POST-DISCHARGE LEARNING NEEDS OF PATIENTS WHO HAD UNDERGONE ORTHOPEDIC SURGERY
ORTOPEDİK CERRAHİ GİRİŞİM GEÇİREN HASTALARIN TABURCULUK SONRASI ÖĞRENME GEREKSİNİMLERİ

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ABSTRACT

Objective: The purpose of this descriptive and cross-sectional type of research was; to determine the post-discharge learning needs of patients undergoing orthopedic surgery.

Materials and Methods: This research was conducted between 20 March and 20 June 2021 with 150 patients who underwent orthopedic surgery for the first time in a public hospital in Central Anatolia. In the collection of data, "Sociodemographic and Introductory Features Information Form" and "Patients Learning Needs Scale (PLNS)'' were used. The data were collected by face-to-face interview technique 24-48 hours before the patients were discharged. The data were analyzed and evaluated by descriptive statistics (number, percentage, mean), t test in independent groups and analysis of variance.

Results: The mean age of the patients was 55.07±17.010, 54.7% were primary school graduates and 58.7% were female. Total knee arthroplasty was applied to 54.7% of the patients. It was determined that 40.0% of the patients received discharge training. The mean scale total score of the patients was 211.520±28.120. The most important learning need for patients is the treatment-complications and the least important learning need is the feelings related to the situation. It was found that there was a statistically significant difference between the education level of the patients and the sub-dimension of treatment-complications (p=0.035); between the previous hospitalization status and the medications (p=0.039); between the elective or emergency surgery status and the activities of living (p=0.001), skin care (p=0.011), quality of life (p=0.000), feelings related to condition (p=0.024), treatment-complications (p=0.047) and scale total score (p=0.003); between the surgery performed and the activities of living and quality of life (p=0.011). The most important learning need of the patients was determined as the need for the answer to the question "What are the problems that may develop due to my disease?" (Significance level: level:4.726±0.611).

Conclusion: It was determined that the learning needs of the orthopedic patients were high. Nurses are advised that when planning and training discharge training for patients, they consider the sequences of learning needs that 'that when planning and training discharge training for patients, they consider the sequences of learning needs that patients find most important.

Keywords: Learning, Needs, Nursing, Orthopedic Surgery, Patient Discharge

ÖZET

Amaç: Bu tanımlayıcı ve kesitsel araştırmanın amacı, ortopedik cerrahi uygulanan hastaların taburculuk sonrası öğrenme gereksinimlerini belirlemektir.

Materyal ve Metot: Bu araştırma 20 Mart- 20 Haziran 2021 tarihleri arasında İç Anadolu'da bir kamu hastanesinde ilk kez ortopedik cerrahi uygulanan 150 hasta ile yürütülmüştür. Verilerin toplanmasında "Sosyodemografik ve Tanıtıcı Özellikler Bilgi Formu" ve "Hasta Öğrenme Gereksinimleri Ölçeği (HÖGÖ)" kullanılmıştır. Veriler, hastalar taburcu olmadan 24-48 saat önce yüz yüze görüşme tekniği ile toplanmıştır. Veriler, tanımlayıcı istatistikler (sayı, yüzde, ortalama), bağımsız gruplarda t testi ve varyans analizi ile analiz edilerek değerlendirilmiştir.

Bulgular: Hastaların yaş ortalaması 55,07±17.010, %54,7'si ilköğretim mezunu, %58,7'si kadındır. Hastaların %54,7'sine total diz protezi uygulanmış olup, %40,0'ının taburculuk eğitimi aldığı belirlenmiştir. Hastaların HÖGÖ toplam puan ortalaması 211,520±28,120'dir. Hastalar için en önemli öğrenme gereksinimi tedavi-komplikasyonlar alt boyutuna ilişkin iken, en az önemli öğrenme gereksinimi ise duruma ilişkin duygular alt boyutuna ilişkindir. Hastaların eğitim düzeyi ile tedavi-komplikasyonlar alt boyutu arasında (p=0,035); önceki hastane yatış deneyimi ile ilaçlar arasında (p=0,039); ameliyatın elektif veya acil olma durumu ile yaşam aktiviteleri (p=0,001), cilt bakımı (p=0,011), yaşam kalitesi (p=0,000), duruma ilişkin duygular (p=0,024), tedavi-komplikasyonlar (p=0,047) ve ölçek toplam puanı arasında (p=0,003); uygulanan cerrahi ile yaşam aktiviteleri (p=0,034) ve yaşam kalitesi puan ortalamaları (p=0,011) arasında istatistiksel olarak anlamlı bir fark olduğu bulunmuştur. Hastaların en önemli bulduğu öğrenme gereksinimi "Hastalığıma bağlı gelişebilecek sorunlar nelerdir?" sorusunun cevabına duydukları gereksinim olarak belirlenmiştir (önemlilik düzeyi:4,726±0,611).

Sonuç: Ortopedik cerrahi uygulanan hastaların öğrenme gereksinimlerinin yüksek olduğu belirlenmiştir. Hemşirelere, hastalara taburculuk eğitimi planlarken ve eğitim verirken, hastaların en önemli buldukları öğrenme gereksinimi sıralamalarını göz önünde bulundurmaları önerilir.

Anahtar Kelimeler: Hemşirelik, Gereksinim, Ortopedik Cerrahi, Öğrenme, Taburculuk

INTRODUCTION

Orthopedic surgery is a treatment method that is frequently needed in the treatment of diseases such as joint arthroplasty, joint injuries, hip fractures, traumas, congenital diseases, spinal injuries, deformities, bone tumors, infections, and the frequency of application all over the world is increasing year by year (Beyaz, 2019; Koçak and Aydın Akbuğa, 2022). Orthopedic nursing is a special field that deals with the care of patients undergoing orthopedic surgery due to these diseases (Cameron and Carvalho de Araújo, 2011; Turan and Şendir, 2019).

In the post-orthopedic surgery period, patients face problems such as pain and insufficient muscle strength, and activities of daily living are restricted (Akyüz et al., 2021). It has been reported that the vast majority of patients hospitalized in orthopedics and traumatology clinics have difficulty in performing the activity of moving and that they have problems with issues such as personal hygiene and wound dressing (Turan and Şendir, 2019). Orthopedic nurses have important duties in the admission of the patient, physiological and psychological evaluation of the patient, both before and during surgery, as well as in coping with these problems experienced by the patients in the postoperative period, supporting the patients, providing a safe and effective follow-up and care, patient education and discharge planning (Koçak and Aydın Akbuğa, 2022; Turan and Şendir, 2019).

Because most patients who have undergone orthopedic surgery are discharged after a few days in the hospital, patient education is especially crucial so that patients can manage their daily life activites, physical restricteds, rehabilitation, exercise, self-care and possible complications after surgery (Eloranta et al., 2016). In surgical patients, it is essential to provide their own self-care management at home and to provide patient education by planning the discharge of the patients before discharge for a good recovery period (Yılmaz, 2017). The goal of patient education is to lead surgery patients to understand their condition and cure choices, and eventually to improve their autonomy to accomplish therapeutic aims (Goldchmit, et al., 2021). For an effective patient education, it is necessary to specify the learning requirements of the patients after discharge. In the study in which Pieper et al. examined the information requirements of surgical patients following discharge, it was specified that the most frequent patients' needs were the need for information and anxiety about incision/wound care, ability of movement, pain management, observation of complications, symptom management, excretory and quality of life (Pieper et al., 2006). In the literature, although it is notified that the learning requirements of the patients including cardiovascular surgery, abdominal surgery, colorectal surgery, breast surgery, urological surgery, gynecological surgery, peripheral artery surgery and general surgery are high (Akyol and Durmaz Edeer, 2021; Başaran Dursun and Yılmaz, 2015; Çetinkaya and Duru Aşiret, 2017; Dağ et al., 2014; Güçlü and Kurşun, 2017; Karaca Sivrikaya and Erdem, 2018; Karahan et al., 2020; Kızılkaya Nur and Büyükyılmaz, 2021; Omari et al., 2014; Sarıtaş et al., 2018; Şahin et al., 2015), only one study evaluating the information needs of the patients specifically after hip and knee arthroplasty (Şendir et al., 2013) has been reached, and the learning of patients after orthopedic surgery in general a study assessing the requirements could not be reached.

Determining the patients learning requirements will ensure that the discharge training to be given reaches its main purpose (Soyer et al., 2018). In this direction, considering that providing the post-discharge information needs of patients undergoing orthopedic surgical operation will contribute to the self-care of patients at home, the prevention of complications and re-hospitalizations and the recovery of patients, it is necessary to estimate the orthopedic surgery patients learning requirements. The purpose of this study was to detect the post-discharge learning requirements of the orthopedic surgery patients.

Research Questions:
• What is the level of orthopedic surgery patients learning requirements?
• Is there any statistically significant difference between the sociodemographic and clinical features of the patients and their learning requirements?
• What are the learning needs, and priorities order of orthopedic surgery patients learning requirements?

MATERIALS AND METHODS

Study Design, Setting and Time

This research was conducted as a descriptive and cross-sectional type. Data, March 20-June 20 in 2021, it was collected in the orthopedics and traumatology clinic of a university hospital in the Central Anatolia region using face-to-face interview technique. All patients who were hospitalized in the clinic and

underwent orthopedic surgery made up the universe of the study. The sample of the study consisted of patients with person, place and time orientation, over 18 years of age, undergoing orthopedic surgery for the first time, planned to be discharged within the last 24-48 hours and voluntarily agreed to participate in the study. 150 patients who had undergone any orthopedic surgical operation, who were admitted to the clinic in the postoperative period and who met the sampling criteria were interviewed.

Data Collection Tools

Sociodemographic and Introductory Features Information Form

The form was created by the researchers through review of the literature (Akyol and Durmaz Edeer, 2021; Başaran Dursun and Yılmaz, 2015; Çetinkaya and Duru Aşiret, 2017; Demirkıran and Uzun, 2012; Karahan et al., 2020; Kızılkaya Nur and Büyükyılmaz, 2021; Omari et al., 2014; Özşaker et al., 2022; Savcı et al., 2021; Soyer et al., 2018; Tan et al., 2013; Uzun et al., 2011). consisting of 15 questions including sociodemographic information of the patients such as gender, age, level of education, marital status, working status and the introductory and clinical features of the patients such as the duration of the patients' hospitalization, the type of surgery performed, their previous hospitalization status, and their discharge education status.

"Patients Learning Needs Scale (PLNS)"

PLNS developed by Bubela et al. (1990) and the Turkish validity and reliability study was performed by Çatal and Dicle (2008). The scale consists of 50 items and seven sub-dimensions (medications, life activities, community and follow-up, treatment and complications, feelings related to the situation, quality of life, skin care). Scale items are interpreted as "1= not important", "2 = somewhat important", "3 = neither less nor more important", "4 = very important", "5 = extremely important" with the likert type scaling method. The evaluation of the scale is made on the basis of each sub-dimension and the total score of the scale. The scoring of the scale varies between 50-250 points. A high score on the scale indicates a high learning requirement, while a low score indicates a low learning requirement (Çatal and Dicle, 2008). In the original version of the scale, the Cronbach's alpha reliability coefficient was 0.95 (Bubela et al., 1990). In Aklime and Dicle's study (2018), the Cronbach alpha of the total scale were 0.93. In this study, the Cronbach alpha values of the scale were found to be 0.92 for the total scale.

Data Collection Process

Patients who underwent orthopedic surgery were informed about the purpose and method of the study. Verbal and written permission was obtained from patients who voluntarily agreed to participate in the study. Then, data collection tools were applied to the patients by face-to-face 24-48 hours before discharge. Each form was completed within approximately 15-20 minutes.

Statistical Analysis

The data obtained from the study were analyzed using SPSS (Statistical Package for the Social Sciences) version 25.0 (Armonk, NY, USA: IBM Corp.) program. For data on the sociodemographic and clinical characteristics of patients, the number, percentage; descriptive statistics such as mean and standard deviation were used for data on scale and scale sub-dimensions. The suitability of the data to the normal distribution was evaluated by Kolmogrov-Smirnov test. The statistical difference between scale and sub-dimension score means and sociodemographic and clinical characteristics was evaluated by using Independent-samples t-test and variance analysis. The level of statistical significance was accepted as $p<0.05$.

Ethical Considerations

Permission was obtained from KTO Karatay University Faculty of Medicine Non-Pharmaceutical and Non-Medical Device Research Ethics Committee to conduct the research (Decision No. 2021/38 dated 09.02.2021). Written permission was obtained from the Chief Physician of the Hospital and the Orthopedics and Traumatology Clinic where the research was conducted. Consent was obtained from patients who agreed to participate in the study. Permission was obtained from Çatal and and Dicle for scale use.
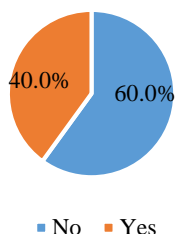
RESULTS

Sociodemographic and descriptive features of the patients participating in the study are presented in Table 1. The mean age of the patients was 55.07±17.010 and the mean length of stay at hospital was 2.57±2.521. It was determined that 58.7% of the patients (n=88) were women, 54.7% (n=82) were primary school graduates, 54.7% (n=82) underwent knee arthroplasty and 75.3% (n=113) underwent elective surgery. It was found that 84.0% of the patients (n=126) had previous hospitalization (Table 1).

Table 1. Sociodemographic and Descriptive Features of Patients (n=150)

	X̄±SD	
Age	55.07±17.010	
Lenght of stay at hospital	2.57±2.521	
	Number (n)	**Percentage (%)**
Gender		
Female	88	58.7
Male	62	41.3
Marital status		
Married	111	74.0
Single	39	26.0
Education level		
Illiterate	38	25.3
Primary school graduate	82	54.7
High school graduate	19	12.7
Bachelor degree graduate and above	11	7.3
Working status		
Working	79	52.7
Not working	71	47.3
Surgical Intervention		
Upper extremity trauma surgery	21	14.0
Lower extremity trauma surgery	32	21.3
Hip Arthroplasty	13	8.7
Knee Arthroplasty	82	54.7
Amputation	2	1.3
Type of surgery		
Elective	113	75.3
Emergency	37	24.7
Having a chronic ilness		
Yes	75	50.0
No	75	50.0
Previous hospitalization		
Yes	126	84.0
No	24	16.0

(X̄: Mean, SD: Standard Deviation)

40% of the patients (n=60) participating in the study stated that they received discharge training, and 60.0% of the patients (n=36) who received discharge training stated that they received discharge training from both nurses and doctors (Charts 1 and 2).

Discharge Training Status

40.0%   60.0%

■ No   ■ Yes

Chart 1. Discharge training status of patients

From Whom Did They Receive The Discharge Training?

19.3%
20.7%

■ Both Doctor and Nurse   ■ Nurse   ■ Doctor
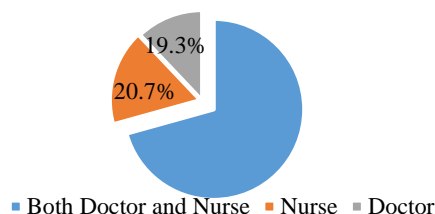
Chart 2. From whom did they receive the discharge training?

The results of the patients' learning needs total and sub-dimension score means, and significance levels are presented in Table 2. It was found that the mean of the total score of the PLNS was high with 211.520±28.120 scores and the level of significance was very important with 4±230.0.562. It was seen that the most important learning needs for the patients was in the treatment-complications sub-dimension. The mean treatment-complications sub-dimension score was 39.733±4.595; the level of significance=4.44±0.510. The mean of the sub-dimension score of feelings related to the situation was

21.373±3.681; the level of significance= 3.994±0.842 and was determined as the least important learning need (Table 2).

Table 2. Patients' PLNS total and sub-dimensions score means and learning needs importance levels (n=150)

Scale total and sub-dimensions	Scores (X̄±SD)	Level of significance (X̄±SD)
PLNS	211.520±28.120	4.230±0.562
Medications	34.222±6.610	4.278±0.826
Life activites	35.953±7.586	4.274±0.736
Community and follow-up	24.706±4.640	4.117±0.773
Feelings related to the situation	21.373±3.681	3.994±0.842
Treatment-complications	39.733±4.595	4.414±0.510
Quality of life	33.740±5.102	4.217±0.637
Skin care	21.786±3.298	4.357±0.659

(PLNS: Patient Learning Needs Scale, X̄: Mean, SD: Standard Deviation)

The comparison of the mean scores of the patients according to sociodemographic and clinical features is shown in Table 3. While there was no statistically significant difference between the education level of the patients and the PLNS total score (p=0.94; p> 0.05), there was a statistically significant difference between the mean of treatment-complications sub-dimension scores (p=0.03; p<0.05). The mean of treatment-complications scores of patients with high school and bacholer degree and above education levels was statistically significantly higher than in illiterate and primary school graduate patients. There was no statistically significant difference between the mean of scale total and other sub-dimensions scores according to the presence of chronic diseases (p>0.05). There was no statistically significant difference (p>0.05) between the mean of the total and other sub-dimension scores of the scales other than the sub-dimension of medications (p=0.03; p<0.05) according to previous hospitalization status. The learning need score in the medications sub-dimension of those who were previously hospitalized for any reason was statistically significantly lower (Table 3).

PLNS total score (p =0.003; p<0.05), activities of life (p=0.001; p<0.05), skin care (p<0.05), quality of life (p=0.000; p<0.05), feelings related to the situation (p=0.02; p<0.05) and treatment-complications (p=0.04) sub-dimensions score according to the type of surgery (emergency, elective) of the patients it was found that there was a statistically significant difference between their means. It was found that the mean score of the participants' learning requirements who underwent emergency surgery was significantly lower.

It was found that there was a significant difference between the surgical intervention applied to the patients and their life activities (p=0.03; p <0.05) and quality of life (p=0.01; p<0.05) sub-dimension scores. It was seen that patients who underwent total hip/ knee arthroplasty and amputation surgery had a higher learning need than patients who underwent lower and upper extremity trauma surgery. There was no statistically significant difference between PLNS total and sub-dimension score means according to the discharge training status of the patients (p>0.05; Table 3).

Table 3. Comparison of PLNS total and sub-dimension score means according to sociodemographic and clinical features of patients (n=150)

Variables	n	Medications X̄±SD	Life activities X̄±SD	Community and follow-up X̄±SD	Feelings X̄±SD	Treatment-complicatios X̄±SD	Quality of life X̄±SD	Skin care X̄±SD	PLNS total score X̄±SD
Education level									
Illutarate	38	32.15±9.01	36.13±8.02	23.36±5.61	21.02±4.21	38.86±4.78	33.13±5.28	21.42±3.20	206.10±33.71
Primary school	82	35.18±4.86	36.18±7.57	25.03±4.50	21.57±3.55	38.15±5.09	34.25±4.79	21.98±3.30	202.94±27.05
High school	19	33.10±8.01	32.94±7.49	25.00±3.10	20.21±3.24	40.10±4.41	32.00±5.92	21.52±3.11	214.24±25.81
Bachelor degree and above	11	36.18±3.54	39.45±4.71	26.36±3.44	23.09±2.87	42.63±2.80	35.00±4.91	22.00±4.12	224.72±18.85
Statistical Analyses		&F=2.380 p=.07	&F=1.822 p=.14	&F=1.708 p=.16	&F=1.644 p=.18	&F=2.951 *p=.03	&F=1.432 p=.23	&F=.308 p=.82	&F=2.174 p=.09
Having a chronic ilness									
Yes	75	34.45±6.53	36.85±7.23	24.77±5.01	21.61±3.52	39.89±4.50	34.14±4.59	21.96±3.01	213.69±28.43
No	75	34.00±6.71	35.05±7.86	24.64±4.26	21.13±3.83	39.57±4.70	33.33±5.56	21.61±3.56	209.34±27.82
Statistical Analyses		†t=.419 P=.55	†t=1.459 p=.12	†t=.175 p=.66	†t=.798 p=.49	†t=.475 p=.73	†t=.976 p=.12	†t=.642 p=.19	†t=.946 p=.66
Previous hospitalization									
Yes	126	33.91±7.02	35.95±7.71	24.70±4.76	21.28±3.84	39.59±4.65	33.50±5.25	21.87±3.32	210.83±29.13
No	24	35.87±3.37	35.95±7.02	24.70±4.00	21.83±2.69	40.45±4.31	34.95±4.12	21.33±3.17	215.12±22.20
Statistical Analyses		†t=-1.336 *p=.03	†t=-.004 p=.90	†t=-.002 p=.24	†t=-.667 p=.12	†t=-.842 p=.46	†t=-1.279 p=.14	†t=.733 p=.074	†t=-.684 p=.05
Type of surgery									
Elective	113	34.58 ±6.55	37.08±6.77	24.92±4.67	21.76±3.08	40.15±4.32	34.66±4.26	22.17±2.85	215.35±25.22
Emergency	37	33.13±6.74	32.48±8.87	24.05±4.54	20.18±4.95	38.43±5.18	30.91±6.33	20.59±4.21	199.81±33.25
Statistical Analyses		†t=1.159 p=.24	†t=3.308 *p=.001	†t=.985 p=.32	†t=2.286 *p=.02	†t=2.004 *p=.04	†t=4.073 *p=.00	†t=2.580 *p=.01	†t=2.995 *p=.003
Receiving discharge training									
Yes	60	33.98±5.13	35.96±6.52	25.05±3.81	21.33±3.34	39.48±3.57	33.15±3.87	21.70±3.04	210.66±21.05
No	90	34.38±7.45	35.94±8.25	24.47±5.12	21.40±3.90	39.90±5.18	34.13±5.76	21.84±3.47	212.08±32.08
Statistical Analyses		†t=-.367 p=.69	†t=.018 p=.98	†t=.739 p=.43	†t=-.108 p=.14	†t=-.543 p=.56	†t=-1.158 p=.21	†t=-.262 p=.15	†t=-.303 p=.74
Surgical Intervention									
ªUE trauma surgery	21	32.28±7.61	34.61±6.74	25.19±2.58	20.95±2.90	39.85±4.04	33.23±4.28	21.00±3.54	207.14±22.81
ᵇLE trauma surgery	32	33.12±7.65	32.65±8.81	23.46±5.09	20.43±5.13	38.81±4.82	31.15±6.59	20.68±4.39	200.34±34.64
Hip Arthroplasty	13	36.69±3.06	36.15±9.59	25.07±5.28	22.23±2.55	40.15±5.47	34.15±4.72	23.07±2.59	217.53±25.29
Knee Arthroplasty	82	34.67±6.25	37.48±6.57	24.93±4.78	21.62±3.29	39.86±4.51	34.70±4.37	22.18±2.70	215.47±26.04
Amputation	2	38.00±2.82	38.50±7.77	27.50±2.12	25.00±0.00	45.00±0.00	38.00±2.82	23.00±2.82	235.00±18.38
Statistical Analyses		&F=1.397 p=.23	&F=2.687 *p=.03	&F=.877 p=.48	&F=1.354 p=.25	&F=1.027 p=.39	&F=3.417 *p=.011	&F=2.109 p=.08	&F=2.379 p=.05

*p< .05; &F = ANOVA test; †t= Independent-samples t-test, ª= Upper extremity, ᵇ= Lower extremity

The most important learning needs of the patients participating in the study were determined as the need for the answer to the question "What are the problems that may develop due to my disease?" (Significance level: 4.726±0.611; Table 4).

Table 4. The 10 learning needs where patients want to get the most information about post-discharge

Learning Needs	Level of Significance (X̄±SD)
What are the problems that may develop due to my disease?	4.726±0.611
How should I care fort the surgical wound?	4.666±0.782
What are the symptoms of my illness?	4.626±0.700
What should I do when symptoms of my disease appear?	4.620±0.720
What are the side effects that may develop due to my treatment?	4.613±0.775
What are the problems that may develop at home and that I need to pay attention to?	4.613±0.849
Where can I go if I have an urgent health problem at home?	4.593±1.010
How will this disease affect my life?	4.586±0.906
What should I do with my care at home?	4.580±0.889
How can I relieve my pain?	4.573±0.861

(X̄: Mean, SD: Standard Deviation)

DISCUSSION

According to this study's results obtained in order to determine the learning needs of patients who underwent orthopedic surgery after discharge, the mean PLNS total score of the patients was 211.520±28.120. In studies with patients who had undergone different surgeries and illness, the mean PLNS score of the patients was found to be in the range of 165 to 211 points. (Akyol and Durmaz Edeer, 2021; Başaran Dursun and Yılmaz, 2015; Çetinkaya and Duru Aşiret, 2017; Demirkıran and Uzun, 2012; Karahan et al., 2020; Kızılkaya Nur and Büyükyılmaz, 2021; Omari et al., 2014; Özşaker et al., 2022; Savcı et al., 2021; Soyer et al., 2018; Tan et al., 2013; Uzun et al., 2011). In one study with patients hospitalized in surgical units, the mean PLNS total score of patients hospitalized in orthopedic service was 209.96±4.19 (Orgun and Şen, 2012), and in another study with patients undergoing total hip/knee arthroplasty, the mean PLNS total score of patients was 188.00±44.53'ti (Şendir et al., 2013). As a result of this study, it was found that the mean PLNS score of the patients who underwent orthopedic surgery was similar to other research results in the literature. Discharge information needs are known to be common problems for surgical patients due to surgical and technological developments, reducing the duration of hospitalization and treatment procedures (Şendir et al., 2013). It is expected that every patient who has undergone surgery will have a learning need for discharge of patients in order to perform activities of daily living and maintain home care after surgery, to prevent the development of complications or to diagnose complication early. Therefore, the post-discharge learning needs of patients undergoing orthopedic surgery may be similar to the learning needs of patients with different surgeries. The literature and the outcomes of present study indicate that surgical patients have a high lack of knowledge regarding the post-discharge period.

In this study, when the PLNS sub-dimensions are examined; the highest learning need score belonged to the treatment-complications sub-dimension (39.733±4.595; the level of significance=4.414±0.510), while the lowest score was in the feelings related to the situation sub-dimension (21.373±3.681; the level of significance=3.994±0.842. When the studies on the post-discharge learning needs of patients undergoing surgical intervention in the literature are examined, in the study of Güçlü and Kurşun (2017), Polat et al.(2014), the highest learning need score was in the treatment-complications sub-dimension, and in the study of Karahan et al. (2020) and Akyol and Durmaz Edeer (2021), the highest learning needs score were in the medications and treatment-complications sub-dimensions were determined. In a study in which Omari et al. (2014) evaluated the learning needs of Syrian patients postcoronary artery bypass graft surgery, chest and leg wound care, complications and medication information were perceived by participants as the most important learning needs were reported. In a study evaluated the learning needs of patients undergoing total knee arthroplasty and total hip arthroplasty, they reported that the most important learning needs were about treatment and complications (Şendir et al., 2013). In studies in which Jacobs (2000) evaluated the need for learning in surgical patients and Johansson et al. (2002) in patients who had hip replacement surgery,

it was determined that the most important learning needs of patients after discharge were treatment and surgery related complications, medications and daily life activities. It was determined that the results obtained from this research were in parallel with the literature. The most basic responsibility of the patients in the postoperative period is the problems that may occur after the operation within the scope of the continuity of their treatment and care, the use of drugs, and when they should apply to the hospital. In this context, it is thought that the mean score of the scale is higher depending on the learning need in these sub-dimensions.

In this study, a significant difference was found between the mean of treatment-complications sub-dimension scores according to the education levels of the patients ($p<0.05$). The treatment-complications sub-dimension score means of high school graduate and university and above graduate patients were statistically significantly higher than the treatment-complications sub-dimension score means compared to illiterate and primary school graduate patients. As the education level of the patients increases, the need to learn treatment-complications increases. In a study in which the learning needs of Başaran and Yılmaz (2015) underwent abdominal surgery were evaluated, it was found that the average score of the learning requirement of patients with high school and above education level was high in the sub-dimensions of life activities, treatment and complications and skin care. In the study of Çetinkaya and Duru Aşiret (2017), it was determined that there was a significant difference between the educational status of the patients and the feelings related to the situations sub-dimension and skin care, and that the post-discharge learning needs of university graduates were higher. Our study findings are similar to these study findings in the literature. Our study results make us think that as the level of education increases, patients question more, care more about their health, become more inquisitive about the drugs they use and are more inclined to access information. In contrast to these studies, some other studies conducted in the literature have reported that there is no significant difference between the learning needs of patients according to their education levels (Şendir et al., 2013; Soyer et al., 2018; Yılmaz, 2017).

In this study, it was determined that the mean PLNS total score of patients with chronic illness was higher than patients without chronic illness, although there was no significant difference (Table 3). It is thought that this situation may be due to the fact that patients with chronic illness have an experience of the disease and the treatment process and have a greater awareness of the treatment. In the studies conducted in the literature, there was no significant difference between the presence of chronic illness and the learning needs (Akyol and Durmaz Edeer, 2021; Çetinkaya and Duru Aşiret, 2017; Kızılkaya Nur and Büyükyılmaz, 2021).

In this study, it was found that there was no significant difference between the mean of scale total and other sub-dimension scores other than the medications sub-dimension score means ($p<0.05$) according to the previous hospitalization status of the patients ($p>0.05$). In the medications sub-dimension, the learning need score mean of patients who were not previous hospitalized was found to be higher. When the literature was examined, in a study with patients who had undergone urology surgery, it was reported that patients with past surgery experience had higher learning needs (Kızılkaya Nur and Büyükyılmaz, 2021). In a study of general surgery patients, there was no significant difference between the mean of learning need scores of patients with previous hospitalization and surgical experience compared to those without (Uzun et al., 2011). In another study, the mean score of patients without hospitalization experience in the treatment and complications sub-dimension was higher than that of patients with hospital experience (Tan et al., 2013). Similarly, in another study with patients who had surgery, patients with no previous hospitalization experience had higher feelings related to the situation than patients with no experience of hospitalization in the lower dimension score of patients with hospitalization experience (Soyer et al., 2018). In this context, it is seen that our study results are similar to some study findings in the literature and differ with some study findings. In our study results, the fact that patients who were not hospitalized before had more learning need scores in the drugs sub-dimension than inpatients made us think that patients may have experienced anxiety due to the fact that they faced many unknowns due to their first admission to the hospital, especially due to the inexperience with the disease and medications. Since this is the first discharge experience of patients who have not been hospitalized before, it is an expected result that their learning needs will be high.

In the present study, according to the type of surgery (emergency or elective), life activities, feelings about the situation, treatment-complications, quality of life, skin care sub-dimension and PLNS total score mean were found to be significantly higher ($p<0.05$). The mean score learning needs of

patients who underwent elective surgery were higher than those who underwent emergency surgery. When the literature is examined, different results are seen. In a study conducted with patients who underwent peripheral artery surgery, the learning need of patients who underwent emergency surgery in the lower sub-dimension mean score of feelings related to the situation was found to be higher than in patients who underwent elective surgery (Akyol and Durmaz Edeer, 2021). In another study, the learning need scores of patients who underwent elective surgery were higher than those who underwent emergency surgery (Yılmaz, 2017), while in another study with general surgery patients, it was reported that the learning need score did not change according to the type of surgery (Güçlü and Kurşun, 2017). In our study results, the fact that the learning needs of patients who underwent elective surgery were higher than those who underwent emergency surgery may be related to the fact that patients who underwent elective surgery had the opportunity to think more about the disease and the surgical process because they had sufficient preparation time before surgery. Since it was a planned surgery, this opportunity to think may have triggered a desire to learn more about the discharge.

In this study, the mean scores of life activities and quality of life learning requirement according to the surgical intervention applied to the patients are different ($p < 0.05$). The mean of life activities and quality of life learning requirement scores of patients who underwent total knee/hip arthroplasty and patients who underwent amputation were higher than those who underwent lower and upper extremity trauma surgery. This situation is thought to be due to the fact that flour arthroplasty and amputation surgeries are major surgical interventions. After these surgeries, it is very important for the patients to have information about the condition in order to manage their activities of daily living, possible complications, physical limitations, exercise/rehabilitation, self-care. It is thought that the learning needs are higher because the patients experience problems such as temporary or permanent role change, financial problems, difficulty in returning to work after these major surgeries such as arthroplasty and amputation.

CONCLUSION

It was found that the post-discharge learning needs of patients who underwent orthopedic surgery were significantly high and the learning needs for treatment and surgery related complications were the most important need. The learning needs of the patients vary according to the level of education, the surgical intervention applied, the previous hospitalization status and the type of surgery like emergency surgery or elective surgery.

The presence of information deficiencies about patients' diseases, treatment and care processes and the post-discharge period may increase patients' anxiety levels and reduce their focus on their own care. For this reason, it is thought that the planning of the discharge training content by determining the subjects on which the patients want to receive information will reduce the likelihood of experiencing distress and complications in the post-discharge period. It is thought that the biggest role in the planning and implementation of this discharge training belongs to the nurses who spend the longest time with the patient throughout their hospital stay and regularly monitor them. Therefore, it is recommended to nurses conduct discharge training according to the order of the learning needs that the patients find the most important. Additionally, conducting longitudinal and experimental research on patients' learning needs related to the topic is recommended.

Author Contributions
Plan, design: SS, FS;**; Materials, methods, and data collection:** SS**; Analysis and interpretation:** SS, FS**; Writing and critical assessment:** SS, FS.

Conflict of interest
There is no conflict of interest to declare in this study.

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