

ORIGINAL ARTICLE / ORJİNAL MAKALE

The Effect of Individualized Care Perception and Patient Characteristics on the Comfort Level of Individuals Undergoing Lower Extremity Surgery

Alt Ekstremitte Cerrahisi Geçiren Bireylerin Bireyselleştirilmiş Bakım Algısı ve Hasta Özelliklerinin Konfor Düzeyine Etkisi Özelliklerinin Konfor Düzeyine Etkisi



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Geliş: 05.04.2024, Kabul: 26.02.2025

Abstract

Background: Individualized care-oriented comfort can improve health and decrease postoperative complications in lower extremity surgery patients.

Objectives: This study aimed to examine the impact of individualized care and patient characteristics on the comfort of patients who had lower extremity surgery

Methods: This cross-sectional study included 100 patients who had lower extremity surgery at a university hospital's orthopaedic and traumatology clinic between January and July 2021. Data were gathered utilizing the "Patient Sociodemographic and Clinical Characteristic Form, "Individualized Care Scale" and "General Comfort Questionnaire". Independent samples t-test and one-way analysis of variance, frequency tables and descriptive statistics were used to interpret the results. The relationship between the scales was further elucidated by calculating correlation coefficients.

Results: The majority of patients were male (57%), married (71%), had completed primary education (26%) and received social security benefits (93%). The mean score for the Individualized Care Scale_A was 3.95 ± 1.09 , the Individualized Care Scale_B was 4.31 ± 0.74 , and the General Comfort Scale was 133.84 ± 16.54 . There was a significant positive correlation between the Individualized Care Scale and its sub-dimensions, and between the General Comfort Scale and its sub-dimensions ($p < 0.05$). The male gender, social security, planned hospitalization and meeting spiritual and personal needs were identified as patient characteristics that increased the comfort level.

Conclusion: Despite differences in patient characteristics and patient perceptions of individualized care, comfort levels were found to be moderate to high. Although patients' perceptions of individualized care were at a moderate level, their comfort level was found to be affected. Patient characteristics such as age, gender, place of residence and social security, mode of arrival at the service, surgical intervention, comorbidity status, perceived adequacy of care, and perceived fulfilment of spiritual and personal needs had a positive effect on comfort. It is recommended that orthopaedic nurses assess the care needs of patients and develop an individualized care plan.

Keywords: Comfort Level, Individualized Care, Lower Extremity Surgery, Nursing Care, Surgical Process

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Nasıl Atıf Yapılır: Bektaşoğlu B, Eyi S. The Effect of Individualized Care Perception on Comfort Level of Patients Undergoing Orthopedic Lower Extremity Surgery. Etkili Hemşirelik Dergisi. 2025;18(3): 448-464

Journal of Nursing Effect published by Cetus Publishing.



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Öz

Giriş: Bireyselleştirilmiş bakım odaklı konfor, alt ekstremité cerrahisi hastalarında sağlığı iyileştirebilir ve ameliyat sonrası komplikasyonları azaltabilir.

Amaç: Bu çalışmanın amacı alt ekstremité cerrahisi geçiren bireylerin konfor düzeyi üzerine bireyselleştirilmiş bakım algısının ve hasta özelliklerinin etkisini incelemektir.

Yöntem: Bu kesitsel çalışmaya Ocak ve Temmuz 2021 tarihleri arasında bir üniversite hastanesinin ortopedi ve travmatoloji kliniğinde alt ekstremité cerrahisi geçiren 100 hasta dahil edilmiştir. Veriler “Hasta Sosyodemografik ve Klinik Özellikler Bilgi Formu”, “Bireyselleştirilmiş Bakım Ölçeği” ve “Genel Konfor Anketi” kullanılarak toplanmıştır. Bulguların yorumlanmasında frekans tabloları ve tanımlayıcı istatistikler, bağımsız örneklem t testi ve tek yönlü varyans analizi kullanılmıştır. Ölçekler arasındaki ilişki için korelasyon katsayıları hesaplanmıştır.

Bulgular: Hastaların çoğunluğunun erkek (%57), evli (%71), ilköğretim mezunu (%26) ve sosyal güvence sahibi (%93) olduğu belirlendi. Bireyselleştirilmiş Bakım Skalası_A puan ortalaması $3,95 \pm 1,09$, Bireyselleştirilmiş Bakım Skalası_B puan ortalaması $4,31 \pm 0,74$, Genel konfor ölçeği puan ortalaması $133,84 \pm 16,54$ olarak saptandı. Bireyselleştirilmiş bakım skalası ve alt boyutları ile Genel konfor ölçeği ve alt boyutları arasında pozitif yönde istatistiksel olarak anlamlı ilişki bulundu ($p < 0.05$). Konfor seviyesini artıran hasta özellikleri olarak erkek cinsiyet, sosyal güvenceye sahip olma, planlı yatış, spiritual ve kişisel gereksinimlerin karşılanması belirlendi.

Sonuç: Hasta özellikleri ve hastaların bireyselleştirilmiş bakım algılarındaki farklılıklara rağmen konfor seviyesi orta ila yüksek düzeyde bulundu. Alt ekstremité cerrahisi geçiren hastaların bireyselleştirilmiş bakımı algılarının orta düzeyde olmasına rağmen konfor düzeylerini etkilediği belirlendi. Yaş, cinsiyet, yaşanan yer ve sosyal güvence, servise geliş şekli, yapılan cerrahi girişim, komorbid hastalık durumu, hemşirelik bakımını yeterli bulma, manevi ve kişisel ihtiyaçları karşılamasını belirtme gibi hasta özelliklerinin konfor düzeyi üzerine olumlu etkisi olduğu sonucuna ulaşıldı. Ortopedi hemşirelerinin hastaların bakım ihtiyaçlarını değerlendirmesi ve bireyselleştirilmiş bir bakım planı geliştirmesi önerilir.

Anahtar Sözcükler: Konfor Düzeyi, Bireyselleştirilmiş Bakım, Alt Ekstremité Cerrahisi, Hemşirelik Bakımı, Cerrahi Süreç

INTRODUCTION

Over the last 20 years, technological advancements, lifestyle changes, and population ageing have all contributed to a significant increase in the incidence of orthopedic surgical interventions. Lower extremity procedures are becoming more common due to acute trauma, non-healing wounds caused by underlying peripheral vascular disease or diabetes, infection, degenerative disease, and osteonecrosis (Gunay et al., 2022; Çamur et al., 2015). While lower extremity surgery is quite costly (Guo et al., 2022; Al-Thani et al., 2019), studies have shown that patients experience varying degrees of surgery-related problems after returning home. Physical, psychological, social, and economic complications following lower extremity surgery have been reported to have a negative impact on patients and may necessitate re-hospitalization (Guo et al.,

2022).

Individualized care is a way of providing care that encourages patients to make decisions about their care, taking into account their unique characteristics, lifestyles, and preferences. It is personalized for an individual and is therefore patient-centered (Suhonen & Charalambous 2019). Because of their physical condition and comorbidities, orthopaedic surgery patients are at higher risk of complications than other surgical patients (Turan & Şendir 2019). Individuals who have undergone lower extremity surgery may experience activity limitations, which can cause psychological distress (Thomas & D’silva 2015). Using appropriate tools to assess the care needs of patients undergoing lower extremity surgery may be the first and most important step in providing quality and effective care (Berg et al., 2019). To ensure a person-centered approach, the patient’s needs

and wishes should be prioritized when planning care, and individualized care should be involved in decision-making (Ajibade, 2021). Individualized care-oriented comfort can improve patient health and reduce postoperative complications in this surgical patient group (Dencker et al., 2021). Despite the positive outcomes of individualised care for patients and nurses, the literature reports that nurses do not consider the principles of individualised care and do not integrate them into their care plans (Rodríguez-Martín et al., 2016; Avcı & Alp Yılmaz 2021)

Comfort is a multidimensional and dynamic concept that varies and is individualized (Lin et al., 2023). Individualized care for patients' needs helps to promote patient comfort (Wensley et al., 2017). There are insufficient studies in the literature that investigate the factors that increase patient comfort, particularly after surgery, and especially after lower extremity surgery. Therefore, it is critical to assess the factors that patients and nurses regard as components of individualized care.

According to the Ministry of Health, 3,722,218 surgeries were performed in 2020, 10% of which were orthopedic surgical interventions (Ministry of Health, 2020). Nonetheless, there is a limited number of studies on the nursing care of individuals undergoing lower extremity surgery. As a result, in this study, we investigated the perception of individualized care of patients who underwent lower extremity surgery and its effect on the comfort levels of patients. The research questions of the study are as follows:

1. Is there a positive relationship between individualized care perception and comfort level in individuals undergoing lower extremity surgery?
2. What is the relationship between perceptions of individualized care and comfort

levels in people undergoing lower extremity surgery?

3. Does the comfort level of individuals undergoing lower extremity surgery differ according to the socio-demographic characteristics of the patient?
4. Does the comfort level of individuals undergoing lower extremity surgery differ according to the clinical characteristics of the patient?

MATERIALS AND METHODS

Type of the Research

The present study was designed as a cross-sectional descriptive study. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist was used as the reporting guidelines in this study.

Place of the Research

The study was conducted in a university hospital's Orthopedics and Traumatology Clinic in a city of Türkiye located in the Marmara Region of Türkiye.

Universe/Sample of the Research

The study population consisted of patients who underwent lower extremity surgery between January 01, 2021, and July 30, 2021. A total of 198 patients underwent lower extremity surgery during the specified timeframe. However, 98 patients were excluded from the study due to failure to meet the inclusion criteria. Consequently, the study sample consisted of 100 patients. Power analysis was performed using G-power (3.9.1) software with the mean scores of the "Individualized Care Scale (ICS)" and "General Comfort Questionnaire (GCQ)" to ensure that the sample size ($n=100$) adequately represents the universe of the study. The correlation values between the scale mean scores indicated that the power level

to determine the relationship between the Individualized Care Scale_A and the General Comfort Scale was 99.74475% and that the power level to determine the relationship between the Individualized Care Scale_B and the General Comfort Scale was 99.79708% considering a 5% margin of error and a sample size of 100. The inclusion criteria were patients who were (a) over 18 years old, (b) undergoing lower extremity surgery, (c) hospitalized for at least two days after surgery, (d) literate in the Turkish language, and (e) who provided written, informed consent to participate in the study. The exclusion criteria were patients who were (a) diagnosed with current neurological diseases such as dementia or Alzheimer's, (b) with a mental disability or psychological diseases/disorders, (c) experiencing any disability in seeing, hearing, or cognitive functions, and (d) who were undergoing upper extremity surgery.

Data Collection Instrument-Validity and Reliability Information

The data were collected using the "Patient Descriptive Information Form," prepared by the researchers and based on a literature review (Bal&Acaroğlu, 2022; Kubat Bakır&Yurt, 2020), the "Individualized Care Scale (ICS)," and the "General Comfort Questionnaire (GCQ)". The data were collected by the researchers using a face-to-face interview technique with the inpatients in their own room in the hospital. For data collection, at least 48 hours were waited for each patient after the operation. A waiting period of at least 48 hours was allowed for each patient to allow parameters that would prevent patients from answering questions in the data collection forms in the post-operative period (such as vital sign irregularities, pain, drowsiness, etc.) to be under control, for patients to fully recover from the effects of anesthesia, and for some patients to

be mobilized with support in the clinical procedure within at least 48 hours. Administration of the data collection forms took an average of 20 minutes.

Patient Sociodemographic and Clinical Characteristic Form

This form consists of 17 questions covering age, gender, place of residence, marital status, level of education, occupation, social security, co-living, surgical intervention, clinic admission, previous hospitalization, comorbidities, length of stay in the orthopaedic clinic and length of stay immobilized, ability to meet spiritual needs, ability to meet personal needs and satisfaction with care.

Individualized Care Scale (ICS)

The ICS developed by Suhonen et al. (2000) was used to evaluate patient perception of individualized care (Suhonen et al., 2000). The ICS consists of two scales (ICS-A/ICS-B), each comprising 17 items, all of which are answered on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The ICS-A measures patient awareness of nursing care during the patient's hospital stay and explains patients' views on how individuality is supported through nursing intervention, while the ICS-B assesses the patient perception of individuality in their nursing care and explains patients' views on how patients perceive individuality in their care. Both scales include three sub-scales: (i) Clinical Condition (Clin-A/Clin-B, seven items), (ii) Personal Life Condition (Pers-A/Pers-B, four items), and (iii) Decision-Making Control (Dec-A/Dec-B, six items). Cronbach's alpha of the ICS-A and ICS-B was 0.92 and 0.93 in the original study. The Turkish adaptation of the ICS was undertaken by Acaroğlu et al. (2010) and Cronbach's alpha of the ICS-A and ICS-B was 0.92 and 0.93 (Acaroğlu et al., 2010). In our study, Cron-

bach's alpha of the ICS-A and ICS-B was 0.96 and 0.92. Again in our study, the mean score for the Individualized Care Scale_A was 3.95 ± 1.09 , the mean score for the Clinical Status_A was 4.08 ± 1.12 , the mean score for the Personal Life Status_A was 3.69 ± 1.21 and the mean score for the Decision Making Control was 3.99 ± 1.17 . The mean score for the Individualized Care Scale_B was 4.31 ± 0.74 , the mean score for the Clinical Status_B was 4.25 ± 0.92 , the mean score for the Personal Life Status_B was 4.09 ± 0.95 and the mean score for the Decision-Making Control_B was 4.55 ± 0.66 .

General Comfort Questionnaire (GCQ)

The GCQ was developed by Kolcaba (2003) to evaluate patient comfort levels and assess patients' comfort-related needs by evaluating nursing practices (Kolcaba, 2003). The GCQ consists of 48 items (24 positives and 24 negatives) and is a 4-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). The response patterns of the scale are given as mixed. The scale's highest and lowest scores are 48 and 192, respectively. The GCQ can be evaluated on the total and average scores (the average score is the total score divided by the number of items). The GCQ is based upon 3 concepts: (a) relief, (b) ease, and (c) transcendence; and 4 domains: (a) physical, (b) psycho-spiritual, (c) sociocultural, and (d) environmental. Cronbach's alpha of the GCQ was 0.88 in the original study. The Turkish adaptation of the GCQ was conducted by Kuğuoğlu&Karabacak (2008) and Cronbach's alpha of the GCQ was 0.85 in the Turkish version of the scale (Kuğuoğlu&Karabacak, 2008). In our study, Cronbach's alpha of the GCQ was 0.87. Again in our study, the mean score for the general comfort scale was found to be 133.84 ± 16.54 . The mean score for the relief level on the comfort scale was found to be 47.04 ± 7.04 ,

while the psychospiritual dimension score was found to be 38.88 ± 6.18 . (Relief: 42.92 ± 5.76 , Ease: 47.04 ± 7.04 , Transcendence: 43.88 ± 5.89 , Physical: 32.13 ± 5.32 , Environmental: 35.43 ± 5.93 , Sociocultural: 27.40 ± 3.09)

Evaluation of Data

IBM SPSS Statistics 25 was used to analyze the data. Frequency distributions (number, percentage) for categorical variables and descriptive statistics (mean, standard deviation) for numerical variables were reported in the study. The normal distribution of the data depended on the skewness and kurtosis values being between ± 3 (Shao, 2002). For normally distributed data, the difference between two groups was analyzed using the independent samples t-test, and the difference between more than two groups was analyzed using one-way analysis of variance (ANOVA). Correlation coefficients were calculated for relationships between scales, subscales, and overall means. The Pearson coefficient was used for normally distributed data. Cronbach's alpha reliability coefficients were calculated to test the internal reliability of the scales. Significance was accepted at $p < 0.05$.

Variables of the Research

The dependent variable of the study was comfort level, and the independent variables were individualized care perception, sociodemographic characteristics (age, gender, education level, place of residence, occupation, marital status, coliving, social security) and clinical characteristics (surgical intervention, admission source, previous hospitalization experience, comorbidities, length of stay in hospital, length of stay immobilized, meeting spiritual and personal needs, and satisfaction with nursing care).

Ethical Aspect of the Research

Ethical approval to conduct the study was granted by the University Ethics Committee for Non-Interventional Clinical Research (E-25403353-050.99-122083-2020/461) and institutional approval was granted by the Faculty of Medicine, Department of Orthopaedics and Traumatology (11.11.2020/No:4). The necessary permissions were obtained from Acaroğlu, who conducted the Turkish validity and reliability study for the use of the individualised care scale, and from Kuşuoğlu and Karabacak, who conducted the Turkish validity and reliability study for the use of the general comfort scale. Patients were asked for written consent to participate and were assured that their information would be kept confidential and used only for research purposes.

RESULTS

A total of 100 patients undergoing lower extremity surgery were included in the study; 38% were between 36 and 55 years old. The most commonly performed lower extremity surgery was Femur surgery (35%). Of all the surgeries conducted, 53% were planned, 69% of the patients had been hospitalized before, and 39% presented with comorbidities. Additionally, 53% of patients stayed in the orthopaedic clinic for 1 to 5 days, while 60% were immobilized in the clinic for the same duration. Regarding perceptions of care, patients felt that their spiritual (62%) and personal (60%) needs were met and were satisfied (93%) with the nursing care they received (Table 1).

The General Comfort Questionnaire comparison with socio-demographic characteristics of the patients

There is a statistically significant difference between patients' demographic data and

the mean scores of the comfort levels, where socio-cultural comfort was found to be high in patients aged 70 years and older ($p=.004$). However, patients who did not perceive individuality in the care they received, were male, lived in the city center, and had no social security had statistically significant mean scores for comfort level ($p=.027$) and the sub-dimensions of comfort such as relief ($p=.009$; $p=.031$), superiority ($p=.033$), physical ($p=.008$; $p=.046$), and psycho-spiritual ($p=.013$; $p=.026$) comfort (Table 2).

The General Comfort Questionnaire comparison with clinical characteristics of the patients

There was a statistically significant difference in clinical characteristics of the patients and the mean scores of the comfort levels. The mean scores of patients whose hospitalization was planned, remained immobilised within 10 days and who indicated that they considered the care they received to be adequate were significantly higher ($p<.05$) in the sub-dimensions of general comfort and the sub-dimensions of relaxation, superiority, psycho-spiritual and environmental general comfort. Despite reporting a lack of perceived individuality in their care during treatment, patients who stated their personal needs were met, were have surgery invention within 5 days after hospitalized, and had no comorbidities exhibited significantly higher mean scores for the general comfort level and its sub-dimensions, including relief, superiority, physical, and psychospiritual aspects. ($p<.05$) (Table 3).

Table 1. Characteristics of patients (demographics, clinic-related characteristics) (n=100)

Demographic variables			n (%)	Clinical variables		n (%)
Age	18-35	25(25.0)	Surgical intervention	Femur surgery	35 (35.0)	
	36-55	38 (38.0)		Nee/joints surgery	30 (30.0)	
	56-70	17(17.0)		Amputation	14 (14.0)	
	71 and over	20 (20.0)		Foot / Ankle	12 (12.0)	
Gender	Female	43 (43.0)	Admission Source	Tibia Fibula	9 (9.0)	
	Male	57 (57.0)		Emergency	43 (43.0)	
Residen- tial place	City center	28 (28.0)		Planned	53 (53.0)	
	District/Town	47 (47.0)		Intensive care	4 (4.0)	
	Village	25 (25.0)	Hospitalized at any time prior	Yes	69 (69.0)	
Marital status	Married	71 (71.0)		No	31 (31.0)	
	Single	29 (29.0)	Comorbid illness	Yes	39 (39.0)	
Level of educa- tion	Illiterate	11 (11.0)		No	61 (61.0)	
	Primary educa- tion	26 (26.0)	Time from admission to surgery (day)	Within 5 days	53 (53.0)	
	Secondary school	18 (18.0)		Within 10 days	34 (34.0)	
	Highschool	22 (22.0)		More than 11 days	13 (13.0)	
	Occupation	University	23 (23.0)	Length of stay immobi- lized (day)	Within 5 days	60 (60.0)
Homemaker		33 (33.0)	Within 10 days		28 (28.0)	
Labourer		18 (18.0)	More than 11 days		12 (12.0)	
Social security status	Civil servant	17 (17.0)	Perceptions of care		n (%)	
	Retired em- ployee	12 (12.0)	Meeting the spiritual needs	Yes	62 (62.0)	
	Other	20 (20.0)		Partly	33 (33.0)	
	Co-liv- ing	Yes	93 (93.0)	Meeting the personal needs	No	5 (5.0)
No		7 (7.0)	Yes		60 (60.0)	
Satisfaction with nursing care	With family	77 (77.0)	Partly		30 (30.0)	
	With a relative	9 (9.0)	No		10 (10.0)	
	Alone	14 (14.0)	Yes	93 (93.0)		
				Partly	7 (7.0)	

The relationship between the Individualized Care Scale and General Comfort Questionnaire

The values indicate a moderate positive relationship between the ICS-A/ICS-B scores and the GCQ ($r=.44$; $p<.001$, $r=.45$; $p<.001$, respectively). Additionally, there was a low-level

positive relationship between the ICS subscale scores (Clin-A, Clin-B; Pers-A, Pers-B; Dec-A, Dec-B) and the four dimensions (physical, psycho-spiritual, environmental, socio-cultural) and three levels (relief, ease, transcendence) of GCQ (Table 4).

Table 2. General Comfort Questionnaire comparison with socio-demographics characteristics

	GCQ	Relief	Ease	Transcendence	Physical	Psycho-spiritual	Environmental	Socio-cultural
	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Age								
18-35	134.28±19.17	43.88±5.49	46.76±8.80	43.64±6.73	32.88±5.58	38.52±6.72	34.84±7.49	28.04±2.35
36-55	133.87±17.96	42.66±6.69	47.39±7.28	43.82±5.95	31.84±5.56	39.34±7.00	35.97±5.95	26.71±3.25
56-70	129.24±11.80	41.82±4.25	44.29±4.45	43.12±5.24	31.35±5.28	37.24±5.87	34.65±4.15	26.00±3.43
71 and over	137.30±13.44	43.20±5.45	49.15±5.32	44.95±5.45	32.45±4.75	39.90±3.64	35.80±5.18	29.15±2.43
<i>F/p</i>	0.733/.535	0.472/.703	1.533/.211	0.324/.808	0.341/.795	0.676/.569	0.308/.820	4.775/.004*
Gender								
Female	129.67±15.04	41.21±5.41	46.02±6.06	42.44±5.91	30.53±5.08	37.14±5.94	34.98±5.11	27.02±3.29
Male	137.04±17.00	44.23±5.71	47.84±7.65	44.96±5.69	33.35±5.21	40.21±6.07	35.77±6.50	27.70±2.93
<i>t/p</i>	-2.251/.027*	-2.677/.009*	-1.284/.202	-2.160/.033*	-2.706/.008*	-2.527/.013*	-0.662/.509	-1.088/.279
Residential place								
City center	137.29±15.82	44.57±5.72	47.39±6.97	45.32±5.31	32.82±5.75	40.71±5.80	35.89±6.48	27.86±2.59
District/Town	131.23±17.18	41.91±5.33	46.83±7.43	42.49±6.04	31.77±5.38	37.15±6.48	35.02±5.13	27.30±3.39
Village	135.00±15.80	43.00±6.33	47.12±6.59	44.88±5.86	32.08±4.80	40.12±5.25	35.68±6.82	27.12±3.09
<i>F/p</i>	1.262/.288	0.1906/.154	0.056/.945	2.589/.080	0.344/.710	3.785/.026*	0.216/.806	0.429/.653
Marital status								
Married	132.39±16.19	42.39±5.77	46.52±6.78	43.48±5.78	31.58±4.98	38.73±6.00	34.97±5.77	27.11±3.12
Single	138.32±16.74	44.36±5.66	48.89±7.20	45.07±6.15	33.68±5.96	39.43±6.76	36.93±6.02	28.29±2.89
<i>t/p</i>	-1.625/.107	-1.532/.129	-1.541/.127	-1.213/.228	-1.785/.077	-0.502/.617	-1.501/.137	-1.719/.089
Level of education								
Literate	130.91±10.89	39.55±5.97	48.45±3.96	42.91±3.36	29.55±4.27	37.91±3.39	34.64±4.65	28.82±2.52
Primary school	136.5±17.38	44.65±5.56	46.81±7.58	45.04±6.04	33.35±5.27	39.58±6.25	37.08±5.82	26.5±3.55
Secondary school	130.11±13.76	41.33±4.3	45.39±6.28	43.39±5.21	29.94±4.21	38.22±5.07	34.11±6.19	27.83±2.43
Highschool	133.09±15.53	42.32±6.27	48.45±5.6	42.32±6.33	32.18±4.83	38.77±6.53	35.32±4.41	26.82±2.94
University	136±20.61	44.43±5.65	46.65±9.18	44.91±6.66	33.7±6.31	39.22±7.75	35.09±7.51	28±3.19
<i>F/p</i>	0.584/.675	2.476/.049	0.596/.666	0.918/.457	2.377/.057	0.213/.930	0.789/.535	1.673/.163
Occupation								
Housewife	136.06±17.99	44.44±6.08	46.67±8.11	44.94±5.06	31.39±5.25	40.33±5.57	36.94±7.43	27.39±2.33
Labourer	134.29±22.17	42.18±7.65	48.00±8.96	44.12±7.56	32.59±6.45	38.24±8.75	36.47±6.02	27.00±3.61
Civil servant	132.06±15.36	41.73±5.86	46.94±5.90	43.39±5.85	31.21±5.31	38.18±5.66	35.45±5.67	27.21±3.66
Retired employee	137.33±11.33	44.42±3.34	46.83±6.09	46.08±4.68	33.67±3.58	40.17±3.64	35.17±4.22	28.33±2.64
Other	132.45±15.05	43.30±4.37	46.95±7.09	42.20±5.65	33.05±5.30	38.55±6.36	33.30±5.54	27.55±2.58
<i>F/p</i>	0.340/.850	0.964/.431	0.093/.984	1.038/.392	0.758/.555	0.535/.710	1.081/.371	0.377/.825
Social security								
Yes	133.19±16.36	42.59±5.57	46.92±7.15	43.68±5.84	31.85±5.17	38.56±6.11	35.47±5.83	27.31±3.13
No	142.86±17.29	47.43±6.75	48.86±5.4	46.57±6.29	36.00±6.08	43.29±5.77	34.86±7.56	28.71±2.36
<i>t/p</i>	-1.502/.136	-2.185/.031*	-0.699/.486	-1.257/.212	-2.024/.046*	-1.981/.050	0.264/.792	-1.159/.249
Co-living								
Nuclear family	134.06±16.6	43.16±5.68	46.9±7.12	44.01±5.88	32.17±5.29	39.08±6.09	35.35±6.05	27.47±2.8
With a relative-Alone	133.22±16.59	42.17±6.05	47.61±6.85	43.43±6.04	32.04±5.5	38.26±6.57	35.7±5.61	27.22±3.99
<i>t/p</i>	0.215/.830	0.716/.476	-0.425/.672	0.411/.682	0.099/.922	0.555/.580	-0.244/.808	0.281/.781

Note. F: One-way ANOVA test. t: Independent sample t test. *p<0.05, GCQ=General Comfort Questionnaire.

Table 3. General Comfort Questionnaire comparison with clinical characteristics of the patients (n=100)

	GCQ	Relief	Ease	Transcendence	Physical	Psycho-spiritual	Environmental	Socio-cultural
	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Surgical intervention								
Amputation surgery	134.79±10.6	43.21±3.68	47.21±3.93	44.36±4.29	33.57±3.34	38±5.86	35.86±2.88	27.36±3.59
Knee joint replacement surgery	136.8±19.52	43.43±6.25	48.57±8.67	44.8±6.82	32.63±5.72	39.3±6.37	36.87±7	28±3.05
Femur surgery	128.91±15.07	41.23±5.44	45.34±6.16	42.34±5.75	30.00±5.17	38.06±5.71	33.94±5.6	26.91±3.39
Surgery on the foot and ankle	133±18.69	43.42±6.93	46.17±7.63	43.42±6.16	32.00±5.27	38.67±7.09	35.67±6.08	26.67±1.97
Tibia/fibula surgery	143.11±11.4	46.78±4.84	49.67±6.56	46.67±3.91	36.78±3.46	42.44±6.52	35.44±6.44	28.44±2.24
F/p	1.803/.135	1.928/.112	1.236/.301	1.342/.260	3.851/.006*	1.014/.404	1.016/.403	0.922/.455
Admission source								
Emergency	131.49±15.88	42.74±5.74	46.14±6.66	42.6±5.72	31.84±5.38	38.72±5.95	33.67±5.99	27.26±3.05
Planned	135.94±17.07	43.11±5.90	48.00±7.44	44.83±5.87	32.09±5.34	39.25±6.08	36.74±5.76	27.87±2.99
Intensive Care	132.00±16.17	42.5±5.20	44.5±4.04	45.00±6.93	36.00±3.46	36.00±10.39	37.00±2.31	23.00±0.00
F/p	0.888/.415	0.059/.942	1.109/.334	1.799/.171	1.130/.327	0.536/.587	3.480/.035*	5.094/.008*
Previous hospitalization								
Yes	132.72±17.37	42.25±5.82	46.91±7.47	43.57±6.34	31.57±5.32	37.88±6.55	36.1±5.89	27.17±3.18
No	136.42±14.38	44.45±5.38	47.39±6.06	44.58±4.77	33.42±5.15	41.13±4.6	33.94±5.83	27.94±2.86
t/p	-1.035/.303	-1.792/.076	-0.310/.757	-0.886/.379	-1.627/.107	-2.841/.006*	1.707/.091	-1.141/.257
Comorbid illness.								
Yes	129.26±14.94	41.21±5.52	45.79±5.93	42.26±6.19	30.82±5.17	36.92±5.50	34.26±4.82	27.26±3.27
No	136.82±16.92	44.03±5.67	47.87±7.59	44.92±5.49	32.98±5.28	40.15±6.30	36.18±6.46	27.51±3.00
t/p	-2.280/.025*	-2.457/.016*	-1.446/.151	-2.249/.027*	-2.016/.047*	-2.620/.010*	-1.596/.114	-0.396/.693
Time from admission to surgery								
Within 5 days	136.43±18.09	44.04±5.81	47.64±7.94	44.75±6.2	32.49±5.73	40.19±6.25	35.98±6.75	27.77±2.91
Within 10 days	131.65±14.49	41.85±6.11	46.85±5.33	42.94±5.34	31.68±5.19	38.32±5.76	34.26±4.91	27.38±3.23
More than 11 days	129.23±13.76	41.23±3.52	45.23±7.15	42.77±5.85	31.92±3.93	35.08±5.47	36.23±4.49	26.00±3.27
F/p	1.473/.234	2.196/.117	0.631/.534	1.254/.290	0.252/.778	4.022/.021*	1.005/.370	1.746/.180
Bed-Day								
Within for 5 days	135.45±18.05	44.03±5.54	47.07±7.92	44.35±6.22	32.32±5.69	39.80±6.38	35.63±6.56	27.70±2.84
Within for 10 days	132.82±15.39	41.00±6.63	48.29±5.71	43.54±5.70	31.39±5.53	38.89±5.34	34.68±5.33	27.86±3.11
More than 11 days	128.42±8.90	41.92±2.94	44.17±3.95	42.33±4.60	33.00±1.76	34.33±5.28	36.17±3.64	24.92±3.37
F/p	0.984/.377	2.978/.056	1.454/.239	0.648/.525	0.462/.631	4.166/.018*	0.349/.707	4.802/.010*
Meeting spiritual needs								
Yes	138.34±16.13	44.19±5.91	48.97±6.26	45.18±5.88	33.19±5.12	41.02±5.74	36.26±6.01	27.87±2.91
Partly	127.24±14.89	41.06±5.20	44.45±7.11	41.73±5.42	30.64±5.31	35.70±5.48	34.48±5.14	26.42±3.43
No	122.2±13.14	39.60±1.67	40.6±7.67	42.00±5.20	29.00±5.05	33.60±3.65	31.40±8.29	28.20±1.30
F/p	6.909/.002*	4.348/.016*	7.532/.001*	4.221/.017*	3.591/.031*	12.147/<.001*	2.236/.112	2.612/.079
Meeting personal needs								
Yes	137.17±16.82	43.67±6.21	48.75±6.84	44.75±5.85	33.00±5.37	40.27±5.98	36.18±5.52	27.72±2.95
Partly	129.63±16.64	42.27±5.48	44.23±6.89	43.13±6.27	30.93±5.3	37.37±6.5	34.37±6.34	26.97±3.16
No	126.80±8.16	40.50±1.72	45.40±5.97	40.90±3.67	30.60±4.33	35.20±3.68	34.10±6.89	26.90±3.81
F/p	3.237/.044*	1.602/.207	4.771/.011*	2.229/.113	2.020/.138	4.481/.014*	1.225/.298	0.736/.482
Nursing care satisfaction								
Yes	134.82±16.64	43.08±5.89	47.49±7.03	44.25±5.92	32.24±5.48	39.25±6.11	35.78±5.89	27.55±3.08
Partly	121.29±7.74	41.00±3.27	41.29±4.03	39.00±2.24	30.86±1.95	34.14±5.3	30.71±4.50	25.57±2.88
t/p	3.984/.002*	0.919/.360	2.301/.024*	5.023/<.001*	1.482/.159	2.146/.034*	2.226/.028*	1.646/.103

Note. F: One-way ANOVA test. t: Independent sample t test. *p<0.05, GCQ=General Comfort Questionnaire.

Table 4. Correlation between Individualized Care Scale and General Comfort Questionnaire (n=100)

		GCQ	Relief	Ease	Tran- scen- dence	Physi- cal	Psycho-spir- itual	Environ- mental	So- cio-cul- tural
ICS_A	r	.44*	.32*	.44*	.40*	.27**	.42*	.32*	.45*
	p	<.001	<.001	<.001	<.001	.005	<.001	<.001	<.001
Clin_A	r	.47*	.37*	.43*	.44*	.29**	.47*	.32*	.46*
	p	<.001	<.001	<.001	<.001	.003	<.001	.001	<.001
Pers_A	r	.38*	.26*	.37*	.37*	.25**	.33*	.30*	.37*
	p	<.001	.007	<.001	<.001	.012	.001	.002	<.001
Dec_A	r	.38*	.26**	.42*	.31*	.23**	.35*	.27**	.42*
	p	<.001	.008	<.001	.001	.020	<.001	.006	<.001
ICS_B	r	.45*	.34*	.44*	.41*	.28**	.38*	.35*	.46*
	p	<.001	.001	<.001	<.001	.004	<.001	<.001	<.001
Clin_B	r	.46*	.35*	.44*	.41*	.28**	.41*	.35*	.48*
	p	<.001	<.001	<.001	<.001	.004	<.001	<.001	<.001
Pers_B	r	.37*	.22**	.41*	.32*	.21**	.31*	.30**	.40*
	p	<.001	.025	<.001	.001	.032	.001	.002	<.001
Dec_B	r	.28**	.18**	.34*	.27**	.19**	.24**	.23**	.32*
	p	.004	.067	<.001	.006	.053	.016	.017	<.001

Note. r: Pearson – Spearman correlation coefficient, *: $p < 0.001$. **: $p < 0.05$. ICS= Individualized Care Scale; ICS-A=Measures the awareness of nursing care aimed at individual care as long as the patient is treated in the hospital.; ICS-B= Assesses patient perception of the individuality of their care. Both sections include three sub-dimensions: (i) Clinical Condition: Clin-A and B, (ii) Personal Life Condition: Pers-A and B, (iii)

DISCUSSION

The results indicated that the patients' perception of individualised care was above average and close to high. Furthermore, the mean score of the BBS-B section of the individualised care scale was found to be higher than that of the BBS-A section, indicating that patients perceived a greater degree of individualisation in their care than awareness of the nursing actions involved. The mean scores for both 'clinical status' and 'decision-making control' were found to be higher than the mean score for 'personal life status' in the context of implementing nursing actions that support patient individuality. In this case, patients demonstrate a heightened awareness of nursing interventions pertaining to their personal care needs, emotional states, cognitive processes, and decision-making abilities. In accordance with the perception of individua-

lity, the highest mean score was identified as 'decision-making control', while the lowest mean score was found to be 'personal life status'. This suggests that patients' involvement in decision-making was perceived to be more significant, while their personal life status was considered to be of lesser importance. A study in the literature revealed that patients' perceptions of care were aligned with the findings of the present study (Özakgöl Aktaş et al., 2022).

The overall comfort level of the patients was found to be slightly above the average. The highest mean scores were observed for the sub-dimensions of relaxation and psychospirituality. In a related study, it was observed that the psychospiritual dimension score was high and the physical dimension score was low among the comfort sub-dimensions in orthopaedic patients (Kubat Bakır & Yurt, 2020). It is hypothesised

that the care provided to patients in relation to their thoughts, feelings and wishes has the greatest impact on their psychospiritual comfort status.

The findings of this study demonstrated that individuals undergoing lower extremity surgery exhibited varying degrees of comfort in accordance with Kolcaba's Comfort Theory. These comfort dimensions were observed to be influenced by patients' perceptions of individualized care and patient characteristics.

Physical Comfort, one of these comforts, is defined as one of the eight principles of patient-centred care (Egger-Rainer et al., 2017). The findings of our study indicate that patients' perception of individualised care is positively and weakly significantly correlated with their physical comfort level. In terms of physical comfort, patients perceived individualised care mostly in relation to their clinical status. This demonstrates that an enhanced comprehension and affirmation of patients' responses to the disease, emotions, sentiments, and the significance of their disease for them augments the level of physical comfort, albeit in a relatively weak and favourable manner. In the domain of physical comfort, the most significant source of discomfort is restricted mobility. This finding is corroborated by prior research conducted with older individuals and patients undergoing surgical procedures (Guo et al., 2022, Lin et al., 2023). In a study of inpatients' perceptions of personal comfort, patients aged 30 to 71 reported that restricted mobility made them feel like prisoners confined to their rooms. The loss of freedom to go where they wanted caused a high level of discomfort (Egger-Rainer et al., 2017). Despite the absence of statistical significance, the mean physical comfort scores of patients aged 56-70 years were observed to be relatively low. Furthermore, the

surgical intervention had a statistically significant impact on the physical comfort level of the patients in our study. Consequently, patients who underwent femur surgery reported that their physical comfort was low, while patients who underwent tibia/fibula surgery exhibited the highest physical comfort level. According to Kolcaba, physical comfort can be defined as the individual's response to physiological variables (Boudiab & Kolcaba 2015, Olivera et al., 2020). The provision of comfort to patients can facilitate a reduction in the physiological variables of pain, anxiety and stress, which in turn can accelerate the recovery process (Tian, 2023). A review of the literature reveals that the results of the studies conducted are similar (Bal & Kulakaç, 2023; Gonzalez-Baz et al., 2024). The other group of patients who reported a markedly reduced level of physical comfort in our study were those with comorbid diseases and those who indicated that their spiritual needs were not met. Despite the assertion that the discussion of religion and spirituality with patients is not a priority for healthcare professionals (Sheldon et al., 2016), several studies have indicated that religion and spirituality play a significant role in patients (Charalambous et al., 2016; Groot et al., 2017). Furthermore, the study revealed that male patients exhibited higher levels of physical comfort. Additionally, Büyükünäl Şahin & Rızalar's (2018) study found a higher comfort level in males, but Kubat Bakır and Yurt (2020) study showed no significant relationship between comfort level and gender (Büyükünäl Şahin & Rızalar 2018, Kubat Bakır & Yurt, 2020). The higher comfort level of male patients may be attributed to female patients valuing privacy and being more accustomed to the home environment.

Psychospiritual Comfort can be defined as an individual's awareness of their own self, the

meaning they attribute to their life, and their relationship with a higher being (Boudiab & Kolcaba 2015; Egger-Rainer et al., 2017). The findings of our study indicate that patients' perceptions of individualised care were found to be positively and moderately significantly related to their level of psychospiritual comfort. The highest levels of individualised care in terms of psychospiritual comfort were perceived in relation to clinical status and decision-making control. Supporting participation in care, taking into account the patient's wishes, feelings, and thoughts to improve comfort before and after surgery, increases the perception of care and nursing awareness by maintaining a high level of satisfaction with the nurses' individualized care plans. Both this study and the Kubat Bakır & Yurt study (2020) found that previous hospitalization and the presence of one or more comorbidities significantly reduced comfort, and that the number of days spent in the hospital affected comfort. Patients' previous hospital experiences and comorbidities may have a negative impact on their comfort as they compare the current hospitalization with previous experiences. As expected, an increase in time from admission to surgery to a decrease in comfort in bed and ward. According to the results of this study, patients who had their spiritual and personal needs met and received adequate nursing care were significantly more comfortable. Meeting spiritual and personal needs is critical to patient comfort. Nurses are the most effective at improving patient comfort because they spend more time with patients. Previous research (Kubat Bakır&Yurt, 2020; Güner&Karakoç Karamsar, 2021) supports our findings that comfort increased with satisfaction with care.

The concept of *Sociocultural Comfort* is closely linked to a number of factors, including family traditions, interpersonal relations-

hips and financial situation. Cultural diversity has a significant impact on this type of comfort (Egger-Rainer et al., 2017). The findings of our study indicate that patients' perceptions of individualised care were found to be positively and moderately significantly related to their level of sociocultural comfort. With regard to sociocultural comfort, patients indicated that they perceived the highest degree of individualised care in the context of their clinical status and decision-making control. The sociocultural comfort levels of patients who arrived at the service as planned were perceived to be higher than those of patients transferred from the emergency service and intensive care unit. This can be explained by the stress caused by the trauma and intensive care process in the patient, which affects their perception status.

Patients' contact and communication with healthcare professionals is a key factor in their satisfaction with their hospital stay and is very important (Moslehpour et al., 2022). A study was conducted which revealed a relationship between patient satisfaction with staff and the improvement of patients' quality of life and self-assessment of their health at the end of their hospital stay. The study also emphasised that patient-staff interaction constitutes a component of the environment experienced in real-world clinical settings, and that patients report enhanced health outcomes when they find interactions with healthcare staff more satisfying (Baumbach et al., 2023). Also, there was a significant difference between the patients' mean scores on the general comfort scale and their age, gender, place of residence, and social security status in this study. Specifically, mean scores on the general comfort scale increased with age, those living in the city center, and those without social security.

The concept of *Environmental Comfort* is

closely linked to the external background of patients, encompassing factors such as temperature, light, and the surrounding landscape (Boudiab & Kolcaba 2015; Egger-Rainer et al., 2017). The findings of our study indicate that patients' perceptions of individualised care were found to be positively and weakly significantly related to their level of environmental comfort. With regard to environmental comfort, patients indicated that they perceived the highest degree of individualised care in the context of their clinical status and decision-making control. The finding that patients who had been in intensive care perceived environmental comfort levels to be higher than patients who had been in the emergency department and those who had planned to be in the service can be explained by the fact that the stress caused by the trauma and intensive care process affects the environmental comfort area, such as sociocultural comfort. This finding is consistent with the literature (Baumbach et al., 2023).

After lower extremity surgery, nurses need to empower patients to perform self-care and any activities that they can do independently. In our study, there was a positive correlation between patients' scores on the Individualized Care Scale and scores on the general comfort scale. This finding is thought to be influenced by the fact that as patients' perceptions of individualized care improve, they perceive the care and treatment to be adequate and their general comfort level increases as a result. As their comfort level increases, they feel more ready to heal through feelings of relief, ease, and transcendence. Previous research also suggests that measures such as pain management practices, safe relationships, reducing anxiety, eliminating information gaps, and preparing patients before surgery significantly improve comfort in nursing care (Güner&Karakoç Karamsar, 2021).

CONCLUSION

In conclusion, the findings of this study indicate that, despite the observed differences in patient characteristics and patients' perceptions of individualised care, the overall comfort level was found to be moderate to high. Although the perception of individualised care among patients undergoing lower extremity surgery was found to be at a moderate level, it was determined that their comfort level was affected. It was determined that the perception of individualised care, as it relates to clinical status and decision-making control, had a positive effect on patient comfort levels. This was particularly evident in the psychospiritual and sociocultural comfort levels of the patients. Furthermore, it was determined that demographic and clinical patient characteristics, including age, gender, place of residence, social security status, method of arrival to the service, surgical intervention, comorbid disease status, satisfaction with nursing care, and the extent to which spiritual and personal needs are met, had a positive impact on comfort levels. In line with these results, we recommend that orthopedic nurses evaluate the sociodemographic and clinical characteristics of patients undergoing lower extremity surgery, give more space to dependent and independent interventions such as support for patient's ethical safety and patient rights, educating patients during the perioperative process. Additionally, they may integrate them into the nursing care provided in the clinical setting to reflect the changing patient needs during the treatment. Nurses should assess patient needs and then develop an individual care plan to meet those needs. Further research is recommended in orthopedic clinics to improve individualized nursing care and to determine patient-related factors that enhance patient comfort.

Limitations

This study is limited to orthopedic surgical clinics at a university hospital with a small sample size, indicating that findings cannot be generalized to other settings. The study factors affecting patient length of stay might have caused differences. Nevertheless, our findings may be helpful for future research that aims to improve individual nursing care and patient comfort in an orthopedic clinical environment. Future research could repeat this study at different institutions. Further work is recommended for additional research on the assessment of patient needs in clinical practices.

IMPLICATIONS FOR PRACTICE

Our findings show a positive relationship between socio-demographic and clinical characteristics of lower extremity surgery patients and their satisfaction with nursing care, perception of individualized care and comfort level. We recommend that orthopaedic nurses assess the socio-demographic and clinical characteristics of patients undergoing lower extremity surgery and give more attention to dependent and independent interventions such as promoting ethical safety and patient rights and educating patients during the perioperative period. These interventions can also be integrated into clinical care to meet the changing needs of patients during treatment.

Disclosure

No potential conflicts of interest were declared by the authors. The authors received no financial support for the research, authorship, and/or publication of this article. The costs of the research were covered by the researchers. Contributions of the authors to the study include: Concept: BB, SE; Design: BB, SE; Supervision: SE; Financing and equipment: BB, SE; Data collection and entry: BB, SE; Analysis and interpretation:

BB, SE; Literature search: BB; Writing: BB, SE; Critical review: BB, SE. In order to carry out the research, written permission from the institution and approval from the Non-Interventional Clinical Research Ethics Committee of the University (E-25403353-050.99-122083-2020/461) were obtained, and institutional approval was granted by the Faculty of Medicine, Department of Orthopaedics and Traumatology (11.11.2020/No:4). Necessary permissions were also obtained from Acaroğlu, who conducted the Turkish validity and reliability study for the use of the individualised care scale, and from Kuğuoğlu and Karabacak, who conducted the Turkish validity and reliability study for the use of the general comfort scale. Informed consent was obtained from participants, who were informed that the data would be used for scientific purposes and would remain confidential. All methods were carried out in accordance with relevant guidelines and regulations. The authors thank the patients who participated in this study.

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