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REVIEW

The Role of Nurses in Personal Protective Equipment Use in the Operating Theater During COVID-19 Pandemic: Are We Still Ready?

COVID-19 Pandemisinde Ameliyathanede Kişisel Koruyucu Ekipman Kullanımında Hemşirenin Rolü: Hala Hazır Mıyız?

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Abstract

The coronavirus outbreak started on December 31, 2019, when the City Health Commission of Wuhan (China) reported 27 cases of pneumonia of unknown etiology. This disease, which is caused by a new coronavirus, was named as coronavirus disease-2019 (COVID-19) by the World Health Organization on February 11, 2020. This situation, which was declared a pandemic after a short time, has deeply affected the entire health system as well as the operating room. Accordingly, nurses have important roles and responsibilities related to education, management, personal protective equipment, surgery planning, patient and employee safety. In this study, nurses' roles in personal protective equipment use in the operating room during the COVID-19 pandemic was compiled in detail. Currently, while attitudes and indicators are dominated by the idea that the pandemic is close to end, we need to question of whether nurses are still ready for COVID-19 patients.

Keywords: Infection control, nurse management, patient care, staff education, surgery

Öz

Koronavirüs salgını, 31 Aralık 2019'da, Wuhan (Çin) Belediye Sağlık Komisyonu tarafından etiyolojisi bilinmeyen 27 pnömoni olgusu bildirmesiyle başlamıştır. Nedeni yeni bir koronavirüs olan bu hastalık 11 Şubat 2020'de Dünya Sağlık Örgütü tarafından koronavirüs hastalığı-2019 (COVID-19) olarak isimlendirilmiştir. Kısa süre sonra pandemi ilan edilen bu durumdan tüm sağlık sisteminin olduğu gibi ameliyathaneler de derinden etkilenmiştir. Buna bağlı olarak bilgilenme ve bilgilendirme, yönetim, kişisel koruyucu donanım, ameliyat planlanması, hasta ve çalışan güvenliği gibi konularda hemşirelere önemli rol ve sorumluluklar düşmektedir. Bu çalışmada COVID-19 pandemisinde ameliyathanede kişisel koruyucu donanım kullanımında hemşirenin rolü detaylı olarak derlenmiştir. Günümüzde tutumlar ve göstergeler pandeminin bitmesine yakın olduğu düşüncesi baskın iken, COVID-19 hastaları için hemşireler hala hazır mıdır sorusunu aklımıza getirmektedir.

Anahtar Kelimeler: Enfeksiyon kontrolü, hemşirelik yönetimi, hasta bakımı, personel eğitimi, cerrahi

Introduction

The coronavirus outbreak started on December 31, 2019, with 27 cases of pneumonia of unknown etiology reported by the Wuhan (China) Municipal Health Commission. Chinese scientists found the pathogen causing this atypical pneumonia and named it "severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2)". This disease caused by a new coronavirus was named COVID-19 by the World Health Organization (WHO) on February 11, 2020 and was declared as a pandemic (1). It is known that not all the patients who have encounter coronavirus disease-2019

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(COVID-19) demonstrates severe symptoms the disease may also progress even without any symptom. Although various organizations have continuously reported on how to take precautions to protect the patient and the surgical team in positive or suspected for COVID-19 cases requiring emergency or elective surgery, so far there has been no definite consensus among patients, physicians and health authorities (2).

The operating rooms (OR) are places where advanced technology tools/equipment are used, various surgical techniques and methods are applied in the light of recent and updated information, important decisions are made and implemented quickly that is why the teamwork is very important. In addition, due to the nature of surgical treatment and operating theatre, serial, important and risky interventions applied creates some risks for the healthcare workers. Prevention of expected/known risks is a basic approach in all working environments such it is in OR. Otherwise, unsafe/unhealthy working environments negatively affect the motivation of the employees and thus their working performance. For this reason, the basic step of increasing work performance is to create a healthy and safe working environment. When it comes to a healthy and safe working environment, it is undoubtedly the environment in which there are no/least physical and psychosocial problems. Although it is very difficult to create such an environment in the OR, it can be considered as a step to know the effects of and determining possible biological, chemical, physical and psychosocial risks according to which precautions could be taken (3).

We know with certainty that COVID-19 is transmitted from person to person, so the risk of hospital transmission poses a danger for the patients and surgical/all hospital staff (4). Operating theaters are high risk contamination areas with increased risks of aerosol generating procedures. Although OR in our country are generally well designed to deal with such high-risk situations, the high transmission risk, disease prevalence, limited resources and the additional workload increases the risk for the entire surgical team (2).

According to the latest WHO estimates as of May 19th, 2024, 36,014 new COVID positive cases were reported worldwide (5). While it draws attention a lack of data from Turkey (5). Acquiring SARS-CoV-2 infection for uninfected patients undergoing surgical procedures following a COVID positive (COVID+) patient is of significant concern, both for patients seeking medical care in hospital settings and for management of surgical services during pandemic times (6). However, findings suggest that, with implementation of infection prevention and control procedures in the operating room the risk of acquiring SARS-CoV-2 infection even when following a COVID+ patient in the same operating room, is very low (6). As study suggests, patients directly following a COVID+ patient in the OR, patients exposed within 24 h or by 48 h following a COVID+ patient in the same operating room, exposed no acquired symptomatic SARS-CoV-2 infection postoperatively. According to another study related to infection of the surgical staff who performed 152 suspected and/or confirmed COVID-19 surgeries from March 2020 to early March 2021 in Thailand, although reports of mental stress due to fear of being infected remained high, there was no proven record of intra-operative infection among them (7). Besides that, healthcare workers should be protected at every stage of their service delivery, this protection should be known in detail by every team member and should be applied immediately in positive or suspected for COVID-19 cases. The use of personal protective equipment (PPE) in surgical units can be addressed in 3 stages: Preoperative (or patient evaluation), intraoperative and postoperative. For the subject to be explained in details and as the pre- and postoperative periods usually takes place outside of the OR, only the perioperative period was considered.

Anesthesia and surgical intervention may adversely affect the course of COVID-19 disease. According to a study conducted in France, 15 of 305 patients who had surgery affecting the gastrointestinal system were infected with COVID-19, so the risk of SARS-CoV-2 infection during hospitalization or following digestive surgery is a real and potentially serious risk. It is necessary to minimize this risk and take necessary precautions so we can be able to return to safe surgical activities (8). In patients suspected or positive for COVID-19, the recommended practice is to cancel or postpone all non-emergency surgeries (1,9-11). Moreover, the American College of Surgeons emphasizes that institutions should not start elective surgery before providing enough PPE for one month (9).

According to WHO, correct use of PPE for COVID-19 Provisional Guideline (February 2020) some PPE management techniques are as following: The management of PPE should be coordinated with important national and international supply chain management mechanisms. To ensure the efficiency of the requested PPE, accurate counting models-based controls are recommended. Monitoring and control of PPE requests from countries and large response teams should be ensured. Strict adherence to basic stock management rules should be made to encourage the use of a centralized demand management approach to avoid duplication of stocks and to limit waste, stock and stock breakdowns. Tracking PPE distribution should include monitoring and control of PPE circulation in healthcare facilities (1). Institutions should also include in their routine, data collection and information on PPE presence, stock and supplies. PPE needs should be calculated by using well known methods by a multidisciplinary team. In order to determine the need for PPE, each institution should be aware of its patient capacity, staff and relations with the patients, working hours, number of breaks of healthcare workers using PPE, location of the isolation area and material supply strategy, waste management, laboratory location, number of laboratory tests, material supply system of the hospital and patients length of stay in the hospital (12). Still, institutions should evaluate their needs on a case-by-case basis and calculate them by adding to the factors mentioned above. Considering that a large number

of materials cannot be stored in institutions or that the material procurement may take time, it is recommended to evaluate the PPE requirement at certain intervals (e.g., every 8 hours) and to assign this task to certain persons (12). The PPE calculator developed by the centers for disease control and prevention for the Ebola epidemic can be considered for PPE calculation (https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/calculator.html).

Use of PPE in the Operating Room

Experience out of China and Singapore have demonstrated that screening by symptoms and routine testing, use of appropriate PPE, as well as a coordinated plan involving all aspects of peri-operative care is essential (13).

According to the WHO COVID-19 outbreak: Rights, roles and responsibilities of healthcare professionals (HCP), Health and Safety Guidelines for Healthcare Professionals, HCP are responsible of properly wear, use, remove and waste of PPE (13). In addition, according to the Turkish Ministry of Health's COVID-19 (SARS-CoV-2 infection) Guidelines (April 12, 2020); healthcare workers having extensive contact with COVID-19 patients with/without a medical (surgical) mask while donning all PPE properly are not considered risky (14).

Based on this information prior to every operation standard precautions are recommended for all patients. Standard precautions include hand and respiratory hygiene, proper PPE use according to risk assessment, injection safety practices, safe waste management, appropriate linens, environmental cleaning and sterilization of patient care equipment. The rational, correct and consistent use of PPE helps reduce the spread of pathogens. Effective use of PPE depends on adequate and regular resources, adequate staff training, proper hand hygiene and especially appropriate human behavior.

Since in all suspected or positive for COVID-19 cases full PPE donning is recommended before any clinical intervention (15) this is the rationale why healthcare personnel who will attend surgery must wear PPE under surgical/sterile equipment. It is extremely important for all personnel to use PPE in all interventional procedures that are in close contact with the patient, for example during surgical intervention, intubation, local anesthesia, cannulation or catheterization (2). In addition, the entire surgical team should be trained in wearing and removing PPE in order to prevent contamination (16). According to the recommendation of the Turkish Intensive Care Nurses Association, four to six hour shifts are to be completed without changing clothes (as much as possible). It is recommended to change PPE for shifts of eight hours or more in accordance with the donning-doffing procedures (15). However, using the same breathing filter/mask for more than 4 hours can cause discomfort and should be avoided (1).

It should be noted that when coming from the inpatient floor, patients should wear a medical mask. In addition, HCP accompanying the patient from the floor to the operating room should wear all protective equipment (N95 mask, protective glasses or visor, waterproof gown and foot protector) properly and properly (4). According to the American College of Surgeons, first of all, a guide should be prepared on PPE to be used during surgery, the number of personnel should be limited to only the necessary personnel and all unnecessary materials, equipment and medical personnel should be excluded from the operating room (9,17,18). Also prior surgery signs should be placed on the door stating that there is a COVID-19 case and that other personnel should not enter the room without PPE.

Despite the wide variety of PPE and its use, PPE, which is necessary in a surgical procedure, is recommended by many institutions and their use is a must. Before entering the operating room, jewelry (ring, watch, etc.) should be removed, keys, wallet, phone, etc. should be left out. Employees involved in the surgical team should be evaluated among level 3 infection control measures and should be provided with full protective equipment [disposable bonnet, medical mask N95 and above, powered air purifying respirator (PAPR), operating room uniform, disposable gloves and disposable foot protector] (10,18,19).

The presence of all PPE that needs to be worn complicates the operation and makes it harder so the process can be uncomfortable and unusual. Working with full PPE can be tiring, and breaks may be required to prevent fatigue while performing lengthy surgical procedures (20).

Wearing face masks and visors can also significantly reduce the clarity of verbal communication between operating room staff. Also, reading non-verbal clues can be more difficult than usual, which may increase medical errors, a subject of separate (20). All surgical personnel (including surgeons, anesthesiologists, scraps and circulating nurses and operating room nurses) must put their PPE in the buffer room before entering the operating room: It's appropriate for the entire surgical team to don, double-layer caps, medical protective mask (N95), medical goggles, medical protective clothing, boot covers, latex gloves and an electric air cleaner (21). It should be noted that in this process, the surgical team should be limited to a minimum of people and irrelevant personnel should be prevented from entering the operating room. Surgeons and nurses should wear disposable sterile surgical gowns and sterile gloves after hand washing, in addition to PPE as outlined above.

In detail, the PPE that the surgical team should wear in suspected or positive for COVID-19 cases is as follows:

Protective overalls: Clothes/waterproof apron over hospital uniforms.

Mask: In the presence of aerosol, conventional surgical masks do not provide protection, so N95 and/or FFP2/FFP3 should be used. For the masks to fit perfectly, beard shaving is recommended.

Goggles or face shield: If there is aerosol presence, glasses that cover the eyes should be used, otherwise the semi-protected shield is sufficient to prevent the risk of contamination from splashing.

Gloves: Long gloves are recommended. Also, use of sand barrier gloves (with mechanical puncture barrier) or disinfectant gloves may be considered.

Cap: Hairs should be properly tied up under the cap.

Shoes: Sterilizable rubber boots that cover the feet completely should be preferred (15,22,23).

After this preparation, normal sterile surgical equipment can be worn (16). Prior the operation, it must be ensured that the entire team is wearing PPE. After the patient enters the operating room, HCP circulation should be limited or when possible prohibited.

After surgery PPE should be properly removed in a designated area, avoiding contamination, and disposed of in medical waste. Operating room staff should wear different PPE if they are to accompany the patient outside of the operating room (24). Outer glove should be removed immediately as it is the most contaminated equipment. Other equipment is also considered contaminated and accordingly, overalls, foot protectors and bonnets are removed first, then the mask and glasses are removed. It's important to hold the mask only by the strings and to not touch the front part of the mask. The inner glove is removed last and hand hygiene is ensured immediately with alcohol-based hand sanitizer. It's recommended that staff takes a shower whenever possible. It should be noted that during the postoperative OR cleaning the relevant personnel should wear all PPE while collecting medical waste and during this time nursing supervision is recommended (24).

A PPE Donning and Doffing Checklist Example

Some institutions PPE donning and doffing guidelines and checklists, such as the University of South Carolina Health or the University of Kansas are available for access and use (9,25).

The procedure for donning and doffing PPE in the OR from South Carolina Health University is as follows:

Donning PPE

1. Remove personal items on head/neck (e.g., earrings, necklaces, etc.),

a. Eyeglasses can remain on,

b. Tip: Long hair should be placed in a braid or bun. A hair band should be used to keep hair away from the face,

2. Don cloth OR hat or disposable skull cap,

3. Don boot covers,

4. Perform hand hygiene,

5. Don N95 and perform seal check,

6. Don Bouffant cap,

7. Don eye protection (choose from options below) with second mask placed over N95,

a. Mask with attached face shield (inverted) PLUS simple surgical mask over N95 (for N95 preservation),

b. Full face visor (reusable ones acceptable if cleaned in decontamination solution),

c. Disposable visor glasses PLUS simple surgical mask over N95 (for N95 preservation),

d. Reusable goggles PLUS simple surgical mask over N95 (for N95 preservation),

8. Remove ALL communication devices including cell phones and pagers. Remove hospital ID badge. These should be left outside the OR entrance on a table manned by the runner. Clean items with disinfectant wipes.

9. Perform standard surgical scrub after dofficer confirms good respirator, eye protection and mask fit,

10. Enter OR (runner can open door if needed),

11. Don first pair of sterile gloves (undergloves),

12. Don surgical gown with assistance from circulator (circulator in non-sterile PPE8),

13. Don second pair of sterile gloves over gown cuffs (overgloves) (9,25,26).

* The second surgical mask should only be worn if N95 masks are to be reused after decontamination during times of scarcity. The N95 mask should only be removed after leaving the operating room (9,25).

Doffing PPE

During PPE removal outlined in 12 steps, the circulator nurse helps, observes/coaches and can read each step from the checklist aloud. Steps 1-12 should be performed in the OR.

1. Wipe off gross contamination from overgloves with OR towel, dispose in biohazard trash,

2. Perform hand hygiene (will have to use hand gel) over overgloves,

3. Remove boot covers and dispose in biohazard trash,

4. Perform hand hygiene over overgloves,

5. Remove gown and overgloves, rolling the gown and gloves together in one unit and dispose in biohazard trash,

6. Perform hand hygiene over undergloves,

7. Remove visor and place in decontamination solution if reusable, biohazard trash if disposable mask/visor combo. If removing the visor/mask combo, take care to avoid touching the front of the mask. May require assistance from dofficer to remove mask safely,

8. Perform hand hygiene over undergloves,

9. Remove outer bouffant and place in biohazard trash,

10. Perform hand hygiene over undergloves,

11. Remove undergloves and place in biohazard trash,

12. With runner opening door so as not to touch door, exit OR,

13. Perform hand hygiene, 20 seconds duration with soap and water,

14. Remove N95. If reusable type mask, place in bag for decontamination,

15. Perform hand hygiene,

16. Go to locker room and dispose of scrubs, shower before leaving OR area (9,25,26).

While preparing this study Turkey and all over the world slowly moved to the normalization process and according to the Guideline for Care in Health Institutions during the Normalization Period in the COVID-19 Pandemic (June 1, 2020), there was no different recommendation regarding the use of PPE and standard measures in the OR. Current practices are recommended to continue during all the pandemic period. At the same time before the planned surgical procedures are initiated, considering that the number of cases may increase over time, it is recommended to provide PPE stocks for at least 30 days of surgical activity. The availability of adequate PPE is confirmed during the preoperative team preparation. At a minimum, PAPR with hoods must be available for the anesthesia provider, surgeon and surgical technician, recognizing the Anesthesia Patient Safety Foundation recommendation that these devices confer superior protection for those with the highest risk and most proximate exposure to the patient throughout the case. An N95 respirator, at minimum, must be available for the circulating OR nurse (27).

The necessary PPE should be provided to the employees, it should be located in easily accessible places and its correct use should be ensured. PPE stocks should be monitored regularly. Proper use of PPE should be ensured by guidelines. Guidelines should be shared with all employees and improper use of PPE should be prevented.

PPE Use in the Operating Room During COVID-19 and the Role of the Nurse

Surgical nurses in line with ethical principles are legally responsible for the quality of their practices and care. It is also important that they undertake the responsibility of protecting their own physical and mental health while providing qualified care to patients and society (24). Nurses, as the most important and closest HCP to the patients, face great risks so they need to assume the necessary role and responsibility in conducting prevention and control efforts to cope with the challenges of epidemics such as COVID-19 (24). In addition, due to the nature of OR, the use of advanced technology creates many dangerous situations. In the OR, nurses may be exposed to numerous risks, including biological, chemical (soap, detergent, latex, radiation, etc.), physical (lighting, noise, etc.) and ergonomic. Nowadays one of the most dangerous biological hazards is the highly contagious SARS-CoV-19 virus. It should be emphasized that during the COVID-19 pandemic, not only the physical but also the mental health of nurses comes into prominence, and both factors should be carefully evaluated. Regarding the physical health, one of the most important means of protection is the use of PPE. The use of PPE has always been a basic and continuous part of nursing education accordingly nurses have an important role in the correct use and supply of PPE. However no properly resources were found regarding the role of the nurses in PPE use in the OR during COVID-19 pandemic.

The roles of the OR nurse in charge and OR nurses are briefly mentioned in a Chinese source. According to this source: The OR nurse in charge activates the team, deploy staff and pass key to controlled drugs, handover pouch to OR runner with the following: mobile phone, PPE cupboard key and card access. In addition, OR nurse in charge should receive feedbacks from the OR nurse throughout the process and make sure that the necessary equipment is provided (28).

The OR nurses role; nurses should undertake the responsibilities of donning full PPE and/or PAPR, prepare OR accordingly, scrub nurse to scrub up and prepare trolley, circulating nurse to pass all additional consumables/ instruments to runner (before patients enters OR), park patients trolley in AnteRoom after transfer. Circulating nurse contacts OR runner if any other item is required and retrieves requested items from the AnteRoom. Telephonic or other electronic tools use to facilitate communication from inside to outside the OR to minimize door opening and foot traffic is recommended (29).

If specimen handling is needed circulating nurse places the double bagged samples into a cooler box and handles it to the porter which don only gloves during transport. After surgery OR should not be ventilated, instruments used are sent directly to the sterilization unit and all unused materials and medicines are threw away. Circulating nurse wears a pair

of gloves and protective gowns and a visor while counting materials (30). Circulating nurse returns the keys to the nurse in charge and performs telephone handover with the ward nurse (28). Trainings on proper donning and doffing of PPE including infection control protocols, donning and doffing of N95 mask, PAPR, goggles, face shield, gowns and gloves should be planned and repeated to the whole team at regular intervals. A team meeting should be held before the surgery for everyone to understand the anesthesia and surgery plan, to ensure that all necessary medicines and equipment are prepared and to ensure that the process is going smoothly. In case of any damage that may occur in PPE, information about control, cleaning, disinfection and storage should be provided. All personnel should be aware that communication is more difficult after PPE is worn and should take special care to facilitate communication during the procedure.

Prior to incision a second time out is performed to confirm the previously verified operative site and plan. During the case, the assistants to the OR nurse and anesthesia provider act as facilitators or "runners" for equipment retrieval and communication with the outside OR staff. These roles are assigned to personnel who are familiar with the layout and day-to-day functioning of the ORs, such as anesthesia technicians and OR circulating nurses. All staff agreed on a strategy of no breaks or alternations whenever possible to conserve PPEs (27).

It is known from the literature and daily practice that the use of PPE during surgery makes the procedure very difficult. However, it should be emphasized that the most effective way of protection from this life-threatening disease is the use of PPE, this awareness will lead the HCP to overcome this process by continuing their sacred duties in safety and without experiencing any disease. Since the use of PPE is always a basic and continuous part of nursing education, nurses have an important role in the correct use and supply of PPE. The perioperative nurse must strictly implement infection control measures like using face mask at times, hand hygiene. Social distancing must be strictly implemented when eating meals; use of personal or disposable utensils is encouraged to prevent contamination (29).

It is important for surgical nurses and specialists to stay up to date with the latest information concerning safety measures in the OR given the fact that PPE has been shown to offer protection against respiratory infections, especially COVID-19 (31). The newest literature should be closely followed so that the best practices are instituted and upgraded (32).

Footnotes

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ORIGINAL ARTICLE

The Effect of Primary Dysmenorrhea on Perceived Stress and Women's Health: One Year Into the Pandemic

Primer Dismenorenin Algılanan Stres ve Kadın Sağlığı Üzerindeki Etkisi: Pandeminin Bir Yılı

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Abstract

Objective: This study, was conducted to examine the effect of primary dysmenorrhea on perceived stress and women's health in one year into the pandemic.

Method: This study was conducted as a descriptive, comparative, and cross-sectional study type epidemiological study between 25 May-31 July 2020. The study group consists of a total of 906 women, including the group with primary dysmenorrhea (n=418) and the group without primary dysmenorrhea (n=488). Research data, were collected using the "introductory information form", "perceived stress scale", and the "women's health questionnaire".

Results: A significant difference was defined between the groups in terms of mean scores according to depression (p<0.001), somatic symptoms (p<0.001), somatopsychic (p<0.001), somatic-cognitive (p<0.001), gastrointestinal (p<0.001), self-esteem (p=0.002), anxiety (p<0.001) and interest-desire (p<0.001). It was determined that women with primary dysmenorrhea experience more depression, somatic, somatopsychic, somatic-cognitive, gastrointestinal, self-esteem, anxiety and interest-desire problems. Negative spousal relationships and premenstrual syndrome are among the reasons for experiencing primary dysmenorrhea.

Conclusion: In our research, it was determined that women with primary dysmenorrhea experience more physiological and psychological problems, and it is thought that measures to be taken to improve the negative consequences of problems such as primary dysmenorrhea, which affect women's health in many ways in situations such as pandemics, are important.

Keywords: Menstruation, women's health, stress, dysmenorrhea

Öz

Amaç: Bu çalışma, pandeminin bir yılında primer dismenorenin algılanan stres ve kadın sağlığı üzerindeki etkisini incelemek amacıyla yürütüldü.

Yöntem: Bu çalışma 25 Mayıs-1 Temmuz 2020 tarihleri arasında tanımlayıcı, karşılaştırmalı ve kesitsel çalışma tipinde epidemiyolojik bir çalışma olarak yürütülmüştür. Çalışma grubu, bir primer dismenoresi olan grup (n=418) ve bir primer dismenoresi olmayan grup (n=488) olmak üzere toplam 906 kadından oluşmaktadır. araştırma verileri "tanımlayıcı bilgi formu", "algılanan stres ölçeği" ve "kadın sağlığı anketi" kullanılarak toplanmıştır.

Bulgular: Gruplar arasında depresyon (p<0,001), somatik semptomlar (p<0,001), somatopsişik (p<0,001), somatik-bilişsel (p<0,001), gastrointestinal (p<0,001), benlik saygısı (p=0,002), anksiyete (p<0,001) ve ilgi-istek (p<0,001) puan ortalamaları açısından anlamlı fark tespit edilmiştir. Primer dismenoresi olan kadınların daha fazla depresyon, somatik, somatopsişik, somatik-bilişsel, gastrointestinal, benlik saygısı, anksiyete ve ilgi-istek sorunları yaşadıkları belirlenmiştir. Olumsuz eş ilişkileri ve premenstrüel sendrom primer dismenore yaşama nedenleri arasındadır.

Sonuç: Araştırmamızda primer dismenoresi olan kadınların daha fazla fizyolojik ve psikolojik sorun yaşadıkları belirlenmiş olup, pandemi gibi durumlarda kadın sağlığını birçok yönden etkileyen primer dismenore gibi sorunların olumsuz sonuçlarını iyileştirmeye yönelik alınacak önlemlerin önemli olduğu düşünülmektedir.

Anahtar Kelimeler: Menstrüasyon, kadın sağlığı, stres, dismenore

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Introduction

Dysmenorrhoea can occur in two forms: primary and secondary dysmenorrhoea. Secondary dysmenorrhoea is usually caused by gynaecological problems such as endometriosis, chronic pelvic inflammation, uterine fibroids and changes in the morphology and function of the reproductive organs (1,2). In primary dysmenorrhea, there is no underlying pelvic pathology (3). Primary dysmenorrhea is seen due to excessive or abnormal uterine contractions (2,4). Pain usually begins a few hours before or after menstrual bleeding, peaks between 48-72 hours and lasts up to 3 days. Pain usually occurs in the suprapubic region, radiating to both thighs and/or the lumbosacral region. Sometimes nausea, vomiting, diarrhoea and headache accompany the pain (5). Primary dysmenorrhea is reported in the literature as one of the most common gynecological problems in women of reproductive age (3,6,7). Dysmenorrhea can negatively impact daily life activities, cause poor sleep quality, and negatively impact an individual's mental health (2). Psychological problems such as depression, anxiety, and stress may have a bidirectional relationship with dysmenorrhea (2). Recently, it has been reported that conditions such as depression, anxiety and stress are risk factors for primary dysmenorrhea (8,9). Therefore, it is important to determine the factors that affect the aggravation of dysmenorrhea (2).

Pandemics negatively affect human mental health due to loneliness, social isolation, fear of catching the virus, economic hardship and uncertainty about the future (10). The coronavirus disease-2019 (COVID-19) pandemic is reported to be significantly associated with symptoms of stress, anxiety, depression, and post-traumatic stress (11,12). It is reported that stressful periods and psychological distress may affect women's menstrual health due to the inhibitory effect of stress on the hypothalamic pituitary gonadal axis (13). There is growing evidence that COVID-19 may affect the menstrual cycle (10,14-16) and menstrual abnormalities after vaccination (17-19). In fact, there is study result reporting that the COVID-19 pandemic has caused an increase in the severity of dysmenorrhea in women (20). Whereas, especially in the period when vaccines were not implemented, no studies have been found on how the COVID-19 virus itself affects women experiencing primary dysmenorrhea in terms of perceived stress and women's health. Despite its prevalence and social importance, there are still gaps in knowledge about primary dysmenorrhea. This study, was conducted to examine the effect of primary dysmenorrhea on perceived stress and women's health in one year into the pandemic. In this regard, it is thought that it will make a important contribution to the literature.

Main Points

- Problems such as primary dysmenorrhea, which affect women's health in many ways, can lead to more negative outcomes, especially in adverse situations such as pandemics.
- The findings of this study showed that it was determined that women with primary dysmenorrhea experience more depression, somatic, somatopsychic, somatic-cognitive, gastrointestinal, self-esteem, anxiety and interest-desire problems.
- Therefore, it can be recommended that health professionals take into account the effects of primary dysmenorrhea on women's health when providing care to women.

Material and Method

Design

This study was conducted as a descriptive, cross-sectional and comparative study.

Participants

The universe of the research consisted of women between the ages of 18-65 and members of social media groups between "25 May-31 July 2020". The study consisted of a total of 906 women, including a group with primary dysmenorrhea (n=418) and a group without primary dysmenorrhea (n=488). In the power analysis conducted to determine the adequacy of the number of research samples, it was determined that the research sample had a power of 0.92. Menstruation sub-dimension of Women's Health Questionnaire (WHQ) (21) was used to determine whether she had dysmenorrhea. Inclusion criteria for the study were as follows: having menstrual cycle, being older than 18 years, speaking Turkish, living in Turkey, and volunteering to participate in the study. Pregnant, puerperal, or menopausal women were not included.

Data Collection Tools

Research data were collected using the "Introductory Information Form", "The Perceived Stress Scale (PSS)" and "The WHQ".

Introductory Information Form: Form consisted of questions regarding the age, educational status, employment status, marital status, socio-economic status and changes after COVID-19 infection.

The PSS: It was developed by Cohen et al. (22) and adapted into Turkish by Eskin et al. (23) in order to measure how stressful some situations in an individual's life are perceived. The scale consists of 14 five-point Likert type questions. A high score indicates that the individual has an excessive stress perception (23). The Cronbach alpha value of the scale was reported to be 0.84 (23). In this study, it was found to be 0.86.

WHQ: Questionnaire is developed by Hunter in 1992 (24), which was adapted to Turkish by Çetinay and Gülseren (21). Its validity and reliability have also been demonstrated. The WHQ was developed to identify and monitor the physical and mental symptoms of women's health between the ages of "18-65" years. WHQ has a 4-point Likert feature and consists of 36 questions and 10 sub-dimensions.

The WHQ sub-dimensions include anxiety-depression (2, 3, 4, 5, 11 and 12), somatic symptoms (1, 19, 27, 28, 29 and 35), somatopsychic (7, 9, 14, 15 and 18), somatic-cognitive (30, 33, 34 and 36), gastrointestinal (6, 16, 17, 22 and 23), self-esteem (21, 24, 25 and 32), anxiety (13 and 20), interest-desire (8 and 10), sexual satisfaction (31) and menstruation (26). Because the WHQ can be applied to every woman between the ages

of "18 and 65", including those who are sexually active and postmenopausal, sub-dimensions are calculated separately. The scale shows that as the mean score of the measurement tool without a cut-off point increases for each subdimension, physical and mental problems increase (21). The Cronbach alpha value of the scale was reported to be 0.84 (21). In this study, it was found to be 0.94.

Data Collection

The survey form of the study, shared with the participants through the online survey system that allows web-based answering, and was collected based on self-report. The participants' answers were transferred to the "The IBM SPSS Statistics for package software (Version 21.0)" for evaluation.

Statistical Analysis

The "IBM SPSS Statistics for package software (Version 21.0)" was used in the analysis of the data. "Descriptive statistics", "chi-squared test" to compare the percentage data between groups, "t-test" and "logistic regression analysis" to determine the factors affecting menstrual problems were performed. Also, statistical significance was considered to be $p<0.05$.

Ethic

This study was confirmed by the ethics committee of the Atatürk University Faculty of Health Sciences Ethics Committee (no: 16, date: May 21, 2020). Participants filled out the questionnaire after reading and approving the informed consent form.

Results

It was determined that 75.8% of the group with primary dysmenorrhea was aged between 20 and 34 years, that 80.6% had an education level of university or higher, 63.6% were not working, 58.1% were single, 89.7% of them had no chronic disease, 13.9% of them had two pregnancies and 15.6% gave birth once (Table 1).

On the other hand, it was determined that 82.8% of the group without primary dysmenorrhea was aged 20 to 34 years, that 80.5% had an education level of university or higher, 68.2% were not working, 73.2% were single. It was determined that 89.1% had no chronic disease, 10.2% had a once pregnancy and 11.3% gave birth once (Table 1).

When the group with primary dysmenorrhea and group without primary dysmenorrhea were compared in terms of socio-demographic characteristics, there was a statistically significant difference in terms of age ($p=0.004$), marital status ($p<0.001$) and pregnancy and number of births ($p<0.001$) (Table 1).

Information on the comparison of the scale mean scores of the with primary dysmenorrhea and without primary dysmenorrhea groups in the study is given in Table 2. The average perceived stress score was 41.50±8.04 in the group with primary dysmenorrhea and 43.21±7.24 in the group without primary dysmenorrhea, a difference that was statistically significant.

The mean scores of WHQ sub-dimensions such as depression ($p<0.001$), somatic symptoms ($p<0.001$), somatopsychic ($p<0.001$), somatic-cognitive ($p=0.001$), gastrointestinal ($p<0.001$), self-esteem ($p=0.002$), anxiety ($p<0.001$) and interest-desire ($p<0.001$) differed significantly between the two groups (Table 2).

In the logistic regression analysis results to examine the factors associated with primary dysmenorrhea that affect menstrual problems, menstrual problems were affected 0.39 times ($p=0.048$) in those who have a negative relationship with their partner and 3.51 times ($p=0.004$) in those who have premenstrual syndrome (Table 3).

Discussion

The findings of the study examining the effect of primary dysmenorrhoea on perceived stress and women's health were discussed with the results of the literature in the first year of the pandemic. In our study, it was found that somatopsychic symptom, anxiety, stress and depression levels were higher in women experiencing primary dysmenorrhea. Dysmenorrhoea, which is one of the leading menstrual symptoms, not only impairs quality of life and social activities, but also causes problems such as anxiety and depression, causing negative effects on mood (2). Alateeq et al. (25) found in their study that students with severe dysmenorrhea had a higher risk of depression than other students. While women experiencing menstrual pain every month may increase their risk of experiencing depression, anxiety or stress, it is stated that having these psychological disorders may also increase the severity of menstrual pain (26). The COVID-19 pandemic has triggered mental health-related problems associated with stress to mental and physical functioning (27,28). Our research finding is compatible with the literature and it is thought that women who experience primary dysmenorrhea may be more negatively affected in terms of somatopsychic symptoms, anxiety, stress and depression, especially during negative life periods such as pandemics that cause significant stress.

The study found that women experiencing primary dysmenorrhea had a higher risk of experiencing somatic symptoms and gastrointestinal problems. Zuckerman et al. (29) found a relationship between dysmenorrhea and somatic symptoms. It is also known that many healthy women may experience gastrointestinal symptoms such as nausea, abdominal bloating and pain on the first day of menstruation (30). For these reasons, it seems likely that the risk of experiencing somatic symptoms and gastrointestinal problems is especially high in women experiencing primary dysmenorrhea.

It has been found that women experiencing primary dysmenorrhea have higher somatic-cognitive symptoms. No similar study results have been found in the literature

that can compare our study results, especially including the pandemic period. However, in addition to mood symptoms, cognitive symptoms are also among the diagnostic criteria for premenstrual dysphoric disorder (31). Additionally, the importance of evaluation and intervention for cognitive impairment in these women is emphasized (32). Based on these results, the necessity of cognitive evaluation of women experiencing primary dysmenorrhea comes to the fore.

The study found that women without partner support had more menstrual problems. Social support contributes positively to the psychological health of the individual by meeting his/her emotional and physical needs (33). In addition, positive social relationships can be a promoting in physical and psychological health against stressful situations. It is thought that psychological and social factors interact with biological processes in dysmenorrhea (34). Eser and Kaya (35), found that the level of social support is among the factors affecting dysmenorrhea. In this context, it is important to consider modifiable factors such as social support in detail in order to the development of biopsychosocial interventions in dysmenorrhea.

It has been determined that primary dysmenorrhea is more common in women who experience premenstrual syndrome. There is literature information that supports this that there is a relationship between factors such as age at menarche,

Table 1.
Comparison of Group with Primary Dysmenorrhea and Group without Primary Dysmenorrhea in Terms of Socio-demographic Characteristics

Socio-demographic characteristics	**The group with primary dysmenorrhea n (%)**	**The group without primary dysmenorrhea n (%)**	**Significance value**
18-19 20-34 35-44 45 and above	22 (5.3) 317 (75.8) 68 (16.3) 11 (2.6)	30 (6.1) 404 (82.8) 51 (10.5) 3 (0.6)	χ^2=13.400 **p=0.004**
Age group			
Level of education			
Primary school Middle school High school University and above	12 (2.9) 10 (2.4) 59 (14.1) 337 (80.6)	8 (1.6) 10 (2.0) 77 (15.8) 393 (80.5)	χ^2=2.082 p=0.556
Working status			
Working Not working	152 (36.4) 266 (63.6)	155(31.8) 333 (68.2)	χ^2=2.128 p=0.145
Marital status			
Married Single	175 (41.9) 243 (58.1)	131 (26.8) 357 (73.2)	χ^2=22.714 **p=0.000**
The impact of COVID-19 on income perception			
Increased Decreased Not changed	10 (2.4) 165 (39.5) 243 (58.1)	18 (3.7) 213 (43.6) 257 (52.7)	χ^2=3.385 p=0.184
Having chronic illness			
Yes No	43 (10.3) 375 (89.7)	53 (10.9) 435 (89.1)	χ^2=0.078 p=0.780
Number of pregnancies (case "n=154"; control "n=115")			
1 2 3 and above	57 (13.6) 58 (13.9) 39 (9.3)	50 (10.2) 35 (7.2) 30 (6.1)	χ^2=20.687 **p=0.000**
Number of births (case "n=150"; control "n=111")			
1 2 3 and above	65 (15.6) 61 (14.6) 24 (5.7)	55 (11.3) 40 (8.2) 16 (3.3)	χ^2=19.930 **p=0.000**

COVID-19=Coronavirus disease-2019

Table 2.
Comparison of Group with Primary Dysmenorrhea and Group without Primary Dysmenorrhea in Terms of Perceived Stress and WHQ Sub-dimensions Scores

	The group with primary dysmenorrhea (mean ± SD)	The group without primary dysmenorrhea (mean ± SD)	t	p
Perceived stress	41.50±8.04	43.21±7.24	-3.355	**0.001**
Depression	9.53±4.51	7.95±4.22	5.418	**0.000**
Somatic symptoms	12.20±3.40	10.24±3.61	8.361	**0.000**
Somatopsychic	7.84±3.47	6.38±3.14	6.587	**0.000**
Somatic-cognitive	7.85±2.39	6.99±2.23	3.204	**0.001**
Gastrointestinal	11.11±3.32	9.34±3.71	7.573	**0.000**
Self-esteem	7.12±2.66	6.57±2.62	3.126	**0.002**
Anxiety	4.06±1.45	3.60±1.59	4.478	**0.000**
Interest-desire	4.41±1.45	4.05±1.48	3.703	**0.000**
Sexual satisfaction	1.55±0.93	1.40±0.83	1.521	0.129

WHQ=Women's health questionnaire

Table 3.
Factors Associated with Primary Dysmenorrhea (Logistic Regression Results)

Factors	β	SE	Wald	p	Exp(B)
Age group	1.197	0.839	2.032	0.154	3.309
Level of education	0.171	0.585	0.085	0.771	1.186
Working status	-1.833	1.024	3.201	0.074	0.160
Marital status	-0.399	0.303	1.735	0.188	0.671
The impact of COVID-19 on income perception	0.186	0.432	0.185	0.667	1.204
Having chronic illness	0.144	0.240	0.360	0.548	1.155
Partner	-0.940	0.476	3.904	**0.048**	0.390
Stress and anxiety	0.264	0.163	2.623	0.105	1.302
Number of pregnancies	0.353	0.961	0.135	0.714	1.423
Number of births	-0.208	1.024	0.041	0.839	0.812
Staining	-0.556	0.468	1.408	0.235	0.574
Premenstrual syndrome	1.257	0.440	8.173	**0.004**	3.514
Infection	0.415	0.410	1.023	0.312	1.514
Constant	0.155	0.067	5.398	**0.020**	1.167

Model χ^2=106.723; p=0.000. R2=0.148
SE=standard error, COVID-19=coronavirus disease-2019

dysmenorrhea and menstrual cycle pattern, attitude towards menstruation, and premenstrual syndrome (36). In terms of women's health, it has been determined that one of the long-term symptoms of COVID-19 is changes/disruptions in women's menstrual cycle (37). There are significant changes in women's menstrual cycles compared to before the pandemic; it is stated that the most common deviations from normal are menorrhagia, dysmenorrhea and worsening of premenstrual symptoms, respectively. Our study results are consistent with the literature, and it is understood that it is important to evaluate reproductive health and the factors that may affect it in important situations that affect women's health, such as pandemics.

Study Limitations

This study's data were collected in a web-based manner due to the quarantine application. As such, lack of accuracy and consistency in the responses provided by women are limitations of the research. Results of this study can only be generalised to the sample group in the study, not all women.

Conclusion

Women's health is affected by physiological, psychological conditions and many factors. Problems such as primary dysmenorrhea, which already affects women's health in many ways, can lead to more negative consequences, especially in negative situations such as pandemics. The results of this study have been presented that women experiencing primary dysmenorrhea had higher levels of depression, somatic, somatopsychic, somatic-cognitive, gastrointestinal, self-esteem, anxiety and interest-desire problems. Negative spousal relationships and premenstrual syndrome are among the reasons for experiencing primary dysmenorrhea.

It is very important to evaluate the effects of situations such as pandemics on women's health and to take measures that can serve to improve these effects. Increasing the studies on the subject and considering the gender-specific effects of the pandemic process by health professionals will allow for better care. Future research can evaluate women's health with different parameters to analyse them during pandemics. We recommend that more comprehensive studies be conducted to reveal the effects of primary dysmenorrhea on women's health.

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Footnote

Ethics Committee Approval: This study was confirmed by the ethics committee of the Atatürk University Faculty of Health Sciences Ethics Committee (number: 16, date: May 21, 2020).

Informed Consent: All study participants provided informed consent before questionnaire administration.

Author Contributions: Concept - E.B., H.K.; Design - E.B., H.K., O.K., H.Ö.; Data Collection and/or Processing - E.B., H.K., O.K.; Analysis and/or Interpretation - E.B., H.K., O.K.; Literature Review - E.B., H.K., O.K., H.Ö.; Writing - E.B., H.K., O.K.

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ORIGINAL ARTICLE

A Descriptive Correlational Study Examining the Relationship between Burnout, Turnover Intentions, and Empowerment among Omani Nurses

Ummanlı Hemşirelerde Tükenmişlik, İşten Ayrılma Niyeti ve Güçlendirme Arasındaki İlişkiyi İnceleyen Tanımlayıcı Korelasyonel Çalışma

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Abstract

Objective: This study explored the levels of structural and psychological empowerment among nurses in the Dhofar Region and investigated the relationship between burnout, turnover intentions, and empowerment. Burnout and turnover intentions are prominent concerns among nursing professionals that often stem from dissatisfaction. Conversely, empowerment within nursing teams can enhance care quality and overall performance.

Method: The study employed a descriptive correlational design. A sample of 204 nurses was selected using a proportional analysis calculator based on the ratio, G*Power analysis, and 95% confidence level. Data were collected through online surveys sent to the participants' e-mail addresses and SNS links. Analyses were conducted using SPSS version 25.

Results: Most nurses reported average access to resources, knowledge, support, and network influence. However, they exhibited high levels of burnout and a moderate inclination toward leaving their profession. Burnout and turnover intentions were significantly correlated with structural psychological empowerment.

Conclusion: This study underscores the crucial relationship between empowerment and burnout among nurses in the Dhofar Region. These insights are vital for shaping a supportive work environment and a system that promotes the well-being and productivity of nurses.

Keywords: Nursing, empowerment, burnout, turnover intentions, structural psychological empowerment, Oman nurses

Öz

Amaç: Bu çalışma, Dhofar Bölgesi'ndeki hemşireler arasında yapısal ve psikolojik güçlendirme düzeylerini araştırmış ve tükenmişlik, işten ayrılma niyeti ve güçlendirme arasındaki ilişkiyi incelemiştir. Tükenmişlik ve işten ayrılma niyeti, hemşireler arasında genellikle memnuniyetsizlikten kaynaklanan önemli kaygılardır. Buna karşılık, hemşire ekipleri içinde güçlendirme, bakım kalitesini ve genel performansı artırabilir.

Yöntem: Çalışmada tanımlayıcı korelasyonel bir tasarım kullanılmıştır. 204 hemşireden oluşan örneklem, oran, G*Power analizi ve %95 güven düzeyine dayalı oransal analiz hesaplayıcısı kullanılarak seçilmiştir. Veriler, katılımcıların e-posta adreslerine ve SNS bağlantılarına gönderilen çevrimiçi anketler aracılığıyla toplanmıştır. Analizler SPSS versiyon 25 kullanılarak gerçekleştirilmiştir.

Bulgular: Hemşirelerin çoğu kaynaklara, bilgiye, desteğe ve ağ etkisine ortalama düzeyde erişim bildirmiştir. Bununla birlikte, yüksek düzeyde tükenmişlik ve meslekten ayrılmaya yönelik orta düzeyde bir eğilim sergilemişlerdir. Tükenmişlik ve işten ayrılma niyeti yapısal psikolojik güçlendirme ile anlamlı şekilde ilişkili bulunmuştur.

Sonuç: Bu çalışma, Dhofar Bölgesi'ndeki hemşireler arasında güçlendirme ve tükenmişlik arasındaki önemli ilişkinin altını çizmektedir. Bu görüşler, destekleyici bir çalışma ortamının ve hemşirelerin refahını ve üretkenliğini teşvik eden bir sistemin şekillendirilmesi için hayati önem taşımaktadır.

Anahtar Kelimeler: Hemşirelik, güçlendirme, tükenmişlik, işten ayrılma niyeti, yapısal psikolojik güçlendirme, Ummanlı hemşireler

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Introduction

The nursing profession is known for its demanding nature and stressful work environment, which stems from tight work schedules and patient and caretaker demands (1). The coronavirus disease-2019 (COVID-19) pandemic has amplified this situation, placing pressure on the global healthcare system. More than ever, nurses' resolve is being challenged. COVID-19 has taken a personal toll on healthcare professionals, disproportionately affecting nurses (2). According to the World Health Organization, as of May 2021, approximately 115,000 nurses had died from COVID-19 (2). COVID-19's impact on the overall well-being and mental health of nurses has been well documented, including reports of anxiety, depression, and post-traumatic disorder (3). This unprecedented situation has pushed the healthcare system to its limits, as severe staff shortages and increased workloads have adversely affected the quality of patient care and decreased job satisfaction (4).

Empowerment is defined as individuals' ability to feel effective to successfully execute their jobs (5). More than ever, the overall health and well-being of nurses are being challenged by factors such as complicated nursing practices, demanding patient contact, workload, time pressure, and workplace conditions, all of which lead to frustration, burnout, and emotional exhaustion (6).

The term empowerment is relevant in every career field, and the nursing profession is no exception. The concept of power cannot be overstated; it is a major concern in all walks of life and professions, including nursing professionals and students. Power is a volatile concept; thus, in the analysis of power, especially in the context of basic duties, key participants in the discourse should appreciate differences in human behavior and must understand similarities to develop the tendency (7,8).

In Oman, hospitals have experienced a decrease in labor supply and a high rate of job turnover, indicating their serious vulnerability. Healthcare organizations are increasingly concerned about the performance of healthcare workers to provide high-quality services. Although people are a vital resource for providing services through performance, organizations are considering management methods to manage their human resources effectively (9). Nurse turnover can decrease, and professional development can be anticipated when the basic benefits and working circumstances are acceptable to them (10). A cross-sectional study including 232 nurses working at a hospital in Oman suggested that nurses in Oman face various occupational problems, especially work-life imbalance (11). This study included interventions to manage this problem, including a review of nurses' working hours to avoid burnout and job dissatisfaction and restore work-life balance. Burnout and stress are major variables that can influence worker performance (12). According to a study conducted at the tertiary care hospital in Muscat, both factors can diminish work execution and client benefit and lead to a higher risk of illness, such as hypertension and anxiety. Moreover, the quality of work life is a critical marker of job-related fulfillment among medical attendants. The quality of work life of medical caretakers influenced the quality of persistent care and related wellbeing outcomes. As such, recognizing the poor quality of work life among medical attendants can help improve their efficient fulfillment, thus enhancing work execution and worker satisfaction (13). In addition, work shift and nationality had statistically significant effects on total job satisfaction, according to the findings. A multiple regression study revealed that having non-Omani nationality explained 21.8% of the total variance in the dependent variables, indicating that overall job satisfaction was higher among non-Omani nurses than among Omani nurses (14). If nurses who are responsible for patient care experience powerlessness, it is even more challenging for an inexperienced nursing student to become powerless. It is possible that novice nursing students who are frequently subjected to disempowerment may run into issues when they become licensed professionals. Depending on important occurrences, particularly in critical practice, nurses may feel empowered or disempowered in a variety of ways, circumstances, and places (15). Nurses feel empowered by their existing knowledge and confidence, feeling valued, mentorship and placement experiences, and cultural and structural influences. In addition, nurses can empower themselves in many ways. Structural and psychological empowerment boosts productivity and job satisfaction in organizations. Nurse managers' transformational leadership positively impacts nurses' empowerment and promotes participation and engagement. Empowerment can be impeded or supported by actions (16). Therefore, the physical, emotional, and psychological demands of nursing may lead to several negative effects (17). Inadequate patient care might result in less-than-ideal treatment outcomes if healthcare personnel are not as productive at work (18). In Oman, turnover intentions are influenced by factors related to educational level, favorable environment, and the level of job satisfaction (19). While Ministry of Health managed facilities have been most successful in bringing the nursing workforce home, none of the governorates have achieved full employment of Omani citizens. Given population sizes, dispersion throughout areas and regional social norms surrounding female employment, such policy targets were overly ambitious from the start (20). This large gap in the number of locally produced nurses and the fast turnover of expatriate staff may result in understaffing and longer duty hours. The aim of this study was to explore the combined influence of structural and psychological empowerment on nurses' burnout and turnover intentions.

Main Points

- The psychological and structural empowerment of nurses in Oman is essential for job satisfaction and overall health.
- A lack of autonomy, decision-making authority, and support from superiors and colleagues can also contribute to feelings of depersonalization and decreased personal achievement.
- A negative correlation between structural and psychological empowerment and burnout.
- Burnout and turnover probabilities are positively connected.

Material and Method

This study included nurses at health institutions in the Dhofar Region affiliated with Oman's Ministry of Health and examined how their turnover intentions were related to psychological empowerment, structural empowerment, burnout, and turnover.

Sample and Sampling

Proportion analysis was used to select sample participants. There are 1430 nurses employed by the ministry of health in Dhofar who work in both hospital and community settings. There were 254 identified samples when using a CL. 95% confidence interval of 5%.

Data Collection

After requesting contact information for potential volunteers, a research study invitation was sent through the nursing officers of various health and nursing facilities (5 hospitals and 12 health centers) in the Dhofar region from May 2023 to July 2023. Participants were asked to complete a validated and pilot-tested questionnaire, which comprised five sections: The conditions of work effectiveness questionnaire II (CWEQ-II), the Maslach burnout inventory general scale (MBI-GS), a demographics section, a psychological scale, and the anticipated turnover scale (ATS) (21). An 80% response rate equivalent to 204 participants who completed the survey, with an attrition rate set at 2%.

Statistical Analysis

The data were statistically analyzed with SPSS version 25.0 using descriptive and inferential analyses, such as Pearson's r-squared and one-way ANOVA.

Instruments

The CWEQ-II, a 19-item instrument with six subscales, measures respondents' perceptions of structural empowerment; it is the second version of the CWEQ and was developed by Laschinger, Finegan, and Wilk in 2003. Two of the subscales gauge formal and informal power according to Kanter's theory of power, while the other four subscales reflect structural empowerment dimensions. A 5-point Likert scale with a range of 1 (never) to 5 (always) was used for the 19-item survey. Through the use of a confirmatory factor, the tools construct validity and reliability were determined in a sample of nurses (22). The internal consistency of the scale is 0.81 and showed a strong fit of the hypothesized model. The instrument was examined for validity and reliability in the current study.

Ethical Considerations

The Ministry of Health's Research Review Ethics Committee in Dhofar provided IRB approval (approval no: MOH/CSR/22/26035, date: 17.08.2022). The online form included a video explanation of the study, after which the respondents were asked to provide informed consent to participate. For the purposes of confidentiality, no identifying information was obtained from the participants. The collected information was stored in a password-secured drive.

Results

Through a survey of nurses at various healthcare facilities in Dhofar, we obtained the demographic profiles of 204 nurses, including their gender distribution, work settings, nationalities, marital status, age range, educational credentials, years of experience, and employment positions (Table 1). Women constituted 85.5% of the nurses surveyed,

Table 1.
Nurses' Demographic Profiles

	Profile	Frequency	Percent
Gender	Female	174	85.3
	Male	30	14.7
Area of assignment	Acute setting (ER, ICU)	10	4.9
	Administration	4	2.0
	Ambulatory (OPD)	40	19.6
	Community	42	20.6
	Specialty units	14	6.9
	MS wards and floors	94	46.1
Nationality	Non-Omani	101	49.5
	Omani	103	50.5
Marital status	Married	168	82.4
	Single	36	17.6
Age	a. 20-30	10	9.8
	c. 31-40	140	68.6
	e. 41-50	40	19.6
	g. 51 above	4	2.0
Educational attainment	Bachelors/BSC	84	41.2
	Diploma	108	52.9
	Masters	6	2.9
	Post-basic certificate	6	2.9
Years of clinical experience	a. 0-3 years	10	4.9
	b. 4-6 years	8	3.9
	c. 7-10 years	62	30.4
	d. 11- 13 years	52	25.5
	e. 14-17 years	40	19.6
	f. 18 years and above	32	15.7
Rank and position	a. Junior staff	88	43.1
	b. Senior staff	92	45.1
	c. In charge	22	10.8
	e. Supervisor	2	1.0
	Total	**204**	**100.0**

ER=emergency room; ICU=intensive care unit; OPD=out patient departments

and men constituted 14.7%. The most common workplaces for nurses in Oman were medical surgical wards, where 46.1% of nurses were employed. The second most common workplaces were community health centers, where 20.6% of respondents worked. The nationality of 50.5% of the nurses surveyed was Omani, whereas 49.5% were non-Omani. Most nurses (82.4%) were married. The most common age group was 31-35 years, accounting for 35.3% of all respondents. The most prevalent educational background was a diploma in nursing (52.9% of respondents), followed by a B.Sc. in nursing (41.2% of respondents). The most common level of experience (in years of experience) was 7-10 years (45.1% of respondents). The most common rank or position was senior staff nurse (45.1%), followed by junior staff nurse (43.1%).

Nurses' levels of structural psychological empowerment are presented as mean scores of each subscale, which were obtained by summing and averaging the items. The score range is between 1 and 5 and indicates the level of access among the dimensions. The mean scores for access to opportunity, information, support and resources were 3.14, 3.40, 3.32 and 3.04, respectively, all of which indicate average access. The mean job activities scale (JAS) score was 3.08, indicating average position power; similarly, the mean organizational relationship scale (ORS) score was 3.11, implying an average network among nurses. The mean structural empowerment score was 19.08, indicating high empowerment. Table 2 presents the details of the nurses' levels of structural psychological empowerment.

The MBI-GS revealed the nurses' levels of emotional exhaustion, depersonalization, and personal accomplishment (Table 3). The results indicated that 116 (56.9%) respondents felt high levels of emotional exhaustion, and 104 (51%) reported high levels of depersonalization; both these criteria imply high levels of burnout. However, 90 respondents (44.1%) indicated high levels of personal accomplishment, indicating feelings of success and competence. The ATS consists of 12 items scored on a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). This includes six reverse-scored items to avoid bias. The total variance of the results ranged from 12 to 84 points, with higher scores indicating a higher risk of turnover. The mean overall ATS score was 49.73, which implies moderate levels of desire to leave their work and average levels of turnover (Table 4).

The study assessed the correlations between structural psychological empowerment and burnout and turnover intentions among nurses (Table 5). Pearson's correlation analysis revealed significant relationships between these variables. A moderate negative relationship was observed between psychological structural empowerment and the burnout dimension of emotional exhaustion (p=-0.432), and a weak negative relationship was observed between psychological structural empowerment and depersonalization (p=-0.237). Furthermore, a weak positive relationship was observed between psychological structural empowerment and personal accomplishment (p=0.290).

Table 2.
Nurses' Levels of Psychological and Structural Empowerment

Dimensions	**Minimum**	**Maximum**	**Mean**	**Standard deviation**
Access to opportunity	2.92	3.41	3.14	0.772
Access to information	2.67	3.66	3.40	0.777
Access to support	3.02	3.47	3.32	0.738
Access to resources	2.85	3.15	3.04	0.759
Job activities scale	2.66	3.45	3.08	0.626
Organization relationships scale	2.73	3.52	3.11	0.639
Total structural empowerment			19.08	3.445

Table 3.
Levels of Burnout Among Nurses

Level	**Emotional exhaustion**		**Depersonalization**		**Personal accomplishment**	
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Low	28	13.7	38	18.6	62	30.4
Moderate	60	29.4	62	30.4	52	25.5
High	116	56.9	104	51.0	90	44.1
Mean (SD)	**28.60** (10.402)		**14.30** (5.952)		**31.82** (7.107)	
Over-all	High		Moderate		Moderate	

**Emotional Exhaustion High -27 or over, Moderate 17-26 , Low 0-16 *Depersonalization High-14 or over, Moderate 9-13, Low 0-8 *Personal Accomplishment High 0-3, Moderate 31-36, Low 37 or over, SD=standard deviation*

Table 4.
Nurses' Levels of Turnover Intentions

Questions	Mean score	Standard deviation
7.1 I intend to stay in my current job for some time.	4.97	1.784
7.2 I am almost certain that I will leave my job in the near future.	4.06	2.178
7.3 Deciding whether to stay or leave my job is not an essential issue for me at this time.	4.34	1.875
7.4 I have already made the decision to stay with or leave this organization in the short term.*	4.09	1.986
7.5 If I were to receive another job offer tomorrow, I would seriously consider it.	4.60	1.936
7.6 I have no intention of leaving my current job.	3.93	2.107
7.7 I have been at this workplace for as long as I want to be.	5.02	1.899
7.8 I am sure that I will stay here for a while.	4.37	1.955
7.9 I have no specific idea how much longer I will stay here.*	4.86	1.899
7.10 I intend to keep my job at this organization for some time.	4.64	1.919
7.11 I have major doubts about whether or not I will stay in this organization.	3.63	1.819
7.12 I plan to leave this job soon.	3.57	2.283
Average score	**49.73**	**10.205**

**=total variance of the results ranges from 12-84 points, and higher scores indicate a higher risk of turnover*

Table 5.
Relationship of Structural Psychological Empowerment with Burnout and Turnover Intentions Among Nurses

		Emotional exhaustion	Depersonalization	Personal accomplishment	Turnover intentions
Total structural empowerment	Pearson correlation	-0.432**	-0.237**	0.290**	0.420**
	Sig. (2-tailed)	0.000	0.001	0.000	0.000
	n	204	204	204	204

***=p-value <0.5*

Thus, significant relationships were observed between psychological structural empowerment and all burnout dimensions. Finally, a moderate positive relationship was observed between psychological structural empowerment and nurses' turnover intentions (p=0.420).

Discussion

This study successfully assessed the degree of structural psychological empowerment and turnover intentions among nurses in Dhofar, thereby achieving its goals and objectives. In terms of demographics, 85.3% of the nurses who took part in the survey were female, with males accounting for only 14.7% of the sample; this is not surprising, as the nursing profession has long been known for its predominance of female practitioners. The historical causes of female dominance in nursing can be linked to gender roles and cultural expectations. Nursing has traditionally been seen as a loving and caring profession, which aligns with women's gender stereotypes. Affective traits generally associated with femininity, such as compassion, empathy, and communication skills, are frequently linked to the nursing profession. According to Gupta (23), the high proportion of females in the nursing profession can be attributed to historical gender biases and the lack of professional prospects for women in other disciplines. In addition, preconceptions may discourage males from pursuing nursing careers because of concerns about societal expectations, stigmatization, or a perceived lack of career progression prospects (24).

The study group comprised approximately 50.5% Omani nurses and 49.5% non-Omani nurses or expatriates. To provide high-quality care, the healthcare sector in Oman relies heavily on both Omani and non-Omani nurses. Omani nurses are essential to the healthcare system because they uphold their cultural values and are aware of regional traditions when treating patients. They expressed a strong feeling of pride in helping their communities and improving the general well-being of their fellow citizens. The nursing workforce in Oman is also largely made up of non-Omanis, who bring a variety of cultural backgrounds, knowledge, and abilities (25), offering distinctive perspectives and understanding of the Omani healthcare environment.

These nurses frequently struggle to adjust to different healthcare systems, language, and cultural norms. They might initially struggle to comprehend local customs, overcome communication challenges, and learn how to use the local healthcare system (26). Nurses from outside Oman, particularly those from nations with distinct healthcare systems, may also encounter difficulties because of variations in nursing education, clinical procedures, and professional rules.

This study revealed that nurses in Oman have an average level of psychological and structural empowerment regarding access to opportunity, information, support, and resources, as well as JAS and ORS levels. These results are in line with those of a previous study conducted in Oman, which reported that nurses who believed they had high degrees of structural empowerment expressed increased job satisfaction and organizational commitment (27). The creation of supportive policies, the provision of suitable staffing levels, the promotion of interdisciplinary collaboration, and the maintenance of efficient communication channels within healthcare organizations all contribute to improving structural empowerment in nursing practice. Oman's nurses had a high degree of psychological empowerment; a different study found that psychological empowerment positively impacts nurses' overall well-being, commitment to the organization, and job satisfaction (28). Fostering psychological empowerment among nurses in Oman may entail giving them opportunities for decision making, opportunities for professional growth, and acknowledgment of their contributions to patient care.

This study also explored the level of burnout among nurses in Oman, and the findings suggest a very high level of burnout; specifically, 56% of the participants reported high levels of emotional exhaustion, and 51% reported high levels of depersonalization. Nursing burnout is a common, serious problem that affects not only the well-being of nurses but also patient care and healthcare systems around the world. In Oman, nurses experience burnout for a variety of reasons. Physical and mental exhaustion may result from a heavy workload due to long working hours, a lack of staff, and increased patient demands. Depersonalization and diminished personal success can also be caused by a lack of autonomy, decision-making power, and support from superiors and coworkers. Additionally, working with seriously ill patients and observing patient suffering can be stressful and raise the risk of burnout among nurses (29). Despite their high levels of burnout, a large proportion of nurses in this study (approximately 44%) showed high levels of personal accomplishment. Nurses in Oman frequently express high levels of personal achievement, demonstrating a sense of satisfaction and success in their work. This sense of accomplishment is a result of the commitment of Omani nurses to patient care, their cultural ideals of helping others, and the gratitude of patients and their families (30). Positive comments and expressions of thanks from patients can support nurses' beliefs that they have a significant impact through their profession and raise their sense of personal accomplishment. However, compounding factors related to psychological structural empowerment and burnout levels may lead to nurses' desire to leave their jobs or increase job turnover. The nurses in this study had an average ATS score. Although little research has specifically focused on Omani nurses' plans to leave the profession, turnover intentions are seen as a widespread problem. Similar to nurses in other countries, Oman's nurses deal with challenges such as a hefty workload, a lack of staff, few opportunities for career advancement, and job dissatisfaction, all of which raise their desire to leave the profession (31). This topic must be thoroughly explored to create practical nurse retention measures for the Omani healthcare system. According to the study findings, burnout was negatively correlated with psychological and structural empowerment. Higher degrees of empowerment among nurses are linked to lower levels of burnout. By contrast, nurses who experience disempowerment and lack of control over their work are more likely to experience burnout. Turnover intention is positively correlated with burnout, as burnout makes nurses more prone to considering changing careers. Consequently, healthcare companies must comprehend the relationship among burnout, structural empowerment, and aspirations to leave. If organizations wish to lower nurse fatigue and turnover intentions, they should prioritize programs that boost empowerment (32). This could involve creating a welcoming work environment, encouraging group decision-making, offering opportunities for career progression, and appreciating and respecting the contributions of nurses.

Study Limitations

Although this study contributes to our understanding of the interplay between burnout, turnover intentions, and nurse empowerment in Dhofar, Oman, it has several limitations. First, the study employed a descriptive correlational design, which limits the ability to establish causal relationships between the variables. Relationships were found, but it is unclear whether empowerment causes lower burnout and turnover intentions or if lower burnout levels contribute to a higher perception of empowerment. Second, the information was gathered through self-reported online surveys, which carry the risk of response biases, such as social desirability or recall bias. Most participants may have, in one way or another, experienced the issue of over-reporting or under-reporting their level of burnout, empowerment, and even turnover intentions due to personal viewpoints or a fear of being judged, despite guarantees of anonymity. Third, the study was narrowed down to Dhofar nurses employed in healthcare facilities under the Ministry of Health. Therefore, the findings may not be applicable to nurses in the private sector or other regions of Oman, where the organizational culture and work conditions may differ. Additionally, the sample was homogeneous - it consisted mainly of nurses with the same level of education and years of experience, which reduces the likelihood of generalizing the findings to a more diverse nursing population. Another restriction is the cross-sectional design, which only captures data at a single point in time. This design makes it impossible to investigate the possible variation of empowerment or burnout over

time, or concerning organizational changes. Lastly, the study did not consider all possible confounding factors, including personal characteristics, coping mechanisms, or organizational policies that could impact burnout and turnover intentions. These findings would be more accurate and useful if subsequent studies employed broader scope longitudinal or experimental designs.

Conclusion

This study makes several important contributions to the literature on this topic. First, the results shed light on the demographic makeup of nurses in Oman. According to the findings, most nurses are employed in medical surgical units and community health facilities and are women. Both Omani and non-Omani nurses comprise the nursing workforce, and married nurses account for a substantial proportion of nurses. Most nurses have a B.Sc. or diploma in nursing, and the age group of 31-35 years is the most strongly represented. Furthermore, much of Oman's nursing workforce comprises senior and junior staff nurses with more than 10 years of experience. Second, this study highlights the importance of nurses' psychological and structural empowerment in the context of the Omani healthcare system. The development, fulfillment, and well-being of nurses in Oman depend on psychological and structural empowerment. Healthcare organizations and governments should establish an atmosphere that supports nurses' autonomy, decision-making skills, and overall empowerment by recognizing and addressing these factors. Empowered nurses are more likely to deliver high-quality care, show greater dedication to their companies, and help Oman's healthcare system as a whole. Additionally, healthcare institutions and authorities in Oman must pay attention to the problem of nurse burnout. Health and job satisfaction among nurses can be improved by identifying the causes of burnout and implementing preventative measures. Ultimately, managing burnout benefit nurses while strengthening the overall healthcare system and improving patient outcomes. Furthermore, healthcare institutions in Oman face increasing difficulties due to the level of nursing staff turnover, which affects patient treatment. To improve nurse retention and the stability of the healthcare system as a whole, it is essential to understand the factors that influence turnover intentions and to utilize effective retention methods. Healthcare organizations and politicians in Oman can reduce nurses' turnover intentions and improve nurse retention by addressing workload difficulties, offering professional development opportunities, and fostering a supportive work environment. According to this study's findings, burnout is negatively correlated with both structural and psychological empowerment. Greater empowerment among nurses is associated with reduced burnout rates; however, nurses who feel that they are powerless and lack control over their profession are more likely to experience burnout. The likelihood of turnover was positively correlated with burnout, as burnout prompted nurses to consider leaving their positions. These results may motivate healthcare organizations to implement healthcare programs and policies that support and cater to the needs of nurses in Oman.

Ethics Committee Approval: The Ministry of Health's Research Review Ethics Committee in Dhofar provided IRB approval (approval no: MOH/CSR/22/26035, date: 17.08.2022).

Informed Consent: The online form included a video explanation of the study, after which the respondents were asked to provide informed consent to participate. For the purposes of confidentiality, no identifying information was obtained from the participants.

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ORIGINAL ARTICLE

Analysis of the Relationship Between Quality of Life and Fatigue in Individuals with Thalassemia Major

Talasemia Majörlü Bireylerde Yaşam Kalitesi ile Yorgunluk Arasındaki İlişkinin İncelenmesi

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Abstract

Objective: Thalassemia major is a chronic blood disease that causes severe anemia. This causes individuals to feel fatigued and decreases their quality of life. This study aims to analyse the relationship between the QOL and fatigue in individuals with thalassemia major.

Method: This study is a descriptive correlational study. This research was conducted in Nicosia, North Cyprus, with 78 individuals with thalassemia major. Data were collected using the personal information form, Nottingham health profile, and visual analogue fatigue scale.

Results: The researcher calculated the average age of the participants as 38.9±7.23. The sub-dimension of the Nottingham Health Profile scale showed that emotional reaction, pain, and levels of energy were the lowest in the QOL of the participants with scores of 53.2, 52.6, and 51.2, respectively. The average score of the participants was 4.5 in the visual analog fatigue scale. There was a weak negative correlation (r=-0.241, p<0.034) between the visual analog fatigue scale scores and the total scores in the QOL scale, and a moderately negative correlation between the visual analog fatigue scale and the pain subscale scores (r=-0.475, p<0.01).

Conclusion: The results of the study reveal the importance of planning health services to reduce fatigue and improve the QOL of patients with thalassemia major, as well as monitoring their fatigue levels and QOL.

Keywords: Thalassemia major, fatigue, quality of life

Öz

Amaç: Talasemi majör, ciddi anemiye neden olan kronik bir kan hastalığıdır. Bu durum bireylerin kendilerini yorgun hissetmelerine ve yaşam kalitesinin düşmesine neden olmaktadır. Bu çalışmanın amacı talasemi majörlü bireylerde yaşam kalitesi ile yorgunluk arasındaki ilişkiyi analiz etmektir.

Yöntem: Bu makale tanımlayıcı korelasyonel bir çalışmadır. Araştırma Kuzey Kıbrıs Lefkoşa'da, 78 talasemi majör hastası ile gerçekleştirildi. Veriler, kişisel bilgi formu, Nottingham Sağlık profilini ve görsel analog yorgunluk ölçeği ile toplandı.

Bulgular: Katılımcıların ortalama yaşı 38,9±7,23 olarak saptandı. Nottingham sağlık profili ölçeğinin emosyonel reaksiyonlar, ağrı ve enerji alt boyut puanları, (sırasıyla 53,2, 52,6 ve 51,2), katılımcıların yaşam kalitelerinin en düşük olduğu alanlar olarak saptandı. Katılımcıların görsel analog yorgunluk ölçeğinden aldıkları ortalama puan 4,5 olarak saptandı. Görsel analog yorgunluk ölçeği puanı ile yaşam kalitesi ölçeği toplam puanı arasında zayıf negatif korelasyon (r=-0,241, p<0,034), görsel analog yorgunluk ölçeği ile ağrı alt ölçeği arasında ise orta derecede negatif korelasyon saptandı (r=-0,475, p<0,01).

Sonuç: Çalışmanın sonuçları, talasemi majörlü hastaların yorgunluğunu azaltmaya ve yaşam kalitesini iyileştirmeye yönelik sağlık hizmetlerinin planlanmasının ve hastaların yaşam kalitelerinin ve yorgunluk düzeylerinin takibinin önemini ortaya koymaktadır.

Anahtar Kelimeler: Talasemi majör, yorgunluk, yaşam

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Introduction

Thalassemia major can be seen in any part of the world; however, it is more common in individuals originating from the Mediterranean, Africa, South Asia, and South China regions (1,2). In the 1980s, the Thalassemia Prevention Program started in North Cyprus and has achieved good success rates to the extent that thalassemia almost does not exist among new-born babies (3). Although thalassemia prevention and treatment programs became an important part of the previously mentioned countries' health policies, 350,000 babies were born with haemoglobinopathetic in the world (4). Individuals with beta-thalassemia live with symptoms like fatigue, paleness, loss of appetite, and restlessness. Thanks to developments in thalassemia treatments, collaborations and partnerships between centres for the exchange of expertise and resources, the quality of life (QOL) and life span of patients showed a substantial increase (5). Despite these improvements, there are still complications in treatments that negatively affect the QOL score. The clinical manifestations of beta-thalassaemia and treatment-related complications may also affect the QOL negatively (6-8). Individuals with Beta-thalassemia major (β-TM) receiving blood transfusion and individuals with beta-thalassemia intermedia patients who are not transfused are exposed to symptoms such as decreased muscle strength and flexibility, and bone pain due to the effects of the disease on muscles and bones. This affects their QOL (9,10).

The treatment process for Beta-thalassemia major (β-TM) is arduous. Individuals face severe anemia attacks and various health problems, especially fatigue, which may negatively affect their daily activities and QOL. Thalassemia major and severe hypochromic microcytic anemia cause severe fatigue (11). The current studies show that there is a relationship between fatigue seen in patients with thalassemia major and the QOL. A study conducted by Nanas et al. (12) found that patients with thalassemia major have lower exercise capacities and lower peripheral muscle functions; therefore, they should avoid high intensity activities and activities over prolonged periods. Nurses take an active role in the treatment and care of patients with thalassemia major. Due to their constant blood transfusion needs, patients are frequently followed up in health centers, which creates an opportunity for nurses to identify their needs and problems. To plan nursing interventions that will contribute to increasing patients' QOL, reducing complications, and improving care outcomes, it is necessary to first determine the current QOL and fatigue levels of patients.

Main Points

- The results of the study show that fatigue and the quality of life of patients with thalassemia major are moderate.
- According to the Nottingham health profile scale, patients' emotional reaction, pain, and level of energy scores were low, while sleep scores were high.
- There was a weak negative correlation between the visual analogue fatigue score and the total score of the quality of life scale, and a moderate negative correlation with the pain subscale scores.

The recent literature has many studies on the QOL of patients with thalassemia and their self-care (13-16). However, there is no study to the best of our knowledge that shows the QOL and fatigue levels together in adults. Therefore, this study aims to analyse the relationship between fatigue and the QOL of patients with thalassemia major. The study raises awareness about fatigue and the QOL of thalassemia major patients. Furthermore, it is thought that the results of this study will contribute to the efforts made on decreasing the fatigue of patients with β-TM, and will increase their QOL.

Material and Method

Study Design

This research is a descriptive correlational study that analyzes the relationship between the QOL and fatigue levels in patients with β-TM.

Setting and Participants

The study was conducted between January and May 2017 at the Thalassemia Centre in Nicosia, North Cyprus. The population of the study consists of 106 individuals with β-TM who are registered at the Thalassemia Centre. The inclusion criteria consisted of living in Northern Cyprus continuously, being 18 years of age and over, speaking Turkish, and participating in regular follow-ups and treatments at the Centre where the study was conducted. Patients who did not want to participate in the study, nor were they under treatment at the same centre, were excluded. Of the participants, 21 live and receive treatment abroad. In addition, among the remaining 85 patients living in Northern Cyprus and whose follow-ups and treatments were conducted at the Centre, 78 of the voluntary individuals with β-TM were included in the study because seven refused to participate . In this study, 88.0% (n=78) of the participants were reached with a 95% confidence interval, 0.5% error, and 80% power.

Instruments

The data collection form used in the study included three parts. The first part consisted of a personal information form that included information about demographic and disease characteristics. The second part of the data collection form applied the Nottingham health profile (NHP). The third part utilized the "visual analog fatigue scale (VAFS)".

Nottingham Health Profile:

NHP defines emotional, social, and physical problems perceived by individuals. The scale consists of 38 items and six subscales. Subscales of the scale consist of energy level (3 items), pain (8 items), physical activity (8 items), sleep (5 items), emotional reactions (9 items) and social isolation (5 items). The highest score that can be obtained from each subscale is "100" and the lowest score is "0". A score of 0 represents the best health status, and 100 indicates the worst health status. The total score is between 0 and 600, with a higher score indicating a lower perception of health-

related QOL. The higher the score, the greater the number and severity of problems. In the Turkish validity and reliability study of the scale, Cronbach's alpha coefficients ranged between 0.56 and 0.83 (17). In this study, Cronbach's alpha coefficient values of the scale vary between 0.52 and 0.73.

Visual Analog Fatigue Scale:

The visual analog scale is a self-reported measurement tool that is often used to measure subjective experiences such as fatigue and pain (18). In this study, VAFS was used to quantify a participant's fatigue levels based on participants' self-reports. Numbers between 0 and 10 were defined on a line, and the participants were asked to indicate their level of fatigue intensity on this line. Participants with no fatigue scored 0 and extremely tired participants scored 10.

Data Collection

The data of the study were collected by a researcher at the Thalassemia Centre. The researcher used the face-to-face method with the patients. The duration of data collection for each patient ranged between 10 and 20 minutes.

Ethical Issues

The study was approved by the Ethics Committee of Girne American University where the study was conducted (no: 6.1/17, date: 27.01.2017). They were also informed that their participation was voluntary. The participants gave their written and verbal consent to participate in the study.

Statistical Analysis

The statistical analysis of the results was conducted using the IBM SPSS 20.0 software. The Kolmogorov-Smirnov test was used to make sure that the data were not consistent with the normal distribution. Then, the researchers used the non-parametric tests of Mann-Whitney U and Kruskal-Wallis to compare the groups. The relationships between QOL and fatigue were analysed using Spearman's rank correlation.

Results

Table 1 shows the distribution of some of the introductory and disease-related characteristics of the participants. The average age was 38.9. Of the participants, 56.4% were female. Furthermore, 50.0% of the participants reported having a family member with thalassemia major. Table 2 shows the distribution of the NHP and VAFS points. The average fatigue of the participants was 4.5 on a scale of 1 to 10. Total NHP scale mean scores of the participants were determined to be 299.1. When the NHP subscale scores were used for the participants, the scores were ranked from high to low, with emotional reaction (53.2) listed as first; pain (52.6) listed as second. The mean score of the VAFS of the participants in the study was determined at 4.5.

Table 3 shows the comparison of the QOL scores. The emotional reaction sub-dimension of the QOL score was found to be lower in the younger age group. The difference between the two groups was statistically significant ($p<0.05$). While the average emotional reaction of unemployed individuals was low (44.7), their average sleep was high (52.4) ($p<0.05$). The physical activity average score of the unemployed individuals (52.8) was also found to be

Table 1.
Patient Characteristics (n=78)

	n	**%**
Age	Mean (SD) 38.9 (7.23)	Min-Max 20 - 56
Gender		
Female	44	56.4
Male	34	43.6
Marital status		
Married	38	48.7
Single	40	51.3
Education		
Secondary school and below	32	41.0
High school and above	46	59.0
Health insurance		
Yes	31	39.7
No	47	60.3
Children		
Yes	14	17.9
No	64	82.1
Smoking		
Yes	50	64.1
No	28	35.9
Using alcohol		
Yes	46	59.0
No	32	41.0
Employment status		
Unemployed	34	43.6
Employed	44	56.4
Exercising		
Yes	34	43.6
No	44	56.4
β-TM History in the Family		
Yes	39	50.0
No	39	50.0
Other chronic diseases		
Yes	6	7.7
No	72	92.3
Frequency of blood transfusion		
Once in two weeks	14	17.9
Once in three weeks	42	53.9
Once in four weeks	22	28.2

β-TM=beta thalassemia major, SD=standard deviation

significantly higher (p<0.05) compared to another group. The average emotional reaction score of individuals with health insurance was higher, at 63.4 (p<0.05), than those without insurance. In addition, the results showed that the physical activity mean score of the individuals with children (60.9) was higher than that of individuals without children. In addition, those individuals with children had a lower emotional reaction score (p<0.05).

The average scores for sleep and physical activity of smokers were 49.2 and 54.5, respectively, and they were found to be high (p<0.05). When exercising was analyzed, the average sleep scores varied significantly. Those whose exercise activity was found to have an average sleep score of 40.0 had a lower score than those who do not exercise, who had an average of 49.1 (p<0.05). Finally, those who did exercise tended to have higher average physical activity scores (p<0.05).

The researchers also examined the energy levels of the participants. The results showed that the number of participants who didn't have another chronic disease was significantly higher (p<0.05). Regarding the average pain and social isolation scores of participants who received a blood transfusion once every three weeks, the scores were higher than those of participants who received a transfusion once every four weeks (p<0.05). When comparing the blood transfusion status with patients' sleeping and physical activities, the results showed that those who had a transfusion once in four weeks had a sleep average score of 61.8 and a physical activity average score of 63.8, which were higher than those who had a transfusion once in three weeks, with a sleep average score 42.4 and a physical activity average score 42.0 (p<0.05).

Table 4 shows the comparison of the VAFS mean scores according to the characteristics of the participants. The difference in fatigue scores between smokers (5.6±1.8) and non-smokers (3.8±2.1) was found to be statistically significant (p<0.05). In addition, fatigue scores of the participants who didn't exercise (5.0±1.9) were found to be significantly higher than those who exercised (3.6±2.1) (p<0.05).

Table 5 shows the correlation between the QOL and fatigue scores of participants. The highest correlation is between sleep and physical activity [r=0.452. n=78. p<0.01]. On the other hand, there is a negative and moderate level of correlation between sleep and emotional reactions [r=-0.387, n=78, p<0.01]. A moderately negative correlation was determined (r=-0.587, p<0.001) between the total scores of the NHP and the level of the energy sub-dimension. In addition, there was a negative weak correlation between the NHP score and pain (r=-0.262, p<0.020), physical activity (r=-0.318, p<0.005), sleep (r=-0.358, p<0.001) and social isolation (r=-0.251, p<0.027). There was a moderately negative correlation between the VAFS score and the pain subscale scores (r=-0.475, p<0.01).

Table 2.
Distribution of Points of Participant in NHP and VAFS (n=78)

Scales	M	SD
Nottingham health profile		
Emotional reaction	53.2	19.2
Pain	52.6	21.2
Level of energy	51.2	35.6
Physical activity	49.0	17.4
Social isolation	47.9	20.2
Sleep	45.1	24.4
Total	299.1	50.6
VAFS	4.5	2.2

M=mean, SD=standard deviation, NHP=Nottingham health profile; VAFS=visual analog fatigue scale

Discussion

This study focused on individuals with thalassemia major in North Cyprus and the relationship between their QOL and fatigue levels. One of the areas that most affected the QOL of the participants was their emotional reaction. The results showed that the emotional reaction sub-dimension scores are low for participants who are employed and those who are 39 years old and above. The scores were also lower for those who have health insurance, and children. A study conducted on 164 individuals with β-TM aged between 15 and 24 years to evaluate their mental health showed that 50.8% of the patients had indications of psychiatric disorders. The research indicated that 11.6% of the individuals had depression, 8.5% had anxiety, and 4.3% had a social dysfunction (19). In another study, findings showed that patients with β-TM have a tendency psychiatric diseases and moderate levels of pain (20). The following study results indicated that the areas that most affected the QOL were depression, fatigue, dyspnea, physical function, and psychological distress. In addition, the study stated that as long as patients stay in the hospital, the QOL will continue to decrease (21).

According to the study of Sobota et al., (22) the QOL of the patients with β-TM was low in 5 out of 8 subscales (physical functionality, role-physical, overall health, social functionality and role-emotional). In addition, the QOL of the patients with β-TM was analysed in 2001 and 2009 by Gollo et al. (23). The results showed that after the second analysis, the overall health of the patients had improved. The study also showed that the subscale of mental health resulted in better recovery outcomes compared to other aspects (23). In another study examining the QOL of individuals with thalassemia, it was determined that the scores of the participants in the domain of mental health were low (15). The researchers also claimed that by using the latest developments in treatment along with better management of complications, this approach can result in improved patient outcomes (23,24).

Table 3.
Comparison of Average Points of Quality of Life of Participants In Accordance with Their Characteristics (n=78)

	Level of energy		**Pain**		**Emotional reactions**		**Social isolation**		**Sleep**		**Physical activity**	
	M (SD)	**Test* / p**	**M (SD)**	**Test* / p**	**M (SD)**	**Test* / p**	**M (SD)**	**Test* / p**	**M (SD)**	**Test* / p**	**M (SD)**	**Test* / p**
Age												
38 and below	56.4 (38.4)	-1.259 / 0.208	54.2 (19)	-0.519 / 0.604	49.2 (17.8)	-2.15 / **0.032**	46.7 (20.7)	-0.766 / 0.444	49.2 (23.3)	-1.625 / 0.104	49.3 (17.4)	-0.182 / 0.855
39 and above	46.1 (32.2)		50.9 (23.3)		57.3 (19.9)		49.2 (19.9)		41 (25.1)		48.7 (17.6)	
Employment status												
Unemployed	53.8 (38.6)	-0.483 / 0.629	52.9 (24)	-0.405 / 0.685	44.7 (18.9)	-3.36 / **0.001**	47.1 (16.2)	-0.474 / 0.635	52.4 (26.1)	-2.237 / **0.025**	52.8 (16.8)	-2.28 / **0.023**
Employed	49.2 (33.4)		52.3 (19)		59.8 (16.9)		48.6 (23)		39.5 (21.8)		46.1 (17.5)	
Health insurance												
Yes	51.5 (29.8)	-0.117 / 0.907	53.9 (22.8)	-0.4 / 0.689	63.4 (22.7)	-3.567 / **<0.001**	49.7 (20.6)	-0.491 / 0.623	40 (24.2)	-1.091 / **0.275**	51.1 (16)	-0.543 / 0.587
No	51 (39.3)		51.6 (20.2)		46.5 (12.9)		46.8 (20.1)		48.5 (24.2)		47.6 (18.3)	
Children												
Yes	35.6 (20.7)	-1.762 / 0.078	40.6 (23.7)	-1.758 / 0.079	43.5 (17.4)	-2.228 / **0.026**	54.3 (9.4)	-1.211 / 0.226	35.7 (17.9)	-1.600 / 0.110	60.9 (20.2)	-2.674 / **0.007**
No	54.7 (37.3)		55.2 (19.8)		55.4 (19)		46.6 (21.7)		47.2 (25.3)		46.4 (15.8)	
Smoking												
No	42.8 (40.5)	-1.681 / 0.093	54.7 (19.9)	-0.472 / 0.637	52.4 (12.7)	-0.261 / 0.794	45 (20.8)	-0.606 / 0.545	37.9 (19.9)	-2.410 / **0.016**	39.2 (14.4)	-3.578 / **<0.001**
Yes	56 (32)		51.4 (21.9)		53.7 (22.1)		49.6 (19.9)		49.2 (25.9)		54.5 (16.6)	
Exercising												
None	52.3 (35.6)	-0.315 / 0.753	48.7 (23.5)	-1.658 / 0.097	54 (18.6)	-0.248 / 0.804	46.8 (19.3)	-0.629 / 0.530	49.1 (24.6)	-1.883 / 0.060	56.2 (17.3)	-4.108 / **<0.001**
Occasionally	49.9 (36.1)		57.6 (16.7)		52.3 (20.2)		49.4 (21.6)		40 (23.6)		39.7 (12.6)	
History of thalassemia in family												
No	44.4 (38.5)	-1.789 / 0.074	56.1 (21.8)	-2.067 / **0.039**	52.6 (16.9)	-0.548 / 0.584	44.1 (15.3)	-2.187 / **0.029**	43.6 (25.9)	-0.186 / 0.853	46.1 (10.4)	-0.979 / 0.327
Yes	58.1 (31.4)		49 (20.2)		53.9 (21.5)		51.8 (23.7)		46.7 (23.1)		51.9 (22.1)	
Other chronic diseases												
No	54.6 (34.7)	-2.928 / **0.003**	51.4 (21.4)	-1.872 / 0.061	53.1 (19.4)	-0.115 / 0.908	48.1 (20.3)	-0.059 / 0.953	46.1 (25)	-1.414 / 0.157	49.3 (18)	-0.117 / 0.907
Yes	11 (17.0)		66.7 (12.9)		55.3 (17.6)		46.7 (20.7)		33.3 (10.3)		46 (6.2)	
Frequency of blood transfusion												
Once in two weeks	57 (35.8)	7.364 / **0.025**	51.3 (16.8)	23.565 / **<0.001**	53.3 (13.5)	0.141 / 0.932	45.7 (12.2)	11.538 / **0.003**	27.1 (12.7)	20.273 / **<0.001**	46.6 (10.1)	27.087 / **<0.001**
Once in three weeks	41.2 (30.3)		62.7 (16.4)		53.6 (21.6)		53.8 (21.9)		42.4 (24.3)		42.0 (16.7)	
Once in four weeks	66.7 (39.9)		33.9 (19.3)		52.6 (18.1)		38.2 (17.4)		61.8 (20.4)		63.8 (13.3)	

*=Mann-Whitney U test was applied to groups that have two variants and Kruskal Wallis test was applied to groups with more than two variants. M=mean, SD=standard deviation

Table 4.
Distrubition of VAFS Points in Accordance with Participant's Characteristics (n=78)

Characteristics	VAFS		
	M	SD	z* / p
Gender			
Women	4.5	1.8	-0.01/ 0.992
Men	4.4	2.6	
Marital status			
Married	4.1	2.5	-1.39/ 0.163
Single/Divorced	4.8	1.8	
Employment status			
No	4.2	1.9	-0.73/ 0.463
Yes	4.7	2.3	
Smoking			
Yes	5.6	1.8	-3.51/ <0.001
No	3.8	2.1	
Exercising			
Yes	3.8	2.3	**-2.47/0.014**
No	5.0	1.9	

**=Mann-Whitney U test for groups with two variants, M=mean, SD=standard deviation, VAFS=visual analog fatigue scale*

As thalassemia is a chronic physical disease, symptoms may include emotional and behavioural problems (25). During treatments, a nurse caring for patients with β-TM should evaluate them physically, socially, and psychologically. Research suggests that it would be beneficial to identify psychologically risky groups and to counsel them on seeking professional help.

In the current study, the participants scored lower in the sub-dimensions of pain and energy levels in the NHP at the second and third levels. A positive correlation is observed between the NHP total score average, and the patients' level of energy and pain sub-dimensions. The previous results are due to the available developments in thalassemia treatments, and the increased life span of the patients. This, in turn, introduces emerging issues such as chronic pain into the literature.

Healthcare professionals frequently face patients with severe and persistent chronic pain problems. A systematic review indicates that the frequency and severity of chronic pain increases over time with age (26). Chronic pain negatively affects the quality of patients' lives. Some adults experience severe pain as a result of the decrease in their hemoglobin levels during the final periods of their transfusion cycles. Interdisciplinary control of their pain is obligatory, but using painkillers, even at safe levels, can be harmful. Therefore, there are many approaches to managing pain without relying on painkillers, such as physiotherapy, psychological consultations, and occupational therapies.

Table 5.
Corelation Between Quality of Life and VAFS of Participants (n=78)

		Emotional reactions	**Level of energy**	**Pain**	**Physical activity**	**Sleep**	**Social isolation**	**Total NHP**	**VAFS**
Emotional reactions	R								
	P								
Level of energy	R	0.006							
	P	0.958							
Pain	R	-0.003	-0.115						
	P	0.982	0.315						
Physical activity	R	-0.219	0.053	-0.203					
	P	0.054	0.642	0.075					
Sleep	R	-0.387**	0.018	-0.280*	0.452**				
	P	**<0.001**	0.877	0.013	**<0.001**				
Social isolation	R	-0.145	-0.252*	0.241*	-0.049	-0.023			
	P	0.205	0.026	0.034	0.671	0.844			
Total NHP	R	0.060	0.587**	0.262*	0.318**	0.358**	0.251*		
	P	0.604	**<0.001**	**0.020**	**0.005**	**0.001**	**0.027**		
VAFS	R	-0.067	-0.014	-0.241**	-0.054	0.103	-0.191	-0.241*	
	P	0.557	0.905	**<0.001**	0.641	0.369	0.094	**0.034**	

**=Spearman Corelation is meaningful at 0.05 level, **=Spearman Correlation is meaningful at the 0.01 level, NHP=Nottingham health profile, VAFS=visual analog fatigue scale*

Other effective methods for pain management include maintaining optimal bone density and having an active lifestyle. The results of this study highlight the importance of health care providers needing to implement effective pain management strategies, provide continual assessment, and utilize evaluation measurement methods for patients with β-TM.

Individuals with thalassemia frequently have problems such as fatigue, bone pain, and muscle weakness. In the current paper, the VAFS score of the participants is moderate. In addition, it was observed that the VAFS score of the individuals who participated in the study had a negative correlation with the total scores of the NHP scale and the pain subscale scores . In a qualitative study conducted with adolescents with thalassemia, the researchers claim that fatigue and pain are among the physical problems experienced by the participants (27).

In another qualitative study, it was indicated the most important factor that negatively affected their life was fatigue. The participants indicated that if they did not have thalassemia, they would have achieved their life goals. The participants said that fatigue and stigma negatively affected their daily routines, social life, and hobbies (28). It is frequently stressed in the literature that chronic diseases, QOL, and fatigue are related (29). In the research, it is stated that thalassemia major negatively affects the physical and mental health of individuals (30-33). The results obtained from our study are similar to findings in literature. Fatigue along with a chronic disease causes a decrease in physical functions and therefore decreases overall QOL.

Furthermore, the current study found that the fatigue scores of individuals who smoke and do not exercise are higher than those who do engage in these behaviors. Individuals with thalassemia, which causes anemia, resulting in hemoconcentration , experience low exercise capacity and frequently experience fatigue. In a systematic review of literature, the effect of non-pharmacological approaches on fatigue is seen in patients undergoing hemodialysis treatment (34). According to this review, some studies indicated that increasing physical activities like exercise programs can foster a sense of well-being, positively affecting fatigue levels. This study also reveals a positive relationship among physical activity, sleep levels, social isolation, and QOL.

In a study that examines the relationship between sleep, fatigue, and QOL in cancer patients, the researcher found that feeling sleepy during the daytime can negatively affect the QOL. The same study shows that fatigue, daytime sleepiness and quality of sleep are important predictors of mental and physical areas (35). Quality of sleep directly affects the QOL. Patients with thalassemia should be informed about behaviors that will improve their quality of sleep. In the research, individuals with thalassemia said that fatigue and pain negatively affected their daily activities, and socialization (36). The results obtained in our study are similar to the findings literature. The current research, suggests that an effective approach for well-being, is for individuals with thalassemia and their relatives to express their feelings about how their daily life affects them. In addition, they should create support groups that will enable them to discuss their concerns and successes.

Study Limitations

One limitation of this study is that it was conducted at one healthcare centre. Thus, the results do not represent all patients with thalassemia major. The other limitation of this study is that it is cross-sectional, so how fatigue levels affect patients' lives and their methods of coping were not revealed. For future research, qualitative studies should be conducted to determine how the QOL and fatigue levels of thalassemia patients affect their daily lives.

Conclusion

The results of this study show that the QOL of patients with β-TM is at a moderate level. It is found that participants are worse when experiencing emotional reactions and pain as defined in the sub-dimensions of the NHP. It also shows that experiences of fatigue by the participants are at a moderate level. In the study, a negative correlation was found between VAFS scores and the NHP's total scale and pain subscale scores. The results of the study prove the importance of educating patients about developing healthy lifestyles that are effective for treating fatigue (e.g., good nutrition, the importance of exercise, organizing activities and rest periods), as well as educating their relatives. Finally, it is important for health care providers to regularly check the level of fatigue and the QOL of patients with beta-thalassemia.

The results of this research are important for health professionals working in the treatment and maintenance of individuals with β-TM, as it helps them understand factors related to the QOL and fatigue. To prevent overlooking other health problems that can develop, such as β-TM chronic disease, healthcare professionals should use integrative methods that address the physical, social, and psychological aspects of life when evaluating their patients. In addition, healthcare professionals should be aware of factors related to the QOL of patients with β-TM and actively participate in developing health policies at the national level to improve the QOL for patients.

Ethics Committee Approval: The study was approved by the Ethics Committee of Girne American University where the study was conducted (no: 6.1/17, date: 27.01.2017).

Informed Consent: The participants gave their written and verbal consent to participate in the study.

Footnotes

Authorship Contributions: Concept – M.U., S.T.; Design – M.U., S.T.; Data Collection and/or Processing – M.U.; Analysis and/or Interpretation – M.U., S.T.; Literature Review –M.U., S.T.; Writing – M.U., S.T.

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ORIGINAL ARTICLE

Determination of Genital Hygiene Behaviors and Affecting Factors of Women of Reproductive Age

Üreme Çağındaki Kadınların Genital Hijyen Davranışlarının ve Etkileyen Faktörlerin Belirlenmesi

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Abstract

Objective: It is estimated that women worldwide have high rates of genital infections. Although not life-threatening, these infections can lead to loss of reproductive capacity if not treated early. Therefore, prevention of genital infections is of great importance. The most important, simple, easy, and cost-free method for preventing genital infections is the practice of correct genital hygiene practices. This study aimed to determine the genital hygiene behaviors of women of reproductive age and the factors that influence these practices.

Method: A descriptive study was conducted between March 25 and May 25, 2023, on 108 women of reproductive age residing in the Famagusta district of North Cyprus. The data of the study were collected using the "personal information form" and the "genital hygiene behavior scale (GHBS)" prepared by the researcher.

Results: Mean scores for the GHBS and its subscales of general hygiene, menstrual hygiene, and abnormal finding awareness were 74.33±26.12, 40.12±14.23, 24.27±9.43, and 9.92±3.86, respectively. The GHBS scores were higher in participants who had graduated from a university (p=0.001), earned income greater than expenses (p=0.003), and had received previous training on genital hygiene (p=0.010). These findings suggest that increasing women's awareness of the importance of maintaining genital hygiene from an early age may contribute to improvements in women's health by preventing complications.

Conclusions: The findings of our study indicate that the genital hygiene behaviors of women in reproductive age are, for the most part, positive. Our analysis revealed that variables such as education level, income status, and information on genital hygiene may influence genital hygiene behaviors.

Keywords: Women, reproductive age, genital hygiene

Öz

Amaç: Dünyada kadınların genital enfeksiyon yaşama oranları yüksektir. Yaşamı tehdit etmemekle birlikte genital enfeksiyonların erken tedavisi yapılmadığında üreme yetisinin kaybına yol açabilmektedir. Bu nedenle genital enfeksiyonların önlenmesi büyük önem taşımaktadır. Genital enfeksiyonların önlenmesi için basit, kolay ve maliyetsiz en önemli yöntem genital hijyen uygulamalarının doğru uygulanmasıdır. Bu çalışmada üreme çağındaki kadınların genital hijyen davranışları ve etkileyen faktörlerin ortaya koyulması amaçlanmıştır.

Yöntem: Tanımlayıcı olarak yapılan araştırmanın örneklemini 25/03/2023 ve 25/05/2023 tarihlerinde Kuzey Kıbrıs Türk Cumhuriyeti Gazimağusa ilçesinde yaşayan toplam 108 üreme çağındaki kadınlar oluşturmuştur. Araştırmanın verileri araştırmacı tarafından oluşturulan "kişisel bilgi formu" ve "genital hijyen davranışları ölçeği (GHDÖ) ile toplanmıştır.

Bulgular: Kadınların GHDÖ'den aldıkları toplam puan ortalamalarının "74,33±26,12" olduğu saptanmıştır. GHDÖ'nin alt boyutlarının puan ortalamalarına bakıldığında, genel hijyen alışkanlıkları alt boyututnun 40,12±14,23, adet hijyeni alt boyutunun 24,27±9,43, anormal bulgu farkındalık alt boyutunun 9,92±3,86 olduğu bulunmuştur. Ölçek toplam puan ortalaması üniversite ve üstü mezunlarda (p=0,001), gelir durumu iyi olanlarda (p=0,003) ve daha önceden genital hijyen eğitimi alanlarda (p=0,010) daha yüksek bulunmuştur. Araştırmadan elde edilen sonuçlar doğrultusunda genital hijyenin sürdürülmesinde kadınların erken yaşlarda eğitilerek farkındalıklarının arttırılması oluşabilecek komplikasyonların önüne geçerek kadın sağlığının geliştirilmesine katkı sağlayacaktır.

Sonuç: Çalışmamızda üreme çağında bulunan kadınların genital hijyen davranışlarının olumlu olduğu ve eğitim, gelir durumu, daha önceden genital hijyene yönelik eğitim alma gibi değişkenlerin genital hijyen davranışlarını etkisi olduğu saptanmıştır.

Keywords: Kadın, üreme çağı, genital hijyen

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Introduction

It is estimated that approximately 75% of women worldwide are exposed to genital infections on an annual basis (1). The relatively high prevalence of genital infections may be attributed to the fact that the genital area serves a multitude of functions, including micturition, defecation, sexual intercourse, sweating, and secretion. Additionally, the anus, vagina, and urethra are in close proximity to one another in women (2,3). Furthermore, unfavorable environmental conditions, compulsory use of unhygienic toilets, vaginal douche habit, nutrition, and menstrual hygiene, and improper genital hygiene all contribute to the risk of genital infections. A number of studies have indicated that inadequate genital hygiene may give rise to the development of genital infections and often result in abnormal genital discharge (4,5). Genital infections are also known to be the most prevalent cause of hospital admissions in reproductive health. The most notable symptom of genital infection is abnormal genital discharge. The majority of women do not consider genital discharge as a significant issue and therefore do not seek treatment. If genital infections are not identified and treated in a timely manner, they may progress to pelvic inflammatory disease and even genital organ cancer, which can have a detrimental impact on a woman's fertility (6-8). Despite the fact that genital infections are among the diseases that can be easily prevented and treated, it is well documented that they represent a significant threat to women's health, with a high incidence of complications (9).

The most effective and cost-efficient method for preventing genital infections is the correct application of genital hygiene practices (7,9). Genital hygiene behavior refers to care practices developed by individuals in line with their knowledge, beliefs, and habits. This behavior is influenced by several factors, including age, education level, income status, fertility, unprotected sexual intercourse, general hygiene behaviors, and knowledge about hygiene (10). To safeguard women's well-being and avert genital infections, nurses must equip women with knowledge about genital tract infections and facilitate the development of optimal genital hygiene behaviors. The assessment of reproductive women's knowledge and behaviors regarding genital hygiene may contribute to an increase in the number of educational activities. The objective of this study was to ascertain the prevalence and determinants of genital hygiene behaviors among reproductive-age women.

Main Points

- Women of reproductive age demonstrate positive behaviors related to genital hygiene.
- The genital hygiene behaviors of women of reproductive age are influenced by age, education level, income level, and previous education in genital hygiene.
- Women who received genital hygiene education exhibited more positive genital hygiene behaviors than women who did not receive genital hygiene education.

Objectives

The objective of this descriptive study was to ascertain the genital hygiene behaviors of women of reproductive age residing in the Famagusta district of Turkey (TRNC).

Research Questions

- What behaviors do women of reproductive age engage in to maintain genital hygiene?

- What factors influence the genital hygiene behaviors of reproductive-age women?

Material and Method

Population and Sampling

The study population consisted of women of reproductive age (15-49 years) who had applied to the Famagusta Maraş Development Academy in the Famagusta district of the TRNC. The Famagusta Development Academy is a center affiliated with the Famagusta Municipality. The center offers a variety of activities, including yoga, Pilates, painting courses, drama, and others, which are accessible to the local population. The required sample size was calculated using OpenEpi v. 3.0 (Online). Based on the assumption that the number of women applying to the center in two months is 175 and the expected prevalence is 50%, the minimum sample size was calculated to be 107 for a two-sided maximum type 1 error margin of 5%, a 95% confidence interval, a statistical power of 0.90, and a pattern effect of 1. A similar sample size was obtained by performing the sampling calculation $[(N.t^2 \times p.q) / (d^2(N-1)+t^2x(pxq))]$ with a known universe. Consequently, 108 voluntary women between the ages of 15 and 49 who could read and write in Turkish were included in the study.

Data Collection Procedures

The data were collected through face-to-face interviews conducted between March 25, 2023, and May 25, 2023. The interviews took place at the Development Academy, where the women were attending the event. Prior to data collection, participants were informed about the research and were asked to sign the "informed volunteer consent form". The data collection process took approximately 10 minutes.

Data collection tools

The personal information form and genital hygiene behavior scale were used for data collection.

Personal information form

The form was developed by the researchers through a review of the relevant literature (6,7,10) and consists of 21 questions designed to identify the descriptive and genital hygiene characteristics of the participants.

Genital hygiene behavior scale (GHBS)

The GHBS is a five-point Likert scale developed by Karahan (11). The scale consists of 23 items, which are grouped into three subscales: general hygiene (items 1-12), menstrual hygiene (items 13-20), and abnormal finding awareness (items 21-23). The items were scored on a five-point Likert scale, with scores ranging from 1 (strongly disagree) to 5 (strongly agree). Items 7, 14, 19, 20, and 23 were reverse scored. Possible scores ranged from 23 to 115, with higher scores indicating more positive genital hygiene behavior. The Cronbach's alpha of the scale was 0.80 (11).

Statistical Analysis

SPPS version 25.0 was used for data analysis. Normality and homogeneity of variables were assessed by Shapiro-Wilk and Levene tests. The results indicated the need for nonparametric data analysis techniques. The Mann-Whitney U test was used to compare paired groups, whereas the Kruskal-Wallis H test was employed to compare three or more groups. When the results of the Kruskal-Wallis H test were found to be statistically significant, the Mann-Whitney U test was used to identify whether there were any significant differences between the groups. Bonferroni correction was applied when a significant difference was observed between the two groups. Descriptive statistics include number, percentage, mean, and standard deviation. Statistical significance was set at $p<0.05$.

Ethical Considerations

Prior to the commencement of the study, ethical approval was obtained from the Scientific Research and Publication Ethics Boards of East Mediterranean University (no: ETK00-2023-0054, date: 23.03.2023).

Results

Table 1 presents the socio-demographic characteristics of the participants. The mean age of the participants was 26.39±8.04 years, with 57.4% of the participants falling within the 21-30 age group. The majority of the participants, 62.0%, were single, 64.8% had obtained a university degree, 60.2% were unemployed, and 46.3% had an income that was less than their expenses.

Table 2 shows that 73.1% of the participants had previously received information on genital hygiene, with 34.3% having received this information at school. Furthermore, 87% of the participants cleaned the genital area from front to back, 97.2% used products, such as cream and perfume in genital cleaning, 76.9% had regular menstruation, 91.7% took a shower standing up, 40.7% shaved pubic hair, and 55.6% did not receive education on vaginal discharge. We also found that 49.1% of the participants had vaginal discharge with an unpleasant odor, and 18.5% frequently changed their underwear in response to the discharge. Finally, 59.3% of the participants had previously experienced a urinary tract infection, 34.3% had sought medical attention for this condition, 87.0% had undergone regular gynecological examinations, 89.8% had placed particular emphasis on maintaining the genital area in a dry state, and 65.7% had utilized cotton underwear.

Table 3 presents the scores for the GHBS and its subscales. The mean total GHBS score was 74.33±26.12. The mean scores for the general hygiene, menstrual hygiene, and abnormal finding awareness subscales were 40.12±14.23, 24.27±9.43, and 9.92±3.86, respectively.

Table 4 compares the GHBS scores according to the various descriptive characteristics. A statistically significant difference was observed between the education level and the scores obtained from the GHBS (X^2=10.20; p=0.006), as well as its subscales of general hygiene (X^2=9.41; p=0.009) and menstrual hygiene (X^2=14.08; p=0.001). The participants with an education level of university or above exhibited statistically significant higher scores on the GHBS (U=545.5; p=0.001) and its subscales of general hygiene (U=563.0; p=0.002) and menstrual hygiene (U=481.0; p=0.000) when compared with those who had graduated from secondary schools. Additionally, a statistically significant difference was observed between income levels and scores obtained from the GHBS (X^2=11.90; p=0.003) and its subscales of general hygiene (X^2=12.46; p=0.002) and menstrual hygiene (X^2=9.95; p=0.007). The participants who earned an income equal to their expenses exhibited statistically significant higher scores on the GHBS (U=761.5; p=0.001) and its subscales of general hygiene (U=761.0; p=0.001) and menstrual hygiene (U=792.5; p=0.002) when compared with the participants with an income less than expenses.

Table 1.
Sociodemographic characteristics

Variables	**n**	**%**
Age group		
18-20 years	19	17.6
21-30 years	62	57.4
31 years and above	27	25.0
Age Mean±SD: 26.39±8.04 - **Median:** 22.00- **Min:** 18.0- **Max:** 51.0		
Marital status		
Single	67	62.0
Married	41	38.0
Education level		
Primary school	11	10.2
Secondary and high school	27	25.0
University and above	70	64.8
Working status		
Employed	43	39.8
Unemployed	65	60.2
Income level		
Less than expenses	50	46.3
Equal to expenses	49	45.4
More than expenses	9	8.3

Table 2.
Descriptive information about genital hygiene practices

Variables	n	%
Has ever received information on genital hygiene		
Yes	79	73.1
No	29	26.9
Source of information on genital hygiene		
Friends	15	13.9
Social and mass media	12	11.1
Health professionals	15	13.9
School	37	34.3
Did not receive information	29	26.9
Method of genital area cleaning		
Front to back	94	87.0
Back to front	14	13.0
Uses products (cream, perfume) in genital cleaning		
Yes	3	2.8
No	105	97.2
Regular menstruation		
Yes	83	76.9
No	25	23.1
Bathing position		
Sitting	9	8.3
Standing	99	91.7
Pubic hair removal by		
Waxing	25	23.1
Shaving	44	40.7
Epilator	26	24.1
No pubic hair	13	12.0
Training on vaginal discharge		
Yes	48	44.4
No	60	55.6
Presence of foul-smelling discharge		
Yes	53	49.1
No	55	50.9
Reactions to foul-smelling discharge		
Visited a health center	17	15.7
Vaginal douching	2	1.9
Frequently changed underwear	20	18.5
Did nothing	7	6.5
Used daily pads	4	3.7
Drank a lot of water	3	2.8
Did not experience	55	50.9

Table 2.
Continued

Variables	n	%
Previous experience of urinary tract infection		
Yes	64	59.3
No	44	40.7
Reactions to urinary tract infection		
Visited a health center	37	34.3
Did nothing	11	10.2
Cleaned genital area with vinegar	3	2.8
Drank a lot of water	10	9.3
Used medications	3	2.8
Did not experience	44	40.7
Regular gynecological examination		
Yes	14	13.0
No	94	87.0
Keeps genital area dry		
Yes	97	89.8
No	11	10.2
Underwear fabric		
Cotton	71	65.7
Synthetic	37	34.3

Table 3.
Descriptive statistics on the GHBS scores

Scales	Mean	SD	Median	Min.	Max.
GHBS Total	74.33	26.12	86.00	24.0	115.0
General hygiene	40.12	14.23	47.00	12.0	60.0
Menstrual hygiene	24.27	9.43	26.00	8.0	40.0
Abnormal finding awareness	9.92	3.86	11.00	3.0	15.0

SD=Standard deviation, Min= Minimum, Max= Maximum

Table 4 demonstrates a statistically significant difference between receiving information on genital hygiene and the median rank scores obtained from the GHBS (U=776.5; p=0.010), as well as its subscales of general hygiene (U=818.5; p=0.023), menstrual hygiene (U=820.05; p=0.024), and abnormal finding awareness (U=862.0; p=0.048). The participants who had previously received genital hygiene training demonstrated higher scores on the GHBS and its subscales than those who had never received any information on the subject.

Table 4.
Comparison of the GHBS scores according to descriptive characteristics

Variables	n	GHBS Total				General hygiene				Menstrual hygiene				Abnormal finding awareness			
		Mean	SD	Median	Mean rank	Mean	SD	Median	Mean rank	Mean	SD	Median	Mean rank	Mean	SD	Median	Mean rank
Age group																	
a-18-20 years	19	71.21	23.48	82.00	47.97	37.63	12.68	44.00	45.95	24.00	8.10	27.00	53.18	9.58	3.93	11.00	52.21
b-21-30 years	62	75.71	26.11	88.00	56.09	41.26	14.13	47.00	57.10	24.61	9.28	27.00	55.72	9.84	3.94	11.00	53.74
c-31 years and above	27	73.37	28.54	84.00	55.44	39.30	15.67	46.00	54.56	23.70	10.88	23.00	52.63	10.37	3.74	11.00	57.85
Statistical analysis		X^2=1.01 p=0.604				X^2=1.84 p=0.397				X^2=0.224 p=0.894				X^2=0.453 p=0.798			
Marital status																	
Single	67	75.10	25.88	87.00	54.33	40.78	14.23	47.00	55.19	24.04	8.80	27.00	53.56	10.28	3.99	11.00	58.22
Married	41	73.07	26.80	84.00	54.78	39.07	14.35	46.00	53.37	24.66	10.49	24.00	56.04	9.34	3.62	10.00	48.43
Statistical analysis		U= 1362.0 p=0.942				U= 1327.0 p=0.768				U= 1310.5 p=0.690				U= 1124.5 p=0.113			
Education level																	
a-Primary school	11	75.00	28.48	84.00	55.05	41.55	15.36	46.00	58.45	23.45	10.19	23.00	52.32	10.00	4.47	12.00	56.64
b-Secondary and high school	27	60.41	26.66	51.00	38.09	32.52	14.53	26.00	38.52	18.67	8.35	19.00	35.59	9.22	4.29	8.00	50.28
c-University and above	70	79.60	23.85	88.00	60.74	42.84	13.03	47.50	60.04	26.57	8.89	27.50	62.14	10.19	3.62	11.00	55.79
Statistical analysis		**X^2=10.20 p=0.006 / c>b**				**X^2=9.41 p=0.009 / c>b**				**X^2=14.08 p=0.001 / c>b**				X^2=0.669 p=0.71 6			
Working status																	
Employed	43	75.63	27.91	88.00	58.63	40.26	14.96	47.00	56.42	25.63	10.78	28.00	59.56	9.74	3.67	10.00	51.93
Unemployed	65	73.48	25.06	85.00	51.77	40.05	13.85	46.00	53.23	23.38	8.40	26.00	51.15	10.05	4.01	11.00	56.20
Statistical analysis		U=1220.0 p=0.265				U=1315.0 p=0.604				U=1180.0 p=0.172				U=1287.0 p=0.485			
Income																	
a-Less than expenses	50	68.72	25.07	82.00	45.89	37.22	13.87	44.00	46.00	22.00	8.47	24.50	46.12	9.50	4.04	10.00	51.41
b-Equal to expenses	49	82.47	24.29	90.00	65.81	44.47	13.07	49.00	65.99	27.35	9.43	28.00	64.91	10.65	3.49	11.00	59.73
c-More than expenses	9	61.22	30.70	48.00	40.78	32.67	16.56	26.00	39.17	20.22	10.46	15.00	44.39	8.33	4.47	8.00	43.17

Table 4.
Continued

Variables	n	GHBS Total				General hygiene				Menstrual hygiene				Abnormal finding awareness			
		Mean	SD	Median	Mean rank	Mean	SD	Median	Mean rank	Mean	SD	Median	Mean rank	Mean	SD	Median	Mean rank
Statistical analysis		**X^2=11.90 p=0.003 / b>a**				**X^2=12.46 p=0.002 / b>a**				**X^2= 9.95 p=0.007 / b>a**				X^2= 3.07 p=0.215			
Received genital hygiene education																	
Yes	79	78.19	24.44	88.00	59.17	42.23	13.13	47.00	58.64	25.58	9.19	27.00	58.62	10.38	3.73	11.00	58.09
No	29	63.83	28.06	73.00	41.78	34.41	15.73	37.00	43.22	20.72	9.33	22.00	43.28	8.69	4.04	9.00	44.72
Statistical analysis		**U=776.5 p=0.010**				**U=818.5 p=0.023**				**U=820.0 p=0.024**				**U=862.0 p=0.048**			
Source of genital hygiene education																	
a-Friends	15	70.87	28.34	87.00	53.47	38.33	15.09	47.00	53.10	23.40	9.92	25.00	52.07	9.13	4.60	10.00	48.83
b-Social and mass media	12	52.00	24.52	46.00	34.08	27.75	12.47	25.00	32.58	16.58	9.13	13.00	30.42	7.67	3.98	7.50	36.71
c-Health professionals	15	74.47	27.87	84.00	55.57	40.60	15.63	46.00	58.33	23.60	10.08	22.00	52.07	10.27	4.20	11.00	58.27
d-School	37	91.16	8.17	90.00	71.08	49.16	3.96	49.00	69.46	30.19	5.23	29.00	73.08	11.81	2.22	12.00	68.70
e-Did not receive education	29	63.83	28.06	73.00	41.78	34.41	15.73	37.00	43.22	20.72	9.33	22.00	43.28	8.69	4.04	9.00	44.72
Statistical analysis		**X^2= 20.30 p= .000 / d>b d>e**				**X^2= 18.36 p= .001 / d>b – d>e**				**X^2= 24.07 p= .000 / d>b – d>e**				**X^2= 15.19 p= .004 / d>b – d>e**			

*Bonferroni correction was performed for differences between two groups; **X^2**=Kruskal-Wallis H, **U**= Mann-Whitney, SD= standard deviation*

Furthermore, a statistically significant difference was observed between the source of information on genital hygiene and the median rank scores obtained from the GHBS (X^2=20.30; p=0.000), and its subscales of general hygiene (X^2=18.36; p=0.001), menstrual hygiene (X^2=24.07; p=0.000), and abnormal finding awareness (X^2: 15.19; p=0.004). The participants who received information on genital hygiene at school obtained higher scores on the GHBS and its subscales than those who received information via social and mass media as well as those who had never received any information.

Discussion

Genital infections have emerged as a significant public health concern, affecting both developed and developing countries. In order to safeguard women's reproductive health and well-being, it is imperative to prioritize prevention strategies for genital infections. A growing body of evidence suggests that genital hygiene behaviors play a pivotal role in the occurrence and prevention of genital tract infections (12-14). In order to prevent genital infections, it is essential to identify and correct any inappropriate genital hygiene behaviors, as well as to encourage the development of positive hygiene practices. In this context, the aim of this study was to determine the genital hygiene behaviors of reproductive women and the factors affecting.

The study found that 73.1% of the participants received information on genital hygiene, with 34.3% indicating that the source of this information was their schools. When most literature studies are examined, women receive genital hygiene training. However, Toroman et al. (15). It has been reported that almost all women do not receive genital hygiene training. Education on genital hygiene is a lifelong process that begins in the family and continues in schools. It is particularly important to instill this knowledge early in life because it can have a significant impact on the occurrence of genital infections. Factors such as maintaining genital area dryness, the method of cleaning the genital area, the products used for genital cleaning, and the bathing position can influence the likelihood of developing genital infections (16-18). The majority of the participants in our study engaged in genital hygiene practices that involved cleaning the genital area from front to back, refraining from the use of products such as cream and perfume during genital cleaning, taking a shower in a standing position, and wearing underwear made of cotton.

The participants of this study exhibited moderate-to-high GHBS scores, indicating positive genital hygiene practices. Previous studies on different populations have reported GHBS scores ranging from 68.63±4.83 to 95.25±8.57 (18-21). The extent to which women engage in genital hygiene behaviors varies. While some studies have indicated that women's genital hygiene behaviors are at an optimal level, others have reported that they are not. Similar to our findings, Kurt et al. (18) found that the mean GHBS score of women who visited a gynecology polyclinic in Turkey was 68.63±4.83. The mean GHBS scores in the study of Demirağ et al.(22) on female students in a vocational health school in Gümüşhane province of Turkey were 86.89±7.124. In the studies of Abiç et al. (23), the GHBS scores of adolescent girls were reported as 85.85±9.64. However, there are also findings in the literature that do not support our results (22,24,25). Özkan and Tosun (24) found that the GHBS scores were lower in female workers. In their study conducted by Ratna et al. (25) with Indonesian women aged 15-24, they found the genital hygiene knowledge scores to be 59,710. Despite technological advancements, low levels of genital hygiene practices remain a concern, which may be improved through health education.

The study found that 64.8% of the participants had graduated from university. Education level is an important factor affecting general health and genital hygiene behaviors. A statistically significant intergroup difference was observed between the level of education and the scores obtained from the GHBS and its subscales of general and menstrual hygiene ($p<0.05$). The findings indicated that an increase in education level was associated with higher scores on the GHBS and its subscales of general and menstrual hygiene. Participants with a university education level or above exhibited statistically significant higher scores on the GHBS and its subscales of general hygiene and menstrual hygiene than those who had graduated from secondary schools. Our findings align with those of previous studies, which demonstrated that education level of women has a positive effect on genital hygiene behaviors (16,26). Various studies have reported a positive correlation between the levels of education and health literacy (27-29). Consequently, we may infer that higher levels of education among the participants of this study may have facilitated the implementation of proper health behaviors, which, in turn, may have contributed to a higher level of GHBS.

The results revealed that 60.2% of the participants were unemployed, and 46.3% had an income that was lower than their expenses. Participants who earned an income equal to their expenses exhibited statistically significant higher scores on the GHBS and its subscales of general hygiene and menstrual hygiene ($p<0.05$). The results of this study are consistent with those of Kurt et al. (18), who found that the frequency of genital infection was higher in women with low incomes than in those with high incomes. This finding may be explained by the possibility that an increase in income could result in greater access to health facilities and hygiene materials.

The GHBS scores of the participants who received information on genital hygiene were significantly higher than those who did not ($p<0.05$). The subsequent analysis demonstrated that the information received at the school was more effective than the other methods of gathering information ($p<0.05$). Health education aims to improve individuals' health by providing knowledge, attitudes, and behaviors on health-related issues. The positive genital hygiene behaviors exhibited by the participants who received information on genital hygiene education can be interpreted in light of the aforementioned information.

Study Limitations

This research is limited to women aged 15-49 who are registered at Famagusta Maraş Development Academy. Therefore, the results can only be generalized to women. Qualitative studies can be conducted to collect more detailed data.

Conclusion

The findings of this study indicate that the genital hygiene behaviors of women of reproductive age are, for the most part, positive. The results also indicate that women's education and income levels and previous knowledge of genital hygiene are associated with more positive genital hygiene behaviors. Improved genital hygiene behaviors are associated with a reduction in the incidence of genitourinary infections and enhanced women's health, which, in turn, contributes to the health economy of the country. Based on these findings, nurses should consider femalesing proper genital hygiene behaviors. Further studies with a larger sample size will provide more comprehensive insights.

Ethics

Ethics Committee Approval: Prior to the commencement of the study, ethical approval was obtained from the Scientific Research and Publication Ethics Boards of East Mediterranean University (approval no: ETK00-2023-0054, date: 23.03.2023).

Informed Consent: Prior to data collection, participants were informed about the research and were asked to sign the "informed volunteer consent form".

Footnotes

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ORIGINAL ARTICLE

Determination of the Relationship Between Mothers' Perception of Birth and Breastfeeding Success in Turkey: An Observational Cross-sectional Study

Türkiye'de Annelerin Doğum Algısı ile Emzirme Başarısı Arasındaki İlişkinin Belirlenmesi: Gözlemsel Kesitsel Bir Çalışma

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Abstract

Objective: To investigate the relationship between birth mothers' perceptions of their birth experiences and postpartum breastfeeding success.

Method: The sample of this descriptive and observational study consisted of mothers who underwent either vaginal delivery or unplanned cesarean section in a maternity hospital in Ankara between April 1, 2022 and May 1, 2022. The data were collected using a "socio-demographic form", "mother's perception of birth scale (MPBS)" and "LATCH-breastfeeding diagnosis and assessment scale (LATCH)" via face-to-face interview technique.

Results: The study included 350 mothers with a mean age of 30.10±3.85 years. It was found that 45.1% of mothers had high school education, 81.1% were unemployed, 80.9% lived in the province, and 74.9% had a nuclear family structure. It was determined that 53.1% of mothers had planned pregnancies, 49.7% had spontaneous vaginal delivery, 91.4% had no problems with breastfeeding in previous births, and 63.4% did not participate in antenatal education. The mean total score of the MPBS was 82.36±10.39 and, the mean total score of the LATCH-breastfeeding diagnosis and assessment scale was 7.26±2.23. A weak negative relationship was found between the MPCS and LATCH total scores (r=-0.131, p=0.014). A moderate negative correlation was found between the total score of the LATCH scale and the mean score of experiences during the labor subdimensions of the MPBS (p=0.254, r=-0.61).

Conclusion: The mothers' experiences at birth were positive, and breastfeeding success increased as positive experiences during the postpartum period increased.

Keywords: Breastfeeding, breastfeeding success, perception, perception of birth, nursing

Öz

Amaç: Bu çalışma, annelerin doğum algıları ile emzirme başarıları arasındaki ilişkiyi belirlemek amacıyla yapılmıştır.

Yöntem: Tanımlayıcı ve gözlemsel nitelikteki bu çalışmanın örneklemini, 1 Nisan-1 Mayıs 2022 tarihleri arasında Ankara'da bir kadın doğum hastanesinde vajinal doğum veya plansız sezaryen ile doğum yapan anneler oluşturmuştur. Veriler "sosyo-demografik formu", "annenin doğum algısı ölçeği (ADAÖ)" ve "LATCH-emzirme tanılama ve değerlendirme ölçeği (LATCH)" kullanılarak yüz yüze görüşme tekniği ile toplanmıştır.

Bulgular: Çalışmaya yaş ortalaması 30,10±3,85 yıl olan 350 anne dahil edilmiştir. Annelerin %45,1'inin lise mezunu olduğu, %81,1'inin çalışmadığı, %80,9'unun ilde yaşadığı ve %74,9'unun çekirdek aile yapısına sahip olduğu saptanmıştır. Annelerin %53,1'inin gebeliklerinin planlı olduğu, %49,7'sinin spontan vajinal doğum yaptığı, %91,4'ünün önceki doğumlarında emzirme ile ilgili sorun yaşamadığı ve %63,4'ünün antenatal eğitime katılmadığı belirlenmiştir. ADAÖ toplam puan ortalaması 82,36±10,39 ve LATCH ölçeği toplam puan ortalaması 7,26±2,23'tür. ADAÖ ve LATCH ölçeği toplam puan ortalamaları arasında negatif, zayıf düzeyde bir ilişki bulunmuştur (r=-0,131, p=0,014). LATCH ölçeği toplam puanı ile ADAÖ doğum sırasındaki deneyimler alt boyut puan ortalaması arasında negatif yönde orta düzeyde bir ilişki bulunmuştur (p=0,254, r=-0,61).

Sonuç: Annelerin doğumda yaşadıkları deneyimin olumlu olduğu ve postpartum döneme ilişkin olumlu deneyimler arttıkça emzirme başarısının da arttığı sonucuna varılmıştır.

Anahtar Kelimeler: Emzirme, emzirme başarısı, algı, doğum algısı, hemşirelik

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Introduction

Birth is an experience lived through psychological and physiological changes. Every woman perceives pregnancy and childbirth uniquely and experiences excitement, happiness, and sometimes fear (1). In the postpartum period, 45% of women experience adverse birth experiences (2). This leads to a decrease in mother-baby relationship (3,4) and breastfeeding success (5,6) in the postpartum period. A previous study stated that negative birth experiences caused interruption in mother-infant attachment (4). All types of negative experiences during both pregnancy and the birth process cause stress in the mother and affect her adaptation to the postpartum period (7,8). Do and Sun (9) found that variables that positively affect women's satisfaction level in Korea significantly positively affect their perception of childbirth. In a study conducted with Japanese women, it was concluded that the birth experience was negatively affected in the absence of mother-centered care and that the birth process, which progressed with her own efforts and family support, provided a positive birth experience in women; however, some women could not overcome the negative perception of birth even after a long time after birth (10). A study performed with Brazilian women reported that violence during the birth process caused the development of negative perceptions of childbirth (11). Studies published in Turkey have concluded that negative perceptions of childbirth negatively affected mother-infant attachment (12,13).

The mother needs to be psychologically comfortable to care for her baby effectively and to feed her baby exclusively with breast milk (14). However, mothers who experience emotional disorders such as stress and anxiety inevitably experience inadequate lactation (15). According to the Turkish Demographic and Health Survey 2018 data, only 41% of infants under six months of age are breastfed in Turkey (16). Globally, only 44% of infants aged 0-6 months are breastfed (17). In a study examining the breastfeeding success of mothers during the early postpartum period, it was concluded that providing information to mothers about breastfeeding had a positive effect on breastfeeding success, whereas unplanned pregnancy, multiple births, and giving food other than human milk to the baby had a negative effect on breastfeeding success (14). In addition to distress caused by unplanned pregnancies, all kinds of negative situations experienced by mothers during the birth process also have a negative effect on the initiation and continuation of breastfeeding (18). In a study evaluating the breastfeeding success of primiparous mothers and the factors affecting it, it was emphasized that it is important to inform and support mothers in adapting to all kinds of changes that occur in the early postpartum period (19). In particular, mothers' positive perception of the support they receive from their spouses affects positive outcomes (maternal health, infant nutrition, etc.) in the postpartum period (8). First, it is essential to determine the perception of the mother related to birth along with the relevant factors for an effective and successful breastfeeding of the infant during the postpartum period. When the current literature is examined in depth, there are studies in which mothers' perception of childbirth and breastfeeding success of infants are examined separately, but no study has investigated the relationship between mothers' perception of childbirth and breastfeeding success. Therefore, this study aimed to investigate the relationship between the perception of childbirth and breastfeeding success and to contribute to the literature on maternal infant health.

Main Points

- In this study, which included 350 mothers, the mothers had both positive perceptions of childbirth success and high breastfeeding success.
- Positive perception in the postpartum period led to increased breastfeeding success.
- Determining the perception of birth during midwifery and the nursing care to be given to mothers can help ensure effective breastfeeding of infants in the postpartum period.

Material and Method

Study Design and Participants

This was a descriptive cross-sectional study. G*Power 3.1.9.2 (Franz Faul, Universitat Kiel, Germany) was used to determine the sample size. It was planned to include 343 women in the sample of the study with an effect level of medium (0.15), a power level of 80%, and a significance level of 0.05. The study included 350 mothers between the ages of 18 and 49, hospitalized for childbirth (in reproductive age), who could speak and understand Turkish, and who agreed to participate in the study. Participation in the study was voluntary. Mothers who did not volunteer to participate in the study were excluded.

Data Collection

After the participants were informed about the importance, purpose, and method of the study face-to-face, data collection forms were administered to the mothers who agreed to participate in the study. The data were collected by using the "socio-demographic form", "mother's perception of childbirth scale (MPCS)" and "LATCH breastfeeding diagnosis and assessment scale (LATCH)". It took about 10-15 minutes to complete the data collection forms with the mothers.

Procedure

Informed consent was obtained from all mothers included in the study. The MPCS and questionnaire form were administered to the mother before breastfeeding her baby using face-to-face interview. The mother was then observed breastfeeding her baby. After the mother breastfed her baby, LATCH was completed by the researcher.

Data Collection Tools

Socio-demographic form

This form, which was prepared by the researchers in line with the literature (8, 14, 15, 19, 20), consists of questions

about the socio-demographic and obstetric characteristics of the mothers.

MPCS

MPCS was developed by Fawcett and Knauth in 1996, and it was adapted into Turkish by Kızılkaya Beji and Güngör in 2007. The MPCS is a Likert-type scale consisting of 25 items and five subdimensions. The sub-dimensions are "experiences during labor", "experiences during the pain period of labor", "postpartum", "spouse's participation", and "awareness". Five items on the scale were reverse scored. The lowest score obtained from the scale was 25 points, and the highest score was 125 points. A higher score on the scale indicates that the mother had more positive experiences during childbirth (20). The Cronbach's alpha value of MPCS scale of this study was found to be 0.79.

LATCH breastfeeding diagnosis and assessment

The LATCH scale was developed by Jensen, Wallace and Kelsay in 1994. It was translated into Turkish by Demirhan and Pek in 1997 and Yenal and Okumuş (21). The method was used to assess the mothers' breastfeeding. The LATCH scale tool comprises the initials of five evaluation criteria. The following criteria were used: L: Latch on breast, A: Audible swallowing, T: Type of nipple, C: Comfort breast/nipple, and H: Hold.

The length of time required to rate this 3-point Likert-type scale is 5 minutes. The scale items included five criteria: "the latch of the baby on to the breast, the swallow sound of the baby, the type of the mother's nipple, the mother's comfort level, and the help the mother needs to place her baby in the breastfeeding position". The lowest score that can be obtained from the scale is "0" and the highest score is "10" points. Higher scores indicate greater breastfeeding success (20). The Cronbach's alpha value of the LATCH scale in this study was 0.67.

Outcomes

The primary outcomes were the relationship between mothers' perceptions of childbirth and breastfeeding success. The secondary outcomes were the factors affecting mothers' perceptions of childbirth and breastfeeding success.

Statistical Analysis

The statistical analysis of the study data was performed using SPSS 23.0 software. The compatibility of variables with normal distribution was examined using Shapiro-Wilk test. Because the data were not normally distributed, non-parametric tests were used. Data were analyzed to examine independent variables and mothers' perceptions of birth and breastfeeding success by Kruskal-Wallis test (χ^2-table value) for comparisons of three or more groups, and Mann-Whitney U test (Z-table value) for comparisons of two groups. Bonferroni test was used in further analyses to determine the difference between the groups. Statistical significance cut-off point was accepted as $p<0.05$ in the study. According to the power analysis at the end of the research, the study was completed at an 88% power level.

Ethical Approval

Prior to commencing the study, formal approval was secured from the Başkent University Non-Interventional Clinical Research Ethics Committee on March 30, 2022 (reference number: KA22/127-22/53). The ethics committee approved the study, and permission was obtained from the institution where the study was conducted. After providing an explanation of the study, verbal and written consent certificates were obtained from the mothers participating in the study.

Results

The study included 350 postpartum mothers. As shown in Table 1, the mean MPCS total score was 82.36±10.39 and the mean LATCH total score was 7.26±2.23.

The Socio-demographic and Obstetrics Characteristics

It was found that 45.1% of the mothers with a mean age of 30.10±3.85 years had high school graduates, 80.3% were not employed, and 54.6% had an income equal to expenses. It was determined that 25.1% of the spouses of the mothers had undergraduate and graduate degrees (Table 2). It was determined that 53.1% of the mothers planned their pregnancy, 31.7% were experiencing their first pregnancy, and 49.7% had normal vaginal delivery. 24.9% of the mothers stated that they attended a childbirth preparation class during pregnancy, and 60.0% stated that they received breastfeeding education. 70.3% of the mothers reported that their first contact with their babies was skin-to-skin, and 56.3% reported that the first breastfeeding was performed within the first five minutes after birth. Approximately 91.4% of the mothers did not have breastfeeding problems (Table 3).

Table 1.
Distribution of MPCS and LATCH Scores Among Mothers (n=350)

Scales	Median	Min.	Max.
MPCS	83.00	46.00	105.00
Experiences during labor	22.00	11.00	34.00
Experiences during the labor pain period	24.00	9.00	32.00
Postpartum	12.00	5.00	20.00
Spouse's participation	16.00	4.00	20.00
Awareness	10.00	4.00	14.00
LATCH	8.00	2.00	17.00

MPCS=Mother's perception of childbirth scale, LACTH= A breastfeeding diagnosis and assessment scale, n=number

Table 2.
Distribution of MPCS and LATCH Scores According to Descriptive Characteristics of Mothers (n=350)

Characteristics	n	%	MPCS		LATCH	
			Median [min-max]	Test/p	Median [min-max]	Test/p
Place of residence						
Province[a]	283	80.9	84.00 [48-105]	KW=7.244 p=0.027 a-b	7.00 [2-10]	KW=20.022 p=0.001 a-b
District[b]	62	17.7	77.50 [46-104]		9.00 [4-17]	
Village/town[c]	5	1.4	78.00 [75-97]		9.00 [6-10]	
Education						
Literate[a]	9	2.6	77.00 [48-96]	KW=10.473 p=0.63	10.00 [6-10]	KW=12.524 p=0.028 e-a;d-a
Primary education[b]	33	9.5	81.00 [58-97]		8.00 [4-10]	
Secondary education[c]	62	17.7	86.00 [46-105]		7.00 [2-10]	
High school[d]	158	45.1	84.00 [55-105]		8.00 [2-10]	
Undergraduate[e]	77	22	79.00 [53-104]		7.00 [2-17]	
Postgraduate[f]	11	3.1	75.00 [67-93]		9.00 [2-10]	
Employment						
Yes	66	18.9	85.50 [65-105]	U=8.330	6.00 [2-10]	U=12.405
No	284	81.1	82.00 [46-105]	p=0.159	8.00 [2-17]	p=0.001
Occupation						
Officer[a]	41	11.7	87.00 [64-105]	KW=0.494 p=0.920	6.00 [2-10]	KW=17.965 p=0.001 a-b;a-d
Worker[b]	50	14.3	82.00 [60-97]		7.00 [2-10]	
Self-employment[c]	16	4.6	84.50 [73-97]		7.00 [2-10]	
Housewife[d]	243	69.4	83.00 [46-105]		8.00 [3-17]	
The perceived economic status						
Low[a]	79	22.6	77.00 [46-104]	KW=11.312 p=0.003 a-b;a-c	8.00 [3-10]	KW=10.367 p=0.006
Modarete[b]	191	54.6	83.00 [48-105]		7.00 [2-17]	
High[c]	80	22.8	87.00 [57-97]		7.50 [2-10]	
Family type						
Nuclear family	262	74.9	82.50 [46-105]	KW=1.224 p=0.542	8.00 [2-17]	KW=3.620 p=0.164
Extended family	77	22	84.00 [64-105]		7.00 [2-10]	
Fragmented family	11	3.1	85.00 [68-97]		8.00 [6-10]	
Spouse's education level						
Literate[a]	6	1.7	72.50 [48-99]	KW=20.311 p=0.001 f-c;f-d	7.50 [3-10]	KW=11.578 p=0.041 f-c;f-d
Primary education[b]	23	6.6	80.00 [55-105]		8.00 [2-10]	
Secondary education[c]	58	16.6	83.00 [70-97]		8.00 [2-10]	
High school[d]	160	45.7	84.00 [46-104]		8.00 [3-17]	
Undergraduate[e]	90	25.7	83.50 [53-105]		7.00 [2-10]	
Postgraduate[f]	13	3.7	73.00 [57-93]		8.00 [2-10]	

MPCS=Mother's perception of childbirth scale, LACTH=LATCH breastfeeding diagnosis and assessment scale, n=number, %=percent, U=Mann-Whitney U test, KW=Kruskal-Wallis test

MPCS and LATCH Scores According to Socio-demographic and Obstetric Characteristics

We found a significant difference in MPCS and LATCH scores among postpartum women based on where they lived (p=0.027, p=0.001). The MPCS and LATCH scores of postpartum women were evaluated according to the educational level (p=0.028), employment status (p=0.001), and occupation of the women (p=0.001), and it was found

Table 3.
Distribution of MPCS and LATCH Scores According to the Obstetric Characteristics of Mothers (n=350)

Characteristics	n	%	MPCS		LATCH	
			Median [min-max]	Test/p	Median [min-max]	Test/p
Pregnancy plan						
Planned	186	53.1	81.00 [46-105]	U=17.826 p=0.006	8.00 [2-10]	U=15.039 p=0.829
Unplanned	164	46.9	84.00 [61-105]		6.00 [4-17]	
Mode of delivery						
Spontaneous vaginal delivery	174	49.7	86.00 [46-104]	U=13.210 p=0.026	7.00 [2-10]	U=14.817 p=0.597
Cesarean section	176	50.3	81.00 [55-105]		8.00 [4-17]	
Problems with breastfeeding during the previous birth						
Yes	30	8.6	76.00 [68-105]	U=6.531 p=0.088	8.00 [2-17]	U=5.914 p=0.116
No	320	91.4	84.00 [46-105]		8.00 [2-10]	
Problems with previous childbirth* (n=30)						
Breastfeeding problems due to impaired latch	8	26.7	75.50 [70-92]	KW=6.531 p=0.088	8.50 [5-17]	KW=5.914 p=0.116
Nipple crack	10	33.3	75.00 [68-78]		4.00 [2-10]	
Interruption of milk	10	33.3	77.00 [71-85]		9.00 [4-10]	
Small nipple	2	6.7	100.00 [95-105]		7.50 [6-9]	
Time elapsed since the first breastfeeding session (minutes)						
In 5	197	56.3	73.50 [68-105]	KW=24.912 p=0.001	7.00 [2-17]	KW=1.080 p=0.583
In 30	105	30	75.00 [69-85]		8.00 [2-10]	
In 60	48	13.7	78.00 [76-78]		7.50 [2-10]	

*MPCS=Mother's perception of childbirth scale, LACTH=LATCH breastfeeding diagnosis and assessment scale, n=number, %=percent, U=Mann-Whitney U test, KW=Kruskal-Wallis test, *=only the responses of those having breastfeeding problems*

Table 4.
Relationship Between MPCS and LATCH Scale According to Obstetric Characteristics of Mothers (n=350)

Characteristics	MPCS		LATCH	
	r	p	r	p
Marriage age	0.35	0.514	0.57	0.289
Duration of marriage (years)	0.108	0.44	-0.108	0.38
Number of pregnancies	0.150	0.005	0.13	0.809
Number of births	0.208	0.001	-0.031	0.559
Number of living children	0.193	0.001	-0.009	0.861
Duration of first breastfeeding after birth (minutes)	-0.151	0.005	-0.024	0.650

MPCS=Mother's perception of childbirth scale, LACTH= A breastfeeding diagnosis and assessment scale. The Spearman correlation test was used for the correlation analysis

that there was no significant difference in the MPCS score, but there was a significant difference in the LATCH scores. The research showed that there was a significant difference in MPCS and LATCH scores among postpartum women based on how they perceived their income (p=0.003 and p=0.006, respectively) and their spouse's education level (p=0.001 and p=0.041, respectively) (Table 2). There was a significant difference in MPCS scores among postpartum women according to pregnancy planning status (p=0.006) and mode of delivery (p=0.026) (Table 3). The study found that there was a significant positive correlation between the MPCS total score and the number of pregnancies (p=0.005), births (p=0.001) and living children (p=0.001). Additionally, there was a significant negative correlation between the duration of the first breastfeeding of the baby after birth (p=0.005) (Table 4).

Relationship between MPCS and LATCH Scale

As shown in Table 5, a negative and week relationship was found between MPCS and LACTH total scores (r=-

0.131, p=0.014). It was found that there was a negative and moderate relationship between the LATCH total score and the MPCS subdimensions of experiences during labor (r=-0.61, p=0.254) (Table 5).

Discussion

This study found that both childbirth perceptions and breastfeeding success of mothers were positive. It was concluded that as mothers' experiences during labor increased, their breastfeeding success also improved. These findings suggest that a positive labor experience is crucial for the effective initiation and maintenance of breastfeeding. Socio-demographic and obstetric factors affecting mothers' breastfeeding success and perceptions of labor were consistent with the literature (18,19,22-24). This study demonstrated a relationship between MPCS and LATCH in mothers. Although no studies have specifically examined the relationship between childbirth perception and breastfeeding success, some have analyzed these conditions separately. However, some studies have analyzed both conditions separately.

Studies have reported that mothers in the postpartum period often have a positive perception of birth (22-24). A study conducted with mothers who had spontaneous vaginal deliveries found that breastfeeding success was high (19,25). Another study revealed that mothers who have a negative birth experience also have a negative impact on breastfeeding outcomes (26). This study found similar results, showing that a positive perception of birth was associated with high breastfeeding success. It is believed that a positive perception of labor experiences influences the success of mothers in breastfeeding during the postpartum period.

This study found that mothers living in the city center, with incomes higher than their expenses, and who graduated from high school had higher median MPCS scores. There is no existing literature examining the relationship between mothers' place of residence, husbands' occupation, perceived economic status, and perceptions of childbirth.

Table 5.
Relationship Between MPCS and LATCH Scale

Correlation	LATCH	
	r	p
MPCS	-0.131	0.014
Experiences during labor	-0.61	0.254
Experiences during the labor pain period	-0.161	0.003
Postpartum	0.149	0.005
Spouse's participation	-0.205	0.001
Awareness	-0.178	0.001

MPCS=Mother's perception of childbirth scale, LACTH= A breastfeeding diagnosis and assessment scale

However, in the study by Yılmaz and Nazik (22), mothers who only completed primary education had high mean MPCS scores, which contrasts with our results. This discrepancy may be due to the higher proportion of high school graduate mothers in our sample. This study suggests that mothers with incomes exceeding their expenses and whose spouses are self-employed may have better access to necessary health services during pregnancy and childbirth, potentially enhancing their positive perceptions of childbirth. Moreover, mothers who did not plan their pregnancy and who had spontaneous vaginal delivery had positive perceptions of childbirth. Consistent with these findings, other studies have shown that mothers who gave birth vaginally generally have positive perceptions of childbirth (24,27,28). Bicalho et al. (29) found that mothers who experienced prolonged hospital stays because of difficult labor had negative perceptions of childbirth and faced challenges with breastfeeding. Factors such as the intensity of pain experienced during delivery, difficulties in meeting the mothers' needs, and delayed or inadequate immediate interaction between the mothers and the babies can impact breastfeeding success (30,31). Early skin-to-skin contact between postpartum mothers and their babies is crucial (32). This study revealed that mothers who breastfed within the first 30 minutes after birth had more positive perceptions of childbirth. A systematic review of the impact of early skin-to-skin contact on maternal and newborn health indicated that it contributes to a positive childbirth experience (32).

In this study, mothers living in districts and villages or towns who perceived themselves as having a low income, were literate, and were housewives tended to have greater success with breastfeeding. Similarly, Ergezen et al. (25) reported that mothers who were not working and had a poor perceived economic status had more successful breastfeeding. This result suggests that a longer breastfeeding duration among mothers who do not work and have lower income contributes to breastfeeding success (33). Additionally, as the numbers of pregnancies, births, and living children increased, mothers' positive perceptions of birth also increased. A similar study found that as the number of births increased, mothers' awareness of childbirth also increased (22). The increase in the number of births and children is significant because it contributes to breastfeeding experience (34).

In this study, LACTH scores of mothers decreased as their experiences during the pain period of childbirth, spouse participation, and awareness subdimensions of MPCS scores increased. Öztürk et al. (35) reported that the majority of mothers perceived labor pain negatively. It has been shown that negatively perceived labor pain can lead mothers to fear that they might lose their baby during delivery, causing anxiety and stress (35). Spousal support is crucial for reducing mothers' stress levels and anxiety. A previous study indicated that spousal support provided to mothers during childbirth contributed to the formation of positive perceptions after birth (36). However, contrary to the findings of Kashaija et al. (36) this study

concluded that increased spousal support decreased the success of breastfeeding. It is believed that this result may be influenced by the perception of maternal support and cultural factors. Providing supportive care to mothers during labor pain can improve their perception of birth (37).

Study Limitations

This study has several limitations. One limitation of this study is that childbirth perception is a multidimensional concept, and breastfeeding success is influenced by many factors. As a result, it may be beneficial to explore these two concepts more comprehensively and support the findings through qualitative studies. Additionally, although the study included a sufficient number of mothers, it is important to conduct studies in different regions to understand the effects of different cultures on these concepts.

Conclusion

In conclusion, this study demonstrated that mothers generally had a positive perception of birth and breastfeeding success. However, negative experiences during labor decreased the success of breastfeeding. In addition, increased spousal support was associated with decreased breastfeeding success. To better understand the impact of spousal support on mothers' breastfeeding success, it is recommended to conduct studies with larger populations and explore the cultural effects and specific nature of the support provided by partners.

Ethics Committee Approval: Prior to commencing the study, formal approval was secured from the Başkent University Non-Interventional Clinical Research Ethics Committee on March 30, 2022 (reference number: KA22/127-22/53). The ethics committee approved the study, and permission was obtained from the institution where the study was conducted.

Informed Consent: After providing an explanation of the study, verbal and written consent certificates were obtained from the mothers participating in the study.

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Footnotes

Author Contributions: Surgical and Medical Practices – R.G., F.M.A.; Conception – R.G., L.T., Z.U.; Design – R.G., L.T., Z.U., F.M.A.; Data Collection and/or Processing – R.G., F.M.A., L.T.; Analysis and/or Interpretation – R.G., L.T., Z.U., F.M.A.; Literature Review – R.G., L.T., Z.U., F.M.A.; Writing – R.G., L.T., Z.U., F.M.A.

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ORIGINAL ARTICLE

The Effects of Stress Ball Use on Comfort and Anxiety Levels in Hemodialysis Patients: A Randomized Controlled Trial

Hemodiyaliz Hastalarında Stres Topunun Konfor ve Anksiyete Düzeyine Etkisi: Randomize Kontrollü Çalışma

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Abstract

Objective: The aim of this study was to evaluate the comfort and anxiety levels of patients undergoing hemodialysis using a stress ball.

Method: This was a randomized controlled trial. The patients were then told how to use the stress ball. The patients were then instructed to squeeze the stress ball for 15 minutes before the dialysis process began. During this time, the patient was emphasized to use the stress ball with the arm without a fistula or graft. The patient was then dialyzed and again instructed to squeeze the stress ball for 15 minutes. This practice was continued for nine hemodialysis sessions.

Results: A statistically significant difference was found between the experimental and control groups in the comfort levels (t=13.254, p<0.001) and the effect size was found to be very high (d=1.56). A statistically significant difference was found between the experimental and control groups in the anxiety levels (t=8.406, p<0.001), and the effect size was found to be very high (d=1.69).

Conclusion: The stress ball decreased anxiety levels and increased comfort levels in HD patients. In particular, long durations of hemodialysis treatment and dialysis durations of up to 4 hours negatively affect the quality of life of patients. According to the effect size analysis conducted in our study, the stress ball had a high-level effect on comfort and anxiety.

Keywords: Hemodialysis, comfort, anxiety, stress ball

Clinical Trials: NCT05845892

Öz

Amaç: Bu çalışmada, hemodiyaliz tedavisi gören hastalarda stres topu kullanılarak hastaların kaygı düzeylerinin ve konfor düzeylerinin belirlenmesi amaçlanmıştır.

Yöntem: Bu çalışma randomize kontrollü bir tasarımında gerçekleştirilmiştir. Hastalara stres topunun nasıl kullanılacağı anlatılmış ve gösterilmiştir. Daha sonra hastalara diyaliz süreci başlamadan önce 15 dakika boyunca stres topunu sıkmaları talimatı verilmiştir. Bu süre zarfında hastanın stres topunu fistül ve greft olmayan kolla kullanması gerektiği vurgulanmıştır. Hasta diyalize alındıktan sonra yine 15 dakika boyunca stres topunu sıkması istenmiştir. Bu uygulamaya dokuz hemodiyaliz seansı boyunca devam edilmiştir. Kategorik değişkenleri karşılaştırmak için ki-kare analizi kullanılmıştır. Grup içi karşılaştırmalar için eşleştirilmiş test ve gruplar arası karşılaştırmalar için tek örnek t-testi kullanılmıştır.

Bulgular: Deney ve kontrol grubunun ortalama konfor puanları arasında anlamlı bir fark olduğu (t=13,254, p=0,00) ve etki büyüklüğünün çok yüksek olduğu bulunmuştur (d=1,56). Deney ve kontrol grubunun anksiyete düzeyleri arasında anlamlı bir fark olduğu (t=8,406, p<0,001) ve etki büyüklüğünün çok yüksek olduğu bulunmuştur (d=1,69).

Sonuç: Çalışma sonucumuza göre stres topunun hd hastalarında anksiyete seviyesini azalttığı ve konfor seviyesini artırdığı bulunmuştur. Özellikle hemodiyaliz tedavi sürecinin uzun olması, diyaliz süresinin 4 saate kadar sürmesi hastaların hayat kalitelerini olumsuz yönde etkilemektedir. Bu nedenle hastaların konfor düzeyinde bozulmalar ve anksiyete görülmektedir. Hemşirelik bakımı bütüncül bir yaklaşımdır bu nedenle hastaların semptomlarına yönelik hemşirelik müdahalesi gerekmektedir. Çalışmamızda yapılan etki büyüklüğü analizine göre stres topunun konfor ve anksiyete üzerinde yüksek düzeyde bir etkisi olduğu bulunmuştur.

Anahtar Kelimeler: Hemodiyaliz, konfor, anksiyete, stres topu

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Introduction

Hemodialysis (HD) treatment causes various physiological, social, and psychological problems in patients (1,2). In addition to physiological problems such as changes in diet and fluid intake, fatigue, and cramps due to HD treatment, conditions such as being dependent on a treatment for a long time, changing body image, coping with treatment complications, fear of losing independence, and hopelessness increase the level of stress and anxiety and lead to psychological problems (2,3).

Complications associated with HD diminish the quality of life of patients and impair their daily comfort (4). In the existing literature, it has been reported that the comfort level of patients undergoing HD is moderate, with a reported range of 5-7 (5-7). It is of great importance to ensure patient comfort level to guarantee continuity of HD treatment (8). Therefore, nurses have important responsibilities in improving the quality of life and comfort of patients. To ensure comfort, which is an important part of nursing care, the patient's current comfort level should be determined, and necessary interventions should be made accordingly (4).

Stress is an important component that negatively affects comfort. For this reason, nursing care is important to help patients cope effectively with stressors by identifying the stressors in patients undergoing HD, thus increasing the comfort level (5). Studies have reported that the prevalence of anxiety in patients undergoing HD varies between 12% and 52% (6-8). Therefore, it is extremely important to ensure stress control and to increase the comfort level of HD patients.

Various non-pharmacological methods, such as exercise, yoga, relaxation techniques, and music therapy, are applied to control the stress and comfort levels of patients undergoing HD (9-11). Another important practice is the use of stress balls. Because the stress ball is accessible and inexpensive, it is an effective method for distracting patients. Nurdina et al. (12) reported that the application of a stress ball, which was performed in 34 HD patients for eight sessions for half an hour, significantly reduced anxiety and stress levels. Additionally, it has been noted that applying a stress ball, one of the cognitive distraction techniques, during invasive procedures including intravenous catheterization, cystoscopy, and extracorporeal shock wave lithotripsy improves pain and vital signs (18). The use of stress balls dramatically decreased the stress levels of the experimental group, according to a study by Kasar et al. (19), while the comfort levels were the same. However, Kasar et al. (19) noted that the study's limitations included the limited sample size and the patients' initial non-homogeneous stress levels. Therefore, in our study, we aimed to determine the anxiety and comfort levels of patients by using a stress ball in a larger sample group and in patients receiving HD treatment with homogeneous anxiety levels.

Main Points

- It was discovered that providing hemodialysis (HD) patients stress balls improved their degree of comfort.
- Patients undergoing HD reported feeling less anxious after using the stress ball.
- Patients receiving HD may find relief from anxiety and comfort by using stress balls as an alternative.

Material and Method

This study was conducted using a single-blind, semi-randomized controlled trial design. The aim of this study was to evaluate the comfort and anxiety levels of patients undergoing HD using a stress ball.

Hypothesis

H0-1: In patients receiving HD treatment, stress ball application for a total of 30 minutes, 15 minutes before the start of HD, and 15 minutes during HD treatment, is not effective at the comfort level.

H1-1: In patients receiving HD treatment, stress ball application for a total of 30 minutes, 15 minutes before the start of HD, and 15 minutes during HD treatment, is effective at the comfort level.

H0-2: In patients receiving HD treatment, stress ball application for a total of 30 minutes, 15 minutes before the start of HD, and 15 minutes during HD treatment, is not effective against anxiety.

H1-2: In patients receiving HD treatment, stress ball application for a total of 30 minutes, 15 minutes before the start of HD, and 15 minutes during HD treatment, is effective against anxiety.

Participants

One hundred and fifty six patients undergoing HD treatment in a private HD facility in Turkey comprised the study population. G*Power Version 3.1.9.2 program was used to determine the sample group. The sample size for 95% power was 54 patients in the power analysis, which was based on the sample group of related research carried out in the literature. Between February and March 2023, 63 patients who met the inclusion criteria were included in the study: 32 patients were included in the control group and 31 patients were included in the intervention group.

Randomization was performed to select the study sample. The experimental and control groups were selected by lottery. As a result of the draw, individuals who received HD treatment in the morning were included in the control group and those who received HD treatment in the afternoon were included in the experimental group. The HD session times of the patients were not changed. Only patients who received treatment in the morning and afternoon were assigned to the experimental and control groups.

Inclusion and Exclusion Criteria

The study included participants who were at least 18 years old, had been on the HD program for at least six months, had been on average for four hours three times a week, could respond to written or verbal scales, had no physical disabilities, could apply the stress ball as demonstrated during the HD study, and gave their consent to participate.

Those who had a fistula in each arm, psychological issues, nerve, soft tissue, and vascular disorders in the upper extremities, as well as those who left the city while the study was underway, were excluded from participation since it was believed that they would have an impact on the study's findings.

Data Collection Process

Once the requisite permissions had been obtained, the researcher elucidated the objective of the study to the individuals comprising the intervention and control groups, prior to commencing the application. Written and verbal informed consent was obtained from all participants.

To carry out the study in a systematic and orderly manner, the researcher interviewed the healthcare team in the dialysis centers, especially the nurse who would perform the stress ball application, and informed them about the purpose and method of the study. The researcher completed the patient forms using the data obtained through face-to-face interviews and a review of the patient medical records.

Intervention Group

In the first interview, data collection forms were given to the patients, and they were asked to fill them in before the start of dialysis. The patients were then told how to use the stress ball. The patients were then instructed to squeeze the stress ball for 15 minutes before the dialysis process began. During this time, the patient was emphasized to use the stress ball with the arm without a fistula or graft. The patient was then dialyzed and again instructed to squeeze the stress ball for 15 minutes. This practice was continued for nine HD sessions. After the last session, the data collection forms were completed.

Stress Ball Usage

1. Place the stress ball in one hand.

2. You can use any hand you want in the application to start dialysis.

3. During dialysis, continue the application with your free hand, not with the needles.

4. After taking the ball, squeeze it in your hand for 2-3 seconds and then loosen it. This process is continued for 15 consecutive minutes.

5. Use the stress ball before starting HD and at any time during HD for 15 minutes each, for a total of 30 minutes.

Control Group

In addition to receiving conventional care, the control group received no interventions. The data collection forms were completed prior to the initial HD session and subsequently at the conclusion of the ninth session. By educating the patients in this group how to utilize the stress ball and its effects in the last session, they were made aware of the bias introduced during the data collection phase of the study.

Data Collection Tools

The patient information form was developed by the research team in accordance with existing literature (7,17,18) and included questions pertaining to both socio-demographic and disease-specific characteristics.

The visual analog scale (VAS) for anxiety converts some values that cannot be measured numerically into numerical form. On the two ends of a 100-mm line, the two extreme definitions of the parameter to be evaluated are written, and people are asked to indicate where their condition corresponds to on this line by drawing a line, putting a point, or pointing (13).

Hemodialysis Comfort Scale

It was developed by Şahin Orak et al. (14) to determine the comfort of HD patients. The scale is comprised of two sub-dimensions: "relaxation" (items 7-9) and "coping" (items 1-6). A minimum score of 3.00 and a maximum score of 15.00 can be obtained from the relaxation subdimension, while a minimum score of 7.00 and a maximum score of 30.00 can be obtained from the overcoming subdimension. The lowest attainable score on the hemodialysis comfort scale is 9, while the highest is 45. As the score approached 45, the level of comfort increased. The Cronbach's alpha reliability coefficient for the scale was 0.87 (14). In the present study, the Cronbach's alpha coefficient was 0.85.

Statistical Analysis

SPSS 22.0 was used to analyze the study's data (SPSS Inc., Chicago, IL, USA). The Shapiro-Wilk test was used to assess the normality of the distribution of clinical parameters. Descriptive statistics were expressed as number (n), percentage (%), mean ± standard deviation (M ± SD). Chi-square analysis was used to compare categorical variables. The paired test was used for intragroup comparison, and the sample t-test was used for intergroup comparison. Statistical significance was set as $p<0.05$.

Ethical Issue

Ethical approval was obtained from the Bakırçay University Non-interventional Clinical Research Ethics Committee (decision no: 740, date: 25.10.2022). Furthermore, verbal

and written informed agreement was obtained from the study participants once the study's goal was described, and written institutional authorization was obtained from the private HD center where the study was conducted.

Results

The demographic characteristics of the patients in the experimental and control groups were statistically homogeneous (p>0.05) (Table 1).

Comfort

While there was a statistically significant difference between the pre-test total comfort mean scores and post-test total comfort mean scores of the experimental group (t=9.662, p<0.001), there was no significant difference between the pre- and post-test total comfort mean scores of the control group (t=1.340, p=0.736). A statistically significant difference was found between the experimental and control groups in the comfort levels (t=13.254, p<0.001) and the effect size was found to be very high (d=1.56).

A statistically significant difference was found between the experimental and control groups in the coping levels (t=4.631, p=0.031), and the effect size was average (d=0.66).

A statistically significant difference was found between the experimental and control groups in the relief levels (t=18.574, p<0.001) and the effect size was found to be very high (d=1.94).

According to these results, the stress ball significantly increased the comfort level of patients receiving HD. Based on this result, H1-1 was accepted (Table 2).

Patients' VAS Anxiety Scores

There was a significant difference between the total VAS mean scores of the participants in the experimental group (t=6.873, p<0.001), but no significant difference was observed in the total VAS mean scores of the participants in the control group (t=0.372, p=0.070). A statistically significant difference was found between the experimental and control groups in the anxiety levels (t=8.406, p<0.001), and the effect size was found to be very high (d=1.69) (Table 3). In line with the results, the stress ball significantly decreased the anxiety level of patients receiving HD. Based on this result, H1-2 was supported.

Discussion

HD treatment requires patients to adapt to conditions such as medication, dialysis sessions, diet, and fluid restriction (15,16). At the same time, vascular access and prolonged dialysis treatment affect the overall quality of life of patients

Table 1.
Demographic Characteristics of the Study Population

Variables		Experimental (n=31) n (%)	Control (n=32) n (%)	x^2	p
Gender	**Female**	18(58)	20(62.5)	2.892	0.174
	Male	13(42)	12(37.5)		
Education	**Secondary education or lower**	11 (35.5)	13 (41)	0.407	0.253
	High school education or above	20 (64.5)	19 (59)		
Age		65.74±10.12	61.95±12.15	t=-410	0.989

Table 2.
Comparison of Comfort Levels between the Experimental and Control Groups

	Experimental groups		Control groups		Independent-test post-mean (p-value)[b]	Effect size (Cohen's d)	95% CI	
	M ± SD	Test statistic[a]	M ± SD	Test statistic[a]			Lower limit	Upper Limit
Pre-total comfort	27.82±6.04	t=9.662 p<0.001	23.52±4.52	t=1.340 p=0.736	t=13.254 p<0.001	1.56	26.303	33.562
Post-total comfort	33.16±9.56		21.39±4.67					
Pre-coping	8.73±2.57	t=8.578 p=0.001	9.13±2.76	t=0.873 p=0.624	t=4.631 p=0.031	0.66	7.544	12.740
Post-coping	10.52±3.85		8.42±2.23					
Pre-relief	19.09±4.48	t=12.248 p=0.001	14.39±4.76	t=1.219 p=0.592	t=18.574 p<0.001	1.94	19.951	26.587
Post-relief	22.64±6.06		12.97±3.58					

[a]=Paired t-test, [b]=Independent t-test, M=mean, SD=standard deviation, CI=confidence interval

Table 3.
Comparison of Anxiety Levels between the Experimental and Control Groups

	Experimental groups		Control groups		Independent-test post-test mean (p-value)[b]	Effect size (Cohen's d)	95% CI	
	M ± SD	Test statistic[a]	M ± SD	Test statistic[a]			Lower limit	Upper Limit
Pre VAS	5.23±1.45	t=6.873 p<0.001	6.42±1.83	t=0.352 p=0.070	t=8.406 p<0.001	1.69	2.756	4.489
Post VAS	3.18±1.12		5.64±1.72					

[a]=Paired t-test, [b]=Independent t-test, M=mean, SD=standard deviation, CI=confidence interval, VAS=visual analog scale

and cause deterioration in comfort (17). Complications related to dialysis treatment, physiological changes such as fluid electrolyte imbalances and fatigue, and sociological factors such as uncertainty about the future cause stress and anxiety, which negatively affect patient comfort (18). Therefore, it is important to determine the comfort status of HD patients (17).

Comfort is an outcome of nursing care and is considered a nursing function in nursing models. In nursing care, the holistic approach prioritizes patient comfort (23). Furthermore, comfort is one of the most crucial aspects of nursing care that patients and their families require. To address patients' comfort demands and promote their comfort level, nurses should employ appropriate nursing interventions (6).

The quality of life and comfort levels of HD patients are negatively affected by the long duration of dialysis and dialysis sessions 2-3 days a week. In our study conducted to increase the comfort level, the use of stress balls significantly increased the comfort level in the experimental group of patients. According to the effect size analysis, the stress ball had a very high effect on comfort in patients undergoing HD. In contrast to our study, Kasar et al. (19) found that stress balls did not affect the comfort level of patients undergoing HD (19). This finding is attributed to the sample adequacy and effect size of our study. In the literature, no study differing from the study of Kasar et al. (19) on the effect of stress balls on the comfort level was found. Therefore, it is clear that our study is original and will contribute to literature.

Patients' personal quality of life is impacted by the fact that they must rely on the dialysis machine for two to three days a week, an average of four hours a day, and live with the assistance of their family and medical professionals while undergoing HD treatment (23). Specifically, prolonged dialysis sessions and machine alarms during the session are among the causes of their worry (24). According to previous studies, between 35% and 46% of patients undergoing HD treatment report feeling anxious upon admission (25-27). Consequently, patients with HD require therapy that addresses several elements of their condition in a comprehensive manner, in addition to the disease's obvious symptoms.

The effect of stress balls on anxiety was evaluated in patients receiving HD treatment. According to our study results, the stress ball significantly reduced the anxiety level of the experimental group. Similarly, in the studies of Kasar et al. (19) and Nurdina et al. (12), it was reported that the stress ball reduced the anxiety level in HD patients. In particular, it is stated that the stress ball alleviates symptoms thanks to its distraction feature. Squeezing the ball evokes a sense of calmness in the body and reduces the anxiety level of patients (20). According to the effect size analysis conducted in our study, the stress ball was found to be effective at reducing anxiety at a very high level.

Study Limitations

In the study design, we initially planned to assess the comfort and anxiety levels of patients every hour during their HD session. However, although the patients responded to the questionnaire because the anxiety scale was short, they did not want to fill in the comfort scale because it was too long. Therefore, only comfort and anxiety levels before and after dialysis were evaluated.

Conclusion

In this study, the effects of stress balls on anxiety and comfort were investigated in HD patients. According to our study results, the stress ball decreased anxiety levels and increased comfort levels in HD patients. In particular, long durations of HD treatment and dialysis durations of up to 4 hours negatively affect the quality of life of patients. Therefore, patients' comfort level deteriorates, leading to anxiety. Nursing care is a holistic approach; therefore, nursing intervention is required to address patient symptoms. According to the effect size analysis conducted in our study, the stress ball had a high-level effect on comfort and anxiety. In particular, the fact that effect size analysis was performed in our study strengthened our findings and provided more detailed information about our findings. Due to its strong effect, we recommend the use of stress balls as a nursing intervention to increase patients' comfort and decrease their anxiety in patients receiving HD treatment.

Ethics Committee Approval: Ethical approval was obtained from the Bakırçay University Non-interventional Clinical Research Ethics Committee (decision no: 740, date: 25.10.2022).

Informed Consent: Written and verbal informed consent was obtained from all participants.

Footnotes

Author Contributions: Surgical and Medical Practices – S.Ş.; Concept – S.Ş., S.G.; Design – S.Ş., S.G., Y.C., C.Ö.; Data Collection and/or Processing – S.Ş., Y.C., ; Analysis and/or Interpretation – S.Ş., C.Ö.;Literature Review – S.Ş., S.G., Y.C., C.Ö.; Writing – S.Ş., S.G., Y.C., C.Ö.

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ORIGINAL ARTICLE

The Relationship Between Nursing Students' Communication Skills and Their Attitudes Toward Clinical Practice: A Descriptive and Correlational Study

Hemşirelik Öğrencilerinin İletişim Becerileri ile Klinik Uygulamalara Yönelik Tutumları Arasındaki İlişki: Tanımlayıcı ve İlişki Arayıcı Çalışma

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Abstract

Objective: This research aimed to determine the relationship between nursing students' communication skills and their attitudes toward clinical practice.

Method: This descriptive and correlational study involved nursing students who were enrolled in the nursing program at a public university (n=482). Data were obtained via a student ınformation form, the communication skills scale, and the nursing students' attitudes toward clinical practices scale.

Results: The mean scores of the communication skills scale was 100.95±11.61 and the mean scores of the nursing students' attitude toward clinical practices scale was 105.94±14.65. Significant differences were found between the students' grades, finding themselves sufficient in clinical practice, satisfaction with the profession, and receiving training to develop communication skills, and between the students' grades and satisfaction with the profession and attitude toward clinical practice ($p<0.05$). Furthermore, a statistically significant positive correlation was identified between the communication skills of students and their attitudes toward clinical practice ($p<0.05$).

Conclusion: The students' communication skills and attitudes toward clinical practice were above average, and as their communication skills increased, they had positive perspectives on clinical practice.

Keywords: Nursing students, communication skills, attitude toward clinical practice

Öz

Amaç: Bu araştırmanın amacı, hemşirelik öğrencilerinin iletişim becerileri ile klinik uygulamaya yönelik tutumları arasındaki ilişkiyi belirlemektir.

Yöntem: Çalışma bir devlet üniversitesinin hemşirelik programına öğrenim gören hemşirelik öğrencileri (n=482) ile gerçekleştirildi. Veriler öğrenci bilgi formu, iletişim becerileri ölçeği ve hemşirelik öğrencilerinin klinik uygulamalara yönelik tutum ölçeği kullanılarak toplandı.

Bulgular: Çalışmanın sonucunda öğrencilerin iletişim becerileri ölçeğinin puan ortalaması 100,95±11,61 ve hemşirelik öğrencilerinin klinik uygulamalara yönelik tutum ölçeği puan ortalaması 105,94±14,65 idi. Öğrencilerin sınıfı, klinik uygulamalarda kendini yeterli bulma, mesleği sevme ve iletişim becerilerini geliştirmeye yönelik eğitim alma durumları ile iletişim becerileri arasında, öğrencilerin sınıfı ve iletişim becerilerini geliştirmeye yönelik eğitim alma durumu ile klinik uygulamalara yönelik tutum arasında anlamlı farklılık bulundu ($p<0,05$). Öğrencilerin iletişim becerileri ile klinik uygulamaya yönelik tutumları arasında pozitif yönde ilişki bulundu ($p<0,05$).

Sonuç: Öğrencilerin iletişim becerileri ile klinik uygulamaya yönelik tutumlarının ortalamanın üzerinde olduğu ve iletişim becerileri arttıkça klinik uygulamaya yönelik olumlu tutumlara sahip oldukları belirlendi.

Anahtar Kelimeler: Hemşirelik öğrencileri, iletişim becerileri, klinik uygulamalara yönelik tutum

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Introduction

Communication, a two-way process based on the interaction of two or more people, is the most important way for people to make sense of the surrounding environment (1). Communication involves transmitting information and ideas from one individual to another (2), and the exchange of verbal and non-verbal information is the heart of all interactions (3). It is important for every individual, regardless of profession, to communicate effectively with other individuals (4). However, the intensive use of communication in environments where health care services are provided, especially in the nursing profession, makes it even more special. It is an undeniable reality that patient-nurse communication has important contributions to establishing a meaningful relationship with patients and both care and social needs (4,5). Therefore, communication skills are considered one of the most important competencies for nurses. Effective interpersonal communication plays a pivotal role in nursing because it directly impacts patient care, teamwork, and overall healthcare outcomes. Therefore, it is essential for not only nurses but also nursing students to possess effective communication skills (2,6). While they are still in their student years, nurses are required to have advanced communication skills to establish an effective relationship with the individuals they provide health care services and to provide quality care (6).

Communication is a crucial element of patient care, as it improves the relationship between the nurse and patient and improves the patient's perception of healthcare services and treatment (7). The intensity of patient interaction during care practice reveals the importance of communication skills in nursing. The ability of nurses to effectively communicate increases the quality of patient-nurse interaction and ensures better results (8). In the literature, it is reported that communication forms the basis of patient care (9), and has an important role in providing effective, safe, and quality care to patients (10-12), ensuring patient satisfaction (13), and determining patient needs (14). It is also stated that effective communication reduces the anxiety and depression of patients (15), increases treatment adherence (16), and is effective in disease management (17).

Nursing students may encounter patients from different populations, cultures, or speech styles during clinical practice. This may cause them to experience communication problems (18). For students, clinical practice requires communicating with patients, but it is also known as an environment where they experience negative emotions like anxiety and fear and do not feel ready to communicate with patients (19). In such situations, students must learn empathic, patient-centered, active listening, and communication techniques based on being aware of their concerns and using correct language in critical situations (20,21).

Main Points

- Effective communication is fundamental to nursing care, and nursing students must interact proficiently with patients.
- Effective communication skills contribute to students' positive attitudes toward clinical practice.
- The student nurses had high communication skills and positive attitudes toward clinical practice.
- As students' communication skills improved, their approaches to clinical practice became increasingly positive, according to the findings.

Nursing education aims to enable students to reach the required level of professional competence before entering the nursing profession (22). Clinical practice is central to nursing education in terms of the acquisition of professional competence (23). The clinical practice aims to develop the knowledge, skills, and attitudes of future nurses, such as research, critical thinking, self-esteem, independent decision-making, and effective interpersonal communication skills (24), and to establish their professional competencies and identities (22,23). Nursing students can transform the theoretical knowledge learned in the classroom into clinical practice by establishing trust-based relationships with patients and developing professional skills and attitudes (25). This situation reveals that attitude development has an important place in the basis of quality nursing care as much as knowledge and practice. Students' attitudes toward clinical practice are affected by the clinical environment, the relationship between the student, nurse, and teacher, and the complex structure of the hospital environment. When the student's attitude toward clinical practice is positive, efficient clinical education develops, whereas in the opposite case, a negative attitude prevents the acquisition of clinical competencies (26). Nurses' attitudes toward clinical practice begin to develop during their student years (27). Students' attitudes also enable them to determine how to adapt to the clinical environment and how to improve their knowledge, skills, and attitudes when they encounter difficulties in professional practice (28). The most important learning outcome of clinical practice is to experience real communication with patients and other healthcare team members and the establishment of a professional identity by establishing effective interpersonal relationships (29). The professional relationship between nurses and patients begins to form during student years and continues to develop throughout professional life. Successfully creating this relationship provides professional satisfaction, success, and productivity for nurses, as well as improvements in patient outcomes (30). Effective communication also guides students in adverse situations that they may encounter in clinical settings and contributes to the development of positive attitudes by enabling them to improve themselves (18). Based on this information, this study aimed to assess the influence of students' communication skills on their attitudes toward clinical practice. This study aimed to answer the following research questions:

1. What communication skills do nursing students possess?

2. What are the attitudes of nursing students toward clinical practice?

3. Is there a relationship between nursing students' communication skills and their attitudes toward clinical practice?

Material and Method

Design and sample

This descriptive and correlational study investigated the relationship between students' communication skills and their attitudes toward clinical practice. The study was conducted with students enrolled in the Nursing Department of the Faculty of Health Sciences at a state university between May 10, 2023 and June 10, 2023.

The study included a total of 726 nursing students enrolled in the nursing departments of state universities during the 2022-2023 academic year, representing the population under investigation. The sample included 482 students who willingly agreed to participate in the study and fully completed the data collection forms.

Data collection forms

The data collection instruments employed were the student ınformation form, communication skills scale, and nursing students' attitudes toward clinical practices scale.

Student information form: The researchers created this form. The form consisted of a total of six questions, comprising the student's age, grade, place of residence, status of loving the profession, status of feeling competent in clinical practice, and whether the student received training to improve their communication skills (4,6,28).

Communication skills scale (CSS): The CSS created by Korkut Owen and Bugay (31) assesses the communication skills of university students is a 5-point Likert scale. The scale comprises 25 items distributed across four dimensions. These dimensions are self-expression (KIE), communication principles and basic skills (IITB), willingness to communicate (IKI), and effective listening and non-verbal communication (EDSOI). The scale ranges from 25 to 125. A higher score on the scale indicate improved communication skills. The calculated Cronbach's alpha internal consistency coefficient of the scale was 0.81 (31). In this research, the Cronbach's alpha coefficient for the scale was 0.93.

Nursing students' attitude scale toward clinical practice (NSASCP): The scale created by Bayülgen and Uysal (32) follows a 5-point Likert scale. Items 11-14, 26, 28, and 30 of the scale consisting of 26 items are coded in reverse. The scale has 4 sub-dimensions: "belief and expectation toward clinical practices (BECP)", "positive approach toward clinical practices (PACP)", "negative approach toward clinical practices (NACP)" and "personal development (PD)" the scale allows for scores ranging from 26 to 130. ıt has been reported that as the score obtained from the scale increases, students' attitudes toward clinical practice increase positively. The calculated Cronbach's alpha internal consistency coefficient of the scale was 0.93 (32). In this research, the Cronbach's alpha coefficient for the scale was 0.94.

Data collection process

Ethics approval and institutional permission were obtained to conduct the study. Subsequently, in accordance with the Helsinki Declaration, the purpose, scope, and methodology of the research, as well as the protection of personal information and the voluntary nature of participation, were explained to the students. After these explanations, students who volunteered to participate were engaged in face-to-face interviews within the classroom, where they completed the relevant forms and scales within a 15-20 minutes period.

Statistical Analysis

The data were evaluated using the IBM SPSS package program (version 20.0). The Kolmogorov-Smirnov test indicated that the data did not follow a normal distribution ($p<0.05$). In the data analysis, descriptive statistical methods (number, percentages, arithmetic means, and standard deviations) and comparative statistical methods (Mann-Whitney U test and Kruskal-Wallis test) were used. The relationship between the scales was evaluated using Spearman's correlation analysis. The findings were assessed with a confidence level of 95% and a significance level set at $p<0.05$.

Ethical considerations

Ethics committee approval was secured from the Scientific Research Ethics Committee of Trakya University Faculty of Medicine (date: 08.05.2023, no: 08/16), institutional permission was obtained from the institutions where the research would be conducted, and informed consent was obtained from the students.

Results

The average age of the nursing students involved in the study was 20.64±1.54 years. Of the participants, 82.6% identified themselves as female, 33.8% were in their first year of study, and 71.0% resided in dormitories. 57.7% of the nursing students stated that they found themselves partially sufficient in practice, 88.8% stated that they liked the nursing profession, and 77.2% stated that they received an education to improve their communication skills (Table 1).

The academic grades of the students showed a statistically significant contrast with the total scores obtained from both the CSS and the NSASCP ($p<0.05$). It was concluded that fourth-grade students had a higher mean CSS total score than first- and second-grade students, while fourth-grade students had a higher mean NSASCP total score than the other students (Table 1).

A significant difference was found between students' perceived adequacy in clinical practice and the total score on the CSS ($p<0.05$). The CSS total score of the students who found themselves adequate in clinical practice was higher than that of the other students (Table 1).

It was found that there was a notable distinction between the students' satisfaction with nursing and both the CSS and NSASCP total score ($p<0.05$). It was found that the CSS and NSASCP total scores of the students who satisfied with the nursing were higher than the other students (Table 1).

It was discovered that there was a notable disparity between the status of receiving training to improve communication skills and the CSS total score ($p<0.05$). The CSS score of the students who received training to improve their communication skills was higher (Table 1).

Table 1.
Comparison of the Demographic Characteristics of Nursing Students and Mean Scores of CSS and NSASCP (n=482)

Characteristics	**X ± SD**		**Min-max**
Age (year)	20.64±1.54		18-26
	n (%)	**CSS X ± SD**	**NSASCP X ± SD**
Gender			
Female **Male**	398 (82.6) 84 (17.4)	101.18±11.57 101.50±11.81 Z=-0.228 p=0.820	105.95±14.80 105.89±14.04 Z=-0.197 p=0.844
Grade			
1 **2** **3** **4**	163 (33.8) 115 (23.9) 106 (22.0) 98 (20.3)	99.74±10.23 98.32±11.55 101.00±11.23 103.51±12.23 χ^2=15.540 **p=0.001** **4>1, 4>2**	103.58±13.30 100.13±16.44 106.00±14.78 112.42±11.36 χ^2=54.871 **p=0.000** **4>1,2,3**
Place of stay			
At home with family **At home with friends** **Dormitory** **Others**	38 (7.9) 74 (15.3) 342 (71.0) 28 (5.8)	100.60±12.38 101.51±10.74 100.71±11.68 102.89±12.39 χ^2=1.211 p=0.750	105.28±16.82 103.60±14.80 106.36±14.20 107.92±16.66 χ^2=3.772 p=0.287
In clinical practice, feeling adequate			
Adequate **Partially adequate** **Inadequate**	188 (39.0) 277 (57.5) 17 (3.5)	104.39±11.73 98.87±10.98 96.88±11.56 χ^2=24.939 **p=0.000**** **1>2, 1>3**	107.41±14.73 105.08±14.57 103.82±14.64 χ^2=3.799 p=0.066
Satisfaction with the professional			
Yes **No**	428 (88.8) 54 (11.2)	101.28±11.77 98.37±10.06 **Z=-2.138** **p=0.033**	107.58±13.58 92.96±16.46 **Z=-6.142** **p=0.000**
Receiving training to improve communication skills			
Yes **No**	110 (22.8) 372 (77.2)	103.43±12.73 100.22±11.18 **Z=-3.033** **p=0.002**	108.12±15.19 105.30±14.45 Z=-1.949 p=0.051

SD=standard deviation, CSS=communication skills scale, NSASCP=nursing students' attitude scale toward clinical practices; Mann-Whitney U test; Kruskal-Wallis test

It was observed that there was no significant difference based on gender, place of residence, and CSS score and between gender, place of residence, feeling competent in clinical practice, receiving any training to improve communication skills, and NSASCP total score (Table 1).

The average CSS total score of the students was 100.95±11.61, the mean score of the communication principles and basic skills subscale was 41.09±4.73, the mean score of the self-expression subscale was 16.08±2.35, the mean score of the effective listening and non-verbal communication subscale was 24.37±3.11, and the mean score of the willingness to communicate subscale was 19.39±3.06 (Table 2).

The mean NSASCP total score of the students was 105.94±14.65, the mean score of the BECP subscale was 35.22±4.76, the mean score of the PACP subscale was 26.45±5.79, the mean score of the NACP subscale was 27.29±5.57, and the mean score of the PD subscale was 16.97±2.73 (Table 2).

When the relationship between CSS and NSASCP was examined, a moderate positive correlation was found between the total and sub-dimension mean scores of the CSS scale and the total and sub-dimension mean scores of the NSASCP scale, except for the NACP sub-dimension mean score. A weak level of positive correlation was found between the total and sub-dimension mean scores of the CSS scale and the NACP sub-dimension mean score of the NSASCP scale (Table 3).

Table 2.
Mean CSS and NSASCP Mean Scores (n=482)

	Scale Min-max	Participant Min-max	X ± SD
Communication skills scale	25-125	62-125	100.95±11.61
Communication principles and basic skills	10-50	25-50	41.09 ± 4.73
Self expression	4-20	7-20	16.08±2.35
Effective listening and non-verbal communication	6-30	11-30	24.37±3.11
Willingness to communicate	5-25	9-25	19.39±3.06
Nursing students' attitude scale toward clinical practices	26-130	47-130	105.94±14.65
Beliefs and expectations toward clinical practices	8-40	9-40	35.22±4.76
Positive clinical approach practices	7-35	7-35	26.45±5.79
Negative approach to clinical practices	7-35	8-35	27.29±5.57
Personal development	4-20	5-20	16.97±2.73

SD=standard deviation, CSS=communication skills scale, NSASCP=nursing students' attitude scale toward clinical practices

Table 3.
Correlation Between CSS and NSASCP (n=482)

CSS		NSASCP				Total NSASCP
		BECP	PACP	NACP	PD	
Communication principles and basic skills	r p	0.475 **p<0.001**	0.368 **p<0.001**	0.269 **p<0.001**	0.415 **p<0.001**	0.438 **p<0.001**
Self expression	r p	0.398 **p<0.001**	0.386 **p<0.001**	0.183 **p<0.001**	0.365 **p<0.001**	0.380 **p<0.001**
Effective listening and non-verbal communication	r p	0.453 **p<0.001**	0.374 **p<0.001**	0.230 **p<0.001**	0.421 **p<0.001**	0.420 **p<0.001**
Willingness to communicate	r p	0.372 **p<0.001**	0.387 **p<0.001**	0.244 **p<0.001**	0.382 **p<0.001**	0.405 **p<0.001**
Total CSS	r p	0.483 **p<0.001**	0.425 **p<0.001**	0.281 **p<0.001**	0.448 **p<0.001**	0.467 **p<0.001**

SD=standard deviation, CSS=communication skills scale, PD=personal development, NACP=negative approach to clinical practices, PACP=positive clinical approach practices, BECP=beliefs and expectations toward clinical practices, NSASCP=nursing students' attitude scale toward clinical practices=Spearman's correlation analysis

Discussion

This study aimed to determine the relationship between nursing students' communication skills and their attitudes toward clinical practice. Results showed that students' communication skills and attitudes toward clinical practice varied according to class year. Fourth-year students scored the highest on both scales. In addition, although there was a difference between the grades in terms of scale score averages, students in all grades scored above the average, and their communication skills and attitudes toward clinical practice were high. In clinical practice, students must communicate with healthcare teams and patients. When a student does not have effective interpersonal communication skills, he/she may experience anxiety during clinical practice, and as a result, his/her attitude toward clinical practice may be negative (33). In the literature, it has been reported that students with high communication skills adapt better to clinical practice and have a high level of satisfaction and confidence (34). Similar to the literature, the fact that all students in this study received high scores on two scales indicates a positive result in terms of both high communication skills and positive attitudes toward clinical practice. Additionally, as students advance through their class levels, the number of courses they take and the clinical practice they participate in increases. This increase is believed to contribute to students becoming more proficient in patient communication and gaining a better mastery of clinical practice. Studies by Hendekçi (4) and Duru et al. (35) have found that as students' grade levels increase, their communication skills scores also increase. Similarly, in the review by Özsaban and Bayram (36) and the study by Özdemir et al. (37), it is noted that students' clinical practice experiences are influenced by their grade level, with perceived stress decreasing as grade level increases. Stress is a significant factor that can adversely affect students' adaptation to clinical environments. This study suggests that as students progress through their academic levels, the increase in the number of courses they take and the clinical experiences they participate in positively contributes to their learning process. Consequently, it is anticipated that students will better adapt to the complex nature of clinical environments, become more proficient in patient communication, and gain greater mastery in clinical practice. In line with similar findings in the literature, the fact that all students scored high on both scales is a positive outcome, as it indicates both strong communication skills and the development of a positive attitude toward clinical practice.

Another finding of the study was that the communication scores of students who found themselves competent in clinical practice were higher. When an individual feels competent in a subject, it indicates that he/she has developed himself/herself and is successful in that subject (38). On the other hand, effective communication skills can increase students' self-confidence (39). In the literature, it has been stated that there is a relationship between the high self-efficacy of nursing students and their readiness for clinical practice (40). A previous study found that students with lower communication skills scores had difficulties with patients during nursing care (41). In a study by Pazar et al. (42), the communication skills score of the students was found to be high, and it was reported that students who recognized their feelings and thoughts and felt strong in patient care could use their autonomy and develop new attitudes when faced with new events. A study by Leal-Costa et al. (43) reported a relationship between communication skills and the perceived self-efficacy of nurses and that good interpersonal relationships were effective in making nurses feel competent. In this study, the higher communication skill scores of the students who found themselves competent demonstrated that the students knew themselves and were open to communication with the patient.

In this study, it was determined that both communication skills and attitudes toward the clinical practice of students who liked the nursing profession were more positive. It has been reported that loving the profession has a positive effect on the working environment by increasing job satisfaction and satisfaction. In addition, communication skills were seen as an effective factor in developing nurses' professional attitudes. In the study conducted with nurses, it was reported that nurses who were satisfied with the nursing had higher professional attitudes, such as communication skills (44). In a study conducted by Tosunöz et al. (45), it was stated that it is important to be satisfied with nursing care and communicate well well with patients, and that these characteristics contribute to improving the quality of care. Zencir and Eşer (46) determined that students who willingly chose their profession had positive attitudes toward the nursing profession. In this study, the fact that the communication skills and attitudes toward the clinical practice of students who like the profession are more positive is a significant finding in terms of showing that the quality of patient care and job satisfaction will be high in the future.

In this study, the communication skill scores of students who received training to improve their communication skills were found to be higher. In Temel and Şişman's (47) study, Temel and Şişman (47) stated that communication skills training improved students' interpersonal relationships. Lau and Wang (48) noted that communication skills training provided to nursing students facilitated the enhancement of their communication abilities. In a study by Mercan et al. (49), training for students was found to be effective in improving their communication skills. In this study, the fact that the communication skill score of the students who received training on communication was found to be high is seen as an important finding in terms of clearly demonstrating the importance of communication in nursing education and practice.

Another significant finding of the study is that student nurses demonstrate high communication skills and hold positive attitudes toward clinical practice. Additionally, as communication skills improve, there is a positive increase in their attitudes toward clinical practice. Communication

in nursing is a basic competence for determining the needs of the patient, quality of care, and patient satisfaction and is at the center of nursing care (13). Nursing students must have developed communication skills to effectively fulfill their roles and establish the desired level of relationship with patients by adapting to the clinical environment (34). It has been reported that student nurses feel reluctant to communicate with patients in clinical practice, have difficulty initiating or maintaining a conversation, and are anxious (50). However, nursing students' communication skills must be developed to provide appropriate nursing care, empower patients, and increase satisfaction (19). In particular, effective communication skills are extremely important in the personal and professional development of students and contribute to their satisfaction with the profession, willingness, and motivation to learn, that is, to develop a positive clinical attitude (32,51). The communication skills of nursing students were classified as medium (31) or high (52). This study found that the communication skills and attitudes of nursing students were high, and there was a positive relationship between students' communication skills and their attitudes toward clinical practice. The results suggest that the high communication skills of students contribute to their ability to adapt to the complex nature of the clinical environment, leading to better performance. Additionally, students who adapt well to the clinical environment will feel more secure, experience reduced stress levels, and consequently perform better in patient communication. Based on these findings, the reciprocal relationship between communication skills and clinical adaptation can play a critical role in the professional development of nursing students. Students with strong communication skills are expected to provide more effective patient care, thereby enhancing patient safety and satisfaction.

Study Limitations

The limitations of this study include the fact that it was conducted solely with nursing students from a single state university. Therefore, the findings cannot be generalized to all nursing students. Additionally, the research was based on the self-reports of the participants. This approach suggests that responses could be influenced by personal perceptions or social expectations.

Conclusion

As a result of this study, it was concluded that nursing students' communication skills were above average, and their attitudes toward clinical practice were positive. It was concluded that enhancing students' communication skills led to a more positive attitude toward clinical practice, as evidenced by the academic research. These results reveal the importance of developing communication skills, which are important in the nursing profession. In this direction, in future studies, it is recommended that teaching strategies that will support students' communication skills should be used in nursing education, starting from the first year of nursing faculty. Guidance should be provided to improve communication skills in clinical practice, and students should be supported by receiving feedback from students.

Ethics Committee Approval: Ethics committee approval was secured from the Scientific Research Ethics Committee of Trakya University Faculty of Medicine (date: 08.05.2023, no: 08/16).

Informed Consent: Informed consent was obtained from the students.

Footnotes

Author Contributions: Surgical and Medical Practices – S.B.K., Ş.B.; Concept – S.B.K., Ş.B., E.P.G.; Design – Ş.B., E.P.G.; Data Collection and/or Processing – S.B.K., Ş.B.; Analysis and/or Interpretation – S.B.; Literature Review – S.B.K., Ş.B., E.P.G.; Writing – S.B.K., Ş.B., E.P.G.

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ORIGINAL ARTICLE

Emotions and Experiences of Pregnant Women with a History of Pregnancy Loss: A Qualitative Study Based on Watson's Theory of Human Caring

Gebelik Kaybı Öyküsü Olan Gebelerin Yaşadıkları Duygu ve Deneyimler: Watson İnsan Bakım Kuramına Dayalı Niteliksel Bir Çalışma

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Abstract

Objective: This study aimed to determine the feelings and experiences of pregnant women with a history of pregnancy loss.

Method: A semi-structured interview form based on Watson's caritas process was used to collect data from 13 pregnant women with a history of pregnancy loss between April and June 2020. Thematic analysis was performed according to Watson's caritas processes and reported in accordance with the Consolidated Criteria for Reporting Qualitative Research guidelines.

Results: Pregnant women were found to expect respect, empathy, understanding, and smiling faces from healthcare professionals. In pregnancy after loss, the participants stated that they expected healthcare workers to be more sensitive to them and needed to talk to healthcare workers, share their feelings with them, and obtain more information.

Conclusion: The use of interview methods based on Watson's theory of human caring can help guide health professionals and increase the quality of care.

Keywords: Pregnancy, pregnancy loss, nursing, qualitative study, Watson's theory of human caring

Öz

Amaç: Bu çalışmanın amacı gebelik kaybı öyküsü olan gebelerin duygu ve deneyimlerini belirlemektir.

Yöntem: Çalışmanın verileri Watson'ın iyileştirme süreçlerine dayalı yarı yapılandırılmış görüşme formu aracılığı ile Nisan-Haziran 2020 tarihleri arasında elde edilmiştir. Çalışmanın örneklemini gebelik kaybı öyküsü olan 13 gebe kadın oluşturmuştur.Watson'ın iyileştirme süreçlerine göre tematik analiz yapılmış; çalışmanın raporlanmasında "Consolidated Criteria for Reporting Qualitative Research" yönergeleri rehber olarak kullanılmıştır.

Bulgular: Gebelerin, sağlık çalışanlarının kendilerine güler yüzlü, anlayışlı ve nazik davranmalarını istedikleri saptanmıştır. Kayıp sonrası gebelikte kadınlar, sağlık çalışanlarının kendilerine daha duyarlı olmasını beklediklerini, sağlık çalışanlarıyla konuşmaya, duygularını paylaşmaya ve daha fazla bilgi edinmeye gereksinim duyduklarını belirtmişlerdir.

Sonuç: Watson'ın insan bakım kuramına temellendirilen görüşme yöntemlerinin kullanılması sağlık profesyonelleri için yol gösterici olup; bakımın niteliğini artırır.

Anahtar Kelimeler: Gebelik, gebelik kaybı, hemşirelik, nitel araştırma, Watson insan bakım kuramı

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Introduction

The loss of a pregnancy due to miscarriage, stillbirth, or termination due to fetal abnormalities is referred to as pregnancy loss (1). Despite great advances in the fields of medicine and obstetrics, pregnancy loss is still frequent and affects millions of families (2,3).

Decisions regarding another pregnancy are important for women who have experienced pregnancy loss. Some families want to have another child, whereas others are afraid of experiencing further loss (4,5). Pregnancy after loss is stressful, and pregnancy is perceived as a danger that continues throughout pregnancy. Therefore, pregnancy after loss can be described as a stressful period (6). Maternal stress experienced during pregnancy has negative effects on the mother and newborn baby (6-14).

More than half of women who have experienced loss intend to conceive again in a short time, with over 60% successfully achieving pregnancy within one year following the loss (15,16). Because of their loss experience, they have a greater likelihood of experiencing deep anxiety and depression (17,18), and they have a higher fear of childbirth and perception of traumatic birth (19). Therefore, planning nursing interventions for this group is important for them to pass their current pregnancy safely and to establish a healthy bond between mother and baby.

As caregivers, nurses must understand the experiences, feelings, and worries of women who are pregnant after a loss. This insight will allow them to provide more therapeutic and sensitive care (20). Although descriptive studies have been conducted with women who have experienced pregnancy loss in Turkey, these are limited. In addition, no qualitative studies have been conducted in Turkey with pregnant women with a history of pregnancy loss. This qualitative study intends to reveal the feelings and thoughts of women. It is believed that as a result of this study, health professionals will be able to understand the feelings and thoughts of pregnant women with a history of loss, which will allow them to plan their care based on these feelings and needs.

According to Watson, nursing is a person-to-person caregiving process. In this process, individuals' capacity to cure themselves can increase with the individual-nurse relationship, and a high level of awareness may develop (21). Therefore, to strengthen the coping ability of pregnant women who have a history of perinatal loss and make it easier for them to express their feelings, Watson's theory of human caring can be used. This is because Watson's care behaviors are expressed in terms of listening carefully, establishing eye contact, calming the patient, taking responsibility for the patient, honesty, touching, sensitivity, being respectful, giving verbal assurances, being physically and mentally present, being emotionally open and accessible, addressing the patient by name, being individual-centered, giving information, and taking account of cultural differences (22,23) (Table 1).

In Watson's nursing care, love is the most important source of recovery in the person-to-person caregiving process. It is believed that conducting interviews based on love in this process will help women easily express themselves. The aim of this study was to determine the feelings and experiences of pregnant women with a history of pregnancy loss.

Main Points

- After a pregnancy loss, being pregnant again is more stressful for women.
- They expected health care professionals to give more attention and to be more sensitive towards them with this experience.
- The women do not forget how health care professionals behaved them in their loss experience.
- When the subject is loss, person to person caregiving process is more important and to use the Watson Theory of Human Care help caregivers to shape their care.

Material and Method

Design and Sample

This is a descriptive and qualitative study. The study was conducted in an outpatient clinic in İzmir, Turkey. The research team consisted of three nursing academicians who identified as female, one medical academician who identified as male, and one doctor who identified as female. One nursing academic works as a professor in the gynecology and obstetrics department. One nursing academic works as an associate professor in the gynecology and obstetrics department. One of the nursing academicians is an assistant professor at the psychiatric nursing department. A medical academician works as a professor at the university gynecology and obstetrics department and also monitors pregnant women in outpatient clinics. The other doctor is a specialist in the gynecology and obstetrics department at the hospital. All researchers are experienced in working with women who have experienced pregnancy loss and are pregnant after loss. The three nursing academicians are also experienced in working with Watson's human care model and qualitative study.

The sample was selected purposively. The sample size was not preferred. Recruitment continued until data saturation was reached. The study was conducted with 13 pregnant women between April and June 2020. Pregnant women aged ≥18 years with a gestational age between 12-36 weeks, a history of at least one pregnancy loss, a healthy fetus, no communication difficulties, spontaneous conception, no complaints such as chronic disease/gestational diabetes/eclampsia/pre-eclampsia/threat of preterm labor and premature rupture of membranes, and who gave their informed consent to participate were enrolled into the study.

Data Collection

The data collection form consisted of semi-structured questions planned by the researchers according to Watson's caritas process by examining the literature (20,21,24,25). The data collection form comprised semi-structured, open-ended questions. The form included the following sections:

Section 1, socio-demographic, and obstetric information; and Section 2, the woman's feelings and thoughts about her current pregnancy (Table 2). It was planned that women who did not mention their previous pregnancy loss in this section would not be referred to Section 3, and the interview would end. The aim here was to prevent the possibility of forcing the mother-to-be to face her previous loss experiences again. However, all of the women who were interviewed talked spontaneously about their pregnancy loss, and therefore all the interviews were completed with Section 3: their feelings, thoughts and experiences of pregnancy loss, sources of support, coping methods, the effect on the current pregnancy, and what a pregnant woman with a history of pregnancy loss expected of the health care workers. The interview questions were not pilot tested. No interviews were repeated.

Interviews were conducted face-to-face with pregnant women who agreed to participate in the study in a quiet room at an outpatient clinic. There was no relationship between the participants and researchers. Before the interview, the interviewer introduced herself and the purpose of the interview to the women. The first and third authors conducted interviews. Each interview lasted approximately 30 minutes. The interviewer took notes about the women's body language throughout the interviews. The interviews were recorded using a sound recording device.

Statistical Analysis

Data analysis was performed by two researchers (PT, KY) who were independent of each other. The deductive method was used for data analysis. The interviews were coded according to the concepts in the women's statements, and later thematic analysis was performed according to Watson's caritas processes by the same two researchers (PT, KY). Once the interviews were conducted, the two authors discussed them according to the caritas factors. At a separate meeting, codes were reviewed by all authors, and consensus was achieved regarding the content. The transcripts were not returned to the participants. The study was reported using the Consolidated Criteria for Reporting Qualitative Research (26).

Ethical considerations

Ethical approval was obtained from the Dicle University Medical Faculty Ethics Committee for Non-interventional Studies (approval no: 2020/113, date: 05.03.2020). Verbal and written informed consent was obtained from the women before the interviews. They were informed about the study objectives before the interview. Participants were assured that they could stop the interview at any time and could skip any questions they did not want to answer.

Table 1.
Curative Factors and the Caritas Process in Watson's Philosophy

Curative Factors (CF)	Caritas Process
1. Formation of a humanistic- altruistic system of values	Practice of loving-kindness and equanimity in the context of caring-consciousness
2. Instillation of faith and hope	Being authentically present and enabling and sustaining the deep belief system and subjective life world of the self and the one-being cared-for
3. The cultivation of sensitivity to one's self and to others	Cultivation of one's own spiritual practices and transpersonal self, going beyond ego self; being sensitive to self and others.
4. Development of a helping-trusting relationship	Developing and sustaining a helping-trusting, authentic caring relationship.
5. Promotion and acceptance of the expression of positive and negative feelings	Being present to and supportive of the expression of positive and negative feelings as a connection with a deeper spirit of self and the one-being-cared-for
6. Systematic use of a scientific problem-solving method for decision making	Creative use of self and all ways of knowing as part of the caring process and engagement in the artistic practice of caring-healing practices
7. Promotion of interpersonal teaching-learning	Engaging in genuine teaching- learning experience that attends to the unity of being and meaning and attempts to stay within another's frame of reference
8. Provision of supportive, protective, and corrective mental, physical, sociocultural, and spiritual environment	Creating a healing environment at all levels (physical, as well as nonphysical) whereby wholeness, beauty, comfort, dignity, and peace are potentiated.
9. Assistance in achieving human needs	Assisting with basic needs, with an intentional caring consciousness; administering human care essentials, which potentiate alignment of mind–body spirit, wholeness, and unity of being in all aspects of care; attending to both embodied spirit and evolving emergence.
10. Allowing existential phenomenological forces	Opening and attending to spiritual-mysterious and existential dimensions of one's own life-death; soul care for the self and the one-being-cared-for

Results

The socio-demographic and pregnancy-related characteristics of the women are presented in Table 3. The results are given according to the caritas factors.

Formation of a humanistic altruistic system of values (CF 1): The pregnant women stated that they wanted health professionals to behave warmly, respectfully, empathically, and helpfully toward them.

"I'd like them to behave in a sincere, good-humored way, nothing else; what else can I expect?" I mean, when they are performing their duties, I would like them to be good-humored. If they're more good-humored, I'll presumably be more open to them. If they behave distantly, I'll act more cautiously with them, but if they act warmly, I'll feel safe..." (P1)

"I want them to be a bit gentler and polite. I really didn't know that they would act so roughly... This kind of behavior upsets me because we're going through a difficult process anyway." (P9)

Instillation of faith and hope (CF 2): Some pregnant women said that when they experienced loss, they needed health professionals to talk to them and give them hope. It was observed that in these pregnancies, they maintained hope by bringing their belief systems into action. It was seen that feeling the baby's movements was an important source of hope for women with a history of loss.

"I wish they'd talked to me when I lost my baby; they could have said this is your first pregnancy, you're still young, don't be upset, it just means that there was a problem with the baby and that's why the pregnancy came to an end... If so, perhaps I would have felt better, I could have prepared myself, but they didn't speak at all... they just said 'It's heartbeat has stopped'..." (P3)

"I still feel like something could happen to the baby at any moment... like when I don't feel the baby move for a long time, I get very worried that something has happened. Is it still alive? Then when I feel a tiny movement, I can't say how much it makes me happy... just a little movement is enough, my baby says with its movements that it's still here." (P8)

Cultivation of sensitivity to oneself and others (CF 3): The pregnant women said that they wanted health professionals to pay more attention to them and to be more sensitive.

Table 2.
Interview Schedule

		Questions
Section 1	1	How old are you?
	2	What is your educational status?
	3	How many years have you been married?
	4	How many pregnancies have you experienced?
	5	How did your pregnancies turn out?
	6	What is your current week's pregnancy?
	7	Did you want to get pregnant?
Section 2	1	Can you tell me about your current pregnancy experience?
	2	What week did you find out you were pregnant?
	3	What was your first reaction?
	4	What did you feel?
	5	What did you think?
	6	Can you tell me about your relationship with your baby?
	7	Women who did not mention their previous pregnancy loss in the second section will not be referred to Section 3.
Section 3	1	What would you like to know about your previous pregnancy loss?
	2	Who has the most support in this process?
	3	What did you do during this process to comfort yourself?
	4	Do you think your previous loss experience affected your pregnancy?
	5	What do you think about experiencing loss again?
	6	What do you do to cope with these feelings and thoughts?
	7	Do you have expectations from healthcare personnel during this process?

"Seeing healthcare workers' interest and love is very important. They were sour-faced; when I asked a question they didn't answer, they only reacted when I asked again." (P5)

"I was going to the hospital; I expected the doctor to take more interest when I lost my baby, but he didn't... Taking an interest could have kept my morale up. I was crying, but the doctor was standing like a robot. What I was going through was very bad anyway, and the doctor behaving like that and not taking an interest made it even worse..." (P7)

Table 3.
Socio-demographic and Pregnancy-related Characteristics

Code no	Age	Education	Duration of marriage	No pregnancies	No surviving children	No pregnancy losses	The type of loss	Week of the current pregnancy	Wanted pregnancy?
P1	36	High school	9 years	3	1	1	24th week, premature birth	30	Yes
P2	30	University student	7 years	3	None	2	8th week, miscarriage; 24th week, premature birth	32	Yes
P3	27	University	5 years	3	1	1	15th week, heartbeat stopped	18	Yes
P4	33	High school	11 years	5	1	3	11th week, 8th week, 12th week, miscarriage	26	Yes
P5	31	Primary school	16 years	3	1	1	12th week, heartbeat stopped	24	Yes
P6	35	Middle school	10 years	4	2	1	8th week pregnant	24	No
P7	33	High school	13 years	4	2	1	13th week, heartbeat stopped	24	Yes
P8	29	High school	7 years	2	None	1	12th week, heartbeat stopped	29	Yes
P9	30	High school	8 years	2	None	1	6th week after miscarriage	12	Yes
P10	24	Middle school	4 years	4	2	1	8th week after miscarriage	26th week	No
P11	41	Middle school	22 years	6	3	2	1 miscarriage (8th week); 1 stillbirth (28th week)	28th week	No
P12	31	Middle school	9 years	5	2	2	20th week, premature birth; 8th week, miscarriage	20th week	Yes
P13	33	Illiterate	9 years	4	2	1	20th week, premature birth.	24th week	Yes

Development of a helping and trusting (human caring) relationship (CF 4): Some pregnant women said that they did not receive enough help and support when they had their loss. One stated that if only a health professional had been with her, it would have given her confidence. Another said that, in particular, trust in the doctor had calmed her down a lot.

"I want them to meet me with a smile. I need attention too... But when I go to the hospital, they don't care about people. They don't take an interest." (P6)

"I mean, we didn't talk to them like we talk to you, but I feel that they are by my side, they're with me, and that's enough for me. Even if they don't sit face to face with me and talk, if they're with me and motivating me, that's enough for me." (P1)

"When I was in the hospital, my doctor visited me during the day. We talked about how everything was going to be, and even when I was at home, I kept on getting psychological support. He always called me, he gave information." (P2)

Promotion and acceptance of the expression of positive and negative feelings (CF 5): The pregnant women expressed their feelings of loss by crying. They stated that having their feelings listened to by health professionals during their current pregnancy motivated them.

"When I lost my baby, I cried, I shouted, I screamed, but my husband didn't, or I didn't see him do it, I don't know, or maybe he didn't want to affect me, I don't know either. I didn't talk to my husband about this, maybe we didn't want to upset each other, so we didn't talk." (P1)

"When I have a problem, nurses listen to my feelings, they speak very nicely, and they motivate me very well." That's enough, I think." (P8)

Systematic use of the scientific problem-solving method of decision-making (CF 6): The pregnant women stated that they tried to overcome their losses with mutual support from their husbands. They also gained strength at the time of their loss from their living children. Some women stated that they tried to cope by taking courses or spending time with friends. They stated that to cope with worry about experiencing loss with their current pregnancy, they followed their baby's movements and went to the hospital more often.

"We talked a lot, and we're still talking. The two of us, my husband and I, have supported each other. When one of us cried, the other was quiet." (P2)

"I was with my son; I was not always at home. I took my son to school; maybe he kept my spirits up; after the loss I didn't close up, I thought of my child...(P1)"

"I went on courses to calm myself. Courses on computer, management, I went to sport, things like that... and I tried to see my friends a lot." (P3)

Promotion of interpersonal teaching and learning (CF 7): The women stated that after the loss, they needed more information about their pregnancy from health professionals. They wanted to be informed on the baby's development and the things they had to do during pregnancy.

"To be honest, these are my expectations: when I go there, they should give me fully detailed information. Are they going to give me medicine, are they going to do something like a blood test or a urine test?" I want them to explain better, to give information, not just do their job..." (P5)

"In my first pregnancy I was naive, I didn't take care, but with this one, I take more care: what I eat, drink, my sleep... everything for my baby. If the doctor talks about the baby's height and weight, its health, what I have to do in which weeks of pregnancy, how much I have to walk or what I have to do... In fact, we know these things, but it's better to hear from a health professional." (P5)

Promoting a supportive environment (CF 8): One of the pregnant women stated that she was happy with the creation of an environment to see the baby, which she had lost; another stated that she did not feel good because she was not shown the baby.

"It's good that I saw it. They told me a lot not to look and not to go in... because it was in an incubator, but I went in so that later I wouldn't regret not having done it. I went in four or five times. It would have been worse if I hadn't gone in; I would have regretted it. I'm glad I went in and saw." (Cries.) (P1)

"After I lost the baby, I did not see it. The doctor did not want me to see him. They took me outside. After that day, I started smoking." (P2)

Assisting the gratification of human needs (CF 9): The pregnant women stated that they received support from health workers in meeting their basic needs. However, they stated that other health workers were insensitive to their needs.

"When I had a pain, the nurse immediately came and saw it and followed it up regularly." (P4)

"When I lost my baby, the doctors had nothing to say. You know, they just send you off to ultrasound." (P12)

Discussion

Discussion was conducted according to the curative factors in the Watson model.

Formation of a Humanistic and Altruistic System of Values (CF 1): Values such as humaneness and altruism mean approaching oneself with love and compassion. The concepts of love, kindness, interest, forgiveness, empathy, and ethics are also included. According to the theory of human caring, health professionals should behave toward themselves and others with love, compassion, and courtesy (24,27,28).

In this study, the pregnant women stated that they wanted health workers to behave in a good-humored manner, understanding, and courteously toward them. They felt safe in this way. They wanted healthcare workers to be more considerate to pregnant women.

In one qualitative study, it was stated that it was necessary to behave differently in pregnant women with a history of loss during their subsequent pregnancies. The pregnant women stated that the most valuable thing given to them was emotional care (25). In another study, it was stated that thoughtful and empathic care should be given to pregnancies after loss (29). It was stated in one study that health care professionals should provide tailored interventions to support these women (30).

Instilling faith and hope (CF 2): This process aims to improve positive health behaviors in patients. This includes the concepts of hope and respect for individual beliefs (31).

The pregnant women stated that they expected health workers to give them hope when they experienced loss.

Côté-Arsenault and Donato (32) stated that it was important for women to talk to health professionals about their hopes and fears concerning their pregnancies to normalize their feelings and develop positive feelings regarding their pregnancy. Health workers should encourage women to overcome their past negative experiences and develop belief and hope concerning pregnancy and childbirth (32). In another study, it was shown that women found solace and acceptance in their losses by embracing their faith and hope. Thus, it made them calmer in their new pregnancy and contributed to strengthening their bond with their unborn babies (33).

Cultivation of sensitivity to oneself and others (CF 3): According to Watson, health professionals should be sensitive to patients (34). In the study, the women stated that health professionals did not take enough interest in them, and they had difficulty even getting answers to their questions at hospitals. Similarly, a qualitative study stated that it was not easy for pregnant women to ask questions to doctors and that some doctors were seen as frightening (25). In another study, women who experienced loss stated that midwives and nurses did not act sensitively toward them (35).

Development of a helping and trusting relationship (CF 4): According to Watson, interpersonal care is very important for health professionals to develop a care relationship that is full of love, helpful, and instills trust. Such a relationship between individuals can only be achieved when there is rapport, empathy, and warm communication (36).

In this study, the pregnant women particularly stated that they needed interest and humor. Some women stated that they generally did not see interest from health workers, while others stressed that feeling that health workers were with them was very important in motivating them. Some of the women stated that their trusting relationship with doctors calmed them. Similarly, pregnant women in one study emphasized the importance of relationships with physicians, particularly the importance of relationships with physicians who understood their previous pregnancy loss and the worries associated with it (25). In another study, women stated that health workers did not take them seriously (29). It is believed that this is important in a helpful, trusting relationship.

Promotion and acceptance of the expression of positive and negative feelings (CF 5): This process involves listening sympathetically to the pregnant women's histories and expressing their positive and negative feelings about their loss and current pregnancy. The women stated that they generally cried at the time of their loss. They stated that having nurses listen to them and express their feelings motivated them.

In one study, many women stated that the health workers did not really listen to them, they did not spend enough time with them, and they did not involve them in their decisions (29). Understanding the feelings, experiences, and worries of women who have become pregnant after loss can enable more therapeutic and sensitive care to be given to these women (20). Sharing these feelings will enable women's emotions to normalize, so that they will develop positive feelings about their current pregnancies.

Systematic use of the scientific problem-solving method of decision-making (CF 6): This process encompasses the concepts of problem solving, creativity, paths of knowledge, the art of care and recovery, and the nursing process. According to Watson, health professionals should use scientific problem-solving skills to address individuals' physical, emotional, and spiritual needs (22).

The women mostly spoke to their husbands to cope with their feelings at the time of loss. Some of the women stated that they spent more time with their friends and participated in more social activities.

In one study, women stated that they wanted to talk about their loss, but they did not believe that their husbands, mothers, or mothers-in-law would completely understand them, and their friends behaved as if there had been no loss. Thus, the women stated that they needed to share their feelings both about the loss they had experienced and about pregnancy after the loss (25). On the other hand, it

was stated in another study that women were able to share their feelings with those close to them (mother-in-law) and that this significantly calmed them (36,37). In addition, one study stated that couples who were able to discuss their feelings with one another appeared more cohesive than those who experienced communication challenges in the aftermath of loss (15).

In our study, we observed that women went to the doctor more frequently in their current pregnancy, specifically to cope with loss anxiety, and that they monitored the movements of their babies. The results of studies showing that women go to the doctor more frequently and have ultrasound examination more frequently in pregnancies after a loss support our findings (12,29).

Promotion of interpersonal teaching and learning (CF 7): The concepts behind this process are effective teaching and knowledge. According to this process, individuals are given information by selecting teaching methods suitable to that individual's needs, readiness, and learning styles (38). In our study, the women stated that in the pregnancy after their loss, they need more information. They said that they would feel better if health professionals gave them information about the baby and what they should and should not do.

In the literature, it has been stated that supporting and informing women during the post-loss process is a factor that positively affects subsequent pregnancies (39) and that providing information to women is an important intervention in reducing their anxiety and calming them (40-42).

Promoting a supportive environment (CF 8): In accordance with this factor, individuals are provided with mental, physical, sociocultural, and spiritual stimulation in a calm and peaceful environment (38). In our study, the pregnant women made statements concerning the creation of an environment where they could see the baby they had lost. The sight of a lost baby calms the woman. They talked about the discomfort of women who do not see their babies. Studies have shown that seeing the baby helps families recover (43), that mothers who spend more time with their babies experience less anxiety than those who spend less time with them (44), and that the risk of depression of mothers who cannot spend as much time as they want with their babies is seven times higher (45). In another study, it was found that mothers who saw and held their babies had higher levels of depression and anxiety (46). A study conducted in Turkey found that parents who saw and touched the baby after its death and who had a photograph of the baby were better able to grieve (47). It has been reported that, generally, contact with a baby makes it better for parents in the future (48). It is believed that providing this environment is important for coping with a loss.

Assisting the gratification of human needs (CF 9): According to this factor, individuals' physical, emotional, and spiritual needs must be identified and met (38). Some of the pregnant women stated that they had no problems with meeting their basic needs, while others stated that they had problems.

The women stated that although they had experienced no difficulties with their physical needs such as pain, there were deficiencies in meeting their emotional needs. There are study results showing that women are not satisfied with the health services that they receive because of ineffective pain management and inadequate communication (49,50). Women stressed that both medical and emotional care are important at the time of loss and afterwards (22,51).

Study Limitations

This study was limited to the opinions of pregnant mothers at the study institution.

Conclusion

It has been stated that pregnant women with a history of loss want health workers to behave with good humor and understanding toward them, and in this way, they feel safe. They stated that sharing their feelings regarding their loss and feelings toward their current pregnancy and setting up a trust-based relationship with them calmed them. It is important for pregnant women to meet their physical and emotional needs.

Health professionals should approach pregnant women with a history of pregnancy loss in an empathetic and understanding manner that inspires trust and is helpful. A suitable environment should be created for women to share their positive or negative feelings, and women should be encouraged and given hope. The use of the Watson human care model is expected to be useful in this process.

Ethics

Ethics Committee Approval: Ethical approval was obtained from the Dicle University Medical Faculty Ethics Committee for Non-interventional Studies (approval no: 2020/113, date: 05.03.2020).

Informed Consent: Verbal and written informed consent was obtained from the women before the interviews.

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Footnotes

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ORIGINAL ARTICLE

Determining the Opinions of Women Living in the Earthquake Zone on the Physical and Psychosocial Problems after the 2023 Kahramanmaraş Earthquake

2023 Kahramanmaraş Depremi Sonrası Deprem Bölgesinde Yaşayan Kadınların Fiziksel ve Psikososyal Sorunlarına Yönelik Görüşlerinin Belirlenmesi

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Abstract

Objective: This study was conducted to evaluate the opinions of earthquake victims about the physical and psychosocial problems that had affected women's health after the 2023 Kahramanmaraş earthquake.

Method: The study was designed in a qualitative type (semi-structured). The study population consisted of women affected by the 2023 Kahramanmaraş-Pazarcık earthquake. Fifteen women were interviewed.

Results: Among the women who participated in the study, 91% were married and had children. Two were breastfeeding. In this study, it was observed that all the women were socially affected by the earthquake and that there were changes in their lives. Furthermore, all experienced psychological and physiological problems, but most did not receive help. Hygiene (toilet-bathroom) was a common issue. Some women were also concerned about their safety. In terms of physical health, it was found that "mostly vaginitis, fungal and urinary tract infections are experienced, and some of them experience musculoskeletal pain".

Conclusion: Ensuring that women have access to clean and safe hygiene products, such as sanitary pads, tampons and soap, during and after an earthquake is essential. Disasters can disrupt supply, which is crucial for having a contingency plan for women's hygiene needs. In addition to hygiene products, access to safe and clean toilets and bathroom facilities. Disasters can damage infrastructure and create unsanitary conditions, increasing the risk of infection and other health problems. By ensuring proper sanitation facilities, we can help prevent these problems and promote overall health.

Keywords: Disaster, earthquake, gender, women's health, psychosocial health

Öz

Amaç: Bu çalışma, 2023 Kahramanmaraş depremi sonrasında kadın sağlığını fiziksel ve psikososyal olarak etkileyen sorunlar hakkında depremzedelerin görüşlerini değerlendirmek amacıyla yapılmıştır.

Yöntem: Çalışma nitel tipte (yarı yapılandırılmış) tasarlanmıştır. Araştırmanın evrenini 2023 Kahramanmaraş-Pazarcık depreminden etkilenen kadınlar oluşturmaktadır. On beş kadın ile görüşülmüştür.

Bulgular: Çalışmaya katılan kadınların %91'i evli ve çocuk sahibidir. İki kadın emzirmekteydi. Çalışmada tüm kadınların depremden sosyal olarak etkilendikleri ve yaşamlarında değişiklikler olduğu gözlemlenmiştir. Ayrıca, tüm kadınlar psikolojik ve fizyolojik sorunlar yaşamış, ancak çoğu bu konuda yardım almamıştır. Kadın olarak yaşadıkları sorunlar arasında hijyen (tuvalet-banyo) hepsinin ortak sorunudur. Kadınların bir kısmı güvenlikleri konusunda da endişe duymaktadır. Fiziksel sağlık açısından "en çok vajinit, mantar ve idrar yolu enfeksiyonları yaşandığı, bazılarının kas-iskelet sistemi ağrıları yaşadığı" tespit edilmiştir.

Sonuç: Kadınların deprem sırasında ve sonrasında temiz ve güvenli hijyen ürünlerine, örneğin; hijyenik ped, tampon ve sabuna erişimini sağlamak çok önemlidir. Afetler normal tedarik zincirlerini aksatabilir, bu nedenle kadınların hijyen ihtiyaçlarını karşılamak için bir acil durum planının bulunması hayati öneme sahiptir. Ayrıca, kadınların güvenli ve temiz tuvalet ve banyo tesislerine erişimini sağlamak da esastır. Afetler altyapıya zarar verip sağlıksız koşullara yol açarak kadınlar için enfeksiyon ve diğer sağlık sorunları riskini artırabilir. Uygun sanitasyon tesislerinin sağlanması, bu sorunları önlemeye ve genel sağlık ve refahı desteklemeye yardımcı olabilir.

Anahtar Kelimeler: Afet, deprem, toplumsal cinsiyet, kadın sağlığı, psikososyal sağlık

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Introduction

Women's health may include social problems both because it forms the basis of public health and because it is in a disadvantaged position with the gender factor (1-5).

There are developments in human rights and women's rights with the increase in socio-cultural level. In both developed and developing societies, legislation is enforced to combat gender-based violence and discrimination. As the level of education, knowledge, and welfare of society improves, gender discrimination is prevented (6-8).

However, in situations such as war, famine, and disasters where social order is disrupted, women are the most affected group. Extraordinary situations disrupt the functioning of laws and social norms. Crime rates increase due to war, famine, and disasters. Problems such as violence against women, women's poverty, and trafficking in women grow because of disruption of order, increased crime rates, and security weaknesses (9-11).

An earthquake is an important natural event that is frequently seen among natural disasters worldwide, and its destructive effects are experienced in many areas. Earthquakes, which are one of the most common types of disasters in Turkey, have caused Turkey to be known as one of the countries located in the earthquake zone (12). Apart from their direct damage, earthquakes also cause secondary disasters such as fires, floods, and landslides (13). Earthquakes, especially when they occur at sudden and unpredictable times, can have chaotic effects that stop social life. In addition to the many injuries and deaths caused by earthquakes, the economic, physical, social, and psychological destruction that occurs after an earthquake creates an important social problem (14).

It is known that all these social effects of the earthquake are more severe in women (15-19). Studies conducted on past earthquakes in our country provide strong evidence supporting this (20-24). Women may be at higher risk in terms of pregnancy, childbirth, postnatal care, breastfeeding, and health services. Young women may face different health and hygiene challenges during their menstrual cycles (16). In addition, women may experience problems in social areas such as female violence and economic independence (25,26).

On February 6, 2023, earthquakes with magnitudes of 7.7 and 7.6 occurred in Pazarcık and Elbistan districts of Kahramanmaraş, respectively. Thousands of aftershocks followed these earthquakes for days (27). The 2023 Kahramanmaraş earthquake severely damaged many cities. Among these cities, Kahramanmaraş, Hatay, Adıyaman, Adana, and Malatya stand out due to experiencing the highest levels of destruction and loss of life. Regarding the Kahramanmaraş earthquake, experts reported that more than 35,000 pregnant women lived in Kahramanmaraş, Hatay and Adıyaman and that they foresee health problems in 20% of them (28). Similar to other earthquakes, women and girls were among the most vulnerable populations in the Kahramanmaraş earthquake. Experts suggest that service provision must be a primary focus.

For this reason, this study aimed to evaluate the opinions of earthquake victims about the problems affecting women's health physically and psychosocially after the 2023 Kahramanmaraş earthquake.

Main Points

After the earthquake;

- Women have experienced many psychological problems, especially "anxiety, fear, sleep problems, depression, and hopelessness",
- Women's social lives have changed;
- Their responsibilities increased,
- Their roles as mothers and caregivers increased the burden,
- Women in the earthquake zone reported hygiene, safety, and shelter problems.

Material and Method

Study Design

The study was designed as a qualitative (semi-structured) study. The study population consisted of women affected by the 2023 Kahramanmaraş-Pazarcık fault line earthquake. The sample comprises women aged 18 years and older who lived in Hatay, Kahramanmaraş, and Adana provinces during and after the earthquake and agreed to participate in the study.

Inclusion Criteria

The criteria for inclusion in the study were as follows: Age >18 years, mental health, Turkish language, and earthquake zone.

The data were collected using the snowball sampling method. The researcher provided preliminary information about the study to the people living in the earthquake zone who they were able to reach. Then, as in the snowball sampling method, the participants recommended other participants. The researcher conducted telephone interviews with the participants to avoid spatial, temporal, and transport constraints. The study "themes" were formed according to the responses to the prestructured open-ended questions.

Study questions:

- What demographic changes have women experienced after the earthquake?

- What physical problems did women experience after the earthquake?

- What psychological/spiritual problems have women experienced after the earthquake?

- What are the needs and difficulties of women after the earthquake?

- What are the difficulties experienced by women in social life after the earthquake?

Data Collection Tools

A semi-structured interview form developed by the researcher through literature review was used as a data collection tool. The form consists of 3 sections: Personal information, changes experienced during the earthquake, and problems related to being a woman during the earthquake.

The first part of the form contains personal information (age, occupation, marital status, number of children, spouse's occupation, educational status, income status).

The second part consists of questions about changes experienced after the earthquake (loss of first-degree relatives, change in income status, living in a house/tent/container).

The third section consists of open-ended questions on opinions about life after the earthquake (changes in life in general; moving, changing jobs, etc.; problems of being a woman; hygiene, etc.).

The interview form comprises 18 questions, the last 5 of which are open questions. During the interviews, the researcher conducted phone conversations in a quiet environment using hands-free mode and wrote down the researcher's statements one by one. The researcher then asked any questions that were not heard or missed. While recording the conversation, the researcher used fast note-taking techniques such as the Cornell note-taking system, abbreviation, and labeling. After the conversation ended, the notes were organized and recorded.

Each interview was conducted individually with each woman, and each interview lasted approximately 40 minutes.

Statistical Analysis

Before the interview, an interview form was created in accordance with the study design. In this study, care was taken to use open-ended general questions that would allow the participant to provide detailed information on the subject and did not require short answers, such as short and clear questions, multiple-choice questions, and yes-no questions.

For the analysis and reporting phase, an introduction was made in the form of a conversation with the participant before starting the interview; the interview was then started if the participant was available. Voice recordings were obtained from participants who consented to have their voices recorded. During the transcription phase, the questions were asked during the interview in such a way as to allow the participant to express themselves in detail without any direction or comment. The interviews conducted individually by telephone. During the interviews, the researcher transcribed the interviewee's sentences exactly as she expressed them. At the beginning of the analysis phase, the interview data were divided into subthemes according to the main themes determined beforehand in the researcher's notes. The working scheme of qualitative research was applied in the seven stages of the interview technique as defined by Kvale [as cited in Dömbekci and Erişen (29)]. The analysis technique was based on Gürbüz and Şahin's (30) method of "data reduction, data labeling, creating categories and themes, revealing patterns, explaining and interpreting, and reporting", which was created by considering all the literature.

Ethical Considetarion

Prior to the study, ethical approval was obtained from the Ethics Committee of Maltepe University (approval no:2023/13-13, date:22.06.2023). All procedures involving human participants were performed in accordance with the ethical standards of the institutional and/or national research committee and the 1964 Declaration of Helsinki and its subsequent amendments or similar ethical standards. The participant information was coded. Personal data will be destroyed within maximum 5 years.

Results

Of the interviewees, 5 lived in Kahramanmaraş, 2 in Adana and 8 in Hatay, all of whom had experienced the earthquake. Two respondents were university students. Three women are single; the others are married. The average age of the women was 34 years. The demographic characteristics of the participants are presented in Table 1. All participants stayed in their cars or a relative's car during the first days of the earthquake. Most of them took shelter in relatives' houses, and some of them settled in tents provided with aid.

The main themes of the study and the subthemes that emerged during the interviews are presented in Table 2 and Figure 1.

Theme 1: Changes in Women's Lives

The participants were asked about changes in their social lives after the earthquake. As expected, the participants found that they experienced changes in different areas, such as shelter, business life, and education. As a result of the interviews, sub-themes such as "uncertainty, staying in the car, waiting for help", "moving to another city/town", "changing home", "settling with others", "change in business life" and "change in educational life" were identified.

Sub-theme 1: Early days: staying in a car, poverty and waiting for help

Most participants (n=14) stayed in their cars or in their relatives' cars during the first days. All participants reported that help did not arrive in the first few days, which made it difficult for them to rescue their relatives and meet their needs for food and shelter.

P.4 "No help came for 3 days, looters reached the area before the help. For 3 days 6 of us took turns sleeping in the car. For 5 days we waited by eating only honey and bread, and drinking water slowly so as not to be run out. For 2 days we had no electricity. Our house was damaged, but we still went in and out during the day because we were afraid to go to the toilet."

P.5 "We stayed in the car for 2 days, there was no reception, and I could not reach my family. On the 2nd day, my brother came and picked us up from the wreckage; we could not go to a safe place, the roads were cracked, and we went to İskenderun Sports Club."

P.6 "We stayed in the car for 20 days during the earthquake. I gave my daughter and mother a place in the car so that they could sleep comfortably. We had to live a dometic life in the car. We had to go to the toilet in an open area. The helplessness was very bad; we lived on bread and milk for days."

P.7 "We stayed in the car for 3 days. No one came for 2-3 days, the streets were full of dying people. The markets were looted. I only fed my 1 years old child wet biscuits; my child was in nappies, and the weather was freezing..."

P.9: "Help came late. It was very painful to hear people crying.

Table 1.
Demographics Features

Scale items group		**n (15)**
Marital status	Married	12
	Single	3
Child	Yes	12
	No	3
Breastfeeding status	Yes	2
	No	13
Houses damaged by earthquake	Moderately/heavily damaged	6
	Destroyed	3
	Slightly damaged	5
	Undamaged	1
Stayed in vehicle after the earthquake	Yes	14
	No	1
Stays in tent	Yes	6
	No	9
Stays at a relative's/ acquaintance's house	Yes	7
	No	8
He stays in his own house	Yes	2
	No	13
Went to another city	Yes	4
	No	11
Working status	Working	5
	Unemployed after the earthquake	3
	She was not working before	7
Husband's employment status	Working	10
	Unemployed after the earthquake	5
	He was not working before	0

Table 2.
Main Themes and Subthemes

Main themes subthemes	
Theme 1: Changes in women's lives	Sub-theme 1: Early days in a car, poverty, and waiting for help Sub-theme 2: Moving to another city Sub-theme 3: Living together in someone else's house Sub-theme 4: Living in a tent Sub-theme 5: Change in business life and economic situation Sub-theme 6: Changes in educational life
Theme 2. Physical problems	• Muscle/joint pain • Urinary tract infection • Vaginal infection • Headache/dizziness • Gastrointestinal problems • Skin fungus • Menstruation/menstrual irregularity
Theme 3. Emotional state after an earthquake	• Anxiety • Fear • Sleep disorders • Depressive mood • Angry mood • Inability to forget what they saw and the sounds they heard • Inability to experience emotions • Feeling obliged to stay strong • Hopelessness • Being thankful
Theme 4. Women's needs and difficulties experienced as women	Sub-theme 1: Hygiene problems Sub-theme 2: Breastfeeding problems
Theme 5. Difficulties experienced by women in their social life	Sub-theme 1: Increased workload Sub-theme 2: Challenges in caring for a mother or caregiver Sub-theme 3: Difficulty in ensuring privacy Sub-theme 4: Security concerns

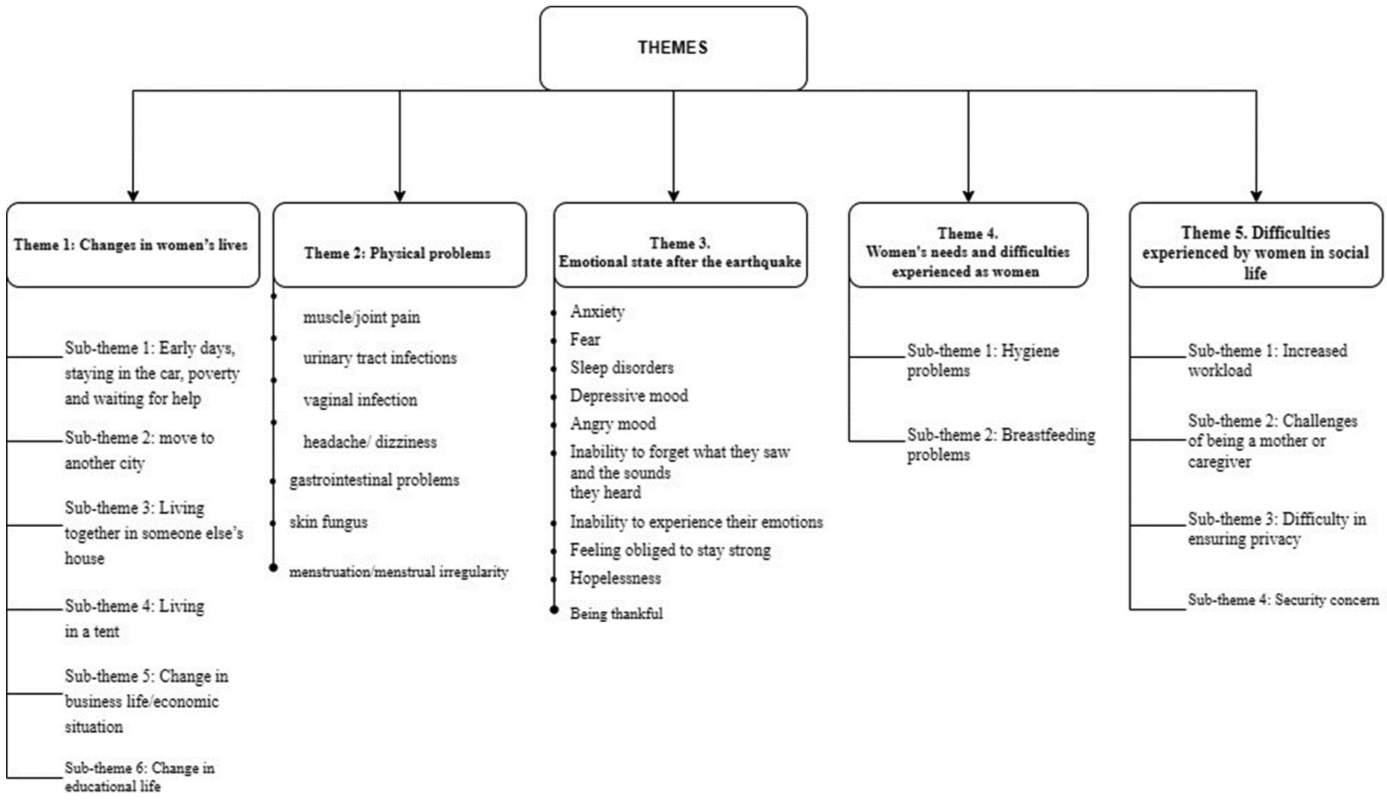

Figure 1.
Themes and Subthemes

P.12 "We were caught in an earthquake in Adana, our house was damaged, but my sisters lived in Kahramanmaraş. My brother-in-law died while holding my sister's hand. There was no AFAD (Disaster and Emergency Management Authority), there was a nation before the state. Syrian migrants also helped us."

The participants who made the above and similar statements explained them with sadness as if they were reliving those moments. The participants' statements noted that in the first days, they experienced a lack of telephone communication, food, toilets, transport, shelter, and help.

Sub-theme 2: Moving to another city

Among the participants, 4 families had to move to another city. P.1, who moved to Ankara, expressed with a sad expression the difficulty of finding a house to rent in the neighboring cities due to the increasing migration and rising rental prices.

P.1: *"We have no other choice; we came to Ankara. There is no house. We were looking for a house for 4 families at the same time, isn't that a shame? Appointments should have been made at different times, and there was no proper respect. We moved for the children; we would have stayed if it wasn't for them. I could not let a 4-year-old child live in that cloud of dust. It hurts me to leave, as if I were running away without saying goodbye to my home where I live. I don't feel that I belong here now."*

P.7: *"We moved for the children. Hatay was very nice. We could not stay at someone else's house. I looked for a detached house because I was afraid of an earthquake, but I could not find one. We are condemned to the apartment again."*

P.3: *"Our family split up, my parents moved to a summer house, I was left alone, my workload increased."*

P.4 said: *"We didn't want to leave our home town; we just wanted to go with the children. We wanted to travel to the hospital. Nobody wants to leave Hatay, they have to. It is like falling in love with your executioner (Stockholm syndrome); we will come back one day."*

Sub-theme 3: Living together in someone else's house

Seven participants moved in with a relative or acquaintance. 3 participants were still living in the houses of their relatives. There are usually several families living together in the houses, which makes life difficult for them. The following statements made by the participants.

P.1 "First we lived in my father's house with 6 people, then in a house with 8 people. We have now rented a house in Ankara. For 1 week, we had to stay with friends and relatives".

P.2 "We stayed with relatives for a while. We were in a house with a stove with my little baby. My baby got sick and was taken to the hospital. My older daughter was with relatives, and we were in the hospital; we were separated."

P.6 "We are staying at my mother's summer house. My sisters are also here. The house is very crowded. I do not feel comfortable. Crowded living difficult."

P.7 "We stayed in a relative's house for two months. We have now moved to Mersin. It was very difficult to stay in someone else's house. The landlords wake up late; my children wake up early. I was embarrassed that my children woke them up. I always gave them the phone to play with so they wouldn't make a sound. We lived in a house with 9-10 people. I thought that with 3 children we were a burden on them and that we were disturbing their order. I was even ashamed to take a shower in someone else's house."

Sub-theme 4: Living in a tent

Six participants lived in tents. All those living in tents are generally uncomfortable sharing toilets and bathrooms. One person stated that he lived in a tent in his village rather than in a tent city because of security reasons and other reasons. The women living in Tent City said that they were satisfied with the social activities and the opportunity to socialize as a result of living together.

P.8 "The tents built by the Kyrgyz were far from the toilet. We moved to tents near the mosque. We used the mosque toilet here. It is safer. It doesn't feel like a home; our house was destroyed, and our belongings are gone. You just can't let go of life".

P.9 "My house is slightly damaged, but we are still living in the tent because I am afraid to go inside. I go to knitting classes, and that helps me. The presence of security forces makes us feel comfortable. Because there is a very conducive environment for fights, for example, during meals. We use the toilet in the mosque".

P.10 "Staying with strangers made me feel uncomfortable at first. Then I to it. The tent door is open, and it is not clear who goes in and out, which is also a problem. But we have made new friends; everyone is in the same situation; the richest and the poorest are in the same place."

P.11: "We went to the tent city and found a tent with great difficulty. A girl was raped in a tent city, and we did not want to stay there. We applied for a container, but it was refused. We moved our tent into the village. We already have 2 cows left alive in the village, and we have a garden although our house was destroyed. If we do not take care of it, strangers will come."

Sub-theme 5: Changes in business life and economic situation

Among the participants, those who are civil servants and those whose workplaces were not demolished are able to continue their work. However, there has been a change in the business life or income status of 6 families among the participants. Since P.1's workplace was closed and the workplaces of P.7's and P.13's spouses were destroyed, their incomes decreased. P.3 explained that she worked extremely hard and did not sleep because she was a nurse.

P.2 said: "My husband continues to work. My workplace was closed down, and my salary was not paid for a while."

P.11 said: "My family was working in the fields, now they are unemployed. The shop where I worked was demolished. I applied to an employment office, but there is no work."

Sub-theme 6: Changes in educational life

After the 6 February earthquake, university dormitories throughout the country were decided to house earthquake victims. For this reason, formal education in universities was canceled and distance learning was started. Then, with a new decision, education was started in a hybrid system (without compulsory attendance) was started (20). There have also been changes in primary and secondary education due to damaged schools, roads, or relocation of families to other regions (21-24).

Two participants were university students, while five participants expressed concern about their children's education.

P.1 "The children's kindergarten changed because we moved".

P.2 "When my daughter started school, I was very afraid that the earthquake would happen again while she was at school."

P.8 "Children cannot go to school. A child who studies in İstanbul cannot go to school; therefore, schools are closed. They could not get education during the pandemic; they cannot receive any education now. So I am worried.

P.10: "I am a university student. I cannot access online courses. There is no mobile phone signal. I don't have a computer."

P.11 "I was studying at the university, now I have suspended my studies. I have to take care of my family. My brothers and sisters are young, my parents are old. I have to find a job and work."

Theme 2. Physical problems

After the earthquake, 10 women experienced physical and mental health problems. These problems were listed as follows:

- Muscle/joint pain
- Spinal problems
- Urinary tract infection
- Vaginal infection (vaginal fungus, vaginitis)
- Headache/dizziness

Table 3.
Physical Problems Experienced by Women

Physical problems	Participant	Problem feature
Muscle-joint problems	K.1	"On the eighth day, I could not feel my left arm, and there was edema and infection. I went to the hospital and took antibiotics. I removed the cupboard that had fallen on my baby's bed."
	K.2	"I have numbness and pain in my right side. My arm and leg. I went to physical therapy, X-rays were taken; it may be psychological."
	K.7	"We jumped from the 3rd floor to escape the earthquake. I have sore feet. I was embarrassed to go to the doctor for this."
	K.12	"During the earthquake, and after my nephew ran around the hospital for surgery, my knee ligament was torn. I went to the emergency room. I'm using drugs. It doesn't help."
	K.14	"I have aches and tremors in my feet."
Spinal problems	K.3 K.6	"I had a fracture in my spine, and I carried many patients after the earthquake; my lower back pain increased. I received neural therapy."
Urinary tract infection	K.11	"I have a herniated disc, and my pain has increased. I did not go to the doctor. In this case, the pain feels simple."
Vaginal infection	K.6 K.4	"I've had vaginitis, but it hasn't gone away."
Gastrointestinal problems	K.6	"I and many women around me have had vaginal fungus."
Headache/dizziness	K.8 K.1	"I experienced diarrhea and vomiting from stress and fear in both earthquakes."
Skin fungus	K.7	"Headaches become forgetfulness, 10 minutes." I forgot to mention it before. I didn't go to the doctor; I'm taking painkillers."
Menstruation/menstrual irregularity	K.1 K.11	"I feel dizzy all the time, there is a constant feeling of an earthquake."

- Gastrointestinal problems
- Skin fungus
- Menstruation/menstrual irregularity.

Half of the women (n=5) applied to the health center for physical problems. The most common problem (n=5) was muscle and joint pain. Data on the problems experienced by women are presented in Table 3.

Theme 3. Emotional state after an earthquake

In the interviews, the women were asked about changes and problems they experienced in their mental health after the earthquake. The intense emotions experienced by the women were reflected in their voice and expressions. The general psychological problems experienced by the women were as follows.

- Anxiety (n=9; P.1, P.2, P.3, P.7, P.8, P.11, P.13, P.14, P.15)
- Fear (n=5; 6, P.8, P.10, P.11, P.15)
- Sleep disorders (n=11; P.2, P.3, P.4, P.6, P.7, P.8, P.11, P.12, P.13, P.14, P.15)
- Depressed mood (n=3; P.3, P.12, P.13)
- Angry mood (n=2; P.4, P.13)
- Inability to forget what they saw and the sounds they heard (n:4; P.7, P.9, P.10, P.12)
- Inability to experience their emotions (n=3; P.5, P.12, P.14)
- Feeling obliged to be strong (n=3; P.5, P.10, P.12)
- Feeling hopeless (n=1; P.1)
- Feeling grateful (n=2; P.7, P.10).

Most women reported insomnia (n=11) and anxiety (n=9). Five women reported feeling of "fear" about their emotional state. The causes of the women's anxiety were as follows: "fear of the future, uncertainty, fear of something bad happening again/earthquake etc. and general anxiety disorder". In addition, the reasons for anxiety were as follows: "fear of earthquakes, fear of heights, fear of re-entering the house, fear of loneliness, fear of losing a loved one, and fear of safety."

P.1: "I have no enthusiasm for the future. I have no enthusiasm for opening my office and continuing with the online training I have acquired. I live to live; I have no enthusiasm for tomorrow. I don't feel like making a future with my spouse. We're not secure. Nobody has to take care of you. Those who were rich and had summer residences had a more comfortable life after the earthquake. It was easier for them to cope with the situation."

P.2 "I feel anxious all the time. I have a constant fear of loss. I feel insecure. Even though my house is undamaged, I cannot trust it. I wanted to run away from Adana. But I can't. My husband has a job, and my child is at school. When the earthquake struck that day, I woke up at 04:07 a.m. to breastfeed my daughter. I looked at my phone. I wake up at 04:00 a.m. every day at the same time. My little daughter was in my arms as I ran away. I cannot remember whether I took my older daughter with me or left her behind. I think about the time."

P.3 "My anxiety increased; I have a depressive mood. I could not sleep until 4-5 in the morning for the first month. I could not experience my grief. I lost 20-25 friends and acquaintances. I often cry now."

P.5 "When we traveled to Mersin, we had no clothes. Someone brought things into a suitcase. The clothes were old and dirty. That day started to cry because of my clothes. I thought, "What did we become one night when we were a wealthy family?" I said, "Are we so helpless?" We were even in need of a vest. The thing that upset me the most was that my child had to wear old clothes."

P.6 "There is significant of fear and panic. I am psychologically and physically affected by every episode. I cannot leave my daughter alone. I cannot go to the toilet or bathroom alone. I have someone waiting at the door when I go to the bathroom. My sleep is very irregular. It was raining that day; now I feel very uncomfortable in rainy and stormy weather."

P.12 "My psychology is breaking." I couldn't cry over my sister's death. I ran to my nephew; I couldn't sob; I cried secretly. When my nephew was put to intensive care, I was devastated when they told me that he could die at any moment. My 18-year-old nephew's leg was amputated twice. I couldn't find a blanket for my nephew in the hospital, so I apart took the hospital curtain and made a blanket. I don't know if it was a sin. I don't know if it was a sin or not. I cannot sleep, my head is confused, and I have nightmares when I fall asleep. I can't forget what I saw in the rubble and in the hospital. I had no sense of time; everything was like a dream. My sister came out of the rubble alive; she was badly hurt. I gave her a sip of water. Then, her arm was amputated in the hospital. Then we couldn't find my sister in the hospital. They told us to look in the intensive care unit, but she was not there. Everything was chaos at the hospital. The patients were lying on the floor. I looked at the morgue list and found no names. There were nameless dead people in the morgue. I looked at the faces of the dead in succession. Then I recognized my sister by her birthmarks."

Theme 4. Women's needs and difficulties experienced as women

Women have specific needs due to their physiological processes (menstruation, breastfeeding, postpartum). The results of the interviews showed that women expressed their needs related to menstruation and breastfeeding during the earthquake process.

Sub-theme 1: Hygiene problems

Most women (n=13) suffered from having to use open defecation facilities within the first few days. Then they bothered by the lack of hygiene in the public toilets. They stated that they experienced problems with accessing clean water and finding sanitary pads and clean underwear (P.2, P.3, P.4, P.5, P.6, P.7, P.9, P.10, P.11, P.12, P.13, P.14, P.15).

P.2: "I was postpartum during the earthquake; I was bleeding, and I could not find a pad".

P.3: "I had my period on the second day of the earthquake, and I could not find any pads except 1-2 pads in the car. The markets are closed. I couldn't go to the toilet. While in the car, we used the field as a toilet."

P.7: "It took a week for the tents to arrive. The men go to the toilet on a comfortable side. The women have to find a secret place..."

P.10: "I prayed not to be in my period. Those who stayed in the villages could not find pads."

P.11: "There is no sink, no bathroom. We fill water in canisters in the garden and take a bath. We bathe in the dark and cold at night so that no one else can see us. My brother and sister are small and cold. We use the field we find empty as a toilet. We do not go to the toilet at night because we are afraid..."

Sub-theme 2: Breastfeeding problems

Among the women interviewed, there were 2 breastfeeding women. Women experienced difficulties related to a decrease in their milk supply, lack of breastfeeding supplies (bras, breast pads), and the absence of a private environment for breastfeeding.

P.2: "I did not wear a bra because I was breastfeeding. When I went out that night, I felt like I was naked without a bra."

P.5: "My milk dried up because of stress. I had to give a formula. I have a 4-5 months old baby."

Theme 5. Difficulties experienced by women in their social life after the earthquake

Sub-theme 1: Increased workload

Most women (n=9) mentioned in their statements "children, care for injured or elderly relatives, increased workload in a crowded family environment" (P.3, P.4, P.5, P.6, P.7, P.8, P.9, P.11, P.13).

P.3 "Women are the only ones responsible for all tent tasks." We rented a house, and it was left to the women to clean, carry, and unload things. There are no laborers to works. There is no lift. As female health workers, our workload has increased even more..."

P.4 "We have moved to my in-laws' house and I am doing more work. I can!t eat when I want or drink coffee when I want. I am even embarrassed to do laundry. It is like being a guest and a host in the same house.."

P.5 "My husband stayed in the earthquake zone to work. I took care of 2 injured elderly people and my little baby, 3 people by myself. It made me very tired. Everyone depends on me."

P.7 "We are in a crowded house, preparing the table, and taking care of the children. All the work is still done by the woman. My husband takes care of his work."

P.8 "Apart from the work I normally do as a woman, I also worked in the rubble removal."

P.9 "My husband is ashamed to stand in line for food and tea, I always wait there."

P.11 "My parents are old. I have to take care of my siblings. My aunt is disabled. I help her. My family has no work; our field is gone. I have to find a job."

P.13: "Being a woman in Turkey was already difficult, but now it has become even more challenging. As women, we work; we come home in the evening and work again, cooking, washing up, childcare, tea service, cleaning."

Sub-theme 2: Challenges in caring for a mother or caregiver

During the interviews, statements from women with children indicated that their only thoughts during and after the earthquake were their children. They stated that they felt that they had to hide their fear and sadness and to appear strong.

P.1: "I had numerous emotional troubles in my inner world, but I have to stay strong because I am a woman. I don't have time to mourn; I can't feel sorry for the earthquake. I am a mother, and I have to laugh with the children..."

P.2: "I couldn't cry, there was an indescribable situation inside me. If I didn't have children, I would have screamed and shouted. My arm where I hold my baby is numb all the time now..."

P.5: "I had to look after my little baby, my mother-in-law and my father-in-law all by myself. My husband was away working in Hatay. My mother-in-law's foot was broken in the earthquake, and my father-in-law's finger was cut-off. For 2 months, I looked after them, took them to the toilet, and fed them. I didn't have time to think about myself; everyone needed me".

P.6: "My mother is chronically ill and experiences panic attacks. I have a baby. I felt I had to be strong both as a mother and as my mother's child. I kept my feelings inside."

P.7: "I didn't think about anything except saving the children. I threw them from above, and they caught them. Then I thought I might die. Motherhood is very tiring..."

It was observed that being a mother or carrying injured people led women to have "intense feelings of responsibility, keeping everyone together, being a collector, being strong, and hiding their emotions".

Sub-theme 3: Difficulties in ensuring privacy

Women reported a lack of privacy for various reasons, such as using the toilet in open areas and dressing in tents (P.3, P.6, P.8, P.15).

P.6: "Using the toilet in open areas was very bad. My husband held a blanket in front of me. It is impossible to have privacy."

"We take turns getting dressed in the tent."

P.15 "Hygiene was very bad, we used the same toilet and bathroom, which caused significant issues with privacy."

Sub-theme 4: Security concerns

Two women expressed concern about security.

P.7 "I would like to see someone in uniform. There is a security problem. There were men we had never seen before in our neighborhood. I was afraid there theft was widespread. There were healthy, mischievous young men in their pockets. I never left my husband's side."

P.11 "My brother is 18 years old, and I cannot sleep without him. There are some people in the village who take drugs, and I am afraid of them. After the earthquake, they found money by looting everywhere. One girl was raped in the tent center. This incident affected me a lot."

Discussion

The effects of unexpected disasters, such as earthquakes, vary according to the level of preparedness. Depending on the society in which the earthquake occurred, post-earthquake problems also vary (36,37). Factors such as the country's post-earthquake contingency plans, organizational capacity and economic power can affect the level of difficulties experienced by people after the earthquake (38,39). Although Turkey is an earthquake-prone country, the 6 February Kahramanmaraş earthquake was a devastating earthquake that affected many cities at the same time (25). After the 7.8 magnitude earthquake, thousands of buildings collapsed, and more than 50,000 people died (41).

Our study examined the physical, social, and psychological problems experienced by women after the devastating earthquake. People's "demographic, socio-economic, and urban/housing" characteristics are changing after an earthquake (42). In our study, the participants' employment, education, income status, and city/residence have changed. There will inevitably be changes in the psychosocial status of the people due to both the direct effects of the earthquake and the indirect effects of these changes (43-45).

In our study, problems related to the arrival of aid in the first days after the earthquake mentioned by all participants. Similarly, in a qualitative study conducted with 20 people after the 2011 Van earthquake 13 years ago, "problems experienced in aid and service delivery" were expressed (38).

In some societies, fatalistic beliefs are seen as obstacles to pre-earthquake seismic preparedness and are effective in easily accepting post-earthquake events (39). A study conducted in İzmir, Turkey, found that people with high levels of fatalism were less prepared for earthquakes (46). In our study, we observed that the fatalistic approach in our society was reflected in the feelings of some of the earthquake victims in the form of being thankful for their situation.

In our study, the problems of the female participants were investigated because women are more sensitive to conditions such as pregnancy, breastfeeding, and childcare. It was found that the workload and responsibilities of the participants increased since they were caregivers due to their social position; they moved to collective living spaces with others; and housework was their responsibility. Similarly, a study conducted after the Elazığ earthquake in Turkey found that women were more affected by the negative effects of the disaster because of their gender roles (47). After the 2011 Tokhoku earthquake in Japan, women's workload increased because of their social roles (48).

In our study, women expressed problems related to hygiene. They had problems accessing clean toilets, bathrooms, and feminine hygiene products (such as sanitary pads and clean underwear). In other earthquakes, women were also found to have problems with such issues. In the 2012 Haiti earthquake, it was noted that women's specific needs were ignored in the aftermath of the disaster (49). Similarly, during the 2015 Nepal earthquake, women expressed difficulties with menstruation and problems with using communal toilets (50). In our study, women reported that they were uncomfortable to having to use toilets in open areas, both in terms of hygiene and privacy. In a study conducted after a cyclone and flood disaster in Odishia, India, women were found to suffer from the same problem (51). In general terms, "water, sanitation, hygiene" are considered important issues related to disasters worldwide (20,51,52). Issues such as lack of access to clean water, hygienic environment, and sanitary pads caused "vaginal and urinary tract infections and skin diseases" among women in our study. Studies have also reported that a lack of sanitation leads to health problems (50,53).

In our study, some women expressed concerns about privacy and safety issues. The two murders of women in the tent city also raised security concerns. In countries with high levels of gender discrimination, such as Haiti and Nepal, rape, trafficking, and domestic violence increased after the earthquake (33,34). A systematic review focusing on 12 paper highlighted that women in low- and middle-income countries are more vulnerable to natural disasters (54). A study found that women experience increased socio-economic health problems such as "psychological stress, chronic fatigue, malnutrition, physical injuries, lack of education, unemployment, poverty, early marriage, domestic violence, inadequate housing and unhealthy living conditions, communicable and non-communicable diseases, inadequate access to feminine hygiene products and increased mortality rates" (54).

Study Limitations

This study was conducted with a sample of 15 women, which limits the generalizability of the results. The snowball sampling method may have reduced participant diversity. Conducting interviews by telephone limited the opportunity to gather in-depth data that could be obtained through face-to-face communication and resulted in the loss of important cues such as body language. Conducting interviews only in certain provinces excluded the experiences of individuals from other regions. Additionally, the psychological state of participants after the trauma may have affected the depth of the data and their freedom of expression. Although open-ended questions were used, the interview form being limited to predefined themes may have prevented unexpected issues from emerging. Staying in collective living spaces such as tent cities heightened concerns about privacy and security, which may have restricted some participants from fully sharing their experiences.

Conclusion

As in all other studies, our study shows that women are more sensitive and more vulnerable to health problems due to their special conditions such as "pregnancy, childbirth, lactation, menstrual cycle" after the earthquake. In addition, in patriarchal societies like ours, women are responsible for childcare, care of the sick, elderly, and injured relatives, and play the role of "caregiver". The increased need for care during disasters increases the responsibility of women in disaster areas. This sense of responsibility was also seen to cause psychological effects, such as suppressing women's emotions and enhancing their need. In addition, women's responsibilities at home, such as cleaning and tidying up, increased. They also participated in labor-intensive activities in the earthquake zone because of delays in relief efforts after the earthquake. It was observed that privacy and security issues in collective living spaces, such as tent cities, after the earthquake caused a sense of anxiety for some women. As many studies have shown, women are

the most disadvantaged group in terms of "health, shelter, economic and security" in disasters (15,16,48-50). For this reason, women should be considered a privileged group for social assistance to be provided in the region after the earthquake.

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Informed Consent: Informed consent was obtained from all participants included in the study.

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ORIGINAL ARTICLE

The Relationship Between Gender Perception, Fertility Awareness, and Reproductive Coercion in Fertile Women

Doğurgan Çağdaki Kadınlarda Toplumsal Cinsiyet Algısı, Fertilite Farkındalığı ve Üreme Baskısı İlişkisi

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Abstract

Objective: This study aimed to determine the relationship between gender perception, fertility awareness, and reproductive pressure in women of reproductive age.

Method: This cross-sectional study included women of reproductive age in Turkey. There are 22 million women between the ages of 18 and 49 living in Turkey. According to the sampling method with a known universe, 385 samples were obtained. The research was completed in 412 women. The data were collected with the "descriptive information form", "perception gender scale (PGS)", "fertility awareness scale (FAS)", "reproductive coercion scale (RCS)".

Results: Women's PGS mean score is 104.40±14.64, their FAS mean score is 64.67±12.83, and their RCS mean score is 0.08±0.36. Between PGS and FAS, highly significant, positive, weak (r=0.206, p=0.000); between PGS and RCS, highly significant, negative, very weak (r=-0.193, p=0.000); and between FAS and RCS, a significant, negative, very weak (r=-0.082, p=0.048) relationship was found.

Conclusion: Women's gender perceptions were high, fertility awareness was moderate, and reproductive pressures were low. It was determined that as gender perception increased, fertility awareness increased, and reproductive pressure decreased.

Keywords: Fertile age, fertility, awareness, women, gender, reproductive pressure

Öz

Amaç: Çalışmada, doğurgan çağdaki kadınların toplumsal cinsiyet algısı, fertilite farkındalığı ve üreme baskısı arasındaki ilişkinin belirlenmesi amaçlandı.

Yöntem: Kesitsel tipteki araştırmanın evrenini Türkiye'deki doğurgan çağdaki kadınlar oluşturdu. Türkiye'de 18-49 yaş arası 22 milyon kadın yaşamaktadır. Evreni bilinen örnekleme yöntemine göre örneklem sayısı 385 bulundu. Araştırma 412 kadınla tamamlandı. Veriler "tanıtıcı bilgi formu", "fertilite farkındalık ölçeği (FFÖ)", "toplumsal cinsiyet algısı ölçeği (TCAÖ)", "üreme baskısı ölçeği (ÜBÖ)" ile toplandı.

Bulgular: Kadınların TCAÖ puan ortalaması 104,40±14,64, FFÖ puan ortalaması 64,67±12,83 ve ÜBÖ puan ortalaması 0,08±0,36'dır. TCAÖ ile FFÖ arasında ileri derecede anlamlı, pozitif yönde ve zayıf (r=0,206, p=0,000), TCAÖ ile ÜBÖ arasında ileri derecede anlamlı, negatif yönde ve çok zayıf (r=-0,193, p=0,000), FFÖ ile ÜBÖ arasında anlamlı, negatif yönde ve çok zayıf (r=-0,082, p=0,048) bir ilişki saptandı.

Sonuç: Kadınların toplumsal cinsiyet algıları yüksek, fertilite farkındalıkları orta ve üreme baskıları düşük düzeydeydi. Toplumsal cinsiyet algısının artmasıyla fertilite farkındalığının arttığı, üreme baskısının azaldığı belirlendi.

Anahtar Kelimeler: Doğurgan çağ, fertilite, farkındalık, kadın, toplumsal cinsiyet, üreme baskısı

Introduction

In societies, certain roles are attributed to genders based on cultural characteristics. As a result, being a woman or a man goes beyond being a biological feature. Gender roles encompass traditional societal norms that dictate the recognized behavioral expectations and responsibilities assigned to individuals based on gender. According to gender roles, women are perceived to occupy lower

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positions than men in social, cultural, political, and economic domains. Consequently, social gender roles have given rise to the concept of gender inequality. In the context of gender perceptions, men are often perceived as powerful decision-makers, whereas women are perceived as dependent and passive individuals in relation to men (1,2). The Global Gender Gap Report (2023) highlights that addressing gender inequality will take 131 years. Turkey ranks relatively low (129/146) compared with the global average in the same report, indicating the need for improvement in this area (3).

The negative impact of gender roles on women's health is evident in various areas, with fertility being one of the foremost affected aspects (4). The most crucial purpose for individuals to continue their lives is to ensure the continuity of their lineage through reproductive function (2,5). Fertility refers to the ability to conceive and reproduce (6). According to social perceptions in many countries, including Turkey, fertility is seen as women's ability to bear children and men's ability to impregnate. In this regard, the concept of "fertility awareness" comes to the forefront. It has been observed that this awareness plays a significant role in promoting healthy lifestyle behaviors and preserving reproductive health (5,7). The sustainability of fertility depends on access to reproductive health services and fertility awareness (8). Fertility awareness helps eliminate the risk of developing health problems that may negatively impact maternal and neonatal mortality and morbidity, such as unwanted pregnancies, abortions, miscarriages, premature births, and low birth weight infants (7). However, the concept of gender inequality resulting from gender perceptions may lead to discrimination against women during the uptake of health services (9). Therefore, the World Health Organization recommends the establishment of fertility awareness among individuals (7).

Women's ability to make autonomous decisions about fertility is influenced by national policies, gender roles, and partners' attitudes. In this context, one of the negative factors that women perceive about fertility is reproductive coercion, which can manifest as being forced into pregnancy against one's will, interference in birth control decisions, or the termination of existing pregnancies (7,10). It is also defined as a form of violence and abuse (11). Women facing this type of pressure generally have lower social status and decision-making autonomy (7,10). Moreover, many women experiencing reproductive pressure also endure physical or sexual violence. Reproductive coercion indirectly leads to the denial of access to and utilization of family planning methods and results in adverse sexual and reproductive health outcomes, such as early pregnancies, unwanted pregnancies, miscarriages, and sexually transmitted infections (12,13). Furthermore, these adversities often invalidate women's sexual rights, reproductive rights, and autonomy (14). The convention on the elimination of all forms of discrimination against women, which has been accepted to eliminate gender discrimination, emphasizes the autonomy of reproductive rights. The convention advocates for equal decision-making on reproductive matters for everyone, regardless of gender (15). However, reproductive coercion undermines this equality (7,10). As reproductive coercion is a developing topic, more research is recommended to identify the factors influencing it (11,16). To the best of our knowledge, no research has examined the relationship between gender perception, fertility awareness, and reproductive coercion. This study aims to investigate this relationship. The research questions are as follows:

Q1: What is the gender perception of women of reproductive age?

Q2: What is the fertility awareness level of women of childbearing age?

Q3: What are the reproductive pressure levels among women of childbearing age?

Q4: Is there a relationship between gender perception, fertility awareness, and reproductive pressure in women of reproductive age?

Main Points

- Gender roles, fertility awareness, and reproductive pressure are important concepts in women of reproductive age.
- Women had high gender perceptions, moderate fertility awareness, and low reproductive pressures.
- It was determined that as gender perception increased, fertility awareness increased, and reproductive pressure decreased.
- It has been determined that single people, those with postgraduate education, those whose spouses have postgraduate education, those who have been married for 1-5 years, and those who do not use regular family planning methods have more positive gender perceptions than others.
- Fertility awareness was found to be higher among those who were married, had a postgraduate education, had a spouse with a bachelor's degree, had a spouse working in the service sector, had an income greater than their expenses, and lived in the Southeastern Anatolia Region.
- The level of reproductive pressure is higher among those who have primary and secondary education, those whose spouses have primary or secondary education, and those whose spouses are not working.

Material and Method

Study Design and Sample

The research is a cross-sectional and descriptive study that explores the relationships between variables. The study population consisted of women of reproductive age (18-49 years) living in Turkey. According to the latest data from the Turkish Statistical Institute in 2021, there are 22 million women in the age range of 18-49 years in Turkey (17). The sample size of the study was calculated as 385 using the known population sampling method, with an acceptable error of 5% and a confidence interval of 95%, assuming a proportion of p=q=0.5. The inclusion criteria for the study were as follows: (1) female, (2) aged 18-49 years, (3) literate, (4) willing to participate in the study, (5) using an Android mobile phone, (6) having Internet access, (7) not being pregnant, (8) not having received a menopause diagnosis, and (9) not having any physical or mental disabilities. The

study was conducted online between December 2022 and March 2023 covering the entire geographical area of Turkey.

Data Collection Instruments

Data were collected using a questionnaire consisting of four sections. The sections consisted of the demographic information form, the perception of gender scale (PGS), the fertility awareness scale (FAS), and the reproductive coercion scale (RCS).

Demographic information form: This form, developed by the researchers in line with the literature, consists of 17 questions to determine the demographic characteristics (age, education level, marital status, spouse's education level, occupation, income level, region of residence, etc.) and obstetric characteristics (number of pregnancies, miscarriages, births, number of living children, etc.) of the participants (1,7,16).

PGS: The PGS was developed by Altınova and Duyan (1) to measure individuals' gender perceptions and consists of 25 items under one factor. Of the items, 10 were positively stated and 15 were negatively worded. Items 2, 4, 6, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21, 24, and 25 are negatively worded and reverse-coded. The scale items were rated on a five-point Likert scale, ranging from "strongly agree (5)" to "strongly disagree (1)". The lowest possible score on the scale is 25, and the highest score is 125, with higher scores indicating a more positive perception of gender roles. The Cronbach's alpha of the original scale was 0.87 (1). In this study, the Cronbach's alpha of the scale was calculated as 0.91.

FAS: The FAS, developed by Özşahin and Derya (7), is a five-point Likert-type scale comprising 19 items grouped under two factors. The physical awareness subdimension comprises items 7, 9, 10, 11, 12, 13, 15, 17, 18, and 19. Meanwhile, the cognitive awareness subdimension comprises items 1, 2, 3, 4, 5, 6, 8, 14, and 16. The scale does not include reverse-scored items. The scale items were rated on a five-point Likert scale, ranging from "Always (5)" to "Never (1)". The lowest possible FAS score was 19, and the highest score was 95. For the physical awareness subdimension, the lowest score was 10, and the highest score was 50. For the cognitive awareness subdimension, the lowest score was 9, and the highest score was 45. A high FAS total score indicates a high level of fertility awareness. Scores between 19 and 43 indicate low awareness, 44 and 69 indicate moderate awareness, and 70 and 95 indicate high awareness. The Cronbach's alpha of the original scale is 0.88 (7). In this study, the Cronbach's alpha of the scale was calculated as 0.85.

RCS: The RCS, first developed by McCauley et al. (16), was developed by Öztürk and Güner (15) and consists of nine items. A shorter form with five items was created by McCauley et al. (16) to facilitate its use. The scale assesses the reproductive coercion experienced by individuals from their partners in the past three months, including subdimensions such as pregnancy pressure and condom manipulation. The Turkish version of the scale includes five items under one factor. Each item was rated on a binary Likert-type scale, with responses of "Yes (1)" and "No (0)". The Cronbach's alpha for the Turkish version of the scale is 0.72 (16). In this study, the Cronbach's alpha of the scale was calculated as 0.491.

Data Collection

The data were collected online using the snowball sampling method. In snowball sampling, initial contact is made with one unit from the population, which helps reach a third unit. In this way, the sample size expands, similar to the growth of a snowball. Initially, researchers aim to reach participants in their immediate social circles and then extend the reach to the social circles of these participants. The data collection form for the study was distributed through various online platforms (WhatsApp, Twitter, Instagram, Facebook, e-mail, etc.). The participants completed the survey form using self-reporting in approximately 10 minutes.

Statistical Analysis

The statistical analysis of the data obtained from the study was conducted using IBM SPSS 22.0 (Statistical Package for the Social Sciences for Windows). The results were analyzed at a significance level of 5.0% with a confidence interval of 95.0%. Descriptive statistics such as numbers, percentages, means, and standard deviations were used for data analysis. The normality of the data distribution was assessed using the Kolmogorov-Smirnov test, which indicated that the data did not follow a normal distribution. Therefore, non-parametric tests, specifically the Mann-Whitney U test and Kruskal-Wallis analysis, were employed for data comparisons. To determine the relationship between the PGS, FAS, and RCS, Spearman's correlation analysis was used.

Ethical Considerations

The authors obtained ethical approval from the Bartın University's Ethics Committee (date: 14.11.2022, protocol no: 2022-SBB-0494). Informed consent was obtained from the participants, ensuring their voluntary participation in the study.

Results

The mean age of the participants was determined to be 31.61±8.96 years. Additionally, the study found that the participants had an average of 1.87±1.34 pregnancies, 1.57±1.03 childbirths, 1.62±1.54 children, and 0.39±0.83 miscarriages. Moreover, the average age at which they became first-time mothers was 26.42±4.25 years. It was found that 58.5% of the participants were married, 54.1% had a bachelor's degree, 50.7% were not employed, and 42.7% worked in the service sector. Among the married participants, 41.9% had a bachelor's degree, 97.1% were employed, and 63.1% worked in the service sector. Furthermore, 25.3% of the participants had been married for 1-5 years, 53.9% had income equal to their expenses, 28.2% lived in the Central Anatolia Region, and 52.2% did not use any regular family planning method (Table 1).

Table 1.
Socio-demographic and Obstetrics Characteristics of the Participants (n=412)

Variables	$\bar{X}$	SD
Age (min: 18, max: 49)	31.61	8.96
Number of pregnancies (min: 0, max: 7)	1.87	1.34
Number of births (min: 0, max: 6)	1.57	1.03
Number of children (min: 0, max: 5)	1.62	1.54
Number of miscarriages (min: 0, max: 8)	0.39	0.83
Age at first birth (min: 17, max: 39)	26.42	4.25
	n	%
Marital status		
Married	241	58.5
Single	171	41.5
Education status		
Elementary school	17	4.1
High school	71	17.2
Associate degree	55	13.3
Bachelor's degree	223	54.2
Postgraduate	46	11.2
Working status		
Not employed	209	50.7
Employed	203	49.3
Working sector		
Housewife Service (education, health, banking, trade, transport, accounting, etc.) Self-employment	209 176 18	50.7 42.7 4.4
Industry (machine, building, iron and steel etc.)	9	2.2
Spouses' educational status (n=241)		
Elementary school	14	5.8
High school	55	22.8
Associatedegree	36	14.9
Bachelor's degree	101	42.0
Postgraduate	35	14.5
Spouses' working status (n=241)		
Not employed	234	97.1
Employed	7	2.9
Spouses' working sector (n=241)		
Service (education, health, banking, trade, transport, accounting, etc.)	152	63.1
Industry (machine, building, iron and steel etc.)	39	16.2
Self-employment	36	14.9
Not working	7	2.9
Agriculture (livestock, forestry, mining, etc.)	7	2.9
Duration of marriage		
20 years and above	43	17.8
16-20 year	44	18.3
11-15 year	48	19.9
6-10 year	32	13.3
1-5 year	61	25.3
1 year	13	5.4
Perceptions of monthly income and expenses		
Income less than expenses	124	30.1
Income equals expenses	222	53.9
Income more than expenses	66	16.0
Living area		
Central Anatolia	116	28.2
The Black Sea Region	113	27.4
Marmara Region	106	25.7
The Southeastern Anatolia Region	23	5.6
The Eastern Anatolia Region	19	4.6
Aegean Region	18	4.4
Mediterranean Region	17	4.1
Family planning method used regularly		
We do not use	215	52.2
Condom	97	23.5
Traditional methods such as the retraction and calendar method	51	12.4
Intrauterine device	33	8.0
Oral contraceptive	16	3.9

SD=Standard deviation

The mean PGS, FAS, and RCS scores are presented in Table 2. The mean PGS score of the participants was 104.40±14.64, indicating a high level of gender role perceptions. The mean FAS score of the participants was 64.67±12.83, suggesting a moderate level of fertility awareness. The mean scores of the participants on the subdimensions of the FAS were 37.18±7.45 for physical awareness and 27.48±6.67 for cognitive awareness. The mean RCS score of the participants was 0.08±0.36, indicating a significantly low level of reproductive coercion (Table 2).

The PGS, FAS, and RCS scores of participants with certain socio-demographic characteristics are compared in Table 3. It was determined that unmarried individuals, those with postgraduate education, those whose spouses had postgraduate education, those married for 1-5 years, and those not using regular family planning methods had more favorable gender role perceptions than others ($p<0.05$). Moreover, married participants, those with postgraduate

education, those whose spouses had a bachelor's degree, those whose spouses worked in the service sector, those with income exceeding expenses, and those living in the Southeast Anatolia Region demonstrated higher levels of fertility awareness than others (p<0.05). On the other hand, the participants with primary and secondary education, those whose spouses had primary and secondary education, and those whose spouses were not employed were found to have higher levels of reproductive coercion compared to others (p<0.05) (Table 3).

Table 2.
Mean PGS, FAS, and RCS Scores of the Participants (n=412)

Scales	**Score received**		**Scale Min-max value**
	$\bar{X}$ ± SD	**Min-max value**	
Total PGS score	104.40±14.64	47-125	25-125
Total FAS score	64.67±12.83	19-95	19-95
Physical awareness subdimension total score	37.18±7.45	10-50	10-50
Cognitive awareness subdimension total score	27.48±6.67	9-45	9-45
Total RCS score	0.08±0.36	0-3	0-5

SD=Standard deviation, PGS=perception gender scale, FAS=fertility awareness scale, RCS=reproductive coercion scale

Table 3.
Comparison of the Mean Scores of the PGS, FAS, and RCS with Certain Socio-demographic and Obstetrics Characteristics

Variables		**PGS**	**FAS**	**RCS Mean rank**
		Mean rank	**Mean rank**	
Marital status*	Single	254.24	187.53	202.58
	Married	172.62	219.96	209.28
		U=12441.500 **p=0.000**	U=17362.000 **p=0.006**	U=19936.000 p=0.174
Education status**	Elementary school	147.56	208.00	231.00
	High school	160.19	172.09	225.62
	Associate degree	189.76	204.35	201.55
	Bachelor's degree	213.57	208.75	202.34
	Postgraduate	285.49	250.74	194.00
		KW=37.043 **p=0.000**	KW=12.386 **p=0.015**	KW=20.004 **p=0.000**
Working status*	Not employed	212.63	214.33	202.13
	Employed	200.55	198.89	210.74
		U=19970.000 p=0.303	U=19623.500 p=0.188	U=20326.500 p=0.076
Working sector**	Housewife	200.55	198.89	210.74
	Service (education, health, banking, trade, transport, accounting, etc.)	164.22	204.17	194.00
	Self-employment	229.56	197.00	205.22
	Industry (machine, building, iron and steel etc.)	213.56	216.63	202.23
		KW=2.919 p=0.404	KW=2.245 p=0.523	KW=3.465 p=0.325

Table 3.
Continued

Variables		PGS Mean rank	FAS Mean rank	RCS Mean rank
Spouses' educational status	Elementary school	103.86	127.79	146.50
	High school	88.85	87.55	127.57
	Associate degree	118.31	128.74	115.29
	Bachelor's degree	132.91	132.88	119.04
	Postgraduate	146.79 KW=20.351	128.61 KW=16.607	112.00 KW=15.738
		p=0.000	**p=0.002**	**p=0.003**
Spouses' working status*	Not employed	121.35	121.24	120.22
	Employed	109.29	113.07	147.14
		U=737.000 p=0.652	U=763.500 p=0.760	U=636.000 **p=0.027**
Spouses' working sector	Service (education, health, banking, trade, transport, accounting, etc.)	128.10	132.09	118.24
	Industry (machine, building, iron and steel etc.)	120.54	99.97	124.38
	Self-employment	94.39	97.36	125.67
	Not working	109.29	113.07	147.14
	Agriculture (livestock, forestry, mining, etc.)	118.07	126.79	112.00
		KW=7.036 p=0.134	KW=11.683 **p=0.020**	KW=7.675 p=0.104
Duration of marriage	1 year	141.27	133.65	112.00
	1-5 year	146.91	122.36	119.92
	6-10 year	114.13	115.45	123.11
	11-15 year	125.33	109.41	116.94
	16-20 year	97.65	121.48	125.67
	20 years and above	102.29	131.83	123.44
		KW=18.067 **p=0.003**	KW=3.023 p=0.696	KW=3.247 p=0.662
Perception of monthly income and expenses	Income less than expenses	213.75	178.29	207.34
	Income equals expenses	199.38	216.78	206.91
	Income more than expenses	216.83	224.92	203.53
		KW=1.752 p=0.417	KW=10.200 **p=0.006**	KW=0.292 p=0.864
Living area**	The Black Sea Region	199.50	202.14	210.53
	Marmara Region	217.07	220.60	205.54
	Aegean Region	207.47	138.00	205.22
	Mediterranean Region	264.50	214.32	194.00
	Central Anatolia	197.87	198.30	204.55
	The Eastern Anatolia Region	169.79	180.63	205.24
	The Southeastern Anatolia Region	222.41	273.50	212.24
		KW=8.091 p=0.232	KW=16.406 **p=0.012**	KW=2.410 p=0.878

Table 3.
Continued

Variables		PGS Mean rank	FAS Mean rank	RCS Mean rank
Family planning method used regularly	Non-users	222.94	195.56	203.70
	Condom	220.25	237.23	202.33
	Intrauterine device	143.26	200.33	225.30
	Oral contraceptive	180.59	209.47	206.63
	Traditional methods such as the retraction and calendar method	160.08	197.22	214.03
		KW=23.226 **p=0.000**	KW=8.689 p=0.069	KW=7.389 p=0.117

**=Mann-Whitney U test, **=Kruskal-Wallis test, PGS=perception gender scale, FAS=fertility awareness scale, RCS=reproductive coercion scale*

When the relationships between participants' PGS, FAS, and RCS scores and certain variables were examined, it was found that there was a significant, negative, and weak relationship between the age of participants and their PGS score (r=-0.305, p=0.000). Additionally, a significant, weak, positive relationship was found between the age of the participants and their FAS score (r=0.137, p=0.003). Furthermore, a significant, very weak, positive relationship was observed between the age of the participants and their RCS score (r=0.083, p=0.047). A significant, strong, negative relationship was found between the number of pregnancies of the participants and the PGS score (r=-0.346, p=0.000). Similarly, there was a significant, very weak, positive relationship between the number of pregnancies and the RCS score (r=0.133, p=0.020). A significant, strong, negative relationship was found between the number of childbirths and the PGS score (r=-0.417, p=0.000). Similarly, a significant, very weak, positive relationship was observed between the number of childbirths and the RCS score (r=0.171, p=0.004). Additionally, a significant, weak, positive relationship was found between the number of children and the PGS score (r=-0.433, p=0.000), and a significant, very weak, positive relationship was observed between the number of children and the RCS score (r=0.133, p=0.020). Lastly, a significant, very weak, positive relationship was found between the number of miscarriages and the RCS score (r=0.157, p=0.008). A significant, weak, positive relationship was observed between the age at which participants became first-time mothers and the PGS score (r=0.251, p=0.000). In terms of intervariable relationships, a significant, weak, positive relationship was found between the PGS and the FAS (r=0.206, p=0.000). Moreover, a significant, negative, very weak relationship was found between the PGS and the RCS (r=-0.193, p=0.000), and a significant, very weak, negative relationship was observed between the FAS and the RCS (r=-0.082, p=0.048) (Table 4).

Discussion

This research aimed to determine the relationship between gender role perceptions, fertility awareness, and reproductive coercion among women of reproductive age and found that women had high gender role perceptions, moderate fertility awareness, and low levels of reproductive coercion. An increase in women's gender role perceptions was associated with an increase in fertility awareness and a decrease in reproductive coercion. The socio-demographic and obstetric characteristics of the women included in the study (age, number of pregnancies, number of childbirths, age at first-time motherhood, marital status, income status, region of residence, family planning method) were found to be consistent with similar studies in the literature (7,16,18-23). Considering that studies on fertility awareness and reproductive coercion mostly focus on women of reproductive age, the socio-demographic findings are believed to be in line with the literature.

The study revealed that the participants had a high mean total score on the PGS (104.40±14.64). This finding is consistent with previous studies in the literature, where the mean total score on the PGS was reported to be high by Özpulat and Özvarış (20) (101.80±12.23), Üstgörül et al. (24) (111.8±11.4), and Lotfi et al. (25) (112.83±10.96) (20,24,25). The similarity of the participants' gender role perceptions in this study with those in national and international studies demonstrates the generalizability of the PGS scores.

The participants' fertility awareness was determined to be at a moderate level (64.67±12.83). Similar findings on moderate fertility awareness have been reported in studies conducted in Turkey (7,21). A systematic review examining 71 articles also revealed that women had a moderate level of fertility awareness (26). In line with these findings, women with similar socio-demographic characteristics were found to have moderate levels of fertility awareness.

In this study, reproductive coercion was found to be at a low level (0.08±0.36). This finding is similar to the findings of different studies on Turkish women (0.47±0.82; 0.872+1.24) (16,27). However, a study conducted in Nairobi reported that women's reproductive coercion was significantly higher (3.8±3.0) (28). One study conducted in the United States (29) reported that one-third of women, and another study (12) found that approximately 47.1% of women experienced

Table 4.
Relationship Between Participants' Mean Scores on the PGS, FAS, and RCS and Certain Variables

Variables	PGS	FAS	RCS
Age	r=-0.305**, **p=0.000****	r=0.137**, **p=0.003****	r=0.083*, **p=0.047***
Number of pregnancies	r=-0.346**, **p=0.000****	r=0.067, p=0.151	r=0.133*, **p=0.020***
Number of births	r=-0.417**, **p=0.000****	r=0.031, p=0.317	r=0.171**, **p=0.004****
Number of children	r=-0.433**, **p=0.000****	r=0.035, p=0.296	r=0.133*, **p=0.020***
Number of miscarriages	r=0.090, p=0.082	r=0.005, p=0.471	r=0.157**, **p=0.008****
Age at first birth	r=0.251**, **p=0.000****	r=0.019, p=0.392	r=0.047, p=0.251
PGS	1.000	r=0.206**, **p=0.000****	r=0.193**, **p=0.000****
FAS	r=0.206**, **p=0.000****	1.000	r=0.082*, **p=0.048***
RCS	r=0.193**, **p=0.000****	r=0.082*, **p=0.048***	1.000

*r=Spearman correlation coefficient, *=correlation 0.05 level meaningful, **=correlation 0.01, meaningful*

reproductive coercion during their lifetime. Our findings are considerably positive compared with international studies. This difference may be attributed to the high gender role perceptions of the women in our study, which positively influenced their reproductive autonomy.

It was found that unmarried individuals and those who had postgraduate education for themselves and their partners had more positive gender role perceptions than others. This finding is consistent with that of similar studies (20,22,24,30). Moreover, the participants who had been married for 1-5 years exhibited more positive gender role perceptions. Akpınar and Kırlıoğlu (31) also found an indirect relationship between the duration of marriage and gender role perceptions in their research. In this study, a relationship was established between the use of regular family planning methods and gender-role perceptions. Similar findings have been reported in different studies conducted in Mexico and Tanzania, where strong associations were observed between family planning method use and gender role perceptions (32-34). The emergence of similar findings in different studies conducted in regions dominated by patriarchal systems can be interpreted as an expected result.

The study found that married individuals, those with postgraduate education, those whose spouses had a bachelor's degree, those with income exceeding expenses, and those living in the Southeast Anatolia Region had higher fertility awareness than others. A study conducted by Özşahin and Altıparmak (21) in the eastern region of Turkey also reported that as participants' education and income levels increased, their fertility awareness also increased. Similar findings have been observed in studies conducted in similar populations, whereas a study involving Indian women found that higher socio-economic status and education did not increase fertility knowledge and awareness (35). Although a relationship between age and fertility awareness was found in this study, no such relationship was reported in the study conducted by Özşahin and Altıparmak (21). These findings indicate that fertility awareness is also influenced by geographical and cultural factors.

The study revealed that individuals whose own and their spouses' education levels were at the primary-secondary level and those whose spouses were not employed had higher levels of reproductive coercion than those whose spouses were not employed. In addition, a positive relationship was found between participants' age, number of pregnancies, number of childbirths, number of children, number of miscarriages, and reproductive coercion was observed. In line with this study, it has been determined in previous research (16,36) that as individuals' age and their own and their spouses' education and socio-economic levels increase, women feel less pressure regarding reproductive matters. Moreover, the literature indicates a significant association between perceived reproductive coercion and obstetric characteristics, such as the number of pregnancies, childbirths, children, and miscarriages. This association is particularly more pronounced in regions where gender role perceptions are not positive (11).

This study revealed that with an improvement in gender role perceptions, fertility awareness increased and reproductive coercion decreased. Similar to a study conducted by Şimşek (4), as gender-role perceptions increased, individuals exhibited more fertility-protective behaviors, that is, higher levels of fertility awareness. As access to healthcare facilities improves, potential risks related to fertility decrease. In this context, the study found that an increase in gender role perceptions was associated with a decrease in reproductive coercion. Uçan and Baydur (38) also found a moderate relationship between gender role perceptions and dominance in decisions related to reproduction. Grace (13) asserted that gender role perceptions influence decisions and pressures related to fertility. Gender role perceptions can diminish a woman's autonomy over reproduction by making the man the decision-maker in sexual life. Risky behaviors resulting from gender role perceptions can lead to reproductive problems. Consequently, an increase in reproductive coercion, which is a negative factor affecting fertility, can be attributed to gender role perceptions. Therefore, gender-role perceptions have a significant impact on the level of reproductive coercion (4).

Study Limitations

Currently, the aim is to reduce gender inequality and address reproductive health issues in line with sustainable development goals. In this context, the study makes a significant contribution to the literature. However, due to the online nature of the survey through a hyperlink, participants might have hesitated to click on the link due to concerns regarding digital security.

Conclusion

The findings revealed that the participants exhibited high gender perception, moderate fertility awareness, and experienced low levels of reproductive pressure. Increased gender perception was associated with increased fertility awareness and decreased reproductive pressure. Based on these findings, courses on gender perception, fertility awareness and reproductive pressure should be included in the undergraduate curriculum, which is the final stage of adult education for many young individuals. Additionally, healthcare professionals should organize health education programs, and awareness-raising activities through public service announcements and mass media to increase awareness among individuals in their reproductive age. Moreover, further research should be conducted to examine various variables to shed light on all aspects of the topic.

Ethics Committee Approval: The authors obtained ethical approval from the Bartın University's Ethics Committee (date: 14.11.2022, protocol no: 2022-SBB-0494).

Informed Consent: Informed consent was obtained from the participants, ensuring their voluntary participation in the study.

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Footnotes

Author Contributions: Concept – E.C.E., İ.Y., G.M., N.Ü., S.K.; Design – E.C.E., İ.Y., G.M., N.Ü., S.K.; Data Collection and/or Processing –İ.Y., G.M., N.Ü., S.K., E.C.E.; Analysis and/or Interpretation – E.C.E., İ.Y., G.M., N.Ü., S.K.; Literature Review – E.C.E., İ.Y., G.M., N.Ü., S.K.; Writing – E.C.E., İ.Y., G.M., N.Ü., S.K.

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