

## Original Article

### The relationship between pain beliefs and anxiety levels in patients undergoing urologic surgery

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#### Abstract

**Aim:** The study was completed with a descriptive design with the aim of determining the effect of preoperative stress on pain beliefs and used a relationship seeking design with the aim of revealing whether there is a significant correlation between pain beliefs and surgery anxiety levels among patients about to undergo surgical procedures in the urology clinic. **Material and method:** With descriptive and relationship seeking type, the study was completed with 112 patients admitted to the urology clinic for surgical procedures. For collection of data, a personal information form, pain beliefs scale and preoperative anxiety scale were used. **Results:** The majority of volunteers participating in the research were male (62.5%), married (74.1%), aged 51 years or older (56.3%), primary school graduates (28.6%) and retired (38.4%) with moderate income levels (48.2%). Most patients had spinal anesthesia (48.1%) administered. There was a significant difference found between the surgery anxiety levels and pain beliefs with the anesthesia type administered. There was a negative, low power and statistically very advanced correlation between surgery anxiety and pain beliefs ( $r: -0.445; p < 0.05$ ). Additionally, among the pain belief subdimensions psychological beliefs were mostly correlated with surgery anxiety ( $r: -0.546; p < 0.05$ ). **Conclusion:** The research found a correlation between anxiety levels and pain beliefs of patients and concluded that researching this in different samples and nurses assessing the pain beliefs of patients will reduce anxiety.

**Keywords:** urology patient; surgical procedure; pain beliefs; anxiety; nurse

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#### Background

Despite the lengthened life expectancy and increased quality of life of patients, all major or minor surgeries are a significant source of anxiety for patients. Surgical interventions cause disruption of body image, reduce self-esteem and change lifestyle and are seen as life-threatening elements. There may be a variety of reasons for the anxiety experienced by patients. Patients experience anxiety due to encountering situations like death, hopelessness, role or responsibility changes, receiving a life-threatening diagnosis or being paralyzed.<sup>1-4</sup> For example, the fear of death experienced before surgery was stated to be greater than fear of death felt during surgery.<sup>5,6</sup> Another cause of anxiety is whether pain will be felt. The study by Yıldız identified that nearly three

quarters (76.5%) of patients experienced anxiety related to surgery, with feeling pain after surgery (64.5%) being the first among the causes of anxiety in the preoperative period.<sup>7</sup>

Pain is defined as “an unpleasant subjective sense and feeling occurring with or without strong tissue injury that is sourced in any region of the body” by the International Pain Foundation. Pain is a complicated and multidimensional experience that reduces quality of life.<sup>8</sup>

Surgical pain comprises the combination of unpleasant sensory, emotional and mental experiences of autonomic, psychological and behavioral responses due to the surgical wound.<sup>9</sup>

Pain displays differences from person to person

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and from culture to culture. A stimulant that causes intolerable pain for one person may be easily tolerated by another.<sup>10</sup>

A universal experience occurring in all age groups, pain is the most common cause of individuals seeking treatment.<sup>11</sup> Pain treatment requires a multidisciplinary approach.<sup>12-15</sup> Nurses are an indispensable part of this team; they have a large effect on pain management as they are the people in most frequent contact with the patient. In the occupation of nursing, founded on the philosophy of comforting patients, the role of the nurse in pain management is to determine the causes of pain, its features and the factors affecting pain control, to identify pain, to accurately assess the effect of pain on the patient and the family and to use the available resources to ease pain and speed recovery.<sup>12</sup> The role of nurses in pain control, which separates them and makes them important, is that nurses spend longer durations with patients compared to other team members, learn the previous pain experiences and coping strategies of patients, if necessary, benefit from them, teach and guide patients in relation to coping strategies for pain, administer the planned analgesic treatment and observe results, have an empathic approach and provide sympathy.<sup>16,17</sup>

The American Pain Society (2003) reported that the most common cause of unresolved pain within the American health system was the lack of evaluation of pain and pain resolution processes by medical personnel.<sup>11</sup> As a result, sensitivity should be shown towards pain statements and behavior indicating pain among patients.<sup>18, 19</sup> The main obstacle and the most important problem of clinical assessment is emphasized to be understanding how people perceive pain. There may be incompatibilities between the reports of patients in terms of pain and behavior.<sup>20</sup> For example, patients may define pain as eight on the numerical rating scale, but be able to smile and walk, while another patient reporting it as two on the scale may have symptoms like tachycardia and sweating. This difference may be related to pain beliefs and very good use of coping mechanisms.

Nurses should be sensitive to physiological and behavioral symptoms, question patients' attitudes and beliefs and perform pain assessments before and after analgesic administration.<sup>21</sup> A study in 1994 by Williams et al. revealed that different beliefs associated with pain were related to different moods. They stated that beliefs about the continuity of pain were associated with anxiety, while beliefs about its

mystery were associated with discomfort, feelings of guilt and depressive symptoms.<sup>22</sup>

Most studies in the field have questioned the association of different pain beliefs with pain severity, functional levels, painkiller consumption and use of treatment services. It is considered that beliefs about behavior displayed in relation to reducing, preventing or coping with pain are effective both on the behaviors and the stress levels linked to pain in the person.

## **Material and method:**

### **Research Aim and Type**

This study was completed with a descriptive design with the aim of determining the effect of preoperative stress on pain beliefs and used a relationship seeking design with the aim of revealing whether there is a significant correlation between pain beliefs and surgical anxiety levels among patients about to undergo surgical procedures in the urology clinic.

### **Research questions**

Based on the aim of the research, the answers to the following research questions were sought.

- ✓ How are the pain beliefs of patients undergoing surgical procedures in the urology clinic assessed?
- ✓ What levels of surgery anxiety are experienced by patients undergoing surgical procedures in the urology clinic?
- ✓ Is there a correlation between pain beliefs and surgery anxiety with the type of anesthesia to be administered among patients undergoing surgical procedures in the urology clinic?
- ✓ Is there a correlation between pain beliefs and surgery anxiety among patients undergoing surgical procedures in the urology clinic?
- ✓ To what extent does surgery anxiety affect pain beliefs of patients undergoing surgical procedures in the urology clinic?

### **Research population and sample**

The population of the research consisted of patients admitted as inpatients for surgical procedures in the urology clinic of a public university hospital located in the city of Çanakkale. We planned to have an average of 5-10 people per item<sup>23-24</sup> in the sample of the study and to reach 110-220 data in line with the number of items of the scales used (22 items).

The population of the research was 234 patients

admitted to the urology clinic between January-April 2018 for surgical procedures. Data were collected pre-operatively by interviewing literate patients aged 18 years and over who agreed to participate in the study (n=112).

### Data collection tools

The data collection tools comprised a participant information form, pain beliefs questionnaire and surgery anxiety scale.

**Participant information form:** This comprised 9 questions about personal characteristics of the patients (age, gender, marital status, educational level, occupation, income level, previous surgical experience, chronic disease and type of anesthesia).

**Pain Beliefs Questionnaire (PBQ):** The Pain Beliefs Questionnaire was developed by Edwards et al. in 1992.<sup>25</sup> The validity and reliability of the questionnaire for Turkish were carried out by Sertel-Berk in 2006.<sup>26</sup> The scale comprises 12 items and two subdimensions. The statements on the scale are 6-point Likert type, with 1 point for “none of the time” and six points for “all the time”. The reliability coefficient for the questionnaire used in Turkey was found to be 0.70.<sup>26</sup>

**Surgery-Specific Anxiety Scale (SSAS):** This scale was developed in Turkish by Karancı and Dirik in 2003 with the aim of measuring surgery-specific anxiety levels among surgery patients during and after surgery.<sup>27</sup> The items attempt to measure fears about pain and dying during surgery and concerns related to complications and limitations that may occur after surgery.<sup>27</sup> As a result, it should be used for surgery patients. It comprises a total of 10 items. The scale is 5-point Likert type (1: Completely disagree, 5: Completely agree). The surgery-specific anxiety points are obtained by adding the responses to all items. The maximum total point is 50. There is no cut-off value for the assessment of scale points. Increases in scale points show increased anxiety levels. The internal consistency coefficient for the scale was reported to be 0.79.<sup>27</sup>

### Analysis of Data

Data were analyzed with the IBM SPSS Statistics 21.0 program (licensed to Istanbul University). For analysis of data, descriptive (number, percentage, mean and standard deviation), correlation analysis (Pearson moment multiplication correlation) and

internal consistency analysis (Cronbach alpha) were used. For statistical assessment, significance was accepted as  $p < 0.05$ .

### Ethical Aspects of the Research

Before beginning the research, permission was granted by Anakkale Onsekiz Mart University Clinical Research Ethics committee. Participants had the aims of the study explained and informed consent was obtained from those who volunteered to participate.

### Results:

The descriptive features of patients participating in the research are given in Table 1.

**Table 1: Descriptive Characteristics of patients (n:112)**

Variables		n	%
<b>Age</b> Mean:55.23±18.26 Min:19 max:83	50> years	49	43.7
	51< Years	63	56.3
<b>Marital status</b>	Married	83	74.1
	Single	29	25.8
<b>Gender</b>	Female	42	37.5
	Male	70	62.5
<b>Education</b>	Primary School	32	28.6
	Middle School	28	25.0
	High school	31	27.7
	University	21	18.7
<b>Occupation</b>	Housewife	23	20.5
	Civil servant	21	18.7
	Laborer	25	22.4
	Retired	43	38.4
<b>Income level</b>	Low	24	21.4
	Moderate	54	48.2
	Good	34	30.4
<b>Previous surgery</b>	Yes	74	66.1
	No	38	33.9
<b>Chronic disease</b>	Hypertension	41	36.6
	Hypertension+Diabetes	35	31.3
	None	36	32.1

Most volunteers participating in the research were male (62.5%), married (74.1%), aged 51 years or older (56.3%), primary school graduates (28.6%) and retired (38.4%) with moderate income levels (48.2%). Most participants stated they had previously had surgery (66.1%). Additionally, 67.9% of participants had no chronic disease.

Most patients undergoing surgical procedures in the urology clinic received spinal anesthesia (48.1%),

and these had the highest general anesthesia scores. On the other hand, patients who received local anesthesia had the highest scores on the pain belief scale. There was a significant difference between the type of anesthesia and the surgery anxiety levels and

pain beliefs (Table 2). The difference in the surgery anxiety levels of the patients was due to the general anesthesia method, while the differences in their pain beliefs and in the subdimensions was due to the spinal anesthesia method (Table 2).

**Table 2: Correlation between type of anesthesia and scale tools**

Type of anesthesia		n	%	SURGERY ANXIETY SCALE	PAIN BELIEFS QUESTIONNAIRE	Psychological beliefs	Organic beliefs
	Spinal	55	49.2	26.86±7.85	2.04±0.66	1.98±0.63	2.07±0.71
	General	36	32.1	<b>38.19±8.79</b>	1.99±0.84	2.07±0.88	1.93±0.84
	Local	21	18.7	30.20±8.12	<b>2.86±0.85</b>	<b>2.93±1.02</b>	<b>2.80±0.83</b>
				KW=1.110 P=0.05	KW=10.180 P=0.006	KW=12.018 P=0.002	KW=11.941 P=0.003

Table 3 includes mean points obtained by the patients from the surgery anxiety scale and pain beliefs total and subdimensions, internal consistency of the scales and analysis results related to the correlation of surgery anxiety and pain beliefs of patients.

When the information in Table 3 is investigated, the internal consistency of the scales for this sample was 0.90 for the surgery anxiety scale and 0.89 for total pain beliefs questionnaire (with 0.73 for the psychological beliefs subdimension and 0.84 for the organic beliefs subdimension). Surgery

Additionally, in the surgery anxiety and pain beliefs subdimensions, there were greater correlations with psychological beliefs (r: -0.546; p< .05) (Table 3).

**Discussion**

The first question answered in the research was “how are the pain beliefs of patients undergoing surgical procedures in the urology clinic assessed?”. According to the responses of the patients to the 6-point Likert scale and considering the findings in Table 3, the patients had similar levels of psychological and organic beliefs related to pain, with points being below the central value for the scale. In parallel with this study, there are studies reporting individuals with similar levels of psychological and organic pain beliefs.<sup>28</sup> In line with this data, it can be said that the participants in the study focused on organic factors as much as psychological factors related to pain. Research investigating the scope of the cognitive-behavioral model of pain has focused on the interpretation of pain by patients and the meaning given to pain.<sup>20</sup> As underlined in Sharp’s model, pain beliefs appear to be one of the most important cognitive structures at the forefront of concepts related to pain.<sup>20</sup> Ellis stated that beliefs may be cognition, thoughts, attitudes or images and that these are the primary determinants of feelings.<sup>29</sup> When the results of all these studies are examined, pain beliefs may be assessed as a significant moderator of coping skills, negative feelings-thought constructs or other cognitive and behavioral constructs complying with pain. As a result, regular assessment of patient pain by nurses, questioning of

**Table 3: Measures and internal consistency obtained from the scales and correlation of surgical anxiety with pain beliefs and subdimensions**

	M	SD	A	SURGERY ANXIETY SCALE
SURGERY ANXIETY SCALE	27.94	8.21	0.90	1
PAIN BELIEFS QUESTIONNAIRE	2.18	0.82	0.89	-0.445* .030
Psychological beliefs	2.19	0.87	0.73	-0.546* 0.029
Organic beliefs	2.17	0.83	0.84	-0.428* 0.044

anxiety scores of the patients were found to be moderate, and the highest points on the pain belief questionnaire were obtained for the psychological beliefs subdimension (2.19±0.87 points). There was a negative, low power and highly statistically significant correlation between surgery anxiety and pain beliefs (r: -0.445; p<.05).

the individual's pain beliefs and cooperation with the clinician are considered important for treatment and for making a care plan.

The second research question was "what levels of surgical anxiety are experienced by patients undergoing surgical procedures in the urology clinic?" Patients with surgery anxiety are a frequently studied case. In this study, patients' surgery anxiety levels were above average levels (Table 3). The study by Koivula et al. (n=193) emphasized that patients undergoing surgical processes with high social support experienced lower levels of anxiety and fear, while patients receiving professional support from nurses had especially reduced anxiety levels.<sup>6</sup> Preoperative training left patients satisfied and lowered their anxiety levels.<sup>30</sup> Nurses should be open to communication and allow the opportunity for patients to express their worries. For assessment of patients at risk of psychological stress, determination of anxiety and fear perceptions is very important. They should help patients cope with stress.<sup>31</sup> Studies have shown that patients admitted to surgical clinics are at risk in terms of anxiety disorders.<sup>32,33</sup>

The third question in the research compared the correlation between pain beliefs and surgery anxiety and the type of anesthesia administered to patients undergoing surgical procedures in the urology clinic. According to the obtained results, there were significant differences between surgery anxiety levels and the type of anesthesia used, mainly in patients administered general anesthesia. In Turkey, it is known that people traditionally experience the fear of not waking up from anesthesia (narcosis) or remaining on the table (death due to narcosis during surgery). As a result, patients may experience intense problems when they are to have operations. In their study identifying fears related to general anesthesia, Osinaik et al. observed the greatest fear as fear of death (82%), followed by postoperative pain (75.4%).<sup>34</sup> Matthey et al. stated that patients undergoing regional anesthesia experienced fear in relation to needle pain in the low back region, injury and paralysis and that patients required information.<sup>35</sup> In the pain beliefs questionnaire, patients undergoing local anesthesia were found to have statistically significant high mean points. Patients undergoing general anesthesia or spinal anesthesia were considered to focus more on surgery outcomes rather than pain as they were undergoing more major surgical procedures.

The questions forming the main aim of the research

were "is there a correlation between pain beliefs and surgery anxiety among patients undergoing surgical procedures in the urology clinic?" and "to what extent does surgery anxiety affect pain beliefs of patients undergoing surgical procedures in the urology clinic?". Analyses related to the answers to these questions concluded there was a negative, low power and statistically very significant correlation between surgery anxiety and pain beliefs. Additionally, surgery anxiety was found to be mostly associated with psychological beliefs among pain beliefs. Anxiety is commonly observed among patients admitted to hospitals. While admission to hospital is a stressor on its own, the decision for surgery further increases the stress situation.<sup>36</sup> Studies have emphasized that patients admitted to surgical units had more common and higher levels of anxiety compared to internal medicine units.<sup>30,37</sup> Anxiety in surgery patients has been observed to be at higher levels in the preoperative period.<sup>38-40</sup>

Other studies support our research findings, emphasizing that pain, feeling of discomfort and fear of death are the most commonly encountered causes of preoperative anxiety.<sup>41-43</sup> Studies have noted that patients with preoperative information and training had reduced anxiety levels and complications linked to this.<sup>6,44-47</sup> Another factor affecting postoperative experience of pain by patients is acceptance of pain linked to the pain beliefs of the patient, and as a result, this is considered to prevent the expression of pain. During our research, most patients thought that pain should be felt in the postoperative period and were observed to be deficient in reporting pain. Studies related to this topic stated that patients were insufficient in reporting pain and saw postoperative pain as a pain that must be tolerated.<sup>14,48</sup>

### Conclusion:

Patients display large variability in terms of personal choices and expectations related to pain, response to interventions and resolving pain. As a result, strict and definite prescriptions in relation to pain management are not possible. An effective pain management program requires nurses to assess the intensity of and recovery from pain, and to make pain diagnosis at regular intervals. When choosing methods considering pain management, respect should be shown to the patient's choices. Creation of positive relationships between the patient and health personnel is an important component of successful pain management. There is a variety of data about choices related to patient pain control,

and additionally they should be informed about worries and choices that should be discussed with the treatment team.<sup>11</sup>Pain is a symptom specific to the person, and patients experience this situation more than health professionals think.<sup>49</sup> The aim of urology nurses is to bring the patient to the best state to cope with stress and pain caused by the surgical intervention. In this context, consideration of pain beliefs, psychological and physiological preparation, effective participation in treatment to control

postoperative pain, which is nearly fully identified with surgical interventions, observing results, using non-medication pain control methods and keeping pain within tolerable limits will prevent possible complications.<sup>15, 17</sup> In conclusion, for ward nurses in a one-to-one relationship with patients to be sensitive to this topic, it is recommended that they should be informed, be supported with in-service training and have good communication with the surgical and anesthesia teams.

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