EHD
Available online at: https://dergipark.org.tr/tr/pub/jnef
Doi: 10.46483/jnef.1406445

ORIGINAL ARTICLE / ORİJİNAL MAKALE

Problems Experienced by Patients in the Clinic and at Home after Orthopedic Surgery and Their Level of Care Dependency

Ortopedik Cerrahi Girişim Sonrasında Hastaların Klinikte ve Evde Yaşadıkları Sorunlar ve Bakım Bağımlılık Düzeyleri

Elif Akyazı[1] Aygül Kıssal[2]

[1] MSc Nursing Professional, Tokat Turhal Public Hospital, Tokat, Türkiye
[2] Assoc. Prof., Tokat Gaziosmanpasa University, Faculty of Health Science, Public Health Nursing Department, Tokat, Türkiye

Received: 18.12.2023, **Accepted:** 17.10.2024

Abstract

Background: The care needs of patients who underwent orthopedic surgery are not limited to the hospital but continue at home after discharge.

Objectives: The aim of this study is to determine the problems and care dependency levels of patients who has orthopedic surgery in the clinic after the surgery and at home in the first month of discharge.

Methods: Between March 1, 2021 and April 18, 2022, 113 patients (aged 18 and over), who were hospitalized in the orthopedics and traumatology clinic of public hospital due to orthopedic surgery, were included in study. Data were collected using the "Patient Information Form (Part I), Follow-up Form (Part II)," and "Care Dependency Scale." Data were evaluated using mean, standard deviation, median, minimum-maximum, number and percentage, McNemar, McNemarBrowker, eta squared (η2), Cohen's d, Kruskal Wallis-H test, Dunn's test for multiple comparisons and Linear regression analysis.

Results: It has determined that patients who had orthopedic surgery mostly had difficulties in fulfill their self care needs and physical mobility limitations. With the relief of patients' pain and anxiety, an increase in their belief in recovery and a decrease in their dependency levels were observed. In the linear regression model, only 17% of the changes in care dependency could be explained by independent variables, but the independent variables were not statistically significant.

Conclusion: Orthopedic patients experience high levels of mobility limitation and care dependency. There was a decrease in care dependency in the first month after discharge compared to the third day in the clinic.

Keywords: Orthopedic Surgery, Daily Living Activity, Postoperative Period, Care Dependency

Corresponding Author: Aygül KISSAL, Assoc. Prof., Tokat Gaziosmanpasa University, Faculty of Health Science, Public Health Nursing Department, Tokat, Türkiye. **Email:** aygul.kissal@gmail.com, **Tel:** +90 5056451072

Cite This Article: Akyazı E, Kıssal A. Problems Experienced by Patients in the Clinic and at Home after Orthopedic Surgery and Their Level of Care Dependency. Journal of Nursing Effect. 2025;18(1): 56-72

Journal of Nursing Effect published by Cetus Publishing.

Öz

Giriş: Ortopedik cerrahi girişim uygulanan hastaların bakım ihtiyaçları hastane ile sınırlı kalmayıp, taburculuk sonrası evde de devam etmektedir.

Amaç: Bu çalışmanın amacı, ortopedik cerrahi girişim uygulanan hastaların ameliyat sonrası klinikte ve taburculuk sonrası ilk ay evde yaşadıkları sorunların ve bakım bağımlılık düzeylerinin belirlenmesidir.

Yöntem: 1 Mart 2021 ile 18 Nisan 2022 tarihleri arasında bir devlet hastanesinin ortopedi ve travmatoloji kliniğinde yatan, ortopedik cerrahi girişim geçiren 18 yaş ve üzeri 113 hasta çalışmaya alındı. Veriler "Hasta Bilgi Formu (Bölüm I), İzlem Formu (Bölüm II)" ve "Bakım Bağımlılığı Ölçeği" kullanılarak toplandı. Veriler ortalama, standart sapma, medyan, minmum-maksimum, sayı ve yüzde, NcNemar, NcNemarBrowker, eta kare (η2), Cohen's d, Kruskal Wallis-H testi, Dunn's çoklu karşılaştırma tetsi ve Lineer regresyon analizi kullanılarak değerlendirildi.

Bulgular: Ortopedik cerrahi girişim geçiren hastaların en çok öz bakım ihtiyaçlarını karşılamada ve fiziksel hareket kısıtlılığında zorluk yaşadıkları belirlendi. Hastaların ağrı ve kaygılarının azalmasıyla iyileşme inancında artış, bağımlılık düzeylerinde ise azalma gözlendi. Lineer regresyon modelinde bakım bağımlılığındaki değişmelerin yalnızca %17'si bağımsız değişkenlerle açıklanabildi ancak bağımsız değişkenler istatistiksel olarak anlamlı saptanmadı.

Sonuç: Ortopedi hastaları yüksek düzeyde hareket kısıtlığı ve bakım bağımlılığı yaşamaktadır. Hastaların klinikteki üçüncü güne kıyasla taburculuktaki birinci ayda bakım bağımlılıklarında azalma görülmüştür.

Anahtar Kelimeler: Ortopedik Cerrahi, Günlük Yaşam Aktivitesi, Postoperatif Dönem, Bakım Bağımlılığı

INTRODUCTION

In orthopedics and traumatology clinics, surgical and medical treatment of trauma, damage, fractures, accidents, falls, and sports injuries that may occur at any age are applied (Kalantar et al., 2020). The most common surgical interventions include major surgical interventions such as diagnostic and therapeutic knee arthroscopies, shoulder arthroscopy surgeries in shoulder injuries and traumas (Hijji et al., 2021; Martin et al., 2022), meniscus surgery (Karakoç & Atalay, 2019). The surgical intervention process consists of preoperative, intraoperative, and postoperative periods and can affect the patient positively and negatively (Bektaşoğlu & Eyi, 2021; Bilik, 2017). Emergency/planned or minor/major surgical interventions affect patients psychologically and physically. These effects include stress reaction to surgical intervention, weakening of the immune system and becoming vulnerable to infection, and changes in lifestyle (Gosens & Oudsten, 2023; Bilik, 2017). Many patients undergoing surgical intervention experience anxiety due to reasons such as the type of anesthesia to be applied, lack of information about the operation process, inability to wake up from surgery, experiencing severe pain after surgery, disruption in working life after surgery, anxiety about loss of control over their own body and fear of sexual loss (Bektaşoğlu & Eyi, 2021).

Background

The surgery process can also influence patients' physiological, psychological, and social dimensions and cause them to become dependent at various levels. Care dependency is defined as the support provided by professionals to individuals who are dependent on others due to a

lack of self-care skills and the need for a certain level of care. Dependency is determined by assessing the patient's ability to fulfill Activities of Daily Living (ADL). The most important determinants in measuring independence in ADL are bathing, feeding, dressing, and undressing, getting in and out of bed (movement), sitting on and off the toilet, and continence. Whether individuals can perform these activities with or without assistance is evaluated. Ignoring independence will lead to decreased self-care skills at home and increased dependency (Kılıç et al., 2017).

Patients' care needs after surgical intervention are not limited to the hospital but continue when they return home from the clinic. Care needs can last weeks and months depending on individual characteristics and diagnosis (Bilik, 2017; Bektaşoğlu & Eyi, 2021). Patients experience the most pain, discharge, bleeding, wound dehiscence, infection, sleep problems, movement restriction, difficulty in meeting self-care and activities of daily living, travel, depression, and psychological and sexual problems at home after surgical intervention (Bektaşoğlu & Eyi, 2021; Bilik, 2017; Dinçer & Kurşun, 2019). Since surgical interventions cause changes in physical movement and life, patients experience various problems in the clinic and at home. Problems such as limited mobility, insomnia and lack of self-care are more common in the clinic. The dependency and independence status of the individual should be evaluated, and patient training should be provided accordingly (Waniga et al., 2016; Bilik, 2017). Necessary and useful training increases the patient's quality of care, reduces hospital readmission rates, accelerates the recovery process, reduces care costs, and increases patient satisfaction (Acar & Fındık, 2021; Akbari et al., 2018). Nurses should identify and know the patient's clinical and home counseling, information, and support needs after orthopedic surgery. The aim of this study is to determine the problems and care dependency levels experienced by patients who underwent orthopedic surgery in the clinic after surgery and at home in the first month after discharge.

Research questions

1. What are the problems experienced by the patients at home on the third day after orthopedic surgery and in the first month after discharge?

2. What is the level of patients' home care dependency on the third day after orthopedic surgery and in the first month after discharge?

3. What are the factors affecting the patients' dependency level after orthopedic surgery?

METHOD

Type of the Research

The study was a prospective descriptive and cross-sectional study. The STROBE checklist was used to guide the submission.

Place of the Research

The study was conducted in a state hospital's orthopedics and traumatology clinic between March 1, 2021, and April 18, 2022 in Türkiye.

Sample of the Research

In this study, purposive sampling was selected. Patients who met the sample criteria and were hospitalized between March 1, 2021 and April 18, 2022 were included in the study. The study population consisted of patients aged 18 years and over who came from the emergency department or orthopedic clinic of a district state hospital, underwent orthopedic surgery, and were admitted to the orthopedics and traumatology clinic. In calculating the sample size, the number of surgeries performed in the last year was used to statistically determine our universe. The effect size was calculated as 0.218, taking into

account the number of patients admitted to the Orthopedics and Traumatology Clinic in one year (between 21.12.2019-21.12.2020, n=249) in the health institution where the research will be conducted. Then, the number of samples in the study was determined using the G Power 3.1 program, considering the incidence rate of problems experienced by elderly individuals at home after discharge (2.6-62.6%) reported in a study conducted by Dinçer and Kurşun (2019). Considering the effect size (0.218), an alpha value of .05, and a power level of .95, the minimum sample size required for this study was determined as 103. To account for possible data loss, the sample size was increased to 113 for this study. Patients who were under the age of 18, who had not undergone orthopedic surgery, and who were not volunteers were not included in the study. The study was completed on a total of 113 patients in 6 different groups, and when the posthoc analysis result was examined, a confidence level of 95% (1-α), an effect size of f=0.732 and a power of the test of 99.9% (1-β) were obtained.

Data Collection Instrument-Validity and reliability information

"Patient Information Form (Part I), Follow-up Form (Part II)," and "Care Dependency Scale" were used in the study.

Patient Information Form

The Form consists of 13 questions, including the patient's diagnosis, age, gender, marital status, educational status, occupation, other existing chronic diseases, Body Mass Index (BMI), pain status, presence of a companion at home, previous surgery, the reason for the surgery in the patient's statement and the type of surgery. BMI was evaluated based on the latest classification accepted by the World Health Organization (WHO, 2010).

Third Postoperative Day and First Month After Discharge Follow-Up Form

The Form was developed by reviewing the literature to determine the problems experienced by patients (Baksi & Genç, 2020; Kılıç et al., 2017) and includes questions about the patient's education and information about the disease, surgery, postoperative care, belief in recovery, pain perceptions and medication use in case of pain, and Functional Health Patterns. Questions about Functional Health Patterns: Health perception, nutrition, excretion, respiration, circulation, activity/exercise, cognitive perception, self-perception, role relationships, coping-stress tolerance, and sexuality.

In evaluating the content validity of the patient information form and follow-up form, the opinions of three faculty members who are experts in surgical diseases nursing were obtained. Necessary changes were made in the data collection form in line with the experts' opinions. The preliminary application of the data collection form was conducted with five patients who were not included in the sample group and agreed to participate in the application in the same hospital. Necessary corrections were made in the data collection form according to the results of the preliminary application.

Care Dependency Scale

The Care Dependency Scale was initially developed by Dijkstra in the Netherlands in 1998. In Turkey, the validity and reliability of the scale were conducted by Yönt et al. in 2010. The scale comprises a total of 17 items and follows a Likert-type format, with response options ranging from 1 (completely dependent) to 5 (completely independent/immediate). The scale's minimum score is 17, while the maximum score is 85. Higher scores indicate a greater level of independence in meeting self-care needs,

whereas lower scores indicate a higher level of dependence on others for care. The scale demonstrates a high level of internal consistency, with a Cronbach's Alpha value of .91 (Yönt et al., 2010). In the present study, Cronbach's Alpha coefficient for the scale was calculated as .97.

Variables of the Research

Dependent Variables

Care dependency scale scores and problems experienced after orthopedic surgical intervention.

Independent Variables

Patients' personal information (age, gender, marital status, educational status, occupation, other existing chronic diseases, pain status, presence of a companion at home, receiving education about the surgery, and discharge) and problems experienced after orthopedic surgery.

Data Collection Process

The First Interview took place on the third day following the surgical procedure, conducted in the patient's room within the clinic using a face-to-face interview technique. The interview time was carefully chosen to ensure privacy, a quiet environment, and the absence of medical interventions. The patient's relatives were present during the interview, except when the patient was experiencing pain. The duration of the interview was approximately 30 minutes. During this stage, the patients were informed that a follow-up interview would be conducted over the phone in the first month after discharge. Contact information, including telephone numbers and home addresses, was obtained from the participants.

Second Interview (at Home); In the telephone interview conducted with the patients during the first month after discharge at a time convenient for the patient, the same forms were used (patient information form questions were not asked again), and it was asked whether the existing problems continued, or new problems and data were collected in approximately 25 minutes.

Evaluation of the Data

Data were analyzed using IBM SPSS V23.0. Compliance with normal distribution was examined by the Shapiro-Wilk test. Quantitative data were presented as mean, standard deviation, median, minimum, and maximum, and categorical data were presented as numbers and percentages. Kruskal Wallis-H test, Dunn's test for multiple comparisons, effect size analysis (Eta Square (η2), Cohen's d), McNemar's test, McNemarBrowker's test, and linear regression analysis were used. The significance level was taken as $p < .05$.

Ethical Aspects of The Research

All study procedures were approved by the University's Non-Interventional Clinical Research Ethics Committee (21-KAEK-045 dated 18.02.2021). Permission to conduct the study was also obtained from the hospital (E-84334760_929 Date: 18.01.2021) and Permission was obtained from the authors who adapted the scales into Turkish. Moreover, written and verbal consent was obtained from the patients included in the study.

RESULTS

Sample Sociodemographic Characteristics

The mean age of the participants was 58.19 ± 13.39 years. Of the participants, 66.3% were in the 18-64 age group, 62.8% were female, 95.6% were married, 48.7% were primary school graduates, 57.5% were housewives, and 63.7% were slightly overweight (Tablo 1).

Table 1. Distribution of Participants' Sociodemographic Characteristics (N=113)

Characteristics	$\bar{X}$ ± SD; Median (Min. - Max.)	
Age	58.19 ± 13.39; 59 (23 - 86)	
	n	%
18-64 (Adult Surgery-Young)	75	66.3
65-74 (Advanced Age Surgery-Young Elderly)	27	23.9
75 and over (Advanced Age Surgery – Elderly-Very Elderly)	11	9.8
Gender Female	71	62.8
Male	42	37.2
Marital status Married	108	95.6
Single	5	4.4
Education status		
Illiterate	20	17.7
Primary education	55	48.7
High School	24	21.2
University	14	12.4
Occupational status		
Housewife	65	57.5
Retired	16	14.2
Officer	13	11.5
Worker	10	8.8
Other (tradesmen, students, not working)	9	8.0
Body Mass Index		
Normal (18.5-24.9)	12	10.6
Slightly overweight (25.0-29.9)	72	63.7
1st degree obese (30,0-34.9)	21	18.6
2nd degree obese (35.0-39.9)	8	7.1

*SD: Standard Deviation

Sample Disease Characteristics

All the patients had preoperative pain. The degree of belief in the recovery status in the clinic was 5.20 ± 1.45 and 6.58 ± 1.17 at home. The majority (97.3%) had someone to help with daily tasks, movement, and care at home after discharge. More than half of the participants (61.9%) had chronic diseases. Participants most commonly had hypertension (56.3%) and diabetes (48.8%). Of the participants, 46.9% had previous hospitalizations, and 39.8% had previous surgery. It was determined that the first clinical complaint of 80.05% of the patients was pain, and the second clinical complaint was falling in 28.3%. Gonarthrosis (29.2%), shoulder Rotator Cuff Syndrome (RC) /shoulder prosthesis (15.9%), and hand/foot trauma (14.1%) were the first three medical diagnoses at hospitalization (Tablo 2). On the third day in the clinic, 72.6% of the participants received information about care, and 94.7% received information about home care from the physician or nurse at discharge.

Sample's Perceptions of Health Status and Activity Exercise Functions

There was no statistically significant difference between the distributions of the answers to the questions of taking an appropriate postoperative position, avoiding forceful movements, not stepping on the foot/leg, eating healthy nutrition, protecting the surgical site, and exercising. While the rate of those who felt that their perception of health status was much better than preoperatively in the clinic was 1.8%, this rate was 21.2% at home. The rate of those who felt their general health status perception worse than preoperatively in the clinic was 3.5%, while the rate of those who felt much worse than preoperatively was 1.8% . Patients in the clinic experienced insomnia (58.4%), drowsiness (25.7%), frequent awakening at night (34.5%), daytime sleepiness (16.8%), fatigue (78.8%), inability to perform self-care (64.6%), and restricted mobility (80.5%) more than at home ($p<0.05$). In the clinic, 8% of the patients had difficulty eating, while this rate was 18.6% at home ($p=.002$). 0% of the patients in the clinic and 38.9% at home reported having problems in performing daily care and housework.

Tablo 2. Distribution of Participants' Disease Characteristics (n=113)

Characteristics		$\bar{X}$ ± SD; Median (Min. - Max.)	
	Preoperative pain scale score	6.69 ± 1.4;	7 (3 - 10)
	Surgical site pain scale score in the clinic	6.92 ± 1.21;	7 (2 - 10)
	Home surgical zone pain scale score	4.02 ± 1.38;	4 (0 - 7)
	The degree to which he/she believes/thinks he/she is recovering in the clinic.	5.20 ± 1.45;	5 (1 - 8)
	The degree to which he/she believes/thinks he/she is recovering at home	6.58 ± 1.17;	7 (1 – 8)
		n	**%**
Pain complaints before surgery	Yes	113	100
Having someone to help with daily tasks, movement, and care at home after discharge	Yes	110	97.3
Presence of chronic disease	Yes	70	61.9
Chronic diseases*	Hypertension	36	56.3
	Diabetes	28	43.8
	Chronic Renal Failure	4	6.3
	COPD	2	3.1
	Mental illness (depression, anxiety disorder etc.)	2	3.1
	Other (Asthma, goiter, heart failure)	28	43.8
Previous hospitalization	Yes	53	46.9
Previous surgery status	Yes	45	39.8
Patient's clinical complaint*	Pain	91	80.5
	Falling	32	28.3
	Increased pain at night	15	13.3
	Reduction in walking distance	11	9.7
	Inability to pull a quilt over weakness	8	7.1
	Mass, incision, cyst, nerve compression	4	3.5
	Infection	3	2.7
	Diabetic foot lifeless finger/tissue	2	1.8
	Inability to climb stairs	2	1.8
Medical diagnosis at hospitalization / Surgical Intervention	Gonarthrosis/Prosthesis	33	29.2
	Shoulder RC/Shoulder Replacement	18	15.9
	Hand/foot Trauma (Incision, CTS, mass-cyst removal, hand/foot fractures) /Hand and Foot Surgery	16	14.1
	Radius fracture /Fracture Surgery	12	10.6
	Tibia fracture-tibia osteotomy /Fracture Surgery	9	8.0
	Meniscus/Meniscectomy	9	8.0
	LSS/ Spine Surgery	7	6.2
	Femur fracture /Fracture Surgery	3	2.6
	Humerus fracture /Fracture Surgery	2	1.8
	Amputation (Lower extremity)/Amputation Surgery	2	1.8
	LDH/ Spine Surgery	1	.9
	Coxarthrosis /Prosthesis	1	.9

*Percentages are based on n. SD: Standard Deviation; COPD: Chronic Obstructive Pulmonary Disease; RC: Rotator Cuff Syndrome; CTS: Carpal Tunnel Syndrome; LSS: Lumbar Spinal Stenosis; LDH: Lumbar Disc Herniation

Some Areas of Functional Health Patterns

According to Table 3, the rate of patients who felt bad at the clinic was 15.0%, and the rate of patients who felt bad at home was .9%. In the clinic, 79.6% of the patients and 62.8% of the patients at home thought they experienced a change in body image ($p < .001$). 22.1% of patients in the clinic and 16.8% at home reported feeling lonely ($p < .001$). In the clinic, 21.2% of the patients felt hopelessness, while at home, this rate was 16.8% ($p < .001$). In the clinic, 18.6% of patients felt a decrease in self-esteem; at home, this rate was 15.9% ($p < .005$). The high stress level was experienced by 19.5% of patients in the clinic and 10.6% at home ($p < .001$). 18.6% of patients in the clinic and 9.7% at home experienced high anxiety ($p < .001$). High levels of anxiety were reported by 15.9% in the clinic and 8.8% at home ($p < .001$). The anger levels of the patients were 7.1% in the clinic and 3.5% at home ($p < .001$). In the clinic, 68.1% of the patients answered 'moderate' to the question 'how they feel in general,' while 70.8% answered 'good' at home. In the clinic, 20.4% of the participants answered 'moderate' when asked about the level of depression, while this rate was 9.7% at home. There was no statistically significant difference between the distributions of the answers given to the question 'do you have concerns about your sexual health' in the clinic and at home ($p=.406$) (Table 3).

Table 3. Comparison of Participants' Follow-Up in the Clinic and at Home for Some Areas of Functional Health Patterns (n=113)

AREAS	Follow-up questions	In the Clinic		At home		Test sta	p
		n	%	n	%		
COGNITIVE PERCEPTION	Thought of impaired verbal communication						
	Yes	10	8.8	3	2.7	7.000	.072*
	No	102	90.3	106	93.8		
	Occasionally	1	.9	4	3.5		
SELF-PERCEPTION	Overall sense of self						
	Very good	---	---	15	13.3	---	---
	Good	17	15.0	80	70.8		
	Middle	77	68.1	17	15.0		
	Bad	17	15.0	1	.9		
	Very bad	2	1.8	---	---		
	The idea that surgery changes body image						
	Yes	90	79.6	71	62.8	2<.001	**<.001***
	No	15	13.3	18	15.9		
	Occasionally	8	7.1	24	21.2		
	Feeling lonely after surgery						
	Yes	25	22.1	19	16.8	14.000	**.001***
	No	49	43.4	57	50.4		
	Occasionally	39	34.5	37	32.7		
	Feeling hopeless after surgery						
	Yes	24	21.2	19	16.8	14.000	**.001***
	No	46	40.7	55	48.7		
	Occasionally	43	38.1	39	34.5		
	Feeling a decrease in self-esteem						
	Yes	21	18.6	18	15.9	10.800	**.005***
	No	53	46.9	62	54.9		
	Occasionally	39	34.5	33	29.2		

Table 3.(continue) Comparison of Participants' Follow-Up in the Clinic and at Home for Some Areas of Functional Health Patterns (n=113)

ROLE RELATIONSHIPS	Presence of spiritual and emotional support						
	Yes	86	76.1	84	74.3	2.000	.157*
	No.	1	.9	1	.9		
	Occasionally	26	23.0	28	24.8		
	Changing responsibilities of family members						
	Yes	73	64.6	73	64.6	3.000	.392*
	No.	10	8.8	10	8.8		
	Occasionally	30	26.5	30	26.5		
	Impact on working life						
	Yes	34	30.1	32	28.3	1.333	.513*
	No.	77	68.1	78	69.0		
	Occasionally	2	1.8	3	2.7		
	Impact on social life						
	Yes	67	59.3	66	58.4	2.000	.572*
	No.	26	23.0	26	23.0		
	Occasionally	20	17.7	21	18.6		
	Impact on family life						
	Yes	76	67.3	77	68.1	1.000	.607*
	No.	11	9.7	10	8.8		
	Occasionally	26	23.0	26	23.0		
COPING WITH STRESS	Stress level						
	High	22	19.5	12	10.6	29.778	**<.001***
	Middle	43	38.1	26	23.0		
	Low	48	42.5	75	66.4		
	Anxiety level						
	High	21	18.6	11	9.7	28.571	**<.001***
	Middle	40	35.4	25	22.1		
	Low	52	46.0	77	68.1		
	Level of concern						
	High	18	15.9	10	8.8	23.000	**<.001***
	Middle	34	30.1	19	16.8		
	Low	61	54.0	84	74.3		
	Anger level						
	High	8	7.1	4	3.5	19.000	**<.001***
	Middle	25	22.1	11	9.7		
	Low	80	70.8	98	86.7		
	Depression level						
	High	7	6.2	3	2.7	17.000	**.001***
	Middle	23	20.4	11	9.7		
	Low	83	73.5	99	87.6		
SEXUALITY AND REPRODUCTION	Impact on sexual life						
	I have no sex life	65	57.5	67	59.3	6.667	.247*
	None.	16	14.2	17	15.0		
	A little bit	13	11.5	12	10.6		
	Middle	8	7.1	9	8.0		
	Very much	11	9.7	8	7.1		
	Concern about sexual health						
	I have no sex life	66	58.4	66	58.4	4.000	.406*
	Nothing.	17	15.0	19	16.8		
	A little bit	12	10.6	12	10.6		
	Middle	13	11.5	12	10.6		
	Very much	5	4.4	4	3.5		

*McNemar-Browker test

Care Dependence Scores According to Diagnostic Groups

According to Table 4, the mean and median care dependency scores of the trauma group were higher than the other groups. The mean care dependency score of the patients was 40.26 ± 12.73 in the clinic and 58.89 ± 13.48 at home (p < .001) (Table 4).

Table 4. Comparison of Participants' Care Dependency Scores in the Clinic, at Home and by Diagnosis Groups (n=113)

	Care Dependency Scores						
	n	Mean. ± S. Deviation	Mean (min. - max.)	Test sta.	p	Cohen's d	
Diagnosis group							
Prosthesis	34	50.88 ± 8.88	53.00 (25.00 - 69.00)[b]	42.309*	**<.001**	1.463	.349
Fracture	26	59.77 ± 13.58	57.00 (39.00 - 85.00)[bc]				
Vertebra	8	51.75 ± 7.89	51.50 (40.00 - 64.00)[bc]				
Shoulder RC	18	56.11 ± 10.30	56.50 (33.00 - 72.00)[bc]				
Trauma	18	75.50 ± 12.18	78.50 (34.00 - 85.00)[a]				
Meniscus	9	65.33 ± 5.87	66.00 (52.00 - 72.00)[ac]				
At home	113	58.89 ± 13.48	57.00 (25.00 - 85.00)	25.668**	**<.001**	1.416	.334
In clinic	113	40.26 ± 12.73	38.00 (19.00 - 82.00)				

*Cruskal-Wallis test. a-c: There is no difference between diagnostic groups with the same letter. **Paired two-sample t-test statistics, Partial eta squared value (η2)

Risk Factors Affecting Care Dependency

The variables affecting the care dependency score were analyzed by linear regression analysis, and the regression model was found to be statistically significant (F=2.526; p=.003). In the regression model, independent variables explained 17% of the dependent variable. However, no statistically significant effect of the independent variables in the model was found (p > .05) (Table 5).

Table 5. Examination of Risk Factors Affecting Care Dependency Score

	β_0 (%95 CI)	Std. Error	β_1	t	p	r^1	r^2	VIF
Fixed	46.352 (27.642 - 65.062)	9.427		4.917	.000			
Age	-.022 (-.1 - .056)	.039	-.053	-.565	.574	-.218	-.057	1.205
Gender (Reference: Male)	3.531 (-2.397 - 9.459)	2.987	.127	1.182	.240	.242	.119	1.561
Educational status (Reference: Illiterate)								
Primary education	5.464 (-1.621 - 12.55)	3.570	.204	1.531	.129	-.065	.154	2.386
High School	8.347 (-.848 - 17.542)	4.633	.254	1.802	.075	.215	.180	2.691
University	9.476 (-1.574 - 20.527)	5.568	.233	1.702	.092	.219	.170	2.522
Presence of chronic disease (Reference: Yes)	-4.01 (-9.199 - 1.18)	2.615	-.146	-1.534	.128	-.234	-.154	1.218
The presence of someone to help with daily tasks, movement, and care at home after discharge (Yes)	14.39 (-1.807 - 30.586)	8.160	.172	1.763	.081	.253	.176	1.290
BMI (Reference: normal)								
Slightly overweight	-6.015 (-14.106 - 2.076)	4.077	-.216	-1.476	.143	.108	-.148	2.879
1st degree obese	-6.624 (-16.29 - 3.042)	4.870	-.192	-1.360	.177	-.183	-.137	2.690
2nd degree obese	-3.165 (-14.855 - 8.524)	5.890	-.061	-.537	.592	-.075	-.054	1.710
Receiving training on regular medication use on the third day after surgical intervention (Doctor/Nurse/Doctor and Nurse, at the clinic) (Reference: Yes)	3.446 (-2.35 - 9.241)	2.920	.108	1.180	.241	.109	.119	1.132
Receiving training about nutrition on the third day after surgical intervention (Doctor/Nurse/Doctor and Nurse, at the clinic) (Reference: Yes)								
No.	-2.607 (-8.117 - 2.903)	2.776	-.091	-.939	.350	-.143	-.095	1.272
Partially	1.41 (-6.03 - 8.849)	3.748	.037	.376	.708	.119	.038	1.280
Receiving training on nutrition in the first month after discharge (Doctor/Nurse/Doctor and Nurse, at the clinic) (Reference: Yes)								
No.	3.181 (-2.482 - 8.844)	2.853	0.104	1.115	.268	.177	.112	1.164
Partially	-4.584 (-15.725 - 6.556)	5.613	-.077	-.817	.416	-.054	-.083	1.187

F=2.526; p=.003; R2=28.1% Adjusted R2=17.0%; β0: Unstandardized beta coefficient; Std. Error: Standard Error; β1: Standardized beta coefficient; r1: Zero-order correlation; r2: Partial correlation

DISCUSSION

Patients experiencing many problems after surgical intervention have more problems in performing physical movement and activities of daily living in the clinic and at home (Akbari et al., 2018; Bektaşoğlu & Eyi, 2021; Dinçer & Kurşun, 2019; Rocha et al., 2022). Surgical procedures are known to cause changes in physical function and life. This study found that 80.5% of the patients experienced movement limitation in the clinic and 72.6% at home in the first month. Patients had more problems sitting and standing among movement activities in the clinic compared to at home. There was a decrease in walking problems at home compared to the clinic. Patients reported more problems with climbing stairs at home compared to the clinic. In a study, it was stated that more than half of the orthopedic patients had problems regarding walking and climbing stairs (Akyüz et al., 2021).

One of the common problems seen after surgery is insomnia. Patients generally have difficulty falling/sustaining sleep after surgery (Bektaşoğlu & Eyi, 2021). In this study, while slightly more than half of the participants experienced insomnia in the clinic, this rate decreased at home. The reasons for this may be the hospital environment, pain, and treatment hours. Although the patients' complaints of drowsiness, frequent awakening at night, and frequent daytime sleepiness decreased by almost half in the first month after discharge, it is seen that the problem persists. It has been found in the literature that sleep problems are experienced to a large extent after orthopedic interventions (Gürler, 2021). Insomnia can have negative effects on individuals' functional health patterns. Therefore, interventions to ensure that patients sleep effectively should be provided to patients with pre-discharge training.

In the clinic, 78.8% of the patients experienced fatigue caused by the entire surgery process, 64.6% had difficulty in performing self-care activities, and 8% had difficulty in eating/ cooking activities, while at home, these rates were 26.5% fatigue, 50.4% difficulty in performing self-care activities, and 18.6% difficulty in eating/ cooking activities. Since the patients were on bed rest in the clinic, they could not compare whether they could do their daily chores (housework, cooking) and stated that they had no problems in daily care and work. When the patients went home from the hospital, approximately half of the participants stated that they had problems with daily care and daily chores in the first month. The increase in this rate is because there are more female patients, and because of the surgical intervention, they experience mobility restriction in their lower and upper extremities, have difficulty walking, and cannot step on their legs. In addition, due to the stereotypical roles in society, we think that the patients have difficulty in doing housework and cooking when they go home from the hospital because women take care of housework to a great extent. In this study, a small number of patients reported problems with impaired verbal communication in the clinic, and this rate decreased at home. We think verbal communication was impaired in the first days due to pain and fatigue due to the effect of anesthesia. Patients generally felt better at home compared to the clinic. The perception of deterioration in body image patients felt in the hospital decreased at home. The reason for this is that we can say that patients who have had their tissue integrity disrupted due to dressings, splints, or surgical incisions in the clinic, have decreased their perception of body image deterioration after their pain has decreased and they have entered a healing process at home and their stitches have been removed. Body image is an important aspect of self-evaluation with

a complex psychological effect (Imeni et al., 2018).

In our study, it was found that the participants had mostly moderate and good health perception in the clinic and mostly good and very good health perception at home. Other studies similarly reported that patients perceived their health status as good (Kubat Bakır & Yurt, 2020; Ciğerci et al., 2016). No significant difference was found between the postoperative home health practices of the patients regarding the appropriate position, avoiding forceful movements, not stepping on the foot/leg, healthy nutrition, protecting the surgical site, and exercising. There was a decrease in the rate of cold application at home compared to the clinic. This is thought to be because cold application is performed in the clinic to help reduce pain and swelling after surgical intervention and cold application at home is generally not recommended.

Our study observed that patients had fewer problems with sitting up, eating alone, dressing, and undressing alone, going to the toilet alone, and bathing alone at home compared to the clinic. However, it is important that these problems still persist at home in the first month after surgery. Patients may experience activity intolerance severely until the first few weeks of discharge after surgery. Patients state that the difficulties they experience decrease after the fourth week (Bektaşoğlu & Eyi, 2021). Orthopedic patients could not tolerate sitting on the edge of the bed the most in the first and second days after surgical intervention and needed help (Silva et al., 2021). In another study, it was found that approximately half of the patients hospitalized in the surgery clinic had problems with eating and drinking, half with personal hygiene and dressing, and slightly more than half with movement (Acar & Fındık, 2021). In another study, it was determined that patients in the orthopedics and traumatology clinic were moderately dependent on eating and drinking, the vast majority had problems with personal cleaning and dressing, and the vast majority with movement (Turan & Sendir, 2019). In light of these findings, it is thought that patients should be taught better ways to cope with the problems experienced during discharge education. Postoperative care and early mobilization are necessary for the success of the surgical intervention and are the responsibility of the nurse. For the desired successful results, interventions that will achieve the desired goals and recovery should be determined. Clinical care and educational interventions greatly help the patient (Bektaşoğlu & Eyi, 2021; Bilik, 2017; Waniga et al., 2016). Patients receive training for the postoperative period during their discharge from the clinic. This training helps patients participate in their own health care and reduces their dependency on care. The findings of this study show that the majority of the patients did not take interventions to solve the problem and the necessity of home care services.

In this study, a decrease was observed in patients' feelings of loneliness, hopelessness, and decreased self-esteem at home compared to the clinic. Moreover, 19.5% of the patients experienced high levels of stress, 18.6% experienced high levels of anxiety, and 7.1% experienced high levels of anger in the clinic. It was determined that these problems of the patients decreased in the first month at home. More than half of the arthroplasty patients were found to have a high risk of anxiety and depression (T. Damar & Bilik, 2018). In a study, the mean self-esteem scale score was found to be at a moderate level (Ünal & Gürhan, 2021). This may indicate that patients' coping needs to be supported.

The issue of sexuality may not be discussed with the patient due to the nurses' lack of knowledge about sexual issues, feeling uncomfortable while talking, and thinking that there is not enough time to talk about sexuality (Aydın & Yılmaz, 2022). This may be the reason why patients lack knowledge about sexuality before and after surgery. Considering that 7.1% of participants reported a significant impact on their sexual life in the first month at home and 10.6% reported moderate concerns regarding their sexual health, it is suggested that further studies should be conducted to explore the details of this issue. This study did not collect detailed data on sexual life. Another study by Acar and Fındık (2021) found a higher prevalence of sexual problems, with 26.0% of patients experiencing difficulties with their sexual life. Additionally, Rougereau et al. (2022) reported that patients with total hip arthroplasty experienced decreased quality or frequency of sexual intercourse, and patients who were sexually active before surgery requested educational brochures about sexual activity after the procedure (Rougereau et al., 2022). In another study with total hip arthroplasty, it was concluded that the sexual function of women was affected more than men (Neonakis et al., 2020). In the postoperative period, muscle tissues and wound healing should be allowed, and for this purpose, sexual activity is generally not recommended for six weeks in orthopedic surgical interventions (Hauer et al., 2023). Patients should be told that concerns about sexual life in the postoperative period are normal (Acar & Fındık, 2021; Bektaşoğlu & Eyi, 2021). Discussing sexual life and concerns with the patient and supplying counseling according to their needs; leads to safe sexual practices, identifies possible or existing sexual problems, and creates an important opportunity for patients to be informed correctly (Bektaşoğlu & Eyi, 2021).

Differences in care dependency levels among individuals undergoing surgery can vary based on specific clinics, the type of surgery, and the surgical procedure itself. Understanding the dependency status of individuals in terms of care is crucial for developing personalized nursing care plans, meeting patient expectations, and enhancing their overall quality of life (Baksi & Genç, 2020; Kılıç et al., 2017; Yılmaz & Toğaç, 2019). In this study, an increase was observed in the average home care dependency score of the participants. In other words, the level of care dependency decreased in the first month at home. In a study conducted on patients hospitalized in surgical and internal services, the mean care dependency score was high in interviews conducted in the clinic (Durgun et al., 2022). A study by Durgun et al. (2022) revealed a positive correlation between the level of care dependency of patients admitted to surgical and internal wards and their perception of nursing care. The specific diagnostic group for the surgical intervention may affect the patient's level of independence in meeting their care needs. In this study, median care dependency was high in the prosthesis (including total knee, total hip, and shoulder prosthesis), the spine group (back and spine surgeries- LSS/LDH) and the shoulder RC group while it was lower in the trauma group (including hand-foot trauma, laceration, cyst-cyst removal and amputation) and the meniscus group. The mean and median care dependency scores were higher in the trauma group compared to the other diagnostic groups, whereas they were lower in the prosthesis group (total knee/hip, shoulder). In a study examining the independence levels of inpatients in the orthopedics and traumatology clinic, it was found that the patients were highly dependent (Koç et al., 2012). With a decrease in the dependency level of the individual, he/she will need less care from someone else. The

high level of care dependency in this study suggests that patients should be supported for independence.

The findings of this study show that the independent variables of age, gender, education, presence of chronic disease, presence of a care helper, BMI, medication use, and receiving education about nutrition, which are among the risk factors affecting care dependency, do not have a statistically significant effect. Kılıç et al. (2017) found that the mean scores on the care dependency scale decreased as the patient's education level decreased. Gender, marital status, and living alone/family did not have a statistically significant effect on the level of dependency (Doroszkiewicz et al., 2018). Ozveren et al. (2021) determined that patients' life quality increased as their dependency decreased on body posture, mobility, dressing and undressing, body cleanliness, avoiding dangers, daily activities, and recreational activities. Figuring out the factors affecting care dependency can reveal which issues will be given more importance in nursing care and discharge services. Our findings may suggest that all patients need support to increase their independence.

Limitations

Obtaining the data based on the participants' self-report is a limitation of the study. During the COVID-19 pandemic, the postponement of planned surgeries due to periodic surgery restrictions during the Covid-19 pandemic and conducting the study only with emergency cases may have prolonged the research process and affected the case characteristics. During our interviews with our participants, when they were asked whether they could do their daily tasks (housework, cooking), the patients were unable to make a comparison because they were on bed rest in the clinic. Some of the patients stated that they had no problems doing their daily tasks.

IMPLICATIONS FOR PRACTICE

In our study, which focused on examining the problems faced by patients both in the clinical setting and at home, as well as their levels of care dependency, we observed that the care dependency levels of patients decreased during the first month at home compared to the third day in the clinic. In our study, which had a higher number of female participants, the most common reasons for patients to undergo orthopedic surgery were pain and falls. In this study, it was found that patients had problems at home after discharge and these problems were especially related to pain management, self-care activities, mobility limitation, sleep, body image and sexual life. It was observed that the patients had fewer problems in eating alone, going to the toilet, dressing, undressing, and bathing activities at home compared to the clinic, but the problems continued. As a result, orthopedic patients experience high levels of mobility limitation and care dependency. A decrease in care dependency was observed with decreased pain and anxiety in our patients.

In line with the findings of the study, it should be ensured that the care dependency of patients undergoing orthopedic surgery should be reduced, and discharge training should be provided more systematically. It is important to provide quality care before and after surgery and holistic education, especially for pain, anxiety, and concerns, and to increase patients' psychological support throughout the surgical intervention process in clinics. It is necessary to plan training that includes body image and sexuality in the postoperative period. There is a need to evaluate the results with nurse follow-up protocols and training with experimental designs in future studies.

Acknowledgement

We would like to thank all participants for their participation in this study. Author Contributions: Study conception and design: AK and EA; data collection and data analysis: EA and AK; and ; Drafting and Critical revision of the article: AK and EA. Approval from Ta university's non-interventional clinical research ethics committee (21-KAEK-045 dated 18.02.2021), necessary institutional permission (E-84334760_929 date 18.01.2021, Provincial Health Directorate State Hospital in Türkiye), and permission from the scale owners were obtained for the study. Written and verbal consent were obtained from the patients included in the study. This study was conducted in accordance with the Declaration of Helsinki. The study was obtained from the master thesis data of the first author. Conflict of Interest: None. Data Availability Statement: Research data are not shared.

REFERENCES

Acar, E. Z, & Fındık, Ü. Y. (2021). The problems of the patients that after surgery living at home and post-surgery patient's problems at home on illness perception. *Journal of Ege University Nursing Faculty (JEUNF),* 37(3), 197-206. https://doi.org/10.53490/egehemsire.943140.

Akbari, A., Nasiri, A., & Amirabadizade, A. (2018). Effects of discharge education and telephone follow-up on patient satisfaction and readmission after orthopedic surgery. *Journal of Surgery and Trauma,* 6(4), 122-127.

Akyüz, E., Ünlü, H., Uğurlu, Z., & Özhan Elbaş, N. H. (2021). Psychosocial problems and changes in quality of life experienced by patients who underwent orthopedic surgery. *Health* and Society, 31(3), 79-93.

Aydın, N., & Yılmaz, D. Ü. (2022). Investigation of nursing diagnosis of orthopedic patients by clinical practice students. *Gümüşhane University Journal of Health Sciences,* 11(1), 257-263.

Baksi, A., & Genç, H. (2020). Examination of care dependency of patients undergoing surgical intervention in terms of perception of care, sociodemographic and clinical characteristics. *Turkiye Klinikleri Journal of Nursing Sciences*, 12(4), 465-72. https://doi.org/10.5336/nurses.2020-75291.

Bektaşoğlu, B., & Eyi, S. (2021). Care according to kolcaba's comfort theory in individuals undergoing lower extremity surgery. *Journal of Nursing Science, 4*(3), 148-155. https://doi.org/10.54189/hbd.875287.

Bilik, Ö. (2017). Travel to home from the clinic: home care of the surgery patients. *Journal of Ege University Nursing Faculty (JEUNF),* 3381), 114-127.

Ciğerci, Y., Özdemir, H., & Kılıç, İ. (2016). The patient safety culture perception of surgery nurses and its relationship with sociodemographic characteristics. *Journal of Duzce University Health Sciences Institute,* 6(3), 149-153.

Dinçer, A., & Kurşun, Ş. (2019). Determining the problems experienced by the elderly at home after (following) surgical interventions. *Acıbadem University Health Sciences Journal*, 10(3), 518-523. https://doi.org/10.31067/0.2019.184.

Doroszkiewicz, H., Sierakowska, M., & Muszalik, M. (2018). Utility of the Care Dependency Scale in predicting care needs and health risks of elderly patients admitted to a geriatric unit: a cross-sectional study of 200 consecutive patients. *Clinical Interventions in Aging*, 8*(13)*, 887–894. https://doi.org/10.2147/CIA.S159511

Durgun, H., Duman, S., & Şahin, K. (2022). Investigation of dependence levels and perceptions of nursing care of inpatients in surgical and medical services. *Journal of Nursology, 25*(1), 31-35. https://doi.org/10.54614/JANHS.2022.688251.

Gosens, T., & den Oudsten, B. L. (2023). Psychology in orthopedics and traumatology: an instructional review. EFORT open reviews, 8(5), 245–252. https://doi.org/10.1530/EOR-23-0038

Gürler, H. (2021). Care requirements of patients undergoing surgery intervention due to the femur fracture according to functional health patterns model. *Journal of Education and Research in Nursing, 18*(4), 415-422. https://doi.org/10.5152/jern.2021.05925

Yönt, GH., A. Korhan, E., Khorshid, L., Eşer, İ., & Dijkstra, A. (2010). Examining the validity and reliability of the care dependency scale in elderly individuals. *Turkish Journal of Geriatrics, Special Issue,* (*13*), 71.

Hauer, G., Sadoghi, P., Smolle, M., Zaussinger, S., Friesenbichler, J., Leithner, A., & Maurer-Ertl, W. (2023). Sexual activity after short-stem total hip arthroplasty. Does stem size matter? Archives of Orthopaedic and Trauma Surgery, 143(6), 3613–3619. https://doi.org/10.1007/s00402-022-04614-y

Hijji, F. Y., Cheslik, T. G., Schneider, A. D., Schach, B. M., & Venkatarayappa, I. (2021). The popularity of outcome measures used in shoulder arthroplasty literature. *Shoulder & Elbow,* 13(3), 237–247. https://doi.org/10.1177/1758573220935865

Imeni, M., Sabouhi, F., Abazari, P., & Iraj, B. (2018). The effect of spiritual care on the body image of patients undergoing amputation due to Type 2 Diabetes: A randomized clinical trial. *Iranian Journal of Nursing and Midwifery Research,* 23(4), 322–326. https://doi.org/10.4103/ijnmr.IJNMR_113_15

Kalantar, S., Farhoud, A., & Mortazavi, J. (2020). Lockdown of an orthopedic department during COVID-19 epidemics, our experience in a general hospital. *The Archives of Bone and Joint Surgery, 8(Suppl1), 235–241. https://doi.org/10.22038/abjs.2020.47834.2362*

Karakoç, Y., & Atalay, İ. B. (2019). The role of magnetic resonance imaging and clinical assessments in predicting meniscal tear surgery. *Joint Diseases and Related Surgery,* 30(2), 85-90. https://doi.org/10.5606/ehc.2019.66962

Kılıç, H. F., Cevheroğlu, S., & Görgülü, S. (2017). Determination of care dependency level of patients staying in medical and surgical clinics. *E-Journal of Dokuz Eylul University Nursing Faculty,* 10(1), 22-28.

Koç, S., Büker, N., Şavkın, R., & Kıter, E. (2012). The effects of independence and depression level on patients' satisfaction with nursing care in orthopedics and traumatology patients. *The Journal of Kartal Training and Research Hospital,* 23(3), 130-136. https://doi.org/10.5505/jkartaltr.2012.49092

Kubat Bakır, G., & Yurt, S. (2020). Evaluation of the comfort level of the post-surgical patients. Health and Society, 20(3), 158-165.

Martin, C., Parellada, C., Vez, H., Urgiles, C., Piedra, J., & Guix, J. (2022). Telemedicine Approach for Patient Follow-up After Total Knee and Reverse Total Shoulder Arthoplasty: A pilot Study. *International Journal of Computer Assisted Radiology and Surgery*, 18(3), 598-602.

Neonakis, E. M., Perna, F., Traina, F., Faldini, O., Antoniou, G., Kyriakopoulos, G., Triantafyllopoulos, I. K., Megaloikonomos, P. D., & Faldini, C. (2020). Total hip arthroplasty and sexual activity: a systematic review. Musculoskeletal Surgery, 104(1), 17–24. https://doi.org/10.1007/s12306-020-00645-z

Ozveren, H., Faydali, S., Sasmaz, S., F. Dokuz, H., & Gulnar, E. (2021). Care dependency and quality of life in older adult patients. *International Journal of Caring Sciences*, 14(1), 319-325.

Rocha, P., Baixinho, C. L., Marques, A., & Henriques, A. (2022). Safety-Promoting interventions for the older person with hip fracture on returning home: A protocol for a systematic review. *Journal of Personalized Medicine*, 12(5), 654. https://doi.org/10.3390/jpm12050654

Rougereau, G., Rabot, C., de Thomasson, E., Tourabaly, I., Mazel, C., Langlais, T., & Ollat, D. (2022). Sexual activity resumption after total hip arthroplasty: A satisfaction survey in 101 patients. *Orthopaedics & Traumatology, Surgery & Research: OTSR*, 108(1), 103171. https://doi.org/10.1016/j.

otsr.2021.103171

Silva, M. B., Palma, M., Engelman, B., Figueiredo, M. S., & Abreu Almeida, M. (2021). Positioning of orthopedic patients according to the nursing outcomes classidic ation. *J Nurs. UFPE On Line, 15*(2), https://doi.org/10.5205 / 1981-8963.2021.245744

T. Damar, H., & Bilik, Ö. (2018). Pain intensity and the affecting factors in elderly patients with arthroplasty surgery. *Journal of Geriatric Science,* 1(3), 104-112.

Turan, N., & Sendir, M. (2019). Defining care needs for inpatients in the orthopaedics and traumatology clinic. *International Journal of Caring Sciences*, *12*(2), 1001-1007

Ünal, N., & Gürhan, N. (2021). The effect of orthopedic operation on self-esteem, body image and state anxiety in patients. *Acıbadem University Health Sciences Journal,* 12(2), 392-400. https://doi.org/10.31067/acusaglik.852087.

Waniga, H. M., Gerke, T., Shoemaker, A., Bourgoine, D., & Eamranond, P. (2016). The impact of revised discharge instructions on patient satisfaction. *Journal of Patient Experience*, 3(3), 64–68. https://doi.org/10.1177/2374373516666972

WHO, 2010. A healthy lifestyle - WHO recommendations. https://www.who.int/europe/news-room/fact-sheets/item/a-healthy-lifestyle---who-recommendations.

Yılmaz, E., & Toğaç, H. K. (2019). Effect of functional disability on quality of life in patients with gonarthrosis. *Çukurova Medical Journal, 44(1), 308-316.* https://doi.org/10.17826/cumj.562774