

ORIGINAL ARTICLE

Medicine Science 2026;15(2):819-25

Investigation of comfort levels in patients undergone abdominal surgery

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Received 05 November 2025; Accepted 17 December 2025

Available online 22 May 2026 with doi: 10.5455/medscience.2025.11.311

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Abstract

Abdominal surgery is one of the most frequently performed interventions that includes surgeries applied to the lower and upper abdominal organs. This study examined the comfort levels of patients who had undergone abdominal surgery. The type of this study was descriptive and cross-sectional. The sample included n=90 patients who had undergone abdominal surgery. The patient information form and General Comfort Questionnaire were used for data collection. The mean age of patients who had undergone abdominal surgery was 53.84 ± 14.76 years. 85.6% were married, 56.7% had primary education, 51.1% were male, 33.3% had multiple comorbidities and 55.6% had previous surgical experience. The proportion of patients with diabetes mellitus and hypertension was 22.2% and 27.8%, respectively. Patients who had undergone abdominal surgery scored 3.51 ± 0.76 , 3.97 ± 0.67 and 3.49 ± 0.74 points in the sub-dimensions of Relief, Ease and Transcendence, respectively, and the total score obtained from the general comfort questionnaire was 3.66 ± 0.59 . The comfort of single patients was higher than that of married patients, and comfort increased as the level of education decreased. The presence of comorbid diseases decreased comfort at a statistically significant level ($p < 0.01$). Abdominal surgery is a frequently performed procedure. This indicates that a significant number of patients are at risk for low comfort in hospitals. Abdominal surgery patients should be carefully monitored throughout the perioperative period and should be further supported to improve comfort.

Keywords: Abdominal surgery, care, comfort, ease, relief, transcendence

Introduction

Abdominal surgical procedures are operations involving the liver, spleen, stomach, gallbladder, pancreas, and small and large intestine [1,2]. Laparoscopic and open-surgical methods are used during abdominal surgery. Laparoscopic surgery is superior to open surgery in terms of being less invasive and associated with fewer complications and hospitalization [3,4]. Thanks to the development of anesthesia techniques, increasing quality of care and technological advances, surgical interventions have become a routine treatment technique instead of being the last resort. Although surgical interventions are performed to improve survival, whether major or minor, emergency or elective, they are a physical, physiological and mental trauma for patients [5,6].

Surgical nurses have the responsibility to eliminate physical pain, increase functionality, ensure patient satisfaction, prevent organ dysfunction, encourage early discharge, and ensure the patient's

quality of life and comfort [7]. Comfort, which is one of the basic components of surgical care, is to make patients comfortable, and relieved, feel good mentally and physically, overcome problems and thus cope with their problems [8]. Traditionally, comfort is defined as a component of care [9]. Comfort is a value at the center of care, and the mental and physical comfort of the patient is the focus of nurses [10]. Long-term surgical interventions applied to the abdominal region and affecting all organs in the abdomen are mostly included in major surgeries and post-abdominal surgery care is multidimensional and multifactorial [11].

Maintenance of drains and catheters, monitoring of liver and kidney functions, initiation and/or maintenance of peristalsis or ostomy (if any) care after intestinal surgery, early ambulation and mobilization, effective pain management, close vital monitoring and prevention of orthostatic hypotension, deep vein thrombosis prophylaxis, determination of multiple drug regimen, as well as the smooth maintenance of activities of daily living are very difficult and stressful care interventions [12,13] and effective

CITATION

Aydin E, Bulbuloglu S. Investigation of comfort levels in patients undergone abdominal surgery. Med Science. 2026;15(2):819-25.



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management of these processes increases the comfort levels of patients. However, abdominal surgeries, the majority of which are major procedures, are associated with various symptoms, problems, and complications during the perioperative period. Interventions of advanced surgical care facilitate a smoother perioperative process, but surgical pain, limited mobility caused by drains and catheters, dressings and incisions, and the negative physical and psychological effects of anesthesia often have the potential to reduce patient comfort. This study aimed to examine the comfort levels of patients after abdominal surgery.

Material and Methods

Research Design and Participants

The population of this study consisted of patients who had undergone abdominal surgery in the general surgery unit of a city hospital in İstanbul. G*Power-3.1.9.2 software was used to calculate the sample size. The sample size of the study was calculated as at least $s=90$ abdominal surgery patients after power analysis with 0.04 effect size, a margin of error of 0.05 and a 95% confidence interval. The sample of this study consisted of $s=90$ patients who had undergone abdominal surgery. The purposive sampling method was used in this study. The inclusion and exclusion criteria are shown below.

Inclusion and Exclusion Criteria

The inclusion criteria for this study were (i) having undergone abdominal surgery in the hospital where the study was conducted, (ii) having no communication, language and psychiatric disabilities and having surgical pain under control, (iii) volunteering to participate in the study, (iv) being in the short or long postoperative period after abdominal surgery at the time of the study. The opposite of the inclusion criteria and a completed hospital stay constituted the exclusion criteria.

Data Collection and Tools

The data for this study were collected between January 1 and April 30, 2024, at a city hospital in İstanbul. Data collection forms were shared with the patients by the researcher and they were asked to complete the informed consent form before answering the questions. The patient information form and the General Comfort Questionnaire, which were prepared with the support of the literature and expert opinion, were used as data collection tools in the study. Information about the data collection forms is presented below.

Patient Information Form

The patient information form was designed by the researcher with the support of the literature and expert opinion. It is an information form that includes questions about age, gender, marital status, educational status, number of days of hospitalization, comorbid disease, and past surgical experience.

General Comfort Questionnaire

The General Comfort Questionnaire (GCQ) belongs to Katharine Kolcaba and was created in 2006 [8]. The internal consistency of the GCQ is 0.8. The Turkish validity and reliability of the GCQ was conducted by Kuğuoğlu and Karabacak in 2014 and the Cronbach's Alpha value was 0.85 [14]. The short form of the GCQ was developed by Çitlik Sarıtaş and colleagues [15], and the Cronbach's Alpha value was calculated as 0.82. In this study, Cronbach's Alpha values were 0.771 for the total GCQ and 0.806, 0.824, 0.824, and 0.832 for its sub-dimensions, respectively. The GCQ has high reliability for the sample of this study. The GCQ is a 28-item questionnaire with sub-dimensions of comfort, relief (9 items), ease (9 items), and transcendence (10 items). There are negative items on the questionnaire. The total score of the GCQ is divided by the number of items and the mean value is found. The items of the GCQ are scored between 28-168. The total score is divided by the number of questionnaire items and the mean value is found. Accordingly, the lowest score of 1 indicates a low comfort level and the highest score of 6 indicates a high comfort level.

Statistical Analysis of Data

The data of this study were coded in Excel by the researcher and transferred to Statistical Packed For The Social Sciences 25. Data analysis was performed with descriptive statistical methods using percentages, arithmetic mean, standard deviation, and minimum and maximum values. Kolmogorov Smirnov test showed that the data were not normally distributed. Spearman rho correlation test, Mann Whitney U test and Kruskal Wallis test were used to determine the relationship between variables. Dunn-Bonferroni post hoc was performed to determine the cause of the differences. In the evaluation of the obtained results, 95% confidence interval and $p<0.05$ error level were taken into consideration.

Ethical Aspects of the Study

Before the study, the Ethics Committee Approval and Institutional Review Board (IRB) were obtained from the İstanbul Başakşehir Çam and Sakura City Hospital Clinical Research Ethics Committee and Provincial Health Directorate (Date: 31.10.2023, No: 2023/17). Patients were informed about the research in line with the Helsinki Declaration and asked to fill out the Informed Consent Form. Patients who volunteered to participate in the study were included in the study after their informed consent was obtained.

Results

Table 1 shows the individual characteristics of patients ($s=90$) who had undergone abdominal surgery. The mean age of patients who had undergone abdominal surgery was 53.84 ± 14.76 years. Among the patients who had undergone abdominal surgery, 85.6% were married and 14.4% were single. Among the patients who had undergone abdominal surgery, 56.7% were primary

school graduates and 25.6% were high school graduates. Among patients who had undergone abdominal surgery, 51.1% were male and 48.9% were female. The number of days of hospital stay of patients who had undergone abdominal surgery was 11.72 ± 16.14 (min 1, max 120), 60% had been hospitalized for 7 days or less. Among patients who had undergone abdominal surgery, 38.9% had no comorbid disease, 27.8% had single comorbidity and 33.3% had multiple comorbidities. Among patients who had undergone abdominal surgery, 55.6% had previous surgical experience, 44.4% did not.

Table 1. Individual characteristics of patients who had undergone abdominal surgery

Characteristics	Mean±SD	(Max., Min.)
Age (Mean ± SD) (Min, max)	53.84 ± 14.76 (21, 81)	
Number of Days of Hospitalization (Mean ± SD) (Min, max)	11.72 ± 16.14 (1, 120)	
	n	%
Age		
Between 21 and 35	10	11.1
Between 36 and 49 years old	23	25.6
Between 50 and 64 years old	34	37.8
65 years and older	23	25.6
Marital status		
Single	13	14.4
Married	77	85.6
Education level		
Literate	10	11.1
Primary education	51	56.7
High school	23	25.6
Higher education and above	6	6.7
Gender		
Woman	44	48.9
Male	46	51.1
Number of hospitalization days		
7 days or less	54	60.0
Between 8 and 30 days	32	35.6
31 days and longer	4	4.4
Comorbid disease		
None	35	38.9
Single comorbidity	25	27.8
Multiple comorbidities	30	33.3
Comorbid diseases*		
Diabetes mellitus	20	22.2
Hypertension	25	27.8
Lung, heart and/or vascular diseases	35	38.9
Other (thyroid disorders, intestinal problems, skeletal-muscular problems)	8	9.8
Past surgical experience		
Yes	40	44.4
No	50	55.6

*A patient may have more than one disease

Table 2 shows the scores of patients who had undergone abdominal surgery from the general comfort questionnaire. Accordingly, patients who had undergone abdominal surgery received 3.51 ± 0.76 , 3.97 ± 0.67 and 3.49 ± 0.74 points from the sub-dimensions of Relief, Ease and Transcendence, respectively. The total score obtained from the general comfort questionnaire was 3.66 ± 0.59 .

Table 2. Mean scores on the GCQ of patients who had undergone abdominal surgery

Scale and Subdimensions	GCQ Subdimensions			GCQ total
	Relief	Ease	Transcendence	
Questions	7,8,9,12,15,20,22,26,28	1,4,13,16,17,18,23,24,25	2,3,5,6,10,11,14,19,21,27	1-28
Mean $\pm$ SD	20,22,26,28	101	140	140
Min, Max	25	27	52	52
Score range	6	11	17	17

SD: Standard deviation, GCQ: General Comfort Questionnaire

Table 3 shows the mean scores of the general comfort questionnaire according to the sociodemographic characteristics of patients who had undergone abdominal surgery and the correlation analysis. Single patients had higher comfort than married patients, and comfort increased with decreasing education levels. In age groups, the lowest comfort was in patients between 36 and 49 years of age. These differences were considered statistically insignificant ($p>0.05$).

Table 3. Mean scores of GCQ according to sociodemographic characteristics of patients who had undergone abdominal surgery and comparisons

Characteristics	Mean GCQ score (Mean ± SD)	Test and p
Age		
Between 21 and 35	3.78 ± 0.55	Kw=5.805 p=0.122
Between 36 and 49 years old	3.40 ± 0.57	
Between 50 and 64 years old	3.72 ± 0.61	
65 years and older	3.78 ± 0.54	
Marital status		
Single	3.80 ± 0.69	U=0.444 p=0.517
Married	3.63 ± 0.57	
Education level		
Literate	3.78 ± 0.44	Kw=1.440 p=0.696
Primary education	3.68 ± 0.64	
High school	3.60 ± 0.54	
Higher education and above	3.47 ± 0.54	
Gender		
Female	3.78 ± 0.55	U=0.756 p=0.039*
Male	3.54 ± 0.6	

Kw: Kruskal Wallis test, U: Mann Whitney U test, *:p<0.05, **:p<0.01, GCQ: General Comfort Questionnaire

Table 4 shows the mean scores of the general comfort questionnaire according to the health-related characteristics of patients who had undergone abdominal surgery and the correlation analyses. Those with a hospital stay of 7 days or less and those with no previous surgical experience had lower comfort, but this difference was statistically insignificant ($p>0.05$). The presence of comorbid disease decreased comfort and this difference was statistically significant ($p<0.01$). In this context, the general comfort questionnaire scores of patients without the comorbid disease (1), with single comorbidity (2) and with multiple comorbidities (3) were 3.8 ± 0.59 , 3.75 ± 0.55 and 3.48 ± 0.59 , respectively. According to the Dunn-Bonferroni post hoc test, the comfort level was as follows: no comorbid disease (1) > single comorbidity (2) > multiple comorbidities (3).

Table 4. Mean scores of the GCQ according to health-related characteristics of patients who had undergone abdominal surgery and comparisons

Characteristics	GCQ score (Mean ± SD)	Test and p
GCQ total	3.66 ± 0.59	r=0.125, p=0.239
Number of hospitalization days-total	11.72 ± 16.14	
Number of hospitalization days		
7 days or less	3.57 ± 0.65	Kw=3.389 p=0.184
Between 8 and 30 days	3.79 ± 0.45	
31 days and longer	3.75 ± 0.43	
Comorbid disease		
None (1)	3.8 ± 0.59	Kw=5.011 p=0.004**
Single comorbidity (2)	3.75 ± 0.55	
Multiple comorbidities (3)	3.48 ± 0.59	
Dunn-Bonferroni post hoc	1>2>3	
Past surgical experience		
Yes	3.71 ± 0.63	U=0.885 p=0.353
No	3.61 ± 0.55	

Kw: Kruskal Wallis test, U: Mann Whitney U test, r: Spearman rho correlation test, *:p<0.05, **:p<0.01, GCQ: General Comfort Questionnaire

Figure 1 shows the relationship between the comfort level of patients who had undergone abdominal surgery and the presence of comorbid diseases. Patients with multiple comorbidities had the lowest comfort, while those without comorbidities had higher comfort than those with single comorbidity.

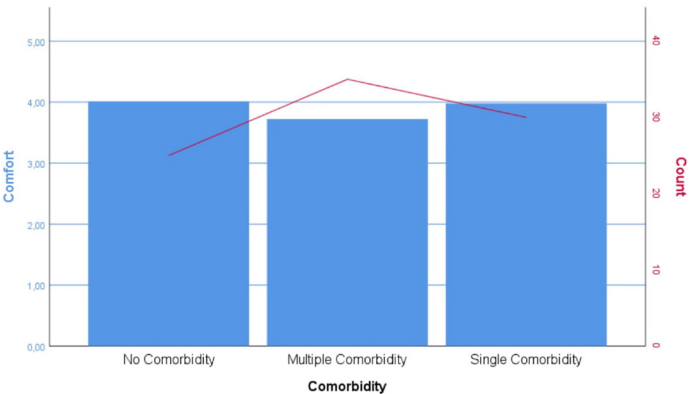


Figure 1. The relationship between comfort level and the presence of comorbid diseases in patients who had undergone abdominal surgery

Discussion

This study investigated the comfort levels of patients who had undergone abdominal surgery. Undergoing abdominal surgery is a difficult experience for every patient and the perioperative processes are highly stressful [16-18]. Patients requiring abdominal surgery undergo a series of diagnostic and monitoring procedures, many of which are painful, including attempted blood collection. Long queues for outpatient clinics, examinations and diagnostic procedures can result in further distress and exhaustion for patients who already have a variety of complaints. Moreover,

patients may feel surgical fear due to the unknown. Surgical fear includes how the surgery will end, the risk of loss of function, the possibility of losing their job and social roles, and the thought of needing a caregiver to meet their daily life activities [19]. In addition, patients who have undergone abdominal surgery may be exposed to severe postoperative pain, gastrointestinal complications, various respiratory problems, circulatory disorders, urinary tract infections, and the development of abscess, hematoma and pain at the wound site [13,20].

Abdominal surgery patients may experience many physiologic, emotional, social and mental problems from the preoperative period to the end of the early and long postoperative period, and almost all of these problems have the potential to reduce the comfort level. Postoperative pain may be inevitable. In Western countries, more than 75% of patients undergoing surgery experience varying levels of pain. In Turkey, the incidence of surgical pain is as high as 97% [21]. It has been reported that pain is the number one symptom that reduces comfort, causes activity limitations, and triggers kinesiophobia after abdominal surgery [22,23]. Nurses play an active role in the pain management of surgical patients [24]. The roles and responsibilities of surgical nurses in pain management are to question the presence of pain at the required frequency, to define pain, to determine its characteristics, to learn how it starts, where it spreads, how long it lasts and to determine the organs it reflects [21,25,26]. While performing surgical pain assessment, it should be checked whether there is consistency between the level of pain felt and expressed pain by comparing the patient's facial expression and behaviors using reliable measurement tools [27]. Nurses play key roles in pain management after abdominal surgery. The sample of this study included patients whose surgical pain was

under control. However, the comfort level was slightly above the intermediate value. This comfort level may not satisfy surgical nurses who aim for the highest possible level of well-being of patients. In this context, trying to control other variables affecting comfort will have significant benefits.

In the literature review, it was found that several studies were conducted to ensure the comfort of patients. These are based on several interventions to relax the patient, including acupressure application, especially the use of electric blankets to provide thermoregulation [28] and preoperative oral carbohydrate liquid [29,30]. Comfort is of great importance in the transition to recovery and readjustment to social life after abdominal surgery. In this process, the aim is to accelerate discharge and recovery, encourage mobilization, and support the patient's participation in care and treatment. People can be freest when they become independent in their activities of daily living. Being free will provide patients with more comfort zone. In this context, adequate mobilization is of great importance in the postoperative period. Spending 2 hours out of bed on the day of surgery and 6 hours on the 1st and other days postoperatively [31] supported by the Enhanced Recovery After Surgery (ERAS) protocol may be a good practice that increases comfort. However, a previous study reported that the common postoperative problems in abdominal surgery patients were longer than expected hospital stays, inadequate mobilization and spending most of the day in the hospital [32].

Prolonged mobility after abdominal surgery is associated with continued invasive treatment and higher mortality, and the proportion of patients at risk was recorded to be 20% [33]. In this study, the proportion of patients hospitalized between 8 and 30 days was 35.6% and the proportion of patients hospitalized longer than 31 days was 4.4%. Long hospitalizations may be associated with comorbid diseases. In this study, the number of days of hospitalization was not associated with comfort level. However, those with multiple comorbidities had the lowest comfort level and this difference was statistically significant. Surgical patients with comorbidities may be de-energized, and less functional and their mental health is threatened [34,35]. Gastrointestinal symptoms (distension, constipation, nausea, vomiting, paralytic ileus, etc.) experienced by patients who have undergone abdominal surgery are other factors that reduce comfort [30,36]. With some changing views in recent years, the previously supported "survival" has been replaced by "quality survival". The term "quality survival" refers to the patient's independence in daily life, rapid reintegration into social life, adaptation to work, duties and social roles, ability to work, maintain marriage, behave independently, earn money, and produce, in addition to the continuity of many roles, and the ability to effectively combat the disease. In this context, if the quality survival of patients who have undergone abdominal surgery is achieved in coping with the negative effects of surgery, their comfort will be protected in the best way. Comorbid diseases constitute an important obstacle to comfort.

This study focuses on its sample and uses a self-report-based questionnaire for data collection, and the study was single-center, limiting generalizability to the population. In addition, since data was collected using a self-assessment-based method, the patients' frank approach to responding is unknown. The answers given to the questions in the general comfort questionnaire may vary according to the sociocultural structures of the patients, which affects the generalizability of the results. The fact that the sample size was not very high can be considered as another limitation principle.

Conclusion

As a result of this study, the comfort level of patients who had undergone abdominal surgery was found to be slightly above moderate. In this study, patients with multiple comorbidities had the lowest comfort. The most important problem that triggers the deterioration of the clinical status of patients who have undergone abdominal surgery is undoubtedly comorbid diseases. This study's results indicates that the comfort level of patients who have undergone abdominal surgery decreases as their clinical condition becomes more complex. It is very important to manage the comfort level of abdominal surgery patients throughout the perioperative process. In addition, the risks that decrease the comfort level of abdominal surgery patients in the clinic should be identified and eliminated.

Ethical Approval

Approved by the İstanbul Başakşehir Çam and Sakura City Hospital Clinical Research Ethics Committee and Provincial Health Directorate (No: 2023/17, Date: 31 October 2023).

Patient Consent

Informed consent was waived due to the retrospective design.

Conflict of Interest

The authors declare no conflict of interest.

Funding

The authors received no financial support for this study.

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