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ORIGINAL ARTICLE

The Effect of Continuing Nursing Care Applied with a Coaching Strategy for Patients with Total Knee Replacement on Some Patient Outcomes: A Randomized Controlled Study Protocol

Total Diz Protezli Hastalara Koçluk Stratejisi ile Uygulanan Sürekli Hemşirelik Bakımının Bazı Hasta Sonuçlarına Etkisi: Randomize Kontrollü Çalışma Protokolü

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NOTE:

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ABSTRACT

Aim: This study aims to determine the effects of continuous nursing care applied with a pre- and postoperative coaching strategy to patients with total knee replacement on some patient outcomes (pain control, anxiety level, self-care power, activities of daily living, patient satisfaction, hospital readmission status, and use of painkillers).
Materials and methods: This research was a parallel group (experiment-control) randomized controlled clinical trial. Data were obtained from patients who underwent 72 knee replacement surgeries between January 20, 2021, and October 28, 2021, using the Patient Identification Form, the Visual Analog Scale, the Self-Care Scale, the Newcastle Nursing Satisfaction Scale, the State Anxiety Inventory, and the Barthel Daily Living Activity Index. The patients were followed up preoperatively and postoperatively. This study is registered in the Clinical Trials database (NCT04683588).
Results: Statistical analysis of the data obtained from this research was calculated using the SPSS 25 package program in the computer environment. Number, percentage, mean and standard deviation were used for descriptive statistics, and chi-square analysis was used to compare the similarity/homogeneity of the groups regarding descriptive characteristics. Obtained results were evaluated at a $p<0.05$ significance level.
Conclusion: As a result of the research, it was concluded that the patients in the experimental group had a positive effect on pain, analgesic use, anxiety, self-care power, activities of daily living and patient satisfaction compared to the patients in the control group.

Keywords: Total knee replacement; coaching; nurse coaching strategy; nursing care; randomized controlled trial.

ÖZ

Amaç: Bu araştırmanın amacı, total diz protezli hastalara ameliyat öncesi ve sonrası koçluk stratejisiyle uygulanan sürekli hemşirelik bakımının bazı hasta sonuçları üzerine etkisini belirlemektir.
Gereç- Yöntem: Araştırma, paralel grup (deney-kontrol) randomize kontrollü klinik araştırma özelliğindedir. Veriler 20 Ocak 2021- 28 Ekim 2021 tarihleri arasında 72 diz protez ameliyatı yapılan hastalardan elde edilmiştir. Deney grubunda yer alan hastalar koçluk stratejisi ile hemşirelik bakımı, kontrol grubu ise; hastaları ise rutin hemşirelik bakımı almıştır. Veriler; Hasta Tanılama Formu, Vizuel Analog Skala, Öz Bakım Gücü Ölçeği, Newcastle Hemşirelik Bakımından Memnuniyet Ölçeği, Durumluk Anksiyete Envanteri ve Barthel Günlük Yaşam Aktivite İndeksi kullanılarak elde edilmiştir. Hastalar ameliyat öncesi ve ameliyat sonrası süreçte takip edilmiştir. Bu çalışma Clinical Trials veri tabanına (NCT04683588) kayıtlıdır.
Bulgular: Araştırma sonucunda elde edilen verilerin istatistiksel analizi, bilgisayar ortamında SPSS 25 paket programı kullanılarak hesaplanmıştır. Tanımlayıcı istatistikler için sayı, yüzde, ortalama ve standart sapma, grupların tanımlayıcı özellikler yönünden benzerliğinin/homojenliğinin karşılaştırılmasında ki-kare analizi kullanılmıştır. Elde edilen sonuçlar $p<0,05$ anlamlılık düzeyinde değerlendirilmiştir.
Sonuç: Araştırma sonucunda deney grubu hastalarının kontrol gruba hastalarına göre ağrı, analjezik kullanımı, anksiyete, öz-bakım gücü, günlük yaşam aktiviteleri ve hasta memnuniyeti üzerine olumlu yönde etkisi olduğunu göstermektedir.

Anahtar kelimeler: Total diz protezi; koçluk; hemşire koçluk stratejisi; hemşirelik bakımı; randomize kontrollü çalışma.

Introduction

Total knee arthroplasty (TKA) is the process of reshaping the articular surface (femoral, tibial, and patellar surfaces) that has deteriorated due to arthritis, trauma, congenital and tumoral factors, with a prosthesis made of metal or plastic raw materials (1,2). TKA is applied more to adults, especially to individuals over the age of 55 (2,3). Although TKA surgery is among the surgeries with a high patient satisfaction rate, some

complications may develop, and the rate varies between 1.65% and 11.3%. (2,4). These complications include delayed wound healing, nerve (peroneal) damage, stress fractures (patella, femur, and tibia), prosthesis instability, subluxation, dislocation, infection, and urinary infection. Nursing care and follow-up have a privileged place, especially in preventing problems and complications that may occur, early diagnosis, and treatment of them in the fastest time. In addition, coping with these difficulties and problems requires the patient to provide their own care and rehabilitation and to take on more responsibility. Active involvement of the patient is required (5). Qualified nursing care applied with the patient' active participation before, during, and after TKA surgery is crucial in preventing complications, increasing functional results, quality of life, and patient satisfaction (6,7).

The nurse is the professional member who interacts with the patient the most and spends a long time with the patient than the other members of the team (1,8,9). In this context, the training, information, skill acquisition, counseling, and care practice that the nurse will provide to the patient will contribute to the desired results by positively affecting both the success of the surgery and the recovery process of the patient (9,10,11). Many models/theories/approaches/methods/strategies are used in nursing process practices. One of them is the nurse coaching strategy (12,13). Nurse coaching is the entire supportive, guiding, and motivating dynamic process for the patient to reach their goals in a shorter time by sharing patient experiences with the nurse (9,14).

In the postoperative period, it is expected that the physiological and psychological problems of the patient will be resolved, self-care should be provided, and the patient will be able to cope with pain, adapt to his new situation, and complete the process with the least possible complication/uncomplicated. To achieve these, it is very important for the patient to have knowledge about the process and to be involved in the process. This can be done by providing active patient participation with a nurse coaching strategy (14). The nurse coaching strategy has been used by many researchers in different patient groups and has been reported to have many advantages (14,15,16). Although the coaching strategy has been studied many times in the literature in different diseases and patient follow-ups, it is seen that there is a limited number of studies in the postoperative patient group (16,19). To our knowledge, there is no study in which the coaching strategy covering the pre-and post-operative care process and follow-up for TKA was used. It was assumed that this was a significant deficiency. In this study, it was thought that the nurse coaching strategy would have significant effects on patient outcomes in patients with TKA.

Aim of the study: This study is an experimental type of research conducted to determine the effects of continuous nursing care administered with a nurse coaching strategy to patients who are planning to have TKA surgery on pain, anxiety, self-care agency, activities of daily living, patient satisfaction, hospital readmission rates and use of pain medication.

Material Method

Design

This study was planned as a parallel group randomized controlled clinical trial with repeated measurements.

Participants

The study population consisted of patients who were examined between January 2021 and October 2021 in the Orthopedics and Traumatology outpatient clinic of the hospital where this study was conducted and decided to have knee prosthesis surgery. Patients (N=165) who had knee prosthesis surgery between the specified dates constituted the population of this study.

Inclusion criteria

- Willingness to participate in this research,
- Being literate,
- Ability to speak Turkish and verbal communication,
- Not having a primary psychiatric diagnosis,
- No vision and hearing problems,
- No cognitive and mental problems,
- Not having trauma,
- Being 18 years or older,
- Living in the city center of Konya.

Exclusion criteria

- Having undergone revision knee prosthesis operation,
- Application of analgesic drugs to the knee joint space during the operation,
- Application of patient-controlled analgesia for postoperative pain control,
- Having difficulty in understanding the content of this research,
- Having a health problem that prevents exercise or evaluation.

Variables of this Study

Independent variables

- Continuous nursing care applied with the coaching strategy

Dependent variables

- Pain Control (intensity)
- State Anxiety Inventory score
- Self-Care Agency Scale score
- Daily Living Activity Index score
- Nursing Satisfaction Scale score
- Re-admission status
- Pain medication use status

Study Group and Power Analysis

The sample of this study consisted of 72 patients who had knee arthroplasty surgery between January 2021 and November 2021 and who met the criteria of the present study and agreed to participate in this study. The patients were divided into two groups as experimental and control groups. Continuous nursing care covering pre- and post-operative processes was applied to the patients in the experimental group using the nurse coaching strategy. Patients in the control group received routine nursing care, along with the patient education booklet. In this study, five repeated measurements were made in two groups. In calculating the sample size of this study, the G*Power statistical analysis program with a Type I error of 0.05 and a Type II error of 0.5 (based on 95% power) and a medium effect size value was used and the sample size was 66 patients for the 33 experimental and 33 control groups. Given that losses might occur for both groups, 72 patients were included in this study, 10% more for both groups (Figure 1).

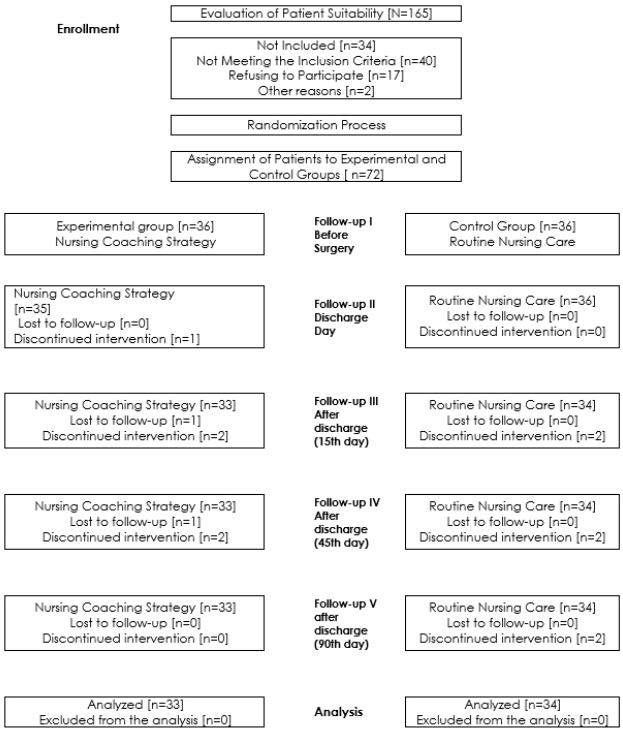

Figure 1. CONSORT chart

Randomization and Blinding

Randomization

Patients were assigned to the experimental and control groups using the "simple randomization" method to prevent selection bias and control the variables that may affect the difference in outcome parameters in the present study. Randomization was carried out by a statistician other than the researchers, using a computer program. Patients who applied to the orthopedics and traumatology outpatient clinic before randomization, who decided to have TKA surgery and were accepted to have surgery, were included in this study. Patients who met the inclusion criteria of this study were informed about this study and their verbal and written consent were obtained. Patients were assigned to the experimental and control groups according to the list prepared by the statistician according to the simple randomization method.

Blinding: No blinding was performed in the present study. Since the researcher managed the implementation process of this study, researcher blinding could not be done. The information about which group the patients belonged to was given by an independent person to the researcher, who collected the data of this study and carried out the application, after obtaining the verbal and written consent of the patients and collecting the initial data. On the other hand, the patients in the experimental and control groups were hospitalized in different rooms since randomization would be disrupted if the patients in the sample group and their relatives interacted in the service. Because the researcher directed the process, the researcher could not be blinded. The information about which patients will be assigned to the experimental and control groups was told to the researcher by another neutral person, in the order of the list determined by the statistician. Thus, the internal validity of this research was ensured. Experimental and control group data were recorded on the computer by the researcher without specifying the data, and data analyses were performed by an expert statistician. In this way, the blind technique method was also performed regarding statistical analysis. The randomization process of this study was planned according to the CONSORT 2017 (Updated Guidelines for Reporting Randomized Parallel Group Studies).

Data Collection Tools

Data were collected using the Patient Identification Form, the Visual Analogue Scale (VAS), the Self-Care Agency Scale (SCA), the Newcastle Satisfaction with Nursing Scale (NSNS), State-Trait Anxiety Inventory (STAI), and the Barthel Index for Activities of Daily Living (ADL). The motivational support interview technique was used in the application of the coaching strategy to the experimental group of patients. The Motivational Interview Form was used for the follow-up of the experimental group patients who were given nursing

care with the coaching strategy, and the Control Group Follow-up Form was used for the follow-up of the control group patients.

Creation and Evaluation of Patient Education Booklet

The booklet to be used in patient education is prepared in line with the current literature and evidence-based practices. In the booklet, pre-operative practices (including period preparations, practices during the surgery, post-operative care and problems that may be encountered, and home care after discharge) are included for patients who are planned for TKA.

The education booklet prepared by the researchers was submitted for expert opinion, and content validity was performed. The booklet was sent to the experts using e-mail. The experts evaluated the patient education booklet with the "Assessment Form for the Appropriateness of Written Educational Materials" and "DISCERN Written Material Evaluation Tool." The training booklet was given its final shape by the researchers according to the suggestions from the experts. The "Multiple Peer-Reviewed Content Validity" method was used in the evaluation of the patient education booklet. Kendall's Coefficient of Concordance test was used to analyze the data obtained from the assessment tools. It was concluded that there was a statistical agreement between the expert opinions for both the "Evaluation Form of Written Educational Materials" and "Discern Form" tools (for the Written Material Evaluation Tool; W=0.044, p=0.266>0.050, for the DISCERN form; W=0.080, p=0.152>0.050).

Pilot Study

The pilot study of this study was carried out in the institution where this study was conducted between September 24 and December 30, 2020, to evaluate the intelligibility of the data collection forms by the patients. After the approval of the ethics committee and the institution, this pilot study was carried out between these dates with the patients who met the study criteria and were accepted to participate in this study. Pilot study was completed with eight patients, four from the experimental group and four from the control group.

Procedures

The implementation process of the research consisted of three stages and a total of 11 steps. The stages are indicated in Table 1.

Stage 1=Preparation Stage: It consists of two simultaneous steps.

First step

By reviewing the literature and evaluating the methods used in patient education, the nurse coaching strategy planned to be used in this study was decided.

Second step

As a result of the literature review, the appropriate measurement tools (VAS, State-Trait Anxiety Inventory, Self-Care Agency Scale, Barthel Index for Activities of Daily Living and Newcastle Satisfaction with Nursing Scale) were decided for the hypotheses of this research.

Stage 2 = Application Stage: It consisted of eight consecutive steps.

First step – surgery decision stage in the outpatient clinic (pre-operative process I)

This step began with the decision on the surgical process after patients applied to the outpatient clinic. Patients admitted to the orthopedics and traumatology clinic for planned TKA surgery and planned to be hospitalized were evaluated whether they met the inclusion criteria, and the patients who met the inclusion criteria were informed about this research process. The patients who agreed to participate in this study were provided to read the Minimum Informed Voluntary Consent Form (BIGOF) and their written consent was obtained. The patients whose consent was obtained were assigned to the experimental and control groups according to the randomization list created by the statistician. In this step, both the socio-demographic characteristics of the patients (Patient Diagnosis Form) were filled in by the researcher in the outpatient clinic, the patient was informed before hospitalization, and the training booklet prepared by the researcher was given to the patient. A coaching interview on pain, anxiety, self-care, and daily life activities was conducted with the patients in the experimental group using the coaching strategy method.

Second step – Time to hospitalization (pre-operative period II)

This step includes the operation day, which is included in the pre-operative period, and the period immediately before the operation (the day of admission to the ward). At this stage, carried out by the researcher, a coaching interview was conducted in the patient's room using the coaching strategy method for the patient's anxiety state. In addition, the physiological preparation of the patients was carried out by the researcher. Here, training was given on the practices that the patients are expected to do after the surgery (extremity strengthening exercises, breathing and coughing exercises, in-bed exercises, sitting in the bed, getting out of bed after the surgery, and the positions to be careful). In addition, it covers the presentation of the clinic, the operation of the service, the introduction of the orthopedics and traumatology service team, and informing the patient and the companion to meet their needs regarding the service and treatment process.

Third step – 0th day after surgery

It covers the post-operative period (0th day of post-operative) of the patients who underwent surgery. This step includes the post-operative nursing care practices of the patient determined by the researcher (e.g., transferring the patients from the surgery to the clinic, pain control and monitoring, monitoring of vital signs, controlling the wound area, hemovac drain control, transition to oral feeding, nausea control, evacuation, wound care, prevention of complications, providing comfort and rehabilitation exercises). The pain status of the patients was evaluated with VAS by the researcher. A coaching session was held to increase the power of coping with pain using the coaching strategy method for the patient whose pain status was evaluated.

Fourth step – 1st day after surgery

This stage covers the period between 24 and 26 hours after surgery. It covers the period after the routine drug treatments of the patients completed 24 hours after the surgery. After removing the elastic bandage and dressing the patient, whose leg was fully wrapped with an elastic bandage in the operating room, the incision site was evaluated regarding heat, redness, edema, and tenderness. The dressing of the incision area of the patient whose drain was removed was renewed, and anti-embolism socks were put on, and the patient was mobilized by taking the necessary precautions. A coaching session for the daily life activities (feeding, dressing, walking, changing in-bed position, transfer, using the toilet) of the patient whose pain was evaluated was carried out using the coaching strategy method.

Fifth step- 2nd day after surgery

It covers the period after the 48th hour after the surgery. A coaching session was held for self-care behaviors. The pain status of the patient was evaluated with VAS by the researcher.

Sixth step- Post-operative (Discharge day)

It covers the 24-48 hours before the discharge of patients scheduled to be discharged. The patients were given discharge training (possible complications, wound care, conditions requiring emergency treatment and care, exercises, physical restrictions, methods for pain reduction and coping, and drug use information) by the researcher with a nurse coaching strategy.

Seventh step- I. control after discharge (15th day)

It covers 14-17 days when the patients come to the first polyclinic for control after discharge. In the interview conducted by the researcher with the patients, the problems they had difficulty in daily life were questioned after discharge. Re-informing, training, and counseling were provided about the completion of the deficiencies in the knowledge and practice regarding the problems (e.g., about nutrition, activity, exercise, drug use, and issues to be careful about) encountered by the patients, and about the correction of the mistakes if any.

Eighth step- II. control after discharge (45th day)

It is the time when the patients come to the outpatient clinic for the second time after discharge, that is, the 45th day after the surgery. In the interview made by the researcher with the patients, the situations they had difficulties in daily life after discharge were questioned, and information, training, and counseling were provided about the completion of the deficiencies regarding these problems (e.g., about nutrition, activity, exercise, drug use and issues to be careful about) and about the correction of the mistakes, if any.

Ninth step- III. control after discharge (90th day)

It is the time when the patients come to the outpatient clinic for the third time after discharge, that is, the 90th day after the surgery. In this interview, the researcher asked the patients about the situations they had difficulties in daily life after discharge and provided information, training, and counseling about the completion of the deficiencies regarding these problems (about (e.g., nutrition, activity, exercise, drug use, and issues that need attention) and the correction of the mistakes if any.

***Stage 3 = Reporting Stage*:** At this stage, the last follow-up data of the patients were completed on October 28, 2021. Data were entered in a computer environment using SPSS 24 package program (Table 2).

Flow Chart of the Research

Data Analysis

Statistical analyses were performed using the SPSS [IBM SPSS Statistics 24] package program. "Frequency tables" and "descriptive statistics" were used to interpret statistical findings. Obtained results were evaluated at $p<0.05$ significance level. Parametric methods were used for measurement values suitable for normal distribution. Shapiro-Wilk tests were performed according to the number of samples in accordance with the normal distribution values. In addition, Q-Q plots, kurtosis, and skewness coefficients were examined. In this study, modified intention to treat (MoITT) and intention to treat (ITT) analyses for attenuation bias and treatment purpose were applied in the data analysis phase. Since it was not possible to reach the data of the patients who were excluded from the present study after randomization, the missing data were filled in in the computer environment (Table 2).

Table 1. Application Chart of the Research

1.Stage: Prepatation Stage	1.Step	Literature Review Deciding on the Appropriate Nursing Strategy Determining the Sample Appropriate for the Criteria
	2.Step	Deciding on Appropriate Measurement Tools
2. Stage: Application Stage	1.Step	**Deciding on surgery in the outpatient clinic** Randomization and assignment to the appropriate group, Obtaining patient consent, Implementation of patient diagnosis form and pre-hospitalization information training for patients planned for surgery by the researcher and giving the training booklet to them, Conducting a coaching interview on pain, anxiety, self-care, and daily living activities using the coaching strategy method for the experimental group, Application of VAS, State-Trait Anxiety Inventory, Self-Care Agency Scale, Barthel Index for Activities of Daily Living measurement tools by the researcher
	2.Step	**Day of hospitalization of the patient (just before surgery)** It includes the introduction of the service, the introduction of the operation of the service, the introduction of the orthopedics and traumatology clinic team, and the information of the patient to meet the service and process-related needs by the researcher. The coaching interview was held in the patient's room with the anxiety-oriented coaching strategy method for the experimental group.
	3. Step	**Surgery day (post-op day 0)** It covers the post-operative nursing care practices of the patient applied by the researcher. The coaching interview was held in the patient's room with the pain-oriented coaching strategy method for the experimental group.
	4. Step	**Post-operative (post op 1st, 2nd day)** Providing the care of the patient in the post-operative period with the nurse coaching strategy by the researcher. ▪ Conducting a coaching session for daily living activities with coaching strategy, (post op 1st day) ▪ Conducting a coaching session for self-care with coaching strategy, (post op 2nd day) Implementation of the VAS by the researcher.
	5. Step	**Discharge planning (Last 24-48 hours before discharge)** Providing discharge training with the nurse coaching strategy within the specified time interval (last 24-48 hours) to the patients whose discharge is planned by the researcher. ▪ Conducting a coaching session for anxiety with a coaching strategy, ▪ Conducting a coaching session for pain with a coaching strategy, ▪ Conducting a coaching session for daily living activities with a coaching strategy, ▪ Conducting coaching sessions for a self-care with coaching strategy, Application of measurement tools (VAS, State-Trait Anxiety Inventory, Self-care Agency Scale, Index for Activities of Daily Living, New Castle Satisfaction with Nursing Scale) by the researcher.
	6.Step	**First control to the outpatient clinic after discharge, examination time (Day 14-17)** Providing information, education and counseling of the patient during the discharge process with the nurse coaching strategy by the researcher. ▪ Conducting a coaching session for anxiety with a coaching strategy, ▪ Conducting a coaching session for pain with a coaching strategy, ▪ Conducting a coaching session for daily living activities with a coaching strategy, ▪ Conducting coaching sessions for a self-care with coaching strategy, Application of measurement tools (VAS, State-Trait Anxiety Inventory, Self-care Agency Scale, Index for Activities of Daily Living) by the researcher.
	7.Step	**Second control to the outpatient clinic after discharge, examination time (Day 45)** Continuing the patient's information, education, and counseling with the nurse coaching strategy by the researcher. ▪ Conducting a coaching session for anxiety with a coaching strategy, ▪ Conducting a coaching session for pain with a coaching strategy, ▪ Conducting a coaching session for daily living activities with a coaching strategy, ▪ Conducting coaching sessions for a self-care with coaching strategy, Application of measurement tools (VAS, State-Trait Anxiety Inventory, Self-care Agency Scale, Index for Activities of Daily Living) by the researcher.
	8. Step	**Third control to the outpatient clinic after discharge, examination time (Day 90)** Continuing the patient's information, education and counseling with the nurse coaching strategy by the researcher. ▪ Conducting a coaching session for anxiety with a coaching strategy, ▪ Conducting a coaching session for pain with a coaching strategy, ▪ Conducting a coaching session for daily living activities with a coaching strategy, ▪ Conducting coaching sessions a self-care with coaching strategy, Application of measurement tools (VAS, State-Trait Anxiety Inventory, Self-care Agency Scale, Index for Activities of Daily Living, New Castle Satisfaction with Nursing Scale) by the researcher.
3.Stage Reporting Stage		Statistical analysis of the data and writing the research report.

Table 2. Statistical methods used in the research

Statistics Areas		Statistical methods used
"According to the expected value levels in examining the relations of two qualitative variables with each other"		"Fisher-Exact," "Continuity Correction" or "Pearson-χ^2"
Parametric Methods	"In comparison with the measured values of two independent groups"	"Independent Sample t-test (t- table value) "
	"In comparison with measurement values of three or more dependent groups"	"Repeated Measures" test (F- table value)"
	"In the study of the relationships of two quantitative variables"	"Pearson Correlation Analysis"
Non-Parametric Methods	"In comparison with the measured values of two independent groups"	"Mann-Whitney U" test (Z- table value)"
	"In comparison with measurement values of three or more dependent groups"	"Friedman test" (χ^2-table value)"
	"For pairwise comparisons of variables with a significant difference for three or more groups"	"correction"
	"In the study of the relationships of two quantitative variables"	"Spearman Correlation Analysis"
Effect size analysis, MoITT ve ITT		

Ethical Dimension of Research

To collect the data, the ethics committee permission with the date of 10/07/2020 and the decision number 2020/5- E. 93804542-020 from Selcuk University Faculty of Nursing Non-Interventional Ethics Committee and institutional permission from the hospital where the research will be conducted were obtained before the research. This study was registered in the Clinical Trials database (NCT04683588). Informed consent was obtained from the patients, both verbally and in writing. Scale usage permissions were obtained from scale owners. All stages of this study were carried out in accordance with the Declaration of Helsinki. This research was prepared, applied, and reported according to the Reporting Criteria for Randomized Parallel Group Studies (CONSORT 2017) (20).

Discussion and Conclusions

This study aimed to determine the effects of continuing nursing education, counseling, and care, which started with the decision of the operation process and applied with a nurse coaching strategy until the third month after the operation, on patients with TKA, pain, anxiety, self-care agency, activities of daily living, nursing care satisfaction, hospital readmission rates, and analgesic drug use. As a result of this research, it was concluded that the patients in the experimental group showed a positive change in pain, analgesic use, anxiety, self-care agency, activities of daily living, and patient satisfaction compared to the patients in the control group, while the rates of readmission were similar.

In the literature, there are studies on coaching strategies applied to different surgical patient groups (16,19,21,22). In the randomized controlled study by Prvu Bettger et al. (23), the effectiveness of the internet-based coaching program after TKA was evaluated and the patients were followed for 12 weeks. At the end of the program, there was a significant decrease in the pain scores of the patients in the experimental group. In the multicentered randomized controlled study conducted by Kassymova et al. (22), patients who underwent hysterectomy (n=525) were followed for six weeks using the coaching method, and it was determined that the pain level of the patients in the experimental group was lower than the control group at the end of the program. In another randomized controlled study, patients who had knee arthroscopy surgery (n=102) were divided into experimental and control groups. The patients in the experimental group were coached for a week, in the evening before the surgery, at the 24th hour, 48th hour and 72nd hour after the surgery and at the end of the program. It was observed that the amount of analgesic medication consumed after the surgery was reduced in patients who received coaching (16). In another study in which the coaching strategy was applied, a coaching interview was applied to the patients with bone fractures about whether pain during the exercises to increase the elbow joint range is healthy and expected pain, about the need to continue the exercise despite the pain during the exercises to increase the elbow joint range, and about increasing and decreasing the elbow opening. The patients were asked to think/imagine goal-oriented in the coaching given during the exercise. It was observed that the mental processes of the patients were healthier in the exercises performed after the application (21). In the randomized controlled study conducted by Losina et al. (24), the patients in the intervention group of 202 adult patients who followed up with the diagnosis of osteoarthritis were applied physical exercises integrated with coaching for six months and coached by telephone. At the end of the program, the physical movements and self-care status of the patients were evaluated. It was determined that the quality of life of the children who performed the activity was significantly higher than the control group after a 6-month study in which the patients were given one-on-one physical activity by the coach.

When the literature is examined, it has been determined that the training, counseling, and care practices given with the coaching strategy have a positive effect on the recovery status of the patients. Also, in this study, it was thought that the training, counseling, and care related to the nurse coaching strategy given to the patients at certain periods before and after the surgery had a positive effect on the patients' pain, anxiety, analgesia use status, self-care agency, daily living activities and satisfaction rates in nursing. To our knowledge, this is the first study presented using the coaching strategy given to TKA patients by the nurse; it is implemented as a randomized controlled nursing intervention to increase the recovery status of patients after surgery; it sets an example and provides evidence for care studies in the literatıre. The results of this study showed that the training, counseling, and care practices given with the nurse coaching strategy in pre-and post-operative patients have significant

effects on the recovery status of the patients.

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Conflict of interest: There is no conflict of interest between the authors.

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