons.	1-5	2.82±1.29
5. I worry that I will not recover completely after the surgery because of inflammation or other issues.	1-5	2.61±1.12
6. I am afraid that after the operation, I will not be able to walk again and/or I will not be able to care for myself as I previously did.	1-5	2.8±1.23
7. I worry that I will have a lot of pain after the operation I will.	1-5	3.65±1.15
8. I believe that I will get rid of all my pain and problems after the surgery.	1-5	3.52±1.08
9. I am afraid that I will be physically disabled by the operation.	1-5	2.47±1.23
10. I think I will feel pain during the operation.	1-5	2.66±1.22
Anxiety specific to the surgery questionnaire.	13-49	23.37±7.46

Min=minimum, Max=maximum, M=mean, SD=standard deviation

Table 5.
Relationship Between Anxiety Specific to Surgery Questionnaire, Illness Perception Scale, and Age (n=92)

		Anxiety specific to the surgery questionnaire	Age
Identity Personal control	r	**0.230***	0.098
	p	0.027	0.353
Personal control	r	0.193	-0.031
	p	0.066	0.769
Timeline (acute/ chronic) Identity	r	**0.673****	0.197
	p	0.000	0.060
Emotional representations	r	**0.539****	0.194
	p	0.000	0.064
Illness coherence	r	0.023	0.032
	p	0.826	0.761
Consequence	r	**0.496****	0.115
	p	0.000	0.276
Treatment control	r	**0.341****	0.085
	p	0.001	0.421
Timeline cyclical	r	0.018	0.084
	p	0.868	0.424
Personal attributions	r	**0.483****	**0.219***
	p	0.000	0.036
External attributions	r	**0.223***	0.165
	p	0.033	0.117
Lifestyle attributions	r	-0.018	-0.155
	p	0.862	0.140
Uncontrollable bodily attribution	r	**0.384****	**0.220***
	p	0.000	0.035
Chance	r	-0.111	-0.003
	p	0.291	0.978
Age	r	0.158	
	p	0.132	

**=p<0.05, **=p<0.01*

Table 6.
Effect of Patients' Perception of Illness on Anxiety Specific to Surgery (n=92)

Dependent variable	Independent variable	Unstandardized coefficients		Standardized coefficients	t	p	R^2
		B	SE	Beta			
Anxiety specific to the surgery questionnaire	Constant	-1.691	4.675		-0.362	0.719	0.637
	Identity	-0.025	0.216	-0.010	-0.115	0.909	
	Personal control	-0.188	0.151	-0.107	-1.241	0.218	
	Timeline (acute/chronic)	0.548	0.127	0.429	4.317	**0.000***	
	Emotional representations	0.230	0.162	0.139	1.416	0.161	
	Illness coherence	-0.175	0.200	-0.071	-0.874	0.385	
	Consequence	0.293	0.146	0.178	2.009	**0.048***	
	Treatment control	0.376	0.193	0.187	1.951	0.055	
	Timeline cyclical	-0.056	0.236	-0.018	-0.239	0.812	
	Personal attributions	0.114	0.136	0.087	0.840	0.404	
	External attributions	0.098	0.207	0.041	0.476	0.636	
	Lifestyle attributions	0.066	0.218	0.025	0.301	0.764	
	Uncontrollable bodily attribution	0.790	0.249	0.246	3.169	**0.002***	
	Chance	-0.090	0.474	-0.015	-0.190	0.850	

*Model: F=10.535, p=0.000, *=p<0.05*

anxiety suggested that illness perception partially mediated the association between the severity of gastrointestinal symptoms and anxiety symptoms, with a mediating ratio of 25.3% (36). A study examining the relationship between illness perception and anxiety level in cancer patients; it was found that illness perception affected anxiety (37). The literature shows that the disease and surgery process changes the perceptions of patients, and their anxiety is affected. For the perioperative process to be managed well by nurses, the perceptions and anxieties of patients during the preoperative period should be comprehensively evaluated.

Study Limitations

As a limitation, although the results obtained from this study are limited to patients who were scheduled for open-heart surgery in the university hospital where the study was conducted, the findings must be generalized to the sample.

Study Implications

This study examined the effects of patients' perceptions of their illness on surgery-specific anxiety levels before open heart surgery. These findings may provide information for nurses to evaluate patients' presurgical perceptions and, if necessary, develop strategies to correct these perceptions. In this way, it can be aimed at reducing patients' concerns about the surgical process by providing presurgical counseling and support. Adopting a more personalized approach in clinical practice can improve patient needs. More effective support can be provided by focusing on patients' individual perceptions and anxiety levels during presurgical counseling.

Conclusion

As a result, it was determined that the illness perceptions of patients who were scheduled for open-heart surgery affected their preoperative anxiety levels. Factors such as patients' perception of the illness as negative, chronic, unmanageable, poor results, previous negative experiences, and the aging process can create anxiety in patients during the preoperative period. In addition, the thought that patients will experience a lot of pain after surgery and that the thought of death will cause them to experience anxiety in the preoperative period. In this context, the healthcare team must be aware of the perceptions of the illness and anxiety levels regarding surgery during the preoperative and postoperative periods. Nurses should reduce negative perceptions of the illness and anxiety experienced by patients scheduled for open heart surgery. In this context, planning and implementing individual and situation-specific nursing interventions can contribute positively to the postoperative process.

Ethics Committee Approval: The study was approved by the Medical and Health Sciences Research Board and Ethics Committee of the Başkent University (desicion no: 22/06, date: 26.01.2022).

Informed Consent: Patients were informed verbally and in writing about the study, and consent forms were filled out by each patient

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