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The Status of Nurses Working in Surgical Units in Delivering Patient Education on Venous Thromboembolism

Cerrahi Birimlerde Çalışan Hemşirelerin Venöz Tromboembolizm İle İlgili Hasta Eğitimi Verme Durumu

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ABSTRACT

Objective: This study was planned to examine the status of education delivered by nurses working in surgical units regarding venous thromboembolism (VTE).

Methods: This descriptive cross-sectional study was conducted between May 2024 and June 2024. The study participants consisted of 126 nurses working in the surgical units of a city hospital in Türkiye. Data were collected using the "Patient Education Practice Form" developed by the researcher. Descriptive statistics (number, percentage, mean, standard deviation, median values) were used for data analysis.

Results: When examining the nurses' education practices, 19.8% stated that they always delivered patient education on mobilization, ankle exercises, and correct leg positioning while sitting; 19.1% on signs and symptoms of VTE; 19.0% on lifestyle changes; 18.3% on anticoagulants; 18.2% on laboratory tests in pharmacological prophylaxis; 17.5% on situations requiring emergency admission and patient safety; 16.7% on hydration; and 15.9% on elevating the legs and using compression stockings.

The issues nurses faced in delivering patient education included difficult working conditions and insufficient nursing staff (86.5%), lack of knowledge about VTE (54.8%), absence of guidelines on VTE and patient education in the clinic (53.2%), considering patient education as the physician's responsibility (48.4%), insufficient presentation and teaching skills (47.6%), lack of prioritization of patient education activities in the institution, lack of teaching materials (45.2%), and low health literacy of patients (32.5%).

Conclusion: Increasing nurses' knowledge and awareness through education on delivering patient education regarding VTE and addressing the perceived barriers to patient education by surgical nurses are essential for ensuring effective patient instruction.

Keywords: Surgical nursing, patient education, venous thromboembolism

ÖZ

Amaç: Bu çalışma cerrahi birimlerde çalışan hemşirelerin venöz tromboembolizm (VTE) ile ilgili eğitim verme durumlarını incelemek amacı ile planlandı.

Yöntemler: Bu tanımlayıcı kesitsel çalışma Mayıs 2024- Haziran 2024 tarihleri arasında gerçekleştirildi. Çalışmanın katılımcıları Türkiye' deki bir şehir hastanesinin cerrahi birimlerinde çalışan 126 hemşireden oluşmaktaydı. Veriler araştırmacı tarafından geliştirilen "Hasta Eğitimi Uygulama Formu'' kullanılarak toplandı. Verilerin analizinde tanımlayıcı istatistikler (sayı, yüzde, ortalama, standart sapma, medyan değerler) kullanıldı.

Bulgular: Hemşirelerin eğitim verme durumları incelendiğinde; %19,8'i mobilizasyon, ayak bileği egzersizleri ve otururken doğru bacak pozisyonu; %19,1'i VTE belirti bulguları; %19,0'ı yaşam tarzı değişiklikleri; %18,3'ü antikoagülanlar, %18,2'si farmakolojik profilakside laboratuvar testleri; %17,5'i acile başvurulması gereken durumlar ve hasta güvenliği; %16,7'si hidrasyon, %15,9'u bacakların yükseltilmesi ve kompresyon çorabı kullanımı ile ilgili her zaman hasta eğitimi verdiklerini belirtmişlerdir. Hemşirelerin hastalara eğitim verme konusunda yaşadıkları sorunlar arasında zor çalışma koşulları ve hemşire sayısının yetersizliği (%86,5), VTE ile ilgili bilgi eksiklikleri (%54,8), klinikte VTE ve hasta öğretimleri ile ilgili kılavuzların bulunmaması (%53,2), hasta eğitimlerini hekimin görevi olarak düşünme (%48,4), sunum ve öğretim becerilerinin yetersiz olması (%47,6), kurumda hasta eğitim faaliyetlerine öncelik verilmemesi, öğretim materyali eksikliği (%45,2) ve hastaların sağlık okuryazarlığının düşük olması (%32,5) vardı.

Sonuç: Hemşirelerin VTE ile ilgili hastalara eğitim vermeleri konusunda bilgi ve farkındalıklarının eğitimlerle artırılması ve cerrahi hemşireleri tarafından hasta eğitimi konusunda algılanan engellerin ortadan kaldırılması, etkili hasta öğretimi sağlanabilmesi için önemlidir.

Anahtar Kelimeler: Cerrahi hemşireliği, hasta eğitimi, venöz tromboembolizm

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INTRODUCTION

In surgical processes, one of the main complications known as the "Silent Killer" is Venous Thromboembolism (VTE), which includes Deep Vein Thrombosis and Pulmonary Embolism.[1] The reported incidence of VTE varies between 48/100,000 to 160/100,000, causing significant morbidity and mortality among surgical patients in Türkiye and the world.[1-3] Estimates suggest 60,000–100,000 Americans die from thromboembolic conditions and, the incidence rate of DVT in Asia was between 3% and 28%.[1,2] In a cross-sectional study conducted in Türkiye, the incidence of VTE was 4.6% among 1,000 patients diagnosed with cancer.[4] Moreover, VTE extends hospital stays and increases healthcare costs, making it a vascular issue of considerable concern.[1-3] However, despite its potentially life-threatening nature, VTE is preventable.[5] Various organizations such as the Association of Perioperative Registered Nurses (AORN) and the National Institute for Health and Care Excellence (NICE) have developed guidelines to prevent VTE and reduce associated mortality.[3,5-9] In these guidelines it is recommended that patient education is one of the strategies for VTE management.

Patient education is a process of learning and teaching aimed at fostering behavior changes to maintain, enhance, and sustain health.[10] Planned patient education during the perioperative process is crucial for developing effective coping strategies for existing health issues, reducing potential complications, preventing repeated hospital admissions, and improving quality of life.[11] Studies have shown that patient education leads to positive patient outcomes such as adaptation to illness, utilization of effective coping methods, maintenance of daily life activities, and reduction in mortality and morbidity both before and after surgery.[11-13] A study involving approximately 9,000 patients indicated that nurse-delivered VTE education led to a 5.3% increase in compliance with prophylaxis.[14] In another study, a patient education program implemented by nurses, which included VTE management, resulted in a lower incidence of VTE symptoms in postoperative patients and fewer emergency department visits for VTE diagnosis.[11]

On the other hand, in the constantly changing healthcare system, patients are discharged shortly after surgery. This shift places more responsibility on patients and their families to manage care, handle new health conditions, and ensure the treatment process progresses positively. Adequate patient education is crucial for them to meet these obligations.[15] Nurses play a pivotal role in providing effective patient education tailored to meet the needs, enabling patients to cope with existing health issues, achieve disease adaptation, actively participate in healthcare decisions, and develop health-promoting and enhancing behavioral changes.[16] Research has demonstrated that nurse-delivered patient education is effective in preventing many complications including VTE.[11-13] In this context, both guidelines and studies emphasize the critical role of nurses in managing VTE through patient education. However, the literature reveals insufficient evidence regarding the status of nurses in providing VTE-related education to patients.[17,18] It is crucial to determine the status of nurses in delivering education on VTE, the perceived barriers to delivering effective education, and to plan appropriate strategies to address these barriers.[16]

AIM

This study was designed to examine the status of delivering patient education on venous thromboembolism among nurses working in surgical units.

Research Questions

1. What is the status of nurses in surgical units in delivering patient education on venous thromboembolism?
2. What barriers do nurses in surgical units face in delivering patient education?

METHODS

Design and Sample

This descriptive cross-sectional study was conducted with nurses working in the surgical units of a city hospital in Türkiye (surgical services, surgical intensive care units, operating rooms) between May 2024 and June 2024. The study population consisted of 249 nurses working in the surgical units of the city hospital, and the sample consisted of 126 nurses who agreed to participate in the study and had worked in the surgical units for at least three months during the specified dates. The participation rate of nurses in the study was 50.6%. There was no protocol or in-service training program related to patient education for VTE at the clinics where the research was conducted.

Data Collection Tools

Patient Education Implementation Form (PEIF): The form, created based on guidelines from universally recognized organizations such as The European Society for Vascular Surgery (ESVS), The Association of periOperative Registered Nurses (AORN), and the National Institute for Health and Care Excellence (NICE), consists of two sections. The first section includes 13 questions related to descriptive characteristics such as age, gender, work unit, and previous education on VTE and patient education. The

second section contains four Likert-type questions that explore whether nurses deliver patient education on VTE, the subjects covered in patient education, and the barriers encountered in patient education. The form consists of a total of 17 questions. The form was presented to six nursing faculty experts with experience and studies related to VTE and patient education for suitability. The necessary adjustments were made based on their feedback to finalize the form. The study found a Cronbach's alpha value of 0.81, indicating that the questions demonstrated acceptable internal consistency and reliability.

Pre-Application

A pre-application was conducted with 10 nurses who met the research criteria. No issues were identified during the implementation of the form, so no changes were made to the form. The nurses who participated in the pre-application were not included in the study.

Application

Data was collected by the researcher through face-to-face interviews using the PEIF. Participants were delivered with necessary explanations by the researcher before the application, and written and verbal consent was obtained. It took approximately 10-15 minutes to complete the form.

Data Analysis

The data was analyzed using the IBM SPSS Statistics Standard Concurrent User V 26 (IBM Corp., Armonk, New York, USA) statistical package program. Descriptive statistics such as unit number (n), percentage (%), mean ± standard deviation, and median (minimum-maximum) values were used.

Ethics Approval

Before the study, necessary ethical approvals were obtained from the Yozgat Provincial Health Directorate Ethics Committee (Approval Number: E-16180230-772.02-243579660 Date: 05\17\2024). The study was conducted according to the Declaration of Helsinki.

RESULTS

The mean age of the nurses in the study was 27.84±3.03 years, with the majority (63.5%) being female. The majority of participants were university graduates (84.9%), and more than half (65.1%) were married. 27.7% of nurses reported previous training related to VTE, while 14.3% indicated receiving education on patient education (Table 1).

Table 1. Distribution of descriptive characteristics of nurses (n=126)

Descriptive characteristics	
Age	
Mean±SD, Median	27.84±3.03, 28
(min-max)	(22-36)
Gender	**n (%)**
Female	80 (63.5)
Male	46 (36.5)
Educational status	
Health vocational high school	19 (15.1)
University	107 (84.9)
Work unit	
Surgical services	61 (48.4)
Surgical intensive care unit	35 (27.8)
Operating room	30 (23.8)
Marital status	
Single	44 (34.9)
Married	82 (65.1)
Work year	
Mean±SD, Median	6.14± 2.54, 6.0
(min-max)	(1.0-14.0)
Previous education status	
Venous thromboembolism	35 (27.7)
Patient education	18 (14.3)

Summary statistics are presented as mean ± SD (standard deviation) for numerical data and as number (percentage) for categorical data.

It was found that nurses consistently delivered patient education at the following rates: mobilization and ankle exercises (19.8%), importance of hydration (16.7%), leg elevation (15.9%), choosing loose clothing for legs (19.8%), proper leg positioning while sitting (19.8%), signs and symptoms of VTE (19.1%), situations requiring emergency admission (17.5%), side effects of anticoagulants (18.3%), importance of laboratory tests in pharmacological prophylaxis (18.2%), importance, correct usage, and complications associated with compression stockings (15.9%), adapting to lifestyle changes (19.0%), and home patient safety measures after discharge (17.5%) (Table 2).

Participants identified several problems in providing patient education, including long working hours, difficult working conditions, insufficient nurse numbers (86.5%), lack of knowledge about VTE (54.8%), lack of guidelines related to VTE and patient education in the clinic (53.2%), belief that patient education is the responsibility of physicians (48.4%), inadequate presentation and teaching skills (47.6%), lack of prioritization of patient education activities and lack of teaching materials (45.2%), and low health literacy among patients (32.5%) (Table 3).

Table 2. Distribution of education subjects on VTE delivered by nurses (n = 126)

Education subjects	Never n(%)	Sometimes n(%)	Always n(%)
The importance of mobilization and ankle exercises	56(44.5)	45(35.7)	25(19.8)
The importance of hydration	59(46.8)	46(36.5)	21(16.7)
Leg elevation	63(50.0)	43(34.1)	20(15.9)
Choosing loose clothing for legs	58(46.1)	43(34.1)	25(19.8)
Proper leg positioning while sitting	53(42.1)	48(38.1)	25(19.8)
Signs and symptoms of VTE	57(45.2)	45(35.7)	24(19.1)
Situations requiring emergency admission	53(42.1)	51(40.4)	22(17.5)
Who to contact when experiencing issues with post-surgical VTE protocol adherence	69(54.8)	36(28.6)	21(16.6)
Side effects of anticoagulants	72(57.1)	31(24.6)	23(18.3)
The importance of adhering to laboratory test schedules for patients on pharmacological VTE prophylaxis	69(54.8)	34(27.0)	23(18.2)
The importance, correct usage, and complications associated with compression stockings (such as skin discoloration, numbness, itching)	63(50.0)	43(34.1)	20(15.9)
Lifestyle changes (nutrition, smoking, weight control, exercise, etc.)	42(33.4)	60(47.6)	24(19.0)
Home patient safety measures after discharge (preventing falls, avoiding injuries, daily activities, proper medication use, etc.)	59(46.8)	45(35.7)	22(17.5)

Summary statistics are presented as numbers (percentage) for categorical data

Table 3. Distribution of problems faced by nurses in providing patient education (n=126)

Problem	Problem n(%)	No problem n(%)
Long working hours, difficult working conditions, insufficient number of nurses	109(86.5)	17(13.5)
Lack of knowledge about VTE	69(54.8)	57(45.2)
Inadequate presentation and teaching skills	60(47.6)	66(52.4)
The belief that patient education is the doctor's responsibility	61(48.4)	65(51.6)
Patients' unwillingness to receive education	49(38.9)	77(61.1)
Patients' lack of motivation to apply given information	41(32.5)	85(67.5)
Negative attitude of the patient's family towards education	51(40.5)	75(59.5)
Patients' health issues hindering education	57(45.2)	69(54.8)
Patients' difficulty in adapting to lifestyle changes	61(48.4)	65(51.6)
Lack of professional nurses in patient education	60(47.6)	66(52.4)
Lack of prioritization of patient education activities in the institution	57(45.2)	69(54.8)
Lack of teaching materials	57(45.2)	69(54.8)
Lack of a suitable educational environment	60(47.6)	66(52.4)
Lack of guidelines related to VTE and patient education in clinics	67(53.2)	59(46.8)
Communication problems with patients and the multidisciplinary team	60(47.6)	66(52.4)
Patients' low health literacy	41(32.5)	85(67.5)

Summary statistics are provided as numbers (percentage) for categorical data

DISCUSSION

The current study was conducted to investigate the status of nurses working in surgical units in delivering patient education on VTE. Our findings indicate that nurses' responses regarding delivering patient education on VTE in surgical units were low rate. In the study, it was observed that the number of nurses who responded "always" for patient education subjects specified according to current guidelines was quite low (ranging from 15.9% to 19.08%). In a study conducted in South Korea, similar findings were reported regarding the inadequacy of nurses' providing patient education;[19] it was noted that only 7.7% of nurses consistently delivered education on the effects of anticoagulants to patients, 3.5% on VTE symptoms, and 2.9% on lifestyle changes (such as smoking, diet, weight loss). In the study of Yohannes et al.[18], nurses reported that they sometimes or never delivered information to patients about the importance of anticoagulants and fluid intake, injury prevention, and lifestyle changes. In another study by Al-Mugheed and Bayraktar[20], 56.4% of nurses did not deliver education on anticoagulants, 73.9% on injury

prevention, 66.1% on adequate hydration, and 67.9% on the proper use of compression stockings. In this context, it can be said that our study results are consistent with the literature. However, ensuring adherence to VTE treatment in hospitalized patients and preventing VTE significantly depends on patient education.[21] Nurses not delivering comprehensive and effective patient education can lead to negative patient outcomes. Indeed, a recent study in the literature reported that a significant portion of patients did not comply with prophylaxis in the postoperative period, were unaware of the side effects of prophylactic medications, and that 30% experienced a lack of knowledge about VTE.[22] Considering the increasing incidence of VTE among surgical patients, preventing VTE is crucial for positively influencing patient outcomes and reducing prolonged hospital stays.[23] In this regard, both guidelines and studies emphasize that comprehensive and effective patient education delivered by nurses is a vital strategy in the management of VTE.[17]

In this study, it is considered that the inadequate responses regarding patient education delivered by nurses may be attributed to the problems they encounter in delivering such education. The majority of nurses (86.5%) reported that long working hours, difficult working conditions, and insufficient number of nurses were important problems in providing patient education. Similarly, in the studies by Bazezew et al.[24] and Fereidouni et al.[25] in the literature, it is also stated that the insufficiency of the number of nurses, the heavy workload of nurses, and long working hours are barriers to providing effective education. According to the Organisation for Economic Co-operation and Development (OECD)[26], in Türkiye, the number of nurses per 1000 population is 2.4, which is below the OECD average. This situation is an objective indicator of the insufficiency of nursing staff and the high workload. On the other hand, surgical units are unstable environments due to surgical interventions defined as controlled traumas. These procedures temporarily make patients of all ages dependent and involve constantly changing hemodynamic conditions. Furthermore, these factors, combined with insufficient nursing staff, place surgical nurses in face of numerous complex problems, exacerbate workplace conditions, and compromise the quality of patient care and consequently, surgical patient safety.[27] It is therefore believed in the study that nurses may not have sufficient time for patient education due to these reasons. Under national health policies, implementing necessary regulations to improve nurses' working conditions and adjusting nurse-to-patient ratios will enhance the quality of patient care, ensure nurses deliver education to patients at the desired level, improve individuals' health outcomes, and positively impact healthcare costs.[28]

In the study, one of the other crucial issues that nurses encounter in patient education was the lack of knowledge about VTE (54.8%). According to AORN[7], with effective patient education, patients will be able to better understand ways to prevent VTE even after discharge and actively participate in their own care. Effective patient education can only be delivered by healthcare professionals who have accurate knowledge about VTE. Unfortunately, studies show that nurses' knowledge and practices related to VTE are insufficient.[18-20,23] In this study, the fact that more than half of the nurses reported a lack of knowledge about VTE suggests that the quality of their undergraduate and in-service education should be evaluated and improved, the retention of knowledge should be ensured using appropriate teaching methods and techniques. In the study, only 27.7% of the nurses stated that they had previously received VTE training. Additionally, the absence of a VTE-related subject in the existing in-service training programs in clinics may contribute to the inadequacy of patient education. In this context, it is crucial to improve nurses' knowledge and practices related to VTE management through courses, in-service training programs, conferences, etc., to ensure effective patient education.

In the study, more than half of the nurses indicated that the absence of clinical guidelines in hospitals posed a barrier to providing patient education. Al-Mugheed and Bayraktar[17], Yohannes et al.[18] and Bazezew et al.[24] similarly indicated that there is a lack of guidelines related to VTE management and patient education in clinics. Clinical guidelines are primary sources to encourage nurses to implement evidence-based practices effectively. They ensure standardization in practices and care, emphasize preventing complications, and are recommended for improving healthcare professionals' practices related to VTE prevention.[29] Recently, the National Institute for Health and Care Excellence (NICE)[5] identified VTE prevention protocols in clinics as one of the top 10 patient safety practices. Establishing institutional protocols that standardize the management of VTE was recommended in a systematic review.[17] In one study, it was highlighted that implementing a nurse protocol in clinics significantly improved nurses' knowledge and practices while substantially reducing VTE risks for patients.[30] In this context, the creation of protocols for VTE patient education is considered crucial for standardizing patient education and for effectively managing VTE. Indeed, a recent large-scale study suggested that a VTE education protocol could

prevent over 134,000 VTE cases within five years.[31]

In the study, nearly half of the nurses mentioned the lack of prioritization of patient education activities in the institution (45.2%), the absence of suitable educational environments (47.6%) and teaching materials for training (45.2%), and the lack of professional nurses in patient education (47.6%) are obstacles to providing effective patient education. In several earlier studies, it was similarly stated that a lack of managerial interest, insufficient professional nurses in patient education, the presence of unsuitable environments for education, and inadequate educational materials pose barriers to delivering patient education.[24,32,33] As known, using audiovisual aids in education appeals to multiple senses, facilitating perception and learning, while enhancing the retention of information, thus increasing the effectiveness of education. Moreover, a conducive physical environment (such as adequate space, good lighting, and quiet surroundings) positively impacts the quality of teaching and enhances learners' motivation for learning. On the other hand, nurses need to approach patient education professionally by identifying educational needs, creating an appropriate education plan, providing effective teaching with effective methods and materials, and, evaluating the effectiveness of the education.[10] In this context, it is believed that institutions should prioritize patient education in their policies, provide appropriate environments and materials for education, and offer in-service training to nurses on patient education. These measures could significantly enhance patient education practices.

In the study, only a small number of nurses (14.3%) reported having received prior education on patient education. Additionally, most nurses identified inadequate presentation skills as another problem they face in providing patient education. If nurses are well-trained and empowered to improve patient outcomes, it implies they have significant roles and responsibilities in preventing VTE. Among these roles, assessing patients' awareness of VTE and providing guiding information for VTE prevention are crucial. Recently, a randomized controlled study conducted by Özbaş et al.[11] investigated the effects of planned patient education, including VTE management, in surgical patients; It was observed in the study that the group receiving education showed a lower incidence of VTE symptoms (such as redness, numbness, and swelling), and fewer patients were admitted to the emergency department with a diagnosis of VTE. Therefore, enhancing nurses' knowledge of patient education is considered essential for achieving the desired performance in patient education and fostering positive patient outcomes.

In the study, nurses identified low health literacy among patients as a barrier to effective patient education. Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to be able to make informed health decisions, and, health literacy is crucial for patients to comprehend their surgical conditions. Unfortunately, the literature indicates that health literacy is significantly low both in Türkiye and globally.[12,34] Patient education developed in accordance with the patients' level of health literacy can improve not only their knowledge but also clinical outcomes such as postoperative complications and quality of life. Indeed, Özbaş and Karadağ[12] found that education tailored to the level of health literacy significantly reduced postoperative problems. At this point, patient education materials that use simple language and short sentences, avoid medical jargon, and enhance readability with explanatory diagrams and images can improve compliance with instructions, thereby ensuring effective patient education.[12,34]

Another notable finding in the study was that nearly half of the nurses perceived patient education as the responsibility of physicians. Although the literature on this subject is limited, a previous study similarly reported that nurses considered delivering patient education to be the responsibility of physicians.[24] However, in Türkiye, the roles of nurses in patient education are legally emphasized by the Turkish Nursing Regulation.[35] It is believed that nurses' lack of knowledge about the information deficiencies regarding nurses' roles and responsibilities in patient education can influence their attitudes, behaviors, and practices toward patient education. It is important to implement comprehensive in-service training and raise awareness to improve nurses' knowledge and perceptions about their roles and responsibilities in patient education, ensuring that they give the necessary importance to patient education. Surgical patients are more susceptible to VTE compared to medical patients, and VTE is a significant cause of sudden deaths in hospitals.[20] Providing patients with personalized, consistent, and comprehensive education on VTE by nurses can potentially reduce morbidity and mortality rates, improve quality of life, and decrease hospital readmissions, thus alleviating financial burdens as well.[11,12,17]

Study limitations

The study is limited to the answers given to the data collection forms by nurses working in the surgical units of a city hospital. It cannot be generalized to all nurses.

Study results showed that nurses' responses regarding providing patient education on VTE in surgical units were at

a low rate. To ensure effective patient education on VTE, it is crucial to increase nurses' knowledge and awareness of VTE-related patient education through training, develop evidence-based clinical guidelines to standardize patient education practices, and address other barriers perceived by surgical nurses (such as long working hours, difficult working conditions, insufficient number of nurses, institutional neglect of patient education, and lack of educational materials and appropriate environments).

Etik Komite Onayı: Etik kurul onayı Yozgat İl Sağlık Müdürlüğü Etik Kurulu'ndan (Tarih: 17.05.2024 Sayı: E-16180230-772.02-243579660) alınmıştır.
Hasta Onamı: Çalışmaya başlamadan önce hemşirelere araştırma hakkında gerekli bilgilendirmeler yapıldı ve onamları alınmıştır.
Hakem Değerlendirmesi: Dış bağımsız.
Yazar Katkıları: Çalışmanın fikri, tasarımı, denetlenmesi, kaynakların sağlanması, veri toplanması ve işlenmesi, analizi ve yorumlanması, literatür taraması, yazının yazımı ve eleştirel incelemesi Nilgün Özbaş tarafından gerçekleştirilmiştir.
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Ethics Committee Approval: Ethics committee approval was obtained from the Yozgat Provincial Health Directorate Ethics Committee (Date: May 17, 2024, Number: E-16180230-772.02-243579660)
Informed Consent: Before the study began, nurses were provided with the necessary information about the research and their informed consent was obtained.
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