Araştırma Sunumu | Research Article

Psychological Well-Being in Postoperative Pain: A Correlational Study / *Postoperatif Ağrıda Psikolojik İyi Oluş: Bir Korelasyon Çalışması*

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Abstract

Introduction: Pain, one of the most common postoperative complications, arises due to tissue damage caused by surgery. Psychological well-being is the state of having emotional and mental health, which is the basis of an individual's quality of life. It is evident that studies investigating the interaction between postoperative pain and psychological well-being are insufficient. Background: This study aims to determine the role of patients' postoperative pain in their psychological well-being. Materials and Methods: This correlational study was conducted with 63 volunteer patients who underwent surgery and were in postoperative 1st and 3rd days, between February 2019 and January 2020. For data collection, Patient Information Form, Psychological Well-Being Scale and Visual Analogue scale were used. Correlation analysis and Mann-Whitney U test and descriptive analyzes were used to evaluate the data.The value of $p < .05$ was accepted as the statistical significance limit. Results: There was a negative correlation between psychological well-being and postoperative pain level, and also, age of the patients. Conclusion and suggestions: Increased pain severity caused a decrease in psychological well-being. Decreased psychological well-being may affect the healing process negatively by impairing the participation of patients in their own treatment and care. Nurses can help patients maintain their psychological well-being through good pre-operative psychological preparation and effective postoperative pain control.

Keywords: *Health Care, Nursing, Postoperative pain, Psychological well-being*.

Öz

Giriş: Ameliyat sonrası en sık görülen komplikasyonlardan biri olan ağrı, ameliyatın neden olduğu doku hasarına bağlı olarak ortaya çıkar. Psikolojik iyi oluş, bireyin yaşam kalitesinin temeli olan duygusal ve zihinsel sağlığa sahip olma durumudur. Postoperatif ağrı ve psikolojik iyilik hali arasındaki etkileşimi araştıran çalışmaların yetersiz olduğu açıktır. Amaç: Bu araştırma, hastaların postoperatif ağrılarının psikolojik iyi oluşlarındaki rolünü belirlemeyi amaçlamaktadır. Gereç ve Yöntem: Bu korelasyonel araştırma, Şubat 2019-Ocak 2020

tarihleri arasında ameliyat olan ve ameliyat sonrası 1. ve 3. günlerde olan 63 gönüllü hasta ile yapıldı. Araştırma verilerinin toplanmasında Hasta Bilgi Formu, Psikolojik İyi Oluş Ölçeği ve Görsel Analog skalası kullanıldı. Verilerin değerlendirilmesinde, korelasyon analizi ve Mann-Whitney U testi ve tanımlayıcı analizler kullanıldı. İstatistiksel anlamlılık sınırı olarak p <0.05 değeri kabul edildi. Bulgular: Psikolojik iyi oluş ile ameliyat sonrası ağrı düzeyi ve ayrıca hastaların yaşı arasında negatif bir ilişki vardı. Sonuç ve Öneriler: Artan ağrı şiddeti psikolojik iyi oluşun azalmasına neden olmuştur. Psikolojik iyi oluşun azalması, hastaların kendi tedavi ve bakımlarına katılımını bozarak iyileşme sürecini olumsuz etkileyebilir. Hemşireler, ameliyat öncesi iyi psikolojik hazırlık ve ameliyat sonrası etkili ağrı kontrolü yoluyla hastaların psikolojik iyilik hallerini korumalarına yardımcı olabilir.

Anahtar Kelimeler: *Sağlık Bakımı, Hemşirelik, Ameliyat sonrası ağrı, Psikolojik iyi oluş.*

1. Introduction

Pain, one of the most common postoperative complications, arises due to tissue damage caused by surgery (Málek et al., 2017). More than 80% of patients who undergo surgical procedures experience postoperative acute pain and 75% of them have moderate to severe, pain (Chou et al., 2016). As an important postoperative complication in patients undergoing surgery, postoperative pain can be managed with various pharmacological and non-pharmacological interventions (Pinto et al., 2016). Fear and anxiety caused by acute postoperative pain can impair the mental and physical recovery of the patients (Málek et al., 2017). Also, the quality of life of the patients may be affected by uncontrollable postoperative pain causing chronic pain development (Guimaraes-Pereira et al., 2016).

Preoperative anxiety, which affects psychological well-being, may be related to doubts about surgical success, fear of anesthesia, loss of ability (Peng et al., 2020; Querichelli et al., 2020). At the same time, even mild surgical complications such as pain, nausea and vomiting may negatively affect the patients psychologically (Pinto et al., 2016). In recent years, it has been stated that sociodemographic and physical factors, as well as psychological factors, have an important effect on postoperative pain (Dunn et al., 2018; Weinrib et al., 2017). In acute postoperative pain, psychological reactions and behavioral changes may occur concerning unpleasant sensory, emotional and mental problems (Málek et al., 2017). In their study examining the effect of postoperative pain on patient outcomes, Michaelides and Zis (2019) stated that anxiety and depression significantly affect the experience of pain. In such situations, as important parts of the pain management process, psychological assessment and interventions may help to identify and manage psychological risks and protective factors in postoperative pain (Querichelli et al., 2020; Dunn et al., 2018; Johnson, 2020; Khalil et al., 2020).

Psychological well-being is the state of having emotional and mental health, which is the basis of an individual's quality of life (Hernandez et al., 2018; Medvedev and Landhuis, 2018). The World Health Organization expresses psychological well-being as a situation where the individual realizes his / her own abilities, copes with normal stresses in life, works efficiently and contributes to society (WHO, 2005). At the same time, psychological well-being which is related to the life of the individuals also includes the methods people used to evaluate their current and past lives. This assessment includes people's emotional

responses to events, moods, and judgments about the life they have (Medvedev and Landhuis, 2018; Schotanus-Dijkstra et al., 2017).

Although the experience of negative emotions (for example, disappointment, failure, grief) is a normal part of life, when these feelings are excessive or last too long, the individual's daily life and ability to function can be affected and psychological well-being may be compromised (Topcu, 2018). Individuals' perception of pain may affect psychological well-being by causing negative emotions rather than positive emotions (Svensson et al., 2016). A well-planned perioperative process together with a whole preoperative evaluation of the patient is vital in postoperative pain management and behavioral and psychosocial interventions may help to prevent and manage the impairment of psychological wellbeing caused by pain (Dunn et al., 2018; Forsberg, 2020). Psychological factors, which are significantly associated with postoperative pain intensity, may cause postoperative psychological fragility by creating abnormal pain perception (Kulkarni et al., 2020). Khalil et al. (2020) found a significant relationship between preoperative anxiety, depression and pain catastrophizing and postoperative pain scores.

In studies examining the relationship between psychological well-being and pain, Bhalang et al. (2020) reported that there is a relationship between the well-being of patients and their pain experiences. Topcu (2018) stated in their study that the level of psychological well-being affects the patients' acceptance of pain and their approaches to coping with pain. In the literature, it is seen that the relationship between psychological well-being and chronic pain is investigated, (Topcu, 2018; Gloria et al., 2018; McParland et al., 2021). However, it is evident that studies investigating the interaction between postoperative pain and psychological well-being are insufficient (Schittek et al., 2020). This study aims to determine the role of patients' postoperative pain in their psychological well-being.

2. Materials and Methods

2.1. Design and Sample:

This cross-sectional and correlational study was conducted with 63 patients who were hospitalized in the General Surgery and Thoracic Surgery clinics and had undergone abdominal or thoracic surgery, at a university hospital in northwestern Turkey, between April 2019 and January 2020.

A convenience sample method was used in the research. The patients included in the study had undergone abdominal or thoracic surgery, were in the postoperative 1–3 day period, had postoperative mobilization, were between 18-65 and literate. The patients who had undergone laparoscopic surgery, had physological and psychological disorders that could prevent communication and did not want to participate in the study were excluded from the study.

2.2. Data Collection:

In data collection, to provide information on the demographic characteristics of the patients, their health histories, and existing diseases "Patient Information Form", to evaluate the well-being levels of the patients "Psychological Well-Being Scale (PWS)" and to identify the patients' pain levels "Visual Analogue Scale (VAS)" were used.

The "Patient Information Form" was prepared by the researcher and it contains questions about descriptive characteristics of the patients such as age, gender, educational status, current diagnosis, service, surgical intervention, previous surgery, chronic disease, and pain treatment.

The PWS was developed by Diener et al. (2010) and the Turkish validity and reliability of the scale were reported by Telef (2013). The PWS is a 7-point Likert scale (1: strongly disagree; 7: strongly agree) consisting of 8 items. The PWS scores were between 8 and 56, and high scores from the scale indicate that the person had a great degree of psychological resources and power. Cronbach α value was 0.87 (Telef, 2013).

The VAS is a standard 10 cm horizontal or vertical line in the form of no pain and insufferable pain tips that measure the severity of pain in the patient. Patients mark the point corresponding to the severity of the pain they feel. The test isn't in a specific language and is easy to apply.

2.3. Procedure:

Face-to-face interviews were used for the data collection, and all interviews were carried out by the researchers. Patients who were between the first and third days after surgery were interviewed at an appropriate time when nutrition, treatment and care practices were not performed. The patients were informed about the research. After patients' participation approvals were received, the researcher asked them questions from the form and recorded the answers. The data collection process took approximately 20-30 minutes for each patient.

2.4. Ethical Considerations:

This study was approved by the Ethics Committee of Trakya University School of Medicine (TÜTF-BAEK 2019/90), and the formal permissions for the study were obtained from the Directorate of Trakya University Health Research and Application (79056779-600). In addition, all patients were informed about the aim and method of the study, and consent was obtained from each participant.

2.5. Statistical Analysis:

The data obtained from the research were evaluated using a computerized statistical program (SPSS 21.0). Correlation analysis and Mann-Whitney U test were used in addition to the descriptive analysis (number, percentage, median, minimum and maximum values) in the evaluation of the data. The value of $p < .05$ was accepted as the statistical significance limit.

3. Results

The mean age of the patients was 54.13 ± 15.00 years; 60.3% were male; 85.7% were primary and secondary school graduates. Overall, 44.4% of the patients had a chronic disease, 47.6% had undergone abdominal surgery and 63.5% had previous surgery experience (Table 1).

Table 1. Demographic Characteristics of the Patients (n = 63)

FEATURES		Mean±Sd	
Age		54.13±15.00	
The highest pain experienced in the previous surgery		7.00±2.10	
The lowest pain experienced in the previous surgery		2.71±2.32	
The patient's current pain level		3.43±2.27	
Psychological well-being		46.41±6.98	
		n	**%**
Gender	Female	25	39.7
	Male	38	60.3
Education status	Primary and secondary school	54	85.7
	High school and above	9	14.3
Chronic illness	Yes	28	44.4
	No	35	55.6
Type of surgery	Thoracic	30	47.6
	Abdominal	33	52.4
Previous surgery	Yes	40	63.5
	No	23	36.5

Sd: Standard deviation, n: Number, %: Percent.

When examining the pain levels of the patients in their previous surgical experiences, it was found that the highest pain level experienced by the patients was 7.00±2.10 and the lowest pain level was 2.71±2.32. The existing pain levels of the patients were found to be 3.43 ± 2.27 and their psychological well-being was 46.41 ± 6.98 (Table 1).

When the current pain and psychological well-being levels of the patients were examined according to the demographic characteristics of the patients, it was determined that there was a statistically significant, weak and negative relationship between the current pain and the psychological well-being levels of the patients (r = -0.274, p = 0.030). It was found that other demographic characteristics of the patients did not make a difference in their psychological well-being, only a statistically significant, weak, negative relationship was found between age and current pain level (r = -0.300, p = 0.017) (Table 2).

Table 2. Relationship between the Patients' Postoperative Pain Levels, Psychological Well-Being and Demographic Characteristics (n=63)

FEATURES		The patient's current pain level		Psychological well-being	
		Median (Min-Max)	**Z, p**	**Median (Min-Max)**	**Z, p**
Gender	Female	4 (0-8)	Z= -0.540	48 (14-56)	Z= -0.655
	Male	3 (0-9)	p= 0.589	47 (30-56)	p= 0.513
Education status	Primary and Secondary school	3.50 (0-8)	Z= -1.807	48 (14-56)	Z= -0.788
	High school and above	5 (0-9)	p= 0.071	45 (38-55)	p= 0.431
Chronic illness	Yes	3.50 (0-9)	Z= -0.622	47.50 (30-56)	Z= -0.326
	No	4 (0-8)	p= 0.534	47 (14-56)	p= 0.745
Type of surgery	Thoracic	3 (0-8)	Z= -1.120	47.50 (30-56)	Z= -0.441
	Abdominal	4 (0-9)	p= 0.263	47 (14-56)	p= 0.659
Previous surgery	Yes	4 (0-9)	Z= -1.955	47.50 (14-56)	Z= -0.666
	No	3 (0-8)	p= 0.051	46 (30-56)	p= 0.506
		R	**p**	**R**	**p**
Age		**0.300**	**0.017***	0.100	0.438
The highest pain experienced in the previous surgery		-0.147	0.400	0.024	0.892
The lowest pain experienced in the previous surgery		-0.219	0.205	-0.063	0.719
The patient's current pain level				**-0.274**	**0.030***

Z: Mann Whitney U test, r: Spearman Correlation, *: p<0.05.

4. Discussion

As a source of physiological stress for the patients, surgeries also cause psychological stress. The psychological factors could have an effective role in the perioperative period and recovery (Richard et al., 2020). Patients who are psychologically well are better at coping with the surgical trauma, they need less anesthetic, less postoperative analgesia, they develop fewer complications and can be discharged early recovering in a shorter period of time (Johnson, 2020). Various patient outcomes such as pain, disability, walking capacity and return to work are affected by preoperative mental symptoms. Because of the postoperative pain, patients might limit certain movements consciously and avoid painful behavior. As a result of such situations, the patients may feel inadequate and helpless to cope with the results of the surgery. Assessing pain and disability together with these feelings, which also deteriorate paralell to increased anxiety and depression, may contribute to a better mood (Mancuso et al., 2018). In the literature, it is stated that worse pain and functional results occur after surgery in patients with preoperative psychological distress (Richard et al., 2020; Belford et al., 2020). Post-operative pain is a subjective and multifaceted experience that is influenced by physiological, sociocultural, cognitive and behavioral factors, together with the type of surgery and the use of analgesia (Yang et al., 2019). Although pain is associated with physiological processes, how individuals react to a new pain experience is shaped by previous experiences and is also affected by the patient's mental state (Moloney et al., 2021). The finding in this study that there is a relationship between psychological wellbeing and postoperative pain supports this information in the literature. Existing mental problems of the surgical patients may delay wound healing by increasing the patients' stress response and thus weakening the immune system (Pinto et al., 2016). It is stated that psychological problems such as depression or anxiety in the preoperative period have negative effects on the postoperative pain score and analgesic requirement of the patients (Karaaslan et al., 2019). Kandemir et al. (2019) reported that psychological conditions such as high pre-operative anxiety scores may have negative effects and because of this effect postoperative pain levels of the patients may increase. Yüksel et al. (2019) emphasized that there is a relationship between the depression, anxiety and stress levels of the patients, pain beliefs which have important effects on postoperative pain experiences were also affected by these psychological conditions. Ravindra et al. (2018) stated that non-structural factors such as psychological well-being and preoperative narcotic use would be associated with higher pain levels. Considering the results of our study and other studies, it is thought that improving the psychological well-being of the patients can help reduce the postoperative pain levels experienced by the patients. In order to improve the psychological well-being of the patients, effective pre-operative psychological preparation and psycho-social support at all stages of the surgical process should be provided to the patients.

It is emphasized that age, which is mentioned as a factor affecting postoperative pain, (Yang et al., 2019; Schnabel et al., 2020), indirectly affects the mental well-being of individuals (Sakel, 2019). In their systematic study to determine the independent factors of postoperative pain, Schnabel et al. (2020) stated that age is an important determinant for postoperative pain and analgesic consumption. In their systematic review and meta-analysis, Yang et al. (2019) also reported that younger patients experience more pain after surgery. Schug and Bruce et al. (2017) pointed out that young women with reduced pre-

operative psychological resilience reported higher postoperative pain scores, and they had a higher risk of developing chronic pain after surgery. Consistent with the information in the literature, it was found in this study that there was a relationship between increasing age and a lower postoperative pain level, although there is no relationship between mental well-being and age. Considering the negative effects of pain on mental well-being, ensuring effective pain management in patients undergoing surgery is an important nursing intervention, regardless of age. However, it should be considered that the complications associated with age may increase postoperative pain hence impair well-being. Alexiou et al. (2018) stated that psychosocial factors and symptoms of depression can increase pain severity and emotional discomfort of patients who are older than 65 year and with hip fractures by seriously affecting their physical and mental functions. They emphasized that beneficial effects were observed on the psychosocial dimension of patients' lives with supportive rehabilitation programs before and after surgery (Alexiou et al., 2018).

5. Conclusion and Suggestions

In this study, a weak correlation was determined indicating that as postoperative pain levels of patients who underwent surgical intervention increased, their psychological well-being decreased. It is recommended to monitor the well-being of the patients both in the preoperative preparation and the post-operative nursing care and to implement the care to ensure effective pain control as a factor that impairs well-being.

6. Implications for Nursing Practice

Pain, which is an inevitable experience for patients undergoing surgery, should be evaluated from a holistic perspective by health professionals. It should be considered that psychological well-being may also deteriorate, as post-operative pain impairs the comfort of patients. While there are studies in the literature dealing with the effect of chronic pain on psychological well-being (Topçu, 2018; Gloria et al., 2018; McParland et al, 2021) the number of the studies investigating the relationship between postoperative pain which is an acute condition resulting from surgical intervention and psychological well-being is insufficient (Schittek et al., 2020). In addition, there is no study to determine the relationship between these variables, which are thought to affect each other. Evaluation of these variables in patients undergoing surgical intervention is thought to guide a nursing care that helps maintain a good mood, and it is expected to fill the gap in the literature. Psychological interventions such as cognitive behavioral programs and self-care practices in the prevention of postoperative pain, psycho-education, activities that focus on preventing or changing maladaptive thoughts and emotions should be used. The patient should be encouraged to participate in her own treatment and care, to use successful pain management methods he/she has used before, and to be physically active (Ehde et al., 2014; Bérubé et al., 2017).

In this context, if it is desired to maintain the psychological well-being of patients who have undergone surgery, psychological care that supports the well-being of the patients during the preparation for the surgery should be ensured and patients should be informed about the expected pain, pain management and methods to help the patient cope with the pain after the surgery. And also, in the postoperative period, a nursing care which ensures an

effective pain control should be provided considering the relationship between postoperative pain and psychological well-being that contributs to the recovery.

7. Limitations

This study certainly has some limitations. First, since data collection coincided with the COVID-19 pandemic period, when surgical interventions other than emergencies were delayed, sample selection was made by convenience sampling, which is an improbable method. In addition, the sample was small and consisted only of patients who had undergone abdominal and thoracic surgery. Therefore, generalizability of the study's findings to other surgical populations could not be guaranteed.Therefore, we encourage researchers to replicate these findings and other analyzes using a contextual approach to care in populations undergoing different surgeries.

Another limitation is related to psychological well-being, which is affected by many individual factors as well as psycho-social factors. It is thought that the relationship between postoperative pain and psychological well-being is weak due to the high psychological well-being of the patients. Because, in this study conducted during the COVID-19 pandemic period, the fact that nurses visit patients who were alone in their rooms more often may be a factor that increases the psychological well-being of patients. Therefore, similar studies with patient populations who have undergone different surgeries in normalized clinical settings may be more effective in revealing the relationship between postoperative pain and psychological well-being.

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