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**Research Article/Özgün Araştırma**

# Determination of factors affecting mobilization in patients undergoing abdominal surgery

# Abdominal bölge cerrahisi geçiren hastalarda mobilizasyonu etkileyen faktörlerin belirlenmesi

Ebru KARAASLAN KARACA[1], Ayla YAVA[2]

[1]Sanko University, Faculty of Health Sciences, Department of Nursing, Surgical Nursing Division, 27090, Gaziantep-Turkey
[2]Hasan Kalyoncu University, Faculty of Health Sciences, Department of Nursing, Surgical Nursing Division, 27410, Gaziantep-Turkey

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**Abstract**

**Aim:** The aim of this study was to determine the factors influencing mobilization in patients following abdominal surgery.

**Materials and Methods:** The study was collected with the Descriptive Characteristics Questionnaire and Questionnaire for Factors Affecting Mobility.

**Results:** Of the patients participating in the study, 59.1% were female and 86.2% were married. Eighty percent of the patients reported experiencing pain during movement, 73% expressed fear of bleeding at the surgical site, and 64.5% indicated a need for family assistance while mobilizing, all of which were factors that negatively influenced their mobilization.

**Conclusion:** It was determined that various factors affect the postoperative mobilization of patients who have undergone abdominal surgery. The most prominent of these factors were patients' fear of bleeding from the surgical site, the experience of pain, and the need for assistance from family members during movement.

**Keywords:** Abdominal surgery; Mobilization; Postoperative care.

**Öz**

**Amaç:** Bu çalışma abdominal bölge cerrahisi geçiren hastaların mobilizasyonunu etkileyen faktörlerin belirlenmesi amacıyla tanımlayıcı tipte yapıldı.

**Gereç ve Yöntem:** Veriler Tanıtıcı Özellikler Soru Formu ve Hareketliliği Etkileyen Faktörler Soru Formu ile toplandı.

**Bulgular:** Araştırmaya katılan hastaların %59.1'i kadın ve %86.2'si evli idi. Hastaların %80'i hareket ederken ağrı yaşamasının, %73'ü yara yerinin kanamasından korkmasının ve %64,5'i hareket ederken ailesine ihtiyaç duymasının hareket etmesini etkilediğini belirtti.

**Sonuç:** Abdominal cerrahi geçiren hastaların ameliyat sonrası dönemde mobilizasyonlarını etkileyen bir çok faktör olduğu belirlendi. Bu faktörlerin başında hastaların yara yerinin kanamasından korkması, ağrı yaşaması ve hareket ederken ailesine ihtiyaç duyması olduğu saptandı.

**Anahtar Kelimeler:** Abdominal cerrahi; Mobilizasyon; Ameliyat sonrası bakım.

**Yazışma Adresi/Address for Correspondence**: Ebru KARAASLAN KARACA, Sanko University, Faculty of Health Sciences, Department of Nursing, Surgical Nursing Division, 27090, Gaziantep-Turkey, E-mail: ebrumm.2310@gmail.com

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*Bu makale araştırma ve yayın etiğine uygun hazırlanmıştır.*
*intihal incelemesinden geçirilmiştir.*

## Introduction

Given its high procedural frequency and the substantial risk of postoperative complications, abdominal surgery constitutes a central focus within modern surgical practice.[1] After abdominal surgery, patients may experience problems such as dry mouth, difficulty swallowing, loss of appetite, constipation, diarrhea, nausea, vomiting, abdominal distension, paralytic ileus, deep vein thrombosis, and pneumonia. If these issues are not controlled early, they may cause additional problems during the recovery process, such as delayed healing, decreased comfort, and prolonged hospital stay.[2] Mobilization in the early postoperative period is recognized as a critical intervention in reducing the incidence of complications following abdominal surgery, particularly in mitigating pulmonary, thromboembolic, and gastrointestinal adverse outcomes.[3]

Mobilization refers to a concept, important of which was emphasized by Dr. Ries in late 1800s and which includes steps such as "turning one side to another or changing positions in bed, sitting, standing up, and walking". Since healthcare personnel in the past believed that it was detrimental to move operated patients and should be placed on bed rest until they recovered, the patients' mobilization was restricted.[4] Surgeons have begun to encourage patients to move postoperatively since mobilization has been found to be effective in preventing many postoperative complications, such as thromboembolism, pneumonia, and muscle atrophy due to prolonged immobility.[5,6]

The prevention of postoperative complications is of great importance. During this period, mobilization practices such as passive movements in bed, turning exercises, and ambulation provide physiological and psychological benefits, whereas immobility may lead to adverse outcomes such as thromboembolism, deep vein thrombosis, pulmonary complications, increased insulin resistance, and inadequate tissue oxygenation.[7]

Mobilization can help reduce anesthesia-related respiratory complications by facilitating the removal of pulmonary secretions, promoting lung expansion, and thus preventing serious conditions such as atelectasis and pneumonia.[8] Furthermore, it contributes to the improvement of cardiovascular functions by accelerating circulation, initiating bowel movements earlier, and preventing deep vein thrombosis.[7]

Abdominal surgery, which involves interventions covering a large anatomical area of the body, may lead to various postoperative complications, including respiratory and cardiovascular problems as well as pain.[9] These complications can delay the patient's recovery and prolong hospital stay.[10] Therefore, early mobilization plays a critical role in preventing such complications.

In the early postoperative period, patients may experience symptoms such as pain at the surgical site, orthostatic hypotension, dizziness, nausea, vomiting, blurred vision, and syncope. Fatigue caused by blood loss and anesthesia may result in reluctance to mobilize.[11] Patients may fear wound dehiscence or bleeding, and they may avoid movement due to concerns that medical devices such as drains or intravenous lines will restrict their mobilization.[12]

During this process, the patient's individual characteristics, surgical factors, and postoperative variables affecting mobilization should be carefully assessed. Nurses' awareness of these factors can support early and safe mobilization practices in clinical settings.[13]

This study aimed to evaluate early postoperative mobilization in patients who underwent abdominal surgery and to identify the factors influencing their mobilization.

## Materials and Methods

### Type of study

This research was conducted in a descriptive type.

### The sample size of the study

This study was conducted in the General Surgery service of the State Hospital between September and December 2019. The population of the study consisted of 234 patients who underwent surgery in the

abdominal region. Using the sample selection method for groups with a known universe, the minimum sample size was determined to be 145 out of a total population of 234, with a 5% margin of error and a 95% confidence level.

The sample included 152 patients who:

- had no chronic pain or no visual or hearing impairment,
- were 18 years of age or older,
- were conscious postoperative,
- had walked for the first time in the patient room postoperative according to the clinical routine,
- were voluntary to participate in the study.

Fifty four patients who did not speak Turkish and 28 patients who failed to walk for the first time postoperative were excluded from the study.

The researcher collected data by holding face-to-face interviews with the patients through the Descriptive Characteristics Questionnaire and Questionnaire for Factors Affecting Mobility. The patients who agreed to participate in the study were asked to read and sign the Informed Consent Form.

**Data collection tools**

Descriptive Characteristics Questionnaire*:* It includes the questions about the birth date, gender, marital status, body mass index (BMI) value, educational level, use of walking aids, previous surgery, the name of the surgery, the type of anesthesia administered to the patient, status of receiving training on how to move from the healthcare team before the surgery, and status of having fallen and felt dizzy postoperative the surgery.

Questionnaire for Factors Affecting Mobility: Researchers developed the questionnaire by making use of the relevant literature in accordance with the purpose of the study.[14] The form included 17 questions on post-operative nausea-vomiting, sleep duration, presence of visitors, feeling weak, fear of falling, needing someone while moving, presence of someone to support while moving, fear of wounds to dehiscence while moving, suffering from stress due to surgery, use of the medical devices, pain, uncomfortable clothes and lack of information on how to move.

**Data collection**

The researcher informed the patients who agreed to participate in the study verbally and the Informed Consent Form and gave their consent by putting a wet signature.

The data were collected through face-to-face interviews with patients who walked for the first time either on the day of surgery or on the first postoperative day. Each patient participated in a single interview lasting approximately 20 minutes.

**Statistical analysis**

The data were transferred to SPSS for the Windows 25 software, and statistical analyses were done. While categorical variables were calculated as number (*n*), percentage (%), continuous variables were calculated as mean±standard deviation and minimum and maximum values. The Shapiro-Wilk test was run to assess whether or not the data were normally distributed. The analysis results showed that the data were not normally distributed ($p<0.05$). The paired sample t-test was used to evaluate the blood pressure, pulse rate, and respiratory rate assessed before and postoperative the movements. The statistical significance level was accepted as $p<0.05$ in all analyses.

**Ethics committee approval**

For the study, approval from the Hasan Kalyoncu University Faculty of Health Sciences Non-Interventional Trials Ethics Committee permission from (Date: 14.06.2019 Decision No. 2019/41).

Written permission was obtained from the General Secretariat of the Gaziantep Hospitals Union. The patients were informed about the purpose of the study, the confidentiality of the information obtained, and that there would be no financial compensation; they then gave their consent to participate in the study by signing the Informed Consent Form.

Accordingly, only patients who agreed to participate in the study were included in the study.

**Results**

The mean age of the patients is 46.61 ± 15.23 years, and the mean body mass index is 30.42 ± 6.95 kg/m². Among the patients, 59.2% are female, 86.2% are married, and 42.1% have graduated from primary school. A total of 65.8% of the patients report a history of previous surgery, and 94.7% undergo cholecystectomy, hernia repair, or bariatric surgery. General anesthesia is administered to 67.1% of the patients, while 92.1% do not receive preoperative training regarding the surgery. It is observed that 77.0% of the patients do not experience dizziness in the postoperative period. Additionally, 94.7% do not use a walking aid, and 92.1% are not informed prior to the surgery (Table 1).

**Table 1**. Descriptive characteristics of the patients (N=152).

| **Characteristics** | | | |
|---|---|---|---|
| Age (mean±Sd) * (years) - (minimum-maximum): | | (46.61± 15.23)-(19- 85) | |
| Body mass index (kg/m2) (mean±Sd)* -(minimum-maximum): | | (30.42± 6.95)-(17.7- 59.41) | |
| | | **n** | **%** |
| **Gender** | Female | 90 | 59. 2 |
| | Male | 62 | 40.8 |
| **Marital Status** | Married | 131 | 86.2 |
| | Single | 21 | 13.8 |
| **Educational Background** | Illiterate | 12 | 7.9 |
| | Literate | 6 | 3.9 |
| | Primary School | 64 | 42.1 |
| | Secondary School | 32 | 21.1 |
| | High School | 38 | 25.0 |
| **Previous surgeries** | Yes | 52 | 34.2 |
| | No | 100 | 65.8 |
| **The name of the surgery** | Elective (cholecystectomy/hernia repair/bariatric surgery) | 144 | 94.7 |
| | Emergency (appendectomy) | 8 | 5.3 |
| **Use of walking aids** | Yes | 4 | 2.6 |
| | No | 148 | 97.4 |
| **Receiving training before surgery** | Trained by a doctor | 12 | 7.9 |
| | Not trained | 140 | 92.1 |
| **Anesthesia Type** | General | 102 | 67.1 |
| | Spinal | 50 | 32.9 |
| **Dizziness after surgery** | Yes | 117 | 77.0 |
| | No | 35 | 23.0 |

* Mean±Sd: Mean ± standard deviation

When the factors affecting patient mobilization are examined, 80.3% indicate that pain, 73.0% fear of wound bleeding during movement, 64.5% the need for family assistance, and 62.5% the presence of equipment on the lower or upper extremities significantly impact their ability to move. Furthermore, 51.3% report that feeling weak, and 44.1% state that nausea negatively influences their mobilization On the other hand, 88.2% of the patients report that moving during mealtimes, and 86.8% indicate that moving during bedtimes does not affect their mobilization at all (Table 2).

## Discussion

Abdominal surgery is a process that comes with problems such as prolonged hospitalization, low physical activity levels and prolonged bed rest. Long-term immobility may lead to complications such as insulin resistance, muscle weakness, thromboembolic disease, and respiratory dysfunction.[15]

The movement of patients in the postoperative period is considered an essential aspect of care in order to prevent complications and restore the preoperative lifestyle.[16] Movement in the early postoperative period has been found to be effective in shorter hospitalization and early restoration of gastrointestinal motility. [10]

**Table 2.** Distribution of factors affecting patients' mobility (N=152)

| Factors | Affecting a lot | Affecting | Affecting slightly | Not Affecting |
|---|---|---|---|---|
| | Number (%) | Number (%) | Number (%) | Number (%) |
| 1. Nausea | 6 (3.9) | 67 (44.1) | 40 (26.3) | 39 (25.7) |
| 2. Vomiting | 5 (3.3) | 46 (30.3) | 25 (16.6) | 76 (50.0) |
| 3. Feeling weak | 22 (14.5) | 78 (51.3) | 29 (19.1) | 23 (15.1) |
| 4. The timing of my activity coincides with my sleep time | - | 8 (5.3) | 12 (7.9) | 132 (86.8) |
| 5. The timing of my activity coincides with my eating time | - | 4 (2.6) | 14 (9.2) | 134 (88.2) |
| 6. The timing of my activity coincides with my visit time | - | 19 (12.5) | 51 (33.6) | 82 (53.9) |
| 7. Fear of falling | 77 (50.7) | 44 (28.9) | 16 (10.5) | 15 (9.9) |
| 8. Need my family | 98 (64.5) | 36 (23.7) | 10 (6.6) | 8 (5.3) |
| 9. No attendant to support me | 2 (1.3) | | 1 (0.7) | 149 (98.0) |
| 10. I fear wounds that could dehiscence or bleed. | 111 (73.0) | 29 (19.1) | 8 (5.3) | 4 (2.6) |
| 11. Feel restless | 15 (9.9) | 36 (23.7) | 56 (36.8) | 45 (29.6) |
| 12. Suffer stress due to surgery | 26 (17.1) | 28 (18.4) | 50 (32.9) | 48 (31.6) |
| 13. Medical devices in the lower part of my body (Foley catheter. drain) | 95 (62.5) | 38 (25.0) | 11 (7.2) | 8 (5.3) |
| 14. Medical devices in the upper part of my body (branula drain) | 92 (60.5) | 42 (27.6) | 10 (6.6) | 8 (5.3) |
| 15. Uncomfortable clothes | 3 (2.0) | 17 (11.2) | 54 (35.5) | 78 (51.3) |
| 16. Pain when moving | 122 (80.3) | 25 (16.4) | 4 (2.6) | 1 (0.7) |
| 17. Lack of knowledge about how to act | 78 (51.3) | 55 (36.2) | 14 (9.2) | 5 (3.3) |

*Mean±Sd: Mean±standard deviation of the factor affecting mobility

Besides, the literature also suggests that patients who move in the early period have a higher quality of life.[17] Given the effects of mobilization accordingly, identifying the factors that may affect mobilization and applying nursing interventions for these factors hold an essential place for expediting recovery in the postoperative period. [18,19]

Most of the patients (73.0%) reported that fear of wound dehiscence during movement significantly limited their mobilization. This apprehension may lead to reluctance in physical activity. Accordingly, nurses should identify the specific situations triggering patient fears and implement targeted education strategies. By demonstrating proper wound support techniques such as splinting during movement, coughing, or sneezing and providing tailored pre and postoperative training, healthcare providers can alleviate anxiety related to wound integrity and encourage safer mobilization. [20,21]

The majority of patients (77.0%) reported postoperative dizziness and 51.3% noted weakness as impediments to mobilization (Table 1, Table 2). Nausea and vomiting were also commonly cited as factors reducing movement. Preoperative fasting implemented to prepare patients for surgery may exacerbate these symptoms by contributing to systemic weakness. This aligns with current literature, which identifies prolonged preoperative fasting and anesthesia as significant contributors to early postoperative symptoms including dizziness, weakness, nausea, and vomiting. [22]

In this study, patients undergoing abdominal surgery reported feeling dependent when getting out of bed and ambulating within their rooms, with a substantial majority (64.5%) requiring family assistance. This finding deviates from much of the existing literature, which often includes heterogeneous surgical populations or structured early mobilization protocols. However, recent evidence supports the notion that limiting the cohort to abdominal surgery patients may increase reliance on caregiver support in the early postoperative period.[23, 24]

Üzen Cura et al.[25] reported that the presence of medical devices, such as catheters or drains, limited patients' mobilization. Consistent with

these findings, the present study also demonstrated that patients' movement was adversely affected by the devices attached to their bodies. Considering that such equipment may act as a barrier to early mobilization, timely removal of catheters and similar apparatuses during the postoperative period may represent an effective nursing intervention to facilitate patient movement and support recovery.[26]

## Conclusion

As a result, pain, fear of wound dehiscence, and the presence of medical devices on the body were identified as the most important factors affecting patient mobilization. It would be beneficial for nurses to inform patients based on their individual characteristics and the type of surgery they underwent, and to plan and implement interventions that enable them to move safely and easily. Postoperative period, the clinical nurse plays a key role in assessing the patient's mobilization status. A mobilization program supported by multidisciplinary collaboration, nursing care, and an authorized mobilization assessment tool will contribute to improving patient outcomes, reducing costs, and promoting a culture of safe and early mobilization.

## Ethics Committee Approval

The study protocol received scrutiny and approval from the Hasan Kalyoncu University Non-Interventional Ethics Committee (decision no: 2019/41, date: 14.06.2019). Our study was conducted in accordance with the principles of the Declaration of Helsinki. Informed consent form were obtained from all patients.

## Author Contributions

E.K.K.: Idea/Concept, Design, Audit/Consultancy, Materials, Data collectıon and/or processing, Analysis and/or comment, Literature review, Writing, Critical review.

A.Y.: Idea/Concept, Design, Audit/Consultancy, Resources, Analysis and/or comment, Literature review, Writing.

## Conflict of Interests

There is no conflict of interest to declare**.**

## Financial Disclosure

No person/organization is supporting this study financially.

## Peer-review

Externally peer-reviewed.

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