

Investigation of the Relationship between Self-Confidence Levels and Professional Attitudes among Nursing Department Students

Şenay Cinemre¹,  Rukiye Türk Delibalta², 

¹Iğdir State Hospital, Iğdir, Turkey

²Kafkas University, Faculty of Health Sciences, Department of Nursing, Kars, Turkey

Şenay Cinemre

0000-0002-9923-3546

Rukiye Türk Delibalta

0000-0002-1424-1564

Abstract

Purpose: The aim of this study was to investigate the relationship between self-confidence levels and professional attitudes of nursing students.

Material and Method: The descriptive and correlational study was conducted with 533 nursing students at the Faculty of Health Sciences Nursing Department of Kafkas University between October 10 and November 5, 2022. Data collection tools were created on the internet using Google Forms and a link was created online. Data were collected using the "Identification Characteristics Question Form", "Self-Confidence Scale", and "Attitude Scale for Nursing Profession (ASNP)" and analyzed by utilizing the IBM SPSS Statistics 28 package program.

Results: The mean self-confidence score of nursing students participating in the study was 113.23 ± 28.40 and the mean attitude score towards the nursing profession was 153.93 ± 24.87 . The Pearson correlation coefficient between the self-confidence scale scores and attitude scale scores towards the nursing profession of nursing students participating in the study was found to be 0.394.

Conclusion: As a result, it was determined that nursing students participating in the study had moderate self-confidence and positive professional attitudes. In addition, a statistically significant moderate positive correlation was found between nursing students' self-confidence and their attitudes towards the nursing profession ($p < 0.001$).

Keywords: Nursing, Students, Self-Confidence, Attitude

Özet

Amaç: Bu çalışmada; hemşirelik bölümü öğrencilerinin özgüven düzeyleri ile mesleki tutumları arasındaki ilişkinin incelenmesi amaçlanmıştır.

Materyal ve Metot: Tanımlayıcı-ilişki arayıcı türde yapılan çalışma; 10 Ekim-5 Kasım 2022 tarihleri arasında Kafkas Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümünde öğrenim gören 533 hemşirelik bölümü öğrencisiyle yapılmıştır. Veri toplama araçları internet ortamında Google Forms kullanılarak bir link oluşturulmuş ve çevrim içi olarak uygulanmıştır. Veriler, "Tanıtıcı Özellikler Soru Formu", "Özgüven Ölçeği" ve "Hemşirelik Mesleğine Yönelik Tutum Ölçeği" kullanılarak toplanmış ve IBM SPSS Statistics 28 paket programı üzerinden analiz edilmiştir.

Bulgular: Çalışmaya katılan hemşirelik öğrencilerinin özgüven puan ortalaması $113,23 \pm 28,40$ ve hemşirelik mesleğine yönelik tutum puan ortalaması $153,93 \pm 24,87$ olarak hesaplanmıştır. Çalışmaya katılan hemşirelik öğrencilerinin özgüven ölçeği puanları ile hemşirelik mesleğine yönelik tutum ölçeği puanları arasındaki Pearson korelasyon katsayısı 0,394 olarak bulunmuştur.

Sonuç: Çalışmaya katılan hemşirelik öğrencilerinin orta düzeyde özgüvene sahip oldukları ve olumlu mesleki tutuma sahip oldukları belirlenmiştir. Ayrıca hemşirelik öğrencilerinin özgüvenleri ile hemşirelik mesleğine yönelik tutumları arasında istatistiksel olarak anlamlı orta düzeyde pozitif yönlü ilişki olduğu saptanmıştır ($p < 0,001$).

Anahtar sözcükler: Hemşirelik, Öğrenciler, Özgüven, Tutum

Correspondence:

Şenay Cinemre

RN, Ministry of Health, Iğdir State Hospital,

E-mail: snycnmr@gmail.com

Received: 30 April 2023

Accepted: 1 October 2023

Introduction

Self-Confidence is a construct that determines an individual's attitudes and behaviors towards themselves, simultaneously encapsulating their self-evaluations (1). One of the factors that affects individuals' self-confidence is profession choice. When individuals have a profession in which they can express their abilities and feel a sense of effectiveness, there's an observed increase in their self-confidence (2). Meanwhile, a profession is defined as an aggregate of activities based on knowledge and skills gained through specialized education, which is determined by societal norms and engaged in for livelihood (3). The current nursing students are destined to be the future nurses. Nurses, forming the backbone of healthcare systems worldwide, play a critical role in determining patient outcomes and the quality of care in hospitals (4). The nursing profession holds substantial responsibilities in health protection, promotion, and improvement during illness (5).

However, having professional competence and understanding one's job nuances do not suffice to perform the job at its best. Alongside these, one should also possess a positive attitude towards the job (6). Negative attitudes of nurses adversely affect both the profession and human life (7). In conducted studies, 30.3% (8) and 46% (9) of nurses have demonstrated a positive attitude towards nursing. Negative attitudes exhibited by nurses lead to detrimental consequences such as losing interest in patient care, providing care without compassion, shyness, and intentions of leaving the profession (9). Consequently, nursing education institutions require students with a positive professional outlook (10).

In a study on nursing students, it was determined that the students had a positive professional attitude, and more than half of them willingly chose their profession (11). Other studies have found that nursing students who willingly chose their profession have a more positive attitude towards nursing than those who chose it unwillingly (10, 12). Furthermore, nursing students who willingly select their department might contribute to an increase in their self-confidence (13).

In the nursing literature, no studies were encountered that investigated the relationship between self-confidence levels and professional attitudes. It is crucial to determine the self-confidence levels, attitudes towards the profession, and the relationship between self-confidence levels and professional attitudes of individuals who will practice nursing. Thus, this descriptive-correlational study aims to examine the relationship between nursing students' self-confidence levels and their professional attitudes.

Location and Time of Research

This study was conducted with all students enrolled in the Nursing Department of the Faculty of Health Sciences at

Kafkas University between October 10 and November 5, 2022.

Population and Sample of the Research

The study's scope encompassed 777 nursing students enrolled in the Department of Nursing, Kafkas University Faculty of Health Sciences. There was no distinct sample selection; the study incorporated 533 nursing students who voluntarily consented to participate (68.59%). Full accessibility to the entire student population was hampered by student absences during the research implementation times and the choice of some students to decline participation. The power analysis of the study was computed utilizing the G*Power 3.1.9.7 software program. The effect size of the study, determined from the results, was found to be 0.394. Accordingly, the power of the study, completed with 533 participants at a significance level of 0.05, and an effect size of 0.394, was determined to be 100%.

Data Collection Tools and Features

In data collection, the "Descriptive Characteristics Questionnaire" (3, 11, 14, 15) prepared by the researcher using literature, the "Self-Confidence Scale" (16), and the "Attitude Scale for Nursing Profession (ASNP)" (17) were used to collect data.

Descriptive Features Questionnaire

This tool is bifurcated into two segments. The initial segment contains 12 queries regarding the sociodemographic attributes of the nursing students (3, 11, 15), while the second segment includes seven queries related to their professional domain (11, 14).

Self-Confidence Scale

Developed by Akin (16), the scale was conducted with 796 high school students in various high schools in Kocaeli, Istanbul, and Sakarya. The scale consists of 33 items gathered under two factors: internal self-confidence and external self-confidence. The scale is prepared with a 5-point Likert type. The options for each question asked to participants are: Never '1', Rarely '2', Often '3', Usually '4', and Always '5'. The scores obtained from the scale range from a minimum of 33 points to a maximum of 165 points. A high score from the scale indicates a high level of self-confidence. The self-confidence levels of the participants are interpreted by dividing the total score obtained from the scale by the number of items in the scale. A result below 2.5 points indicates low self-confidence, between 2.5 and 3.5 points indicates moderate self-confidence, and 3.5 points and above indicates high self-confidence (16). The Cronbach's Alpha coefficient of this scale was found to be 0.94 for the whole scale, 0.97 for the internal self-confidence subscale, and 0.87 for the external self-confidence subscale (16).

In this study, these values were 0.97, 0.96, and 0.95, correspondingly.

Attitude Scale for Nursing Profession (ASNP): Developed by Ipek Coban and Kasikci (17), the scale consists of sub-dimensions related to the preference for the nursing profession, characteristics of the nursing profession, and the general situation of the nursing profession. It consists of a total of 40 items. For positive questions, 1 point is given for the "strongly disagree" response, 2 points for "disagree", 3 points for "agree moderately", 4 points for "strongly agree", and 5 points for "completely agree". Items 21, 23, 25, 26, 28, 30, 34, and 38 are reverse-scored. As the score obtained from the scale increases, the positive attitude towards the nursing profession also increases. The highest score that can be obtained from the scale is 200 points, and the lowest is 40 points. If the total score obtained from the scale is above 120 points, it can be said that the individuals have a positive attitude (17). The Cronbach's Alpha coefficient of this scale was found to be 0.91 (17). In this study, the Cronbach's Alpha coefficient was found to be 0.94.

Data Collection: Due to the necessity of adhering to physical distancing and reducing personal contact, as well as the privacy issues surrounding self-confidence, data collection for this research was conducted via Google Forms in an online environment. A link was created using Google Forms and distributed to the students. Students accessed the study by clicking on this link, read the written explanation about the study, and gave their online consent before filling out the data collection tools. Students who were absent on the day of the study or who did not wish to participate were excluded. The data for this research was collected between October 10 and November 5, 2022.

Data Evaluation: Analyses were performed using the IBM SPSS Statistics 28 software package. While evaluating the study data, frequencies (number, percentage) were used for categorical variables, descriptive statistics (mean, standard deviation, minimum, maximum), Pearson Correlation Coefficient, Independent Sample T-Test, and One-Way Analysis of Variance (ANOVA) were used for numerical variables.

In case of a difference in the ANOVA results, the group causing the difference was identified using the Tukey multiple comparison test. Statistical significance in the analyses was interpreted at the 0.05 level. The Cronbach's Alpha internal consistency coefficients of the scales used in the study were calculated, and the scales were found to be reliable ($\alpha > 0.700$).

Ethical Aspect of the Research: Prior to initiating the

study, ethical approval was secured from the Non-Invasive Research Ethics Committee of the Faculty of Health Sciences on September 30, 2022, under the decision number 81829502.903/91. Formal permission was received from the Rectorate of Kafkas University on October 14, 2022, with the reference number E-10160100-399.99-37310. Permissions were secured from the corresponding authors to employ the "Self-Confidence Scale" and the "Attitude Scale for Nursing Profession". Furthermore, informed consent was obtained online from students willing to participate in the study.

Limitations of the Research: The data derived from this study can only be generalized to the group incorporated in the study, as it reflects individual participant inputs and comprises their self-expression. The study is limited to voluntary participants enrolled in the Department of Nursing, Faculty of Health Sciences, Kafkas University.

Results

This study, aimed at examining the relationship between the self-confidence levels and professional attitudes of nursing students, included 533 participants. In Table 1, it was found that female students had statistically significantly higher scores in the external self-confidence subscale than male students ($p=0.040$). Students with an income higher than their expenses had statistically significantly higher self-confidence scale score averages compared to those with equal or lower income ($p=0.011$). Students with social security had statistically significantly higher self-confidence scale scores than those without social security ($p=0.023$). Students who described their feelings towards the nursing profession as "average" before coming to school had statistically significantly lower self-confidence scale score averages than those who described it as "very good" or "good" ($p=0.002$).

First-year students' average scores for the subscale of preferring the nursing profession were statistically significantly higher than those of second, third, and fourth-year students as given in Table 2 ($p < 0.001$). First-year students' attitude subscale scores towards the general situation of the nursing profession were statistically significantly higher than those of second-year students ($p=0.011$). Female students had statistically significantly higher average scores on the ASNP than male students ($p < 0.001$). Participants living in their family's residence for 1-10 years had statistically significantly lower ASNP score averages than those living there for 11-20 years or more than 20 years ($p=0.037$). Students currently living with their family had statistically significantly higher ASNP score averages than those currently living with friends ($p=0.016$). Students with an income lower than their expenses had statistically significantly lower ASNP scores than those with equal or higher income ($p=0.002$).

Students with social security had statistically significantly higher ASNP score averages than those without social security ($p=0.007$). Students who chose their department voluntarily had statistically significantly higher ASNP score averages than those who did not ($p<0.001$). Students not considering changing departments had statistically significantly higher ASNP scores than those considering it or undecided ($p<0.001$). Students who described their feelings towards the nursing profession as "very good" or "good" before coming to school had statistically significantly higher ASNP score averages than those who described it as "average", "bad", or "very bad" ($p<0.001$). Students planning to continue in the nursing profession in the future had statistically significantly higher ASNP score averages than those not planning to do so ($p<0.001$). Students without family members working as nurses had statistically significantly higher average scores for the subscale of preferring the nursing profession than those with family members working as nurses ($p=0.043$).

In Table 3, the study's participating nursing students had an average self-confidence scale score of 113.23 ± 28.40 , an internal self-confidence subscale score average of 58.99 ± 14.81 , and an external self-confidence subscale score average of 54.24 ± 14.06 . The average score for the ASNP was found to be 153.93 ± 24.87 , with a subscale average score of 75.05 ± 15.06 for nursing profession characteristics, 46.30 ± 9.51 for the preference of the nursing profession, and 32.58 ± 5.27 for the attitude towards the general status of the nursing profession.

As given in Table 4, correlation analyses conducted in the study revealed a statistically significant moderate positive relationship between the self-confidence scale scores of the participating nursing students and the ASNP scores ($p<0.001$, $r=0.394$). There was a statistically significant moderate positive relationship between self-confidence scale scores and nursing profession characteristics ($r=0.345$) and attitude towards the general status of the nursing profession ($r=0.350$). A statistically significant low positive relationship was found between self-confidence scale scores and the preference of the nursing profession ($r=0.290$). The internal self-confidence scores had a statistically significant moderate positive relationship with the ASNP ($r=0.395$), nursing profession characteristics ($r=0.348$), and attitude towards the general status of the nursing profession ($r=0.353$). There was a statistically significant low positive relationship between internal self-confidence scores and preference of the nursing profession ($r=0.288$). External self-confidence scores had a statistically significant moderate positive relationship with the ASNP ($r=0.379$), nursing profession characteristics ($r=0.330$), and attitude towards the general status of the nursing profession ($r=0.335$). A statistically significant low positive relationship was found between

external self-confidence scores and the preference of the nursing profession ($r=0.283$).

Discussion

Self-Confidence provides motivation related to the learning process. Higher self-confidence in nursing students leads to better future expectations and a positive attitude towards their profession. Therefore, professional self-confidence is a crucial factor for these students (18, 19). This research was conducted to examine the relationship between the self-confidence levels of nursing department students and their professional attitudes.

In a study, it was found that self-confidence increases as income level rises (20). In this research, the average self-confidence scale scores of students whose income exceeded their expenses were found to be statistically significantly higher than the scores of students with equal or lower income compared to their expenses ($p=0.011$, Table 1). Twenge and Campbell (21) reported that those with higher socio-economic status had higher self-confidence. Few studies in the existing literature explore this topic (20, 21), but these findings suggest that a healthy income level might positively influence self-confidence.

One of the major obstacles to the nursing profession, which holds a significant position in the health field, appears to be related to gender roles in the profession (22). In this study, it was found that the average scores on the attitude towards nursing scale were significantly higher for women than men ($p<0.001$, Table 2). A study by Çalışkan, et al. (11) on nursing students also determined that female students had a more positive attitude towards the nursing profession than male students. According to a study conducted with high school seniors, female students' average scores on the ASNP were higher than those of male students, suggesting a more positive attitude (7). These results might be associated with the societal perception that nursing is still a female-dominated profession.

This study found no difference in the attitudes of nursing students towards the profession based on their year of education. However, when looking at the sub-dimensions of the scale, it was determined that first-year students had significantly more positive attitudes towards choosing the nursing profession than second, third, and fourth-year students ($p<0.001$). A study with nursing students found that first-year students had a more positive attitude in all sub-dimensions of the scale related to the nursing profession than fourth-year students (12), which is consistent with findings of this study. In contrast, another study found that fourth-year students had a more positive attitude towards the nursing profession than the first, second, and third-year students, and this positive attitude decreased as the year decreased (11). The studies

present different results. Nonetheless, it is essential for an individual to willingly choose their profession to execute it appropriately and benefit those served (23). In this study, the attitude towards the nursing profession of students who willingly chose their department was statistically significantly higher than those who did not ($p < 0.001$). It has been determined in studies that the majority of students willingly chose the nursing profession (10, 12). In a study by Yazicioğlu (15) on nursing students, it was found that students who willingly chose their profession had statistically significantly higher attitudes towards the nursing profession than those who did not. It is expected that students who willingly choose their department would have a more positive attitude.

In this research, it was revealed that students without family members in the nursing profession had a significantly higher average preference score for the profession, indicating a more positive attitude than their counterparts with family members in nursing ($p = 0.043$). Conversely, high school seniors with a family member who is a nurse exhibited a more positive attitude towards the nursing profession than those without such familial connections (7). We hypothesize that this outcome could be attributed to individuals being more informed about the profession's challenges due to having family members working as nurses.

It was found that the average ASNP score was statistically significantly higher among students who were not considering a department change compared to those contemplating a change and those undecided about a department change in this research ($p < 0.001$, Table 2). In another study conducted with nurses, 44.2% of the nurses reported that they did not consider changing their profession (14). In a study conducted with nursing students, 74.3% expressed satisfaction with their department, and of these, 63.3% had no intentions of changing their department (24). These findings imply that individuals who are not considering a department change display a positive attitude towards their profession and enjoy their role.

In the literature, it has been found that nursing students have high levels of self-confidence (25, 26). In this study, the average self-confidence score of nursing students was found to be 113.23 ± 28.40 (item average; 3.43). Therefore, it can be inferred that the participating nursing students possessed a moderate level of self-confidence. In a different study conducted with nursing students, it was determined that the students had moderate self-confidence (27), consistent with this study.

In this study, the average score of nursing department students on the ASNP was found to be 153.93 ± 24.87

(Table 3). Accordingly, it has been determined that the nursing students participating in the study have a positive professional attitude. Studies have also found that nursing students have a positive attitude towards the nursing profession (4, 10, 28). It is believed that nursing students having a positive attitude, as in these studies, is crucial for the professionalization of the profession and for both future colleagues and patients.

In conclusion, this study determined that nursing students have moderate self-confidence and a positive professional attitude. Additionally, a statistically significant, moderate positive relationship was found between nursing students' self-confidence and their attitudes for the nursing profession ($p < 0.001$, $r = 0.394$, Table 4). However, in the literature, there are no studies comparing self-confidence and professional attitude in studies conducted with nursing students or nurses. Therefore, it is thought that comparing the self-confidence and professional attitudes of nursing students in different sample groups may be beneficial.

Declarations

Funding: None

Conflicts of interest/Competing interests: The authors declare that they have no conflict of interest.

Ethics approval: Approval was obtained from the Non-Interventional Research Ethics Committee of the Faculty of Health Sciences on September 30, 2022, with the decision number 81829502.903/91. Official permission was obtained from Kafkas University Rectorate on October 14, 2022, with the number E-10160100-399.99-37310.

Availability of data and material: All data and material are available on request from the authors.

Authors' contributions

SC: Authored the paper, collected data, designed and executed the analysis and statistical procedures.

RTD: Designed the study, revised the manuscript, and contributed to the design and execution of the analysis and statistical procedures.

Acknowledgements

This study was produced from Master thesis of Senay CINEMRE under the supervision of Rukiye TURKDELIBALTA.

	Self-Confidence scale Mean±Std	Internal Self-Confidence Mean±Std	External Self-Confidence Mean±Std
Age (Years)			
17-19	108,46±28,69	56,75±15,06	51,71±14,06
20-22	113,99±28,09	59,16±14,51	54,83±14,02
23+	117,45±28,90	62,02±15,54	55,44±14,00
F;p	2,480;0,085	2,727;0,066	2,408;0,091
Gender			
Male	110,70±30,53	58,14±16,01	52,56±14,99
Female	114,72±27,01	59,50±14,05	55,22±13,41
t;p	-1,532;0,126	-0,990;0,323	-2,058;0,040*
Year			
1st Year	112,84±28,57	59,32±14,66	53,52±14,27
2nd Year	111,94±27,69	58,06±14,51	53,87±13,68
3rd Year	113,02±29,77	58,88±15,66	54,14±14,48
4th Year	115,33±27,40	59,92±14,22	55,41±13,85
F;p	0,330;0,803	0,364;0,779	0,414;0,743
The Last School Graduated From			
Public High School	113,33±30,10	59,17±15,40	54,16±15,10
Anatolian High School	113,47±27,40	59,13±14,36	54,34±13,52
Science High School	108,31±29,67	56,22±15,52	52,09±14,62
Vocational High School	116,55±29,86	60,79±15,34	55,76±14,99
F;p	0,910;0,436	1,034;0,377	0,736;0,531
Mother's Educational Level			
Illiterate	112,68±27,87	58,78±14,75	53,89±13,55
Primary School	114,19±29,32	59,41±15,16	54,78±14,55
High School	112,49±25,20	58,59±13,11	53,90±12,94
F;p	0,201;0,818	0,143;0,866	0,259;0,772
Father's Educational Level			
Illiterate	108,16±26,00	56,32±13,67	51,84±13,06
Primary School	114,18±28,91	59,56±15,08	54,62±14,18
High School	114,61±25,68	59,60±13,44	55,01±12,93
University	109,68±32,08	57,07±16,55	52,62±15,94
F;p	0,865;0,459	0,903;0,439	0,782;0,504
Place of Residence of the Family			
Province	112,39±28,38	58,72±14,85	53,68±13,99
District	112,27±28,88	58,42±15,10	53,85±14,29
Village	116,75±27,71	60,42±14,19	56,33±13,90
F;p	1,013;0,364	0,658;0,518	1,426;0,241

	Self-Confidence scale Mean±Std	Internal Self-Confidence Mean±Std	External Self-Confidence Mean±Std
Length of Residence in the Place of Family's Residence			
0-1 Year	113,73±28,66	59,91±15,06	53,82±14,02
1-10 Year	111,11±26,55	57,84±13,72	53,27±13,46
11-20 Year	113,61±28,28	59,06±14,68	54,55±14,05
20 + Year	114,11±30,04	59,25±15,74	54,86±14,68
F;p	0,272;0,845	0,354;0,786	0,324;0,808
Current Place of Residence			
With Family	118,84±29,94	61,60±15,59	57,24±14,73
In a Dormitory	112,22±27,34	58,50±14,23	53,72±13,60
With Friends at Home	114,97±30,40	60,00±15,95	54,97±15,01
Alone at Home	109,33±35,10	56,95±18,60	52,38±16,74
F;p	1,186;0,314	1,019;0,384	1,303;0,273
Income Level			
1) Less than expenses	111,96±29,08	58,41±15,20	53,55±14,29
2) Equal to expenses	112,27±27,45	58,28±14,19	53,98±13,70
3) Greater than expenses	125,13±25,57	65,57±13,33	59,55±13,26
F;p	4,590;0,011*	5,175;0,006*	3,775;0,024*
Difference (Tukey)	3>1,2	3>1,2	3>1,2
Social Security			
Yes	115,90±28,17	60,14±14,69	55,76±13,95
No	110,32±28,41	57,75±14,86	52,58±14,03
t;p	2,276;0,023*	1,870;0,062	2,628;0,009*
Choosing the Field of Study by Own Will			
Yes	113,84±27,99	59,29±14,51	54,54±13,93
No	111,66±29,47	58,22±15,56	53,45±14,42
t;p	0,791;0,429	0,752;0,452	0,806;0,420
Consideration of Changing the Field of Study			
Yes	114,24±32,17	59,11±16,22	55,13±16,27
No	114,34±28,50	59,51±14,89	54,83±14,08
Unsure	107,63±24,91	56,62±13,37	51,01±12,09
F;p	2,030;0,132	1,355;0,259	2,766;0,064
Feelings About Nursing Profession Before Starting University			
1) Very Good	120,88±34,17	62,96±17,90	57,92±16,61
2) Good	116,43±26,79	60,66±13,91	55,77±13,45
3) Fair	107,60±25,92	56,32±13,52	51,28±12,88
4) Poor	115,30±29,14	59,43±15,26	55,86±14,29
5) Very Poor	110,03±31,21	56,34±16,43	53,69±15,13
F;p	4,250;0,002*	3,980;0,003*	4,385;0,002*
Difference (Tukey)	3<1,2	3<1,2	3<1,2

TABLE 1: Distribution of Self-Confidence Scale and Sub-Dimension Mean Scores According to Students' Sociodemographic Characteristics.

	Self-Confidence scale Mean±Std	Internal Self-Confidence Mean±Std	External Self-Confidence Mean±Std
Intention to Continue the Nursing Profession in the Future			
Yes	113,96±28,19	59,33±14,66	54,63±13,98
No	111,38±28,95	58,13±15,18	53,25±14,26
t;p	0,942;0,346	0,840;0,401	1,019;0,309
Presence of Family Member(s) Working as Nurse(s)			
Yes	113,99±28,57	59,38±14,77	54,62±14,22
No	112,88±28,35	58,82±14,84	54,06±14,01
t;p	0,420;0,675	0,402;0,688	0,424;0,672
Chronic Disease Status			
Yes	113,41±27,34	59,23±14,54	54,18±13,31
No	113,22±28,51	58,98±14,84	54,24±14,13
t;p	0,041;0,968	0,103;0,918	-0,027;0,978

std: standard deviation

TABLE 2: Distribution of Attitude Scale and Subscale for Nursing Profession Scores According to the Sociodemographic Characteristics of Students

	Attitude Scale for Nursing Profession Mean±Std	Characteristics of the Nursing Profession Mean±Std	Preference for Choosing the Nursing Profession Mean±Std	Attitude towards the General Condition of the Nursing Profession Mean±Std
Age				
17-19	154,15±28,25	73,42±17,14	48,17±9,55	32,56±5,45
20-22	154,76±23,51	76,10±14,03	45,84±9,56	32,82±5,06
23+	149,14±25,56	72,21±16,14	45,59±8,90	31,33±5,93
F;p	1,430;0,240	2,722;0,067	2,819;0,061	2,219;0,110
Gender				
Male	145,02±27,01	70,65±17,24	42,87±9,74	31,49±5,67
Female	159,16±21,93	77,63±12,97	48,32±8,78	33,22±4,92
t;p	-6,243;<,001*	-4,922;<,001*	-6,630;<,001*	-3,557;<,001*
Year				
1st Year	157,52±28,74	74,11±17,07	49,89±10,36	33,52±5,27
2nd Year	149,32±26,27	72,92±16,49	45,00±8,82	31,40±5,89
3rd Year	154,65±24,27	76,18±14,46	45,70±9,37	32,77±5,10
4th Year	155,06±19,19	76,82±11,68	45,40±9,00	32,84±4,52
F;p	2,512;0,058	1,954;0,120	6,849;<,001*	3,726;0,011*
Fark (Tukey)	-	-	1>2,3,4	1>2

	Attitude Scale for Nursing Profession	Characteristics of the Nursing Profession	Preference for Choosing the Nursing Profession	Attitude towards the General Condition of the Nursing Profession
	Mean±Std	Mean±Std	Mean±Std	Mean±Std
The Last School Graduated From				
Public High School	152,05±27,62	73,16±17,16	47,25±9,72	31,63±5,53
Anatolian High School	155,00±22,75	76,07±13,43	46,31±9,37	32,62±5,17
Science High School	149,65±25,58	72,59±16,49	44,15±8,45	32,91±4,79
Vocational High School	155,33±28,89	74,71±17,27	47,31±10,49	33,30±5,45
F;p	0,945;0,418	1,355;0,256	1,432;0,233	1,254;0,289
Mother's Educational Level				
Illiterate	152,35±26,92	74,10±16,51	45,99±9,97	32,26±5,61
Primary School	155,60±23,84	76,03±14,08	46,63±9,42	32,94±5,13
High School	153,67±23,50	74,62±14,49	46,75±8,76	32,30±5,01
F;p	0,906;0,405	0,927;0,396	0,283;0,754	1,022;0,361
Father's Educational Level				
1)Illiterate	156,44±28,47	74,56±17,39	48,48±9,37	33,40±5,56
2)Primary School	153,16±25,51	74,57±15,39	46,34±9,37	32,25±5,44
3)High School	156,68±20,27	77,60±11,46	45,79±9,86	33,29±4,74
4)University	150,40±29,25	71,78±19,07	46,48±8,95	32,14±5,52
F;p	1,293;0,276	2,729;0,043*	0,605;0,612	1,653;0,176
Difference (Tukey)	-	3>4	-	-
Place of Residence of the Family				
Province	155,93±23,82	75,94±14,31	46,94±9,61	33,05±5,09
District	152,22±25,61	74,34±15,29	45,82±9,82	32,06±5,39
Village	151,26±26,42	73,77±16,67	45,19±8,68	32,30±5,47
F;p	1,798;0,371	0,995;0,371	1,478;0,329	1,974;0,140
Length of Residence in the Place of Family's Residence				
1) 0-1 Year	156,01±29,81	74,43±17,49	48,53±10,99	33,06±5,28
2) 1-10 Year	147,88±26,00	71,57±15,92	45,16±9,45	31,14±5,39
3) 11-20 Year	155,22±22,78	75,95±14,32	46,16±9,11	33,10±4,96
4) 20+ Year	155,70±22,65	77,01±13,22	45,99±8,94	32,70±5,43
F;p	2,858;0,037*	3,084;0,027*	2,241;0,083	3,737;0,011*
Difference(Tukey)	2<3,4	2<4	-	2<3
Current Place of Residence				
1)With Family	160,44±20,29	79,31±10,39	47,23±9,57	33,90±4,55
2)In a Dormitory	154,35±25,01	75,10±15,14	46,73±9,49	32,51±5,27
3)With Friends at Home	148,39±25,36	72,28±15,92	44,06±9,99	32,06±5,57
4)Alone at Home	145,43±28,32	70,57±19,57	43,29±6,60	31,57±5,90
F;p	3,457;0,016*	3,089;0,027*	2,453;0,062	1,812;0,144
Difference (Tukey)	1>3	1>3	-	-

	Attitude Scale for Nursing Profession	Characteristics of the Nursing Profession	Preference for Choosing the Nursing Profession	Attitude towards the General Condition of the Nursing Profession
	Mean±Std	Mean±Std	Mean±Std	Mean±Std
Income Level				
1) Less than expenses	150,58±26,43	73,57±16,31	45,18±9,52	31,83±5,72
2) Equal to expenses	157,45±21,89	76,50±13,13	47,54±9,05	33,41±4,57
3) Greater than expenses	160,55±23,30	78,38±13,37	48,26±10,51	33,91±4,20
F;p	6,387;0,002*	3,497;0,031*	4,720;0,009*	7,026;<,001*
Fark (Tukey)	1<2,3	1<3	1<2,3	1<2,3
Social Security				
Yes	156,73±23,16	76,60±13,85	46,92±9,54	33,20±4,89
No	150,89±26,31	73,35±16,13	45,63±9,45	31,91±5,59
t;p	2,725;0,007*	2,486;0,013*	1,575;0,116	2,829;0,005*
Choosing the Field of Study by Own Will				
Yes	158,03±24,55	76,13±14,60	49,10±8,78	32,80±5,21
No	143,27±22,46	72,23±15,91	39,03±7,23	32,01±5,40
t;p	6,362;<,001*	2,695;0,007*	13,527;<,001*	1,558;0,120
Consideration of Changing the Field of Study				
1) Yes	137,30±25,88	68,28±18,84	37,98±7,16	31,04±6,37
2) No	157,79±23,65	76,31±14,08	48,47±9,09	33,01±5,05
3) Unsure	146,86±24,03	73,57±15,64	41,69±8,13	31,60±5,27
F;p	21,928;<,001*	7,422;<,001*	48,465;<,001*	5,212;0,006*
Difference (Tukey)	2>1,3	2>1	2>1,3	2>1
Feelings About Nursing Profession Before Starting University				
1) Very Good	163,94±29,50	76,61±16,89	53,23±10,06	34,09±5,74
2) Good	158,50±24,16	76,03±14,78	49,63±8,45	32,85±5,00
3) Fair	151,10±20,42	75,20±13,12	43,52±7,58	32,37±4,88
4) Poor	140,11±24,08	71,00±16,73	38,54±7,87	30,57±5,41
5) Very Poor	136,17±26,85	68,76±20,24	36,48±5,95	30,93±6,88
F;p	12,965;<,001*	2,364;0,052	45,559;<,001*	3,926;0,004*
	1>3,4,5		1>2,3,4,5	
Difference (Tukey)	2>3,4,5	-	2>3,4,5	1>4,5
	3>5	-	3>4,5	
Intention to Continue the Nursing Profession in the Future				
Yes	157,92±23,98	75,86±14,37	49,11±8,65	32,95±5,02
No	143,75±24,26	72,98±16,57	39,13±7,68	31,63±5,77
t;p	6,118;<,001*	1,870;0,063	13,005;<,001*	2,455;0,015*

	Attitude Scale for Nursing Profession	Characteristics of the Nursing Profession	Preference for Choosing the Nursing Profession	Attitude towards the General Condition of the Nursing Profession
	Mean±Std	Mean±Std	Mean±Std	Mean±Std
Presence of Family Member(s) Working as Nurse(s)				
Yes	152,12±24,81	74,61±15,27	45,08±8,92	32,44±5,62
No	154,76±24,88	75,25±14,98	46,87±9,73	32,64±5,11
t;p	-1,139;0,255	-0,459;0,646	-2,026;0,043*	-0,414;0,679
Chronic Disease Status				
Yes	155,31±26,86	74,87±16,38	47,41±9,92	33,03±4,61
No	153,82±24,73	75,06±14,97	46,22±9,48	32,54±5,32
t;p	0,358;0,720	-0,076;0,939	0,754;0,451	0,548;0,584

TABLE 3: Distribution of Mean Scores on the Self-Confidence Scale and Attitude Scale for Nursing Profession and Their Subscasles

	Mean	Standard Deviation	Min	Max
Self-Confidence Scale	113,23	28,4	37	165
Internal Self-Confidence	58,99	14,81	17	85
External Self-Confidence	54,24	14,06	18	80
Attitude Scale for Nursing Profession	153,93	24,87	72	194
Characteristics of the Nursing Profession	75,05	15,06	18	90
Preference for Choosing the Nursing Profession	46,3	9,51	19	65
Attitude towards the General Condition of the Nursing Profession	32,58	5,27	17	45

TABLE 4: Investigation of the Relationships Between Subscales Scores of the Self-Confidence Scale and Attitude Scale for Nursing Profession

		Attitude Scale for Nursing Profession	Characteristics of the Nursing Profession	Preference for Choosing the Nursing Profession	Attitude towards the General Condition of the Nursing Profession
Self-Confidence Scale	r	,394**	,345**	,290**	,350**
	p	<,001	<,001	<,001	<,001
Internal Self-confidence	r	,395**	,348**	,288**	,353**
	p	<,001	<,001	<,001	<,001
External Self-confidence	r	,379**	,330**	,283**	,335**
	p	<,001	<,001	<,001	<,001

r: Pearson Correlation Coefficient **:p<0,01

References

- Gürsu O and Önce Özokudan FS. Ergenlerde dindarlık, narsizm ve özgüven. *Turkish Academic Research Review*. 2019;4:439-54.
- Eryetiş M. Meslek seçimi ve mesleki rehberlik. *Anadolu Bil Meslek Yüksekokulu Dergisi*. 2016;44:0-0.
- Çiftçi GE, Bülbül SF, Muluk NB, et al. Sağlık Bilimleri Fakültesini tercih eden öğrenciler, üniversite ve meslek tercihlerinde etkili olan etkenler (Kırıkkale Üniversitesi örneği). *Kartal Eğitim ve Araştırma Hastanesi Tıp Dergisi*. 2011;22:151-60.
- Mai BH, Ho TMY, Nguyen TTT, et al. Attitudes and perceptions towards nursing profession among nursing students at Hue University of Medicine and Pharmacy. *Journal of problem-based learning*. 2018;5:55-62.
- Özveren H, Gülnar E and Özden D. Hemşirelik öğrencilerinin meslek seçimini etkileyen faktörlerin belirlenmesi. *Turkish Journal of Clinics and Laboratory*. 2017;8:57-64.
- Kaya M and Nazıroğlu B. Din görevlilerinin mesleki tutum ve motivasyon düzeylerini etkileyen bazı faktörler. *Ondokuz Mayıs Üniversitesi İlahiyat Fakültesi Dergisi*. 2008;26:25-53.
- Güven ŞD. Lise son sınıf öğrencilerinin hemşirelik mesleğine yönelik tutumlarının belirlenmesi: Nevşehir ili örneği. *Turk J Clin Lab*. 2019;1:6-11.
- Solomon Y, Beker J and Belachew T. Professionalism and its predictors among nurses working in Jimma Zone Public Hospitals, South West Ethiopia. *Journal of Nursing and Care*. 2015;5:1-9.
- Rekisso AD, Mengistu Z and Wurjine TH. Nurses' attitudes towards the nursing profession and associated factors in selected public hospitals, Addis Ababa, Ethiopia, 2021: a cross-sectional study. *BMC Nurs*. 2022;21:1-9. DOI: 10.1186/s12912-022-00808-2.
- Zencir G and Eşer İ. Hemşirelik öğrencilerinin hemşirelik mesleğine yönelik tutumları ile hemşirelik tercihi arasındaki ilişki: Türkiye örneği. *DEUHFED*. 2016;9:30-7.
- Çalışkan E, Kargın M and Ersöğütçü F. Hemşirelik öğrencilerinde Covid-19 korkusu ile hemşirelik mesleğine yönelik tutum arasındaki ilişki. *Sürekli Tıp Eğitimi Dergisi*. 2021;30:170-80.
- Seval M and Sönmez M. Hemşirelik öğrencilerinin mesleğe yönelik tutumları ve imaj algıları arasındaki ilişki. *Sağlık Akademisi Kastamonu (SAK)*. 2020;5:19-35.
- Kılavuz F and Karabağ Aydın A. Hemşirelik öğrencilerinin bireysel girişimcilik algıları ve yaşam boyu öğrenme eğilimleri arasındaki ilişkinin belirlenmesi. *Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi*. 2020;7:240-8.
- Tarhan G, Kılıç D and Yıldız E. Hemşirelerin mesleğe yönelik tutumları ile mesleki profesyonellikleri arasındaki ilişkinin incelenmesi. *Gülhane Tıp Dergisi*. 2016;58:411-6.
- Yazıcıoğlu İ. Hemşirelik öğrencilerinin Covid-19 salgınında yaşadıkları korku ile hemşirelik mesleğine yönelik tutumları arasındaki ilişkinin incelenmesi. *İstanbul Üniversitesi-Cerrahpaşa, Lisansüstü Eğitim Enstitüsü, Yüksek Lisans Tezi, İstanbul, 2020*.
- Akın A. Öz-Güven Ölçeği'nin geliştirilmesi ve psikometrik özellikleri. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*. 2007;7:167-76.
- İpek Coban G and Kasıkcı M. Development of the attitude scale for nursing profession. *International Journal of Nursing Practice*. 2011;17:518-24.
- Lundberg KM. Promoting self-confidence in clinical nursing students. *Nurse educator*. 2008;33:86-9.
- Ghofrani Kelishami F, Sadooghiasl A, Izadi A, et al. The relationship between self-confidence of nursing students and their attitude towards a nursing career. *I.J.N.R*. 2018;12:58-64.
- Gencer N. İmam hatip lisesi öğrencilerinin özgüven düzeyleri hakkında nicel bir analiz. *Bilimname XL*. 2019;4:407-40.
- Twenge JM and Campbell WK. Self-esteem and socioeconomic status: a meta-analytic review. *Personality and Social Psychology Review*. 2002;6:59-71.
- Zeren F and Köşgeroğlu N. Toplumsal cinsiyet eşitsizliğinin hemşirelik mesleğine yansımaları. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi*. 2020;9:293-9.
- Bölükbaş N. Hemşirelik öğrencilerinin meslek seçimi ve etkileyen faktörler. *Ordu Üniversitesi Hemşirelik Çalışmaları Dergisi*. 2018;1:10-17.
- Olğun S and Adıbelli D. Hemşirelik öğrencilerinin meslek seçimini etkileyen faktörler. *Acıbadem Üniversitesi Sağlık Bilimleri Dergisi*. 2020;11:55-60.
- Kukulu K, Korukçu O, Özdemir Y, et al. Self-confidence, gender and academic achievement of undergraduate nursing students. *J Psychiatr Ment Health Nurs*. 2013; 20:330-5. DOI: 10.1111/j.1365-2850.2012.01924.x.
- Yalınzoğlu Çaka S, Topal S, Karakaya Suzan Ö, et al. Hemşirelik öğrencilerin sağlık algısı ile özgüvenleri arasındaki ilişki. *Journal of Human Rhythm*. 2017;3:198-203.
- Eraydın Ş and Karagözoğlu Ş. Investigation of self-compassion, self-confidence and submissive behaviors of nursing students studying in different curriculums. *Nurse Educ Today*. 2017;54:44-50.
- Safaa RM, Karima HA, Salwa AM, et al. Nursing students' attitudes toward nursing profession and its relation to study adjustment. *Ijnd*. 2019;9:09-16.

“Ours Is A Hopeless Disease”: A Qualitative Study On The Supportive Care Needs Of Women Under Treatment For Gynecological Cancer

Sidar Gül¹, 

¹Siirt University, Faculty of Health
Sciences, Midwifery Department, Siirt,
Turkey

Sidar Gül
0000-0002-5766-4129

Abstract

Background/Purpose: Identifying and managing unmet supportive care needs while caring for a patient with gynecological cancer is an important component of healthcare. The purpose of this study is to determine the supportive care needs of women receiving gynecological cancer treatment.

Methods: This study, using a qualitative research design, was conducted with 15 women diagnosed with gynecological cancer. Face-to-face interviews were conducted with the participants determined by the purposive sampling method until reached the saturation point. The interviews were held between January and May 2022.

Results: The mean age of the participants was 53.5 ± 11.14 , five of them were primary school graduates, nine of them had a medium income and 10 were married. Seven of the participants had endometrial cancer and the mean diagnosis period was 10.4 ± 2.5 months. As a result of the analysis of the data, five themes were determined. These themes; the continuity of the need for care, lack of social support, lack of sense of control, the desire to cope with uncertainty, and the lack of communication in the health institution.

Conclusion: It was determined that women who were treated for gynecological cancer had care needs that were not met and needed to be supported due to individual, economic, social and medical reasons. Supportive care needs of women receiving gynecological cancer treatment should be evaluated within the framework of a multidisciplinary team approach, and counseling and rehabilitation programs including symptom management and psychosocial support should be organized in order to improve coping methods with their diseases.

Keywords: gynecological cancer, qualitative study, supportive care, need, woman

Özet

Giriş/Amaç: Jinekolojik kanserli hastaya bakım verilirken karşılanmamış destekleyici bakım ihtiyaçlarının belirlenmesi ve yönetilmesi sağlık hizmetlerinin önemli bir bileşenidir. Bu çalışmanın amacı jinekolojik kanser tedavisi gören kadınların destekleyici bakım gereksinimlerini belirlemektir.

Gereç ve Yöntem: Nitel araştırma desenin kullanıldığı bu çalışma, jinekolojik kanser tanısı alan 15 hasta ile yürütüldü. Amaçlı örnekleme yöntemiyle belirlenen katılımcılarla doyum noktasına ulaşmaya kadar yüz yüze görüşmeler yapıldı. Görüşmeler Ocak-Mayıs 2022 tarihleri arasında gerçekleştirildi.

Bulgular: Katılımcıların yaş ortalaması $53,5 \pm 11,14$, beşi ilkököl mezunu, dokuzu orta düzeyde geliri sahip olup ve 10'u evlidir. Katılımcıların yedisinin tanısı endometrium kanseri olup tanı süresi ortalaması $10,4 \pm 2,5$ aydır. Verilerin analizi sonucunda beş tema belirlendi. Bu temalar; bakımın gereksiniminin sürekliliği, sosyal destek eksikliği, kontrol duygusu eksikliği, belirsizlikle baş etme isteği ve sağlık kurumunda iletişim eksikliği olarak belirlendi.

Sonuç: Jinekolojik kanser tedavisi gören kadınların bireysel, ekonomik, sosyal ve tıbbi nedenlerden dolayı karşılanmamış ve desteklenmesi gereken bakım gereksinimlerinin olduğu belirlendi. Jinekolojik kanser tedavisi gören kadınların destekleyici bakım gereksinimleri multidisipliner bir ekip anlayışı çerçevesinde değerlendirilmeli, hastalıklarıyla baş etme yöntemlerini geliştirmek için semptom yönetimi ve psikososyal destek konularını içeren danışmanlık ve rehabilitasyon programları düzenlenmelidir.

Anahtar Kelimeler: jinekolojik kanser, niteliksel çalışma, destekleyici bakım, gereksinim, kadın

Correspondence:

Sidar Gül, PhD, Assistant Professor,
Siirt University, Faculty of Health Sciences,
Midwifery Department,
Phone: +90 (541) 432 37 40
E-mail: sidaraytekin@gmail.com

Received: 30 May 2023

Accepted: 21 September 2023

Introduction

Gynecological cancers are one of the diseases that should be given importance due to the serious consequences they cause. Gynecological cancers are among the top 10 most common cancer types in women, and these are endometrial, ovarian, and cervical cancers (1). According to Globocan 2020 data, when the most common cancer in women is examined; cervix cancer ranks 4th, endometrial cancer 6th, and cancer ranks 8th (2). Women undergoing gynecological cancer treatment go through a process that includes different treatment methods such as surgical treatment, chemotherapy and radiation therapy. During the treatment process, women's physical functions, social life and quality of life are adversely affected. Among these effects, common physical complications, psychological distress, changing body image and changing personal relationships increase the psychological burden of cancer (3-5).

As gynecological cancer patients transition into survival, inappropriate management of disease process and cure sequelae increases the challenges they face. In order to eliminate these problems and meet the needs of the patients, women with cancer need supportive care (6). Addressing the effects of gynecological cancer multidimensionally requires a comprehensive supportive care service. Supportive care is a person-centered approach that provides basic services to people, living with or affected by cancer to meet their physical, sexual, psychological, spiritual, social and informational needs during cancer pre-diagnosis, treatment and survival process (7). As advances in the treatment of gynecological cancers contribute to increasing survivors, it becomes increasingly important to meet the care needs of women living with cancer to be supported (6).

Health professionals are in an important position to provide professional care to reduce the symptoms and complications for gynecological cancers on life quality. In order to meet the supportive care needs of patients, healthcare professionals should prevent complications, symptoms or side effects caused by cancer and the treatment process, as early as possible and throughout the treatment period. It is a primary component of providing care that health professionals identify the supportive care needs of women undergoing gynecological cancer treatment. This approach, which includes evaluating the patient and her family at all stages of cancer, provides a holistic perspective and contributes to the improvement of the patient's quality of life (2,8-10). This study is designed to assess the various aspects of the supportive care needs of women receiving gynecological cancer treatment and to provide basic information for the policy makers, health professionals and researchers toward the appropriate planning that in turn help to promote

the health of women undergoing gynecological cancer treatment. Most of the researches about supportive care needs of women receiving gynecological cancer treatment have been conducted with a quantitative approach (5,7-9), and limited qualitative data are available on women's experience of supportive care needs (6,10). Unlike previous studies, the present study points to the different challenges and changing needs of women throughout the treatment process. Thus the impact of the treatment process on needs was the primary focus of the present study. In addition, the qualitative approach adopted in this study sought to understand the reasons, concerns and contradictions underlying the failure to meet women's specific needs. In line with this information, the present study was conducted to determine the supportive care needs of women receiving gynecological cancer treatment.

Materials And Methods

Design

In this study, a qualitative research method was applied. Adopting a qualitative design allows researchers to explore context and details regarding participants' needs (11). This study was carried out between January 2022 and May 2022 within a city center located in the Southeastern Anatolia Region of Turkey.

Sample

Female patients diagnosed with gynecological cancer registered in the chemotherapy unit of the training and research hospital in the city center were included in the study. The study sample consisted of 15 participants. The participants, who were determined by the purposeful samples method, were interviewed until they reached the saturation point (n=15). Inclusion criteria for the study; being diagnosed with gynecological cancer, being over 18 years old, currently undergoing cancer treatment, and volunteering to participate in the study. The exclusion criterion was determined as having any comprehension that communication problems.

Instruments and Data Collection

Data of the study were collected by using an sociodemographic characteristics form and semi-structured interview form designed by the author in line with the literature (5,6,9,12). The sociodemographic characteristics form consists of six questions to determine age, income status, education level, marital status, and how many years they have taken. The structured interview form, which consists of three open-ended questions, is as follows: "What are your needs that you cannot meet to provide your care during the treatment? Which needs for your care were met by the health institutions you applied to? In which aspects would you like to receive support from the health institution during the treatment?". Data

collection forms were evaluated by experts (two nurse academics).

The interviews were conducted face-to-face in a room in the hospital where the study was conducted, in a room where confidentiality could be ensured. The duration of the interviews varied between 30 minutes and one hour. With the consent of the participants, the interviews were audio recorded. During the recording of the data, the participants were coded by giving numbers from one to fifteen.

Statistical Analysis

The sociodemographic characteristics of participants were evaluated by number, mean, percentage, and standard deviation. Expressions of the participants were analyzed by content analysis method. The data recorded with the audio device were converted into written text as raw data after listening immediately after the interviews and transferred to the Nvivo 11 package program. In line with the purpose of the research, the statements were read many times and the data were coded. Views were combined according to their semantic similarity and code names were created to represent these views. After the generated codes were grouped according to the integrity of meaning, the sub-theme representing these codes and finally the themes of the study were obtained. The data obtained at the end of the analysis were transferred to the participants to confirm the results. Themes, sub-themes and analysis results. It was evaluated by three different academics who were not involved in this study, who are experts in qualitative research and women's health for counseling.

In the study, credibility, consistency and confirmability criteria were provided in order to ensure validity and reliability. In order to increase the credibility of the study, while the personal information form and in-depth interview questions were created, a conceptual framework was created by reviewing the relevant literature and expert opinion was sought. In the content analysis, the themes and the relationship between the sub-themes forming the themes and the relationship of each theme with the others were checked and integrity was ensured. In order to increase the consistency, all the findings are given directly without comment. In-depth data collection, expert review strategies, and participant consent were adopted to ensure reliability.

Results

When the sociodemographic characteristics of the participants shown in Table 1 are examined, the mean age of participants was 53.5 ± 11.14 . Five of the participants were primary school graduates, nine of them had middle level and 10 of them were married. Seven of the

participants were diagnosed with endometrial cancer and the mean diagnosis time was 10.4 ± 2.5 months. Nine of the participants were being treated with both chemotherapy and surgery.

As a result of the analysis of the interview data, five main themes were created that reflect the supportive care needs of the participants (Fig. 1). These themes were; continuity of care, lack of social support, desire for a sense of control, inability to cope with uncertainty, and lack of communication in the health institution.

Continuity of Care

All participants stated that they needed the support of someone else while meeting the need for care during the treatment process and that this should be continuous. Subject-oriented life two sub-themes were determined as change of lifestyle and financial hardship. All of the participants stated that there were changes in their lives after the diagnosis of cancer and during the treatment process, that they had difficulty in adapting to this process and that they needed the support of someone else during the adaptation process. 12 participants stated that their economic expenses related to cancer treatments were constantly increasing, they had difficulty in meeting this, and they needed to be supported financially by their family members.

Lack of Social Support

10 participants reported that they needed the support of family members or friends during the treatment process.

Desire for a Sense of Control

Six participants stated that they needed to develop a sense of control to adapt to changes in their body during the treatment process and to be respected in order to shape the treatment plan.

Inability to Cope with Uncertainty

Five participants stated that they experienced uncertainty about the future and needed support to improve their coping skills. Two sub-themes were determined for the subject: time of death and treatment process. Four participants expressed concern about the uncertainty of the time of death. Four participants stated that they needed support to cope with the uncertainty of the treatment process.

Lack of Communication in the Health Institution

Seven participants stated that they had communication problems in health institutions and that this problem should be solved. Two sub-themes were identified, the desire for information and the lack of trust. Six participants stated that they needed information about the diseases, symptoms and treatment process. Four participants

stated that there were problems about the treatment plans due to gaps in interdisciplinary communication, and therefore they did not trust health institutions. The same participants stated that they needed support from

the health institution to resolve this problem. How these supportive care needs were expressed by the participants is shown below with direct quotes from their responses (Table 2).

Theme	Subtheme	Examples of illustrative quotes
Continuity of care	Change of lifestyle	<p>"Our life has completely changed. I have to adjust everything according to my disease. Now I get tired quickly, especially after chemotherapy for a week, I cannot recover, someone has to be by my side all the time" (P3, 62 years old, endometrial cancer)</p> <p>"Yes, I got cancer and I accepted it. After that, it is not really easy. I have to think about everything from food to the my trip. This is not easy either. Someone needs to accompany me" (P5, 45 years old, cervical cancer)</p>
	Financial hardship	<p>"The money flows like water during the treatment and it bothers me very much that I had to constantly make calculations. Someone from my family has to transfer money to me" (P6, 48 years old, endometrial cancer)</p> <p>"It is a fact that I have financial hardship. I do not know where to transfer the money. Sometimes we make a loan. Yes there is insurance but it only covers part of my treatment. I have special medicines that come from abroad and they are very expensive. My husband even took out a loan. It's hard for me to be a burden to him like this." (P10, 55 years old, ovarian cancer)</p>
Lack of social support		<p>"My family tells me that if I had not smoked, I would not have cancer. Let alone asking for support, I am also blamed for having cancer. This situation embarrasses me" (P1, 48 years old, cervical cancer)</p> <p>"My children always tell me to be strong, you will beat cancer, you will succeed. Actually, they have good intentions. It seems boring to say this all the time. It backfires. But I guess ours is a hopeless disease, I'll embarrass them. Having so many surgeries and taking drugs doesn't give a person that power anyway. I expected them to understand this" (P9, 50 years old, ovarian cancer)</p> <p>"I need my friends and family in this process. You ask why? because they are my reason for survival and we must achieve this together. If they were in my place (God forbid), I would give all kinds of support"(P2, 50 years old, cervical cancer)</p>
Desire for a sense of control		<p>"Someone decides about me, yes for me to be well, but no one asks me if it's appropriate. For example, this drug that is right, I have to accept it. Or you will come to the hospital today. I surrender myself to the treatment helplessly and without question. I have cancer. but I can still decide, at least it will make me feel better. I need to control the process" (P15, 40 years old, cervical cancer)</p> <p>"My body has changed after the surgery, I have already entered menopause. I can't stand the heat anymore, they call it hot flashes. Or I vomit after taking my medications. But I used to have no stomach complaints. My body was not like that" (P13, 53 years old, ovarian cancer)</p>
Inability to cope with uncertainty	Time of death	<p>"Yes, everyone will die one day, but it is difficult to know that I will die of cancer. It is harder to predict when it will happen. I wonder when death waits for the right time? It cannot be said that my illness is going well. But my children have not married yet, I have no grandchildren. Mine should not be an unquestioned surrender, I have to cope, I need this, I'm so sorry" (P4, 52 years old, endometrial cancer)</p> <p>"I have a lot of things to do before I die. I am very worried in case I die suddenly without doing these things. When I get cancer, I keep thinking about when I'm going to die" (P12, 55 years old, endometrial cancer)</p>
	Treatment process	<p>"There are cancer patients around me. They beat cancer but reappeared. Mine can too. I have not recovered from cancer yet, but every time I give a tests, I am waiting for my results and I am afraid that there will be a worse result at any moment. This situation makes me very uncomfortable and I need support in this regard" (P7, 33 years old, endometrial cancer)</p> <p>"It is unclear how long my treatment will continue. I had surgery first, now chemotherapy. This uncertainty is very sad" (P13, 53 years old, ovarian cancer)</p>

TABLE 2: The data structure for expressions of participants

Theme	Subtheme	Examples of illustrative quotes
Lack of communication in the health institution	Desire for information	"When I go to the hospital, I wonder what was my test result, how is my illness going, what should I do at home? Sometimes health experts give missing answers. In general, they are very busy people, it is okay, but if they spend me a little more time, I would know what to do" (P11, 43 years old, ovarian cancer)
	Lack of trust	"You have to be your own lawyer in the hospital, because I receive heavy treatments and a mistake can throw away everything. I prefer this way to trust the health personnel. I have been treated in larger hospitals and I realized this. When I do not question, I cannot access enough information and services. It is uncomfortable to be in this situation, hospitals should deal with this issue " (P8, 30 years old, endometrial cancer) " We do not expect much from hospitals. I want to trust the hospital we go to. For example, let them not do anything wrong because of intensity. They should make us feel that we can trust them " (P14 , 47 years old, endometrial cancer)

Discussion

Women undergoing treatment for gynecological cancers have unmet needs that need to be supported. It is important to continually assess, anticipate and meet the needs of women living with gynecological cancers (13). The supportive care needs stated by the participants in this study are the fields of continuity of care, financial difficulties, psychological, communication and social support. In the literature review, it was determined that the main unmet needs of women treated for gynecological cancer were related to psychological, symptom management, economic and daily life problems (8,14–17).

The theme of "continuity of care needs" determined in this study is an important indicator in terms of increasing the quality of daily life of the participants. In a study conducted in Indonesia, it was reported that daily life changing among the most frequently unmet physical needs of women diagnosed with gynecological cancer (18). In a study conducted in Turkey on this subject, it was determined that 46% of women had needs for daily life changes (9). Thus, the fact that the needs of women who are treated for gynecological cancer to continue care in daily life are not met, shows that it continues as an important problem that prevents individuals from improving their quality of life.

The themes of "desire to cope with uncertainty", "sense of control", and "lack of social support" identified in this study revealed the importance of organizing counseling and rehabilitation programs that include symptom management and psychosocial support for women who are in treatment, and their families and relatives. In the study of Lopez et al., patients treated for gynecological cancer reported needs for social support, isolation, uncertainty, escape from illness, and advocacy. In the same study, participants reported the need for symptom management of regarding the impact of surgical treatment-induced

menopause (10). In a study conducted in Turkey on the subject, it was determined that women had problems in meeting the symptom management requirements diagnosed with gynecological cancer (19). Providing support to patients diagnosed with gynecological cancer and their relatives on how to manage the treatment process will make it possible to reduce these concerns. Furthermore, participants needed help coping with family members' expectations of being a "cancer survivor", and strengthening social support in this study. Similarly, other studies reported that many gynecological cancer patients experience increased distress about family members' perspective on cancer and lack of social support (20,21). For these problems, nurses can facilitate open discussions with family members, elicit their fears and concerns, and provide education about common concerns faced by the gynecological cancer patients.

In this study, the sub-themes of "request for information", and "lack of trust" revealed the importance of healthcare professional-patient communication and the fact that these expectations are often not met. A study conducted in Indonesia confirms that 98% of patients with gynecological cancer have at least one unmet need for supportive care, and the need for information is the most widely reflected topic (5). In a study conducted in Sweden, it was defined that the service provided in a health institution is a desire for consistency and continuity in order to improve the quality of life of patients with gynecological cancer (22). The attitude of health professionals is important in terms of reducing communication and information concerns of women who are treated for gynecological cancer. Therefore, health professionals should pay special attention to the problems originating from health institutions in the process of evaluating the supportive unmet needs of gynecological cancer patients.

Several limitations were determined for the present study. Firstly, it was used a small purposive sample that included

a diverse group of gynecological cancer types. The sample was heterogeneous and consisted of endometrial, ovarian, and cervical cancers and diagnosis period ranging from 6 to 10 years. Although most of the participants were treated with both surgery and chemotherapy, their treatment regimens and sociodemographic characteristics were variable and this may affect the type of needs expressed by the participants. Finally, each participant was interviewed only once. More interviews over a period of time could have provided a more complete picture of knowledge on their needs to be supported.

Conclusion

In this study, within the scope of the unmet and to be supported needs of women receiving gynecological cancer treatment; knowledge of continuity of care, psychological, financial, communication, and social support needs were obtained.

A multidisciplinary team approach is needed to meet the supportive care needs of the patients, including oncologists, gynecological oncology nurses, social workers, dietitians, and physiotherapists. A systematic screening process is recommended to identify women undergoing gynecological cancer treatment who need and want support, and to ensure appropriate and timely assistance or referral. In addition, the results of the study showed that research involving large sample groups is needed to determine to what extent these needs are met in health institutions.

Declarations

Ethical Approval: This study was performed in line with the principles of the Declaration of Helsinki. It was obtained Ethics committee approval from Siirt University Non-Interventional Clinical Research Ethics Committee (Application date: 26/11/2021 and, Approval number: 2021/26.11.08), and written informed consent from all participants.

Conflict of interest: The author reported no conflict of interest.

Financial support: The author received no financial support for this study.

Acknowledgements

The author thank the women who participated in this study. This study was presented as an oral presentation at the 1st International Congress of Palliative Care in Nursing 2022 (October 6-8, 2022).

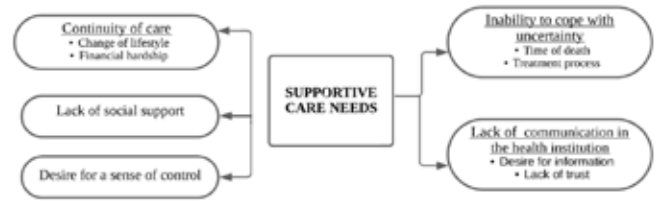


Figure1 Themes and sub-themes emerging from the data analysis

TABLE 1: Sociodemographic characteristics of participants

Characteristics	n	%
Education level		
Illiterate	2	13.3
Literate	3	20.0
Primary school	5	33.4
High school	3	20.0
University	2	13.3
Perceived income level		
Good	2	13.3
Moderate	9	60.0
Poor	4	26.7
Marital status		
Married	10	66.6
Single	5	33.4
Diagnosis		
Endometrial	7	46.6
Ovarian	4	26.7
Cervical	4	26.7
Treatment received*		
Surgery	14	
Chemo	10	
Radiation	3	
Age	X±SD 53.5±11.14 (Min: 40 M ^a x: 62)	
Diagnosis time	X±SD 10.4±2.5 Min: 6 M ^a x: 20	

X: Mean; SD: Standart Deviation; Min: Minimum; Max: Maximum; * Multiple options select

References

- World Health Organization (WHO). Cancer. Accessed on: 21.06.2023. <https://www.who.int/news-room/fact-sheets/detail/cancer>
- Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin*. 2021;71(3):209–49.
- Eker A, Aslan E. Psychosocial approach of gynecological cancer patients. *Hemşirelikte Eğitim ve Araştırma Dergisi*. 2017;14(4): 298-303.
- Beesley VL, Alemayehu C, Webb PM. A systematic literature review of the prevalence of and risk factors for supportive care needs among women with gynaecological cancer and their caregivers. *Support Care Cancer*. 2018;26(3):701–10.
- Afiyanti Y, Gayatri D, Bestral D. Unmet supportive care needs of Indonesian gynecological cancer survivors. *Enfermería Clínica*. 2019;29(2):869–73.
- Williams N, Griffin G, Farrell V, Hauck YL. Gaining insight into the supportive care needs of women experiencing gynaecological cancer: a qualitative study. *Journal of Clinical Nursing*. 2020;29:1684–94.
- Afiyanti Y, Milanti A, Putri RH. Supportive care needs in predicting the quality of life among gynecological cancer patients. *Can Oncol Nurs J*. 2018;28(1):22–9.
- Seven M, Sahin E, Yilmaz S, Akyuz A. Palliative care needs of patients with gynaecologic cancer. *J Clin Nurs*. 2016;25(21–22):3152–9.
- Akkuzu G, Kurt G, Guvenc G, Kok G, Simsek S, Dogrusoy S, et al. Learning needs of gynecologic cancer survivors. *J Cancer Educ*. 2018;33(3):544–50.
- Lopez AJ, Butow PN, Philp S, Hobbs K, Phillips E, Robertson R, et al. Age-related supportive care needs of women with gynaecological cancer: a qualitative exploration. *Eur J Cancer Care*. 2019;28(4):e13070.
- Hennink M, Hutter I, Bailey A. *Qualitative research methods*. London:Sage Publication. 2020.
- Faller H, Brähler E, Härter M, Keller M, Schulz H, Wegscheider K, et al. Unmet needs for information and psychosocial support in relation to quality of life and emotional distress: a comparison between gynecological and breast cancer patients. *Patient Educ Couns*. 2017;100(10):1934–42.
- Mirošević Š, Prins JB, Selič P, Zaletel Kragelj L, Klemenc Ketiš Z. Prevalence and factors associated with unmet needs in post-treatment cancer survivors: a systematic review. *Eur J Cancer Care*. 2019;28(3):e13060.
- Driessen KAJ, de Rooij BH, Vos MC, Boll D, Pijnenborg JMA, Hoedjes M, et al. Cancer-related psychosocial factors and self-reported changes in lifestyle among gynecological cancer survivors: cross-sectional analysis of PROFILES registry data. *Support Care Cancer*. 2022;30(2):1199–207.
- Manne SL, Kashy DA, Virtue S, Criswell KR, Kissane DW, Ozga M, et al. Acceptance, social support, benefit-finding, and depression in women with gynecological cancer. *Qual Life Res*. 2018;27(11):2991–3002.
- La Rosa VL, Shah M, Kahramanoglu I, Cerentini TM, Ciebiera M, Lin L-T, et al. Quality of life and fertility preservation counseling for women with gynecological cancer: an integrated psychological and clinical perspective. *J Psychosom Obstet Gynecol*. 2020;41(2):86–92.
- Anuk D. The effect of body image concerns, anxiety, and depression on sexual problems in gynecological cancer patients. *Turkish J Oncol*. 2022;37(2):208–13.
- Afiyanti Y, Milanti A, Rosdiana M, Juliastuti D. Deficient health care services as barriers to meet care needs of gynecological cancer survivors in Indonesia: a qualitative inquiry. *Semin Oncol Nurs*. 2021;37(5):151206.
- Üstündağ MF, Özcan H, Yazla E, Kıvrak Y, Aydın EF, Yılmaz M. Anxiety and depression symptoms, self-esteem and body image among patients with gynecological cancers: a cross-sectional study. *Kafkas J Med Sci*. 2017;7(3):214–9.
- Reb AM, Cope DG. Quality of life and supportive care needs of gynecologic cancer survivors. *West J Nurs Res*. 2019;41(10):1385–406.
- Yağmur Y, Duman M. The relationship between the social support level perceived by patients with gynecologic cancer and mental adjustment to cancer. *Int J Gynecol Obstet*. 2016;134(2):208–11.
- Mattsson E, Ljungman L, Einhorn K, Sundström Poromaa I, Ståhlberg K, Wikman A. Perceptions of care after end-of-treatment among younger women with different gynecologic cancer diagnoses – a qualitative analysis of written responses submitted via a survey. *BMC Womens Health*. 2020;20(1):276.

Examination of Dysfunctional Beliefs and Attitudes About Symptoms, Sleep Quality and Sleep in Patients Receiving Hemodialysis Treatment

Fatma Gündoğdu¹, Halime Gökhan Hakverir², Hasip Hakverir³

¹KTO Karatay University, School of Health Sciences, Department of Nursing, Konya-Turkey

²Konya Provincial Health Directorate Kadinhani Refik Saime Koyuncu State Hospital, Konya-Turkey

³Moral Psychology, Konya-Turkey

Fatma Gündoğdu

0000-0001-8147-220

Halime Gökhan Hakverir

0000-0003-1170-9165

Hasip Hakverir

0009-0009-2625-9495

Abstract

Objective: This study was conducted to examine the relationship between symptoms, sleep quality, and dysfunctional beliefs and attitudes about sleep in patients receiving hemodialysis treatment.

Material and Methods: This descriptive and correlational study was conducted with 120 patients undergoing hemodialysis in a private hemodialysis center. Data were collected using the Descriptive Information Form, Dialysis Symptom Index (DSI), Pittsburgh Sleep Quality Index (PSQI), and Dysfunctional Beliefs and Attitudes About Sleep Scale-16 (DBAS-16). The statistical analysis of the data obtained as a result of the study was analyzed using number, percentage, standard deviation and arithmetic mean as descriptive statistics, Pearson correlation test and structural equation modeling in IBM SPSS 26 program. Ethics committee approval and permission from the research institution were obtained for the conduct of the study.

Results: The most common hemodialysis-related symptoms were fatigue (70.8%), feeling irritable (61.7%), difficulty falling asleep (60.8%). The mean PSQI Global sleep score of the patients was 7.40 ± 5.02 points. Dialysis Symptom Index explained 26.5% of the change in PSQI Global sleep score in a statistically significant way ($F=42.479$ $p<0.001$). The DSI and the total score of the DBAS-16 explained 45.2% of the change in the PSQI Global sleep score in a statistically significant way ($F=48.301$ $p<0.001$).

Conclusion: As a result of this study, it was observed that symptom burden and dysfunctional beliefs and attitudes about sleep negatively affected sleep quality in hemodialysis patients. Studies on the management of sleep-related symptoms and regulation of dysfunctional beliefs and attitudes about sleep are recommended to improve sleep quality.

Keywords: Hemodialysis, sleep quality, symptom

Özet

Amaç: Bu çalışma, hemodiyaliz tedavisi alan hastalarda görülen semptomlar, uyku kalitesi ve uyku ile ilgili işlevsiz inanç ve tutumlar arasındaki ilişkinin incelenmesi amacıyla yapıldı.

Gereç ve Yöntem: Bu araştırma tanımlayıcı ve ilişki arayıcı türde, özel bir hemodiyaliz merkezinde hemodiyalize giren 120 hasta ile yapıldı. Veriler Tanıtıcı Bilgi Formu, Diyaliz Semptom İndeksi (DSİ), Pittsburgh Uyku Kalite İndeksi (PUKİ), Uyku ile İlgili İşlevsiz İnanç ve Tutumlar Ölçeği-16 (DBAS-16) kullanılarak toplandı. Araştırma sonucunda elde edilen verilerin istatistiksel analizi IBM SPSS 26 programında tanımlayıcı istatistikler olarak sayı, yüzde, standart sapma ve aritmetik ortalama, pearson korelasyon testi ve yapısal eşitlik modeli kullanılarak analiz edildi. Araştırmanın yürütülebilmesi için, etik kurul onayı ve araştırmanın yapılacağı kurumdan izin alındı.

Bulgular: Hemodiyalize bağlı en çok yaşanan semptomların yorgunluk (%70,8), sinirli hissetme (%61,7), uykuya dalmada zorlanma (%60,8) olduğu belirlendi. Hastaların PUKİ Global uyku puan ortalamasının $7,40 \pm 5,02$ puan olduğu saptandı. DSİ'nin, PUKİ Global uyku puanı üzerindeki değişimin %26,5'ini istatistiksel olarak anlamlı şekilde açıkladığı ($F=42,479$ $p<0,001$) belirlendi. DSİ ve DBAS-16 toplam puanının PUKİ'deki Global uyku puanı üzerindeki değişimin %45,2'sini istatistiksel olarak anlamlı şekilde açıkladığı ($F=48,301$ $p<0,001$) görüldü.

Sonuç: Bu çalışma sonucunda hemodiyalize giren hastalarda semptom yükünün ve uyku ile ilgili işlevsel olmayan inanç ve tutumların uyku kalitesini olumsuz etkilediği görülmüştür. Uyku kalitesinin geliştirilmesi için uyku ile ilgili semptomların yönetimine ve uyku ile ilgili işlevsel olmayan inanç ve tutumların düzenlenmesine ilişkin çalışmalar yapılması önerilir.

Anahtar Kelimeler: Hemodiyaliz, uyku kalitesi, semptom

Correspondence:

Fatma Gündoğdu

KTO Karatay University, School of Health Sciences, Department of Nursing,

Phone: +90 (530) 324 38 24

E-mail: fatma.gundogdu@karatay.edu.tr

Received: 23 August 2023

Accepted: 6 September 2023

Introduction

Although hemodialysis (HD) is a life-saving treatment method in Chronic Kidney Disease (CKD), symptoms such as muscle cramps, fatigue, sleeplessness, nausea and vomiting, loss of appetite, itching, and irritability are common in patients undergoing hemodialysis (1,2). Insomnia, which is among the common symptoms in HD patients (1,3-6). It is emphasized that it should be considered among the priority symptoms to be managed (7). Sleep problems may occur in association with many factors such as CKD and HD itself, pain, dietary limitations, fatigue, dyspnea, itching, restless leg syndrome, and psychosocial problems caused by a chronic disease, and sleep quality may be negatively affected due to these sleep problems (1,3,4,8). Inability to fall asleep on time, waking up unintentionally at night, not waking up rested in the morning, daytime sleepiness and impaired daytime functioning are indicators of poor sleep quality. In improving sleep quality, it is important to change dysfunctional beliefs and attitudes about sleep. Cognitive Behavior Therapy (CBT) can be used as an effective method in the treatment of chronic insomnia in adults (8). Cognitive Behavior Therapy-Insomnia (CBT-I) method can support the change of dysfunctional beliefs and attitudes about sleep. For this, it may be necessary to evaluate the symptom burden, sleep quality, and dysfunctional beliefs and attitudes about sleep in patients undergoing HD. This study was conducted to evaluate the relationship between symptom experiences, sleep quality and dysfunctional beliefs and attitudes about sleep in patients undergoing HD, which is expected to contribute to the management of sleep quality in patients undergoing HD.

Materials And Methods

Study Design

This descriptive and correlational study was conducted in a private dialysis center.

Sample

Patients who underwent HD in a private dialysis center between 1 July and 30 September 2022 constituted the population of the study. Between these dates, 200 patients were evaluated for research. The sample of the study consisted of 120 patients who met the inclusion criteria and volunteered to participate in the study. Post hoc power analysis was performed for the results found to examine the power of the study. For a sample of 120 patients, the power of the study was found to be 99.9% for the effect of DSI score on PSQI at 5% significance level and power above 80% is considered sufficient in the literature. Individuals aged 18 and over, receiving hemodialysis treatment, volunteering to participate in the study, and having no communication barriers were included in the study.

Measurement Tools

Personal Information Form: The Personal Information Form consisted of a total of 17 questions evaluating participants' age, gender, education, marital status, and information related to hemodialysis (1,6).

Dialysis Symptom Index (DSI): DSI was developed by Weisbord et al. (9) in HD patients in order to determine the symptoms experienced by patients and the level of their effects on patients. The responses were obtained through 5-point Likert scale. The symptoms experienced in the last seven days were answered as yes-no; if the answer was yes, the amount of the effect of this symptom was evaluated as "0=none, 1=a little, 2=sometimes, 3=very little, 4=too much" in 5-point Likert scale. The total score was found by summing up the points obtained. This value ranged from "0 to 150". The value of "0" indicated no symptoms. The increase in the total scores of the answers to 150 points indicated that the effect of the mentioned symptom increased. The validity and reliability of DSI in Turkish was performed by Önsöz and Usta Yeşilbakan (Cronbach's $\alpha = .83$) (10). In this study, Cronbach's Alpha coefficient was found to be 0.89.

Pittsburgh Sleep Quality Index (PSQI): The PSQI has 19-items that are categorised into seven components: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medications and daytime dysfunction. The score for each of the seven components can range from 0 to 3. The PSQI global sleep score is calculated by the sum of the seven components, which ranges from 0 to 21, with a global score ≥ 5 indicating poor sleep quality in the previous month (11). The PSQI has acceptable reliability in Turkish (12). In this study, the Cronbach's Alpha coefficient for the PSQI scale calculated based on 7 components was found to be 0.84.

The dysfunctional beliefs and attitudes about sleep-16 (DBAS-16): It is a scale developed to determine individuals' false beliefs and attitudes about sleep (13). The total score of the scale is obtained by summing the scores obtained from all items (16 items) and dividing by 16. As the score obtained from the scale increases, dysfunctional beliefs about sleep also increase. The DBAS-16 has acceptable reliability in Turkish (Cronbach's $\alpha = .82$) (14). In this study, Cronbach's Alpha coefficient was found to be 0.92.

Data Collection

For participation in the study and data collection, hemodialysis patients were informed about the study and patients who agreed to participate in the study were asked to fill out the data collection forms face to face. It took an average of 10-15 minutes to fill out the data forms.

Data Analysis

Data were evaluated using IBM SPSS Statistics Standard Concurrent User V 26 (IBM Corp., Armonk, New York, USA) statistical package programs. Descriptive statistics were given as number of units (n), percentage (%), mean (Mean), standard deviation (SD), median (M) and minimum (min), maximum (max) values. The normal distribution of the numerical variables was evaluated by Shapiro Wilk normality test and it was found that the scale scores were normally distributed. Therefore, Independent Sample t Test was used to compare two groups and analysis of variance (ANOVA) was used to compare more than two groups. Multiple comparisons were made with Bonferroni test. The relationships between numerical variables were evaluated with Pearson correlation coefficient.

Before starting the basic analysis, the prerequisites of the structural equation model such as sample size, outlier analysis, multicollinearity problem and normality assumption were examined. The non-zero values of the mediating variables at 95% confidence intervals indicate

that the indirect effect is significant. For this reason, the bootstrap method was preferred for testing mediation models as it provides more reliable results. $p < 0.05$ level was considered statistically significant.

Ethical Consideration

In order to conduct the research, ethical approval was obtained from the KTO Karatay University Non-Drug and Non-Medical Device Research Ethics Committee under the approval number 2022/033, and permission was obtained from the institution where the research would be conducted. Participation in the study was entirely voluntary, and written consent was obtained from the participants.

Results

The mean age of the participants was 54.71 ± 12.11 years, 55.8% were male, 75.8% were married, 84.2% had an additional chronic disease, and 50% had been on hemodialysis for ≥ 3 years (Table 1).

TABLE 1: Distribution of participants' socio-demographic characteristics and hemodialysis history	
Age, (Year)	
Mean \pm SS	54.71 \pm 12.11
Median (min-max)	53.5 (35-86)
Gender, n (%)	
Woman	53 (44.2)
Male	67 (55.8)
Marital Status, n (%)	
Married	91 (75.8)
Single	29 (24.2)
Education Status, n (%)	
Primary School	87 (72.5)
High School	18 (15.0)
College	15 (12.5)
Working Status, n (%)	
Working	96 (80.0)
Not Working	24 (20.0)
Chronic Disease, n (%)	
Yes	111 (84.2)
No	19 (15.8)
Hemodialysis Time, n (%)	
<1 year	15 (12.5)
1-3 years	45 (37.5)
≥ 3 year	60 (50.0)
mean \pm standart deviation and Median (minimum, maximum)	

The most common symptoms related to hemodialysis treatment were feeling fatigue/decrease in energy (70.9%), difficulty maintaining sleep (61.7%), difficulty falling asleep (60.8%), feeling irritable (58.4%), muscle

cramps (48.3%), worrying (46.7%), dry skin (42.5%), itching (42.5%), feeling uncomfortable (40.9%), and numb feet (39.2%) (Table 2).

TABLE 2: The frequency and severity of the symptoms experienced by patients according to the dialysis symptom index (n=120)

	None %	Little%	Sometimes %	Very little %	Too much %
Feeling fatigue/Decrease in energy	29,2	14,2	17,5	12,5	26,7
Difficulty maintaining sleep	38,3	7,5	10,8	4,2	39,2
Difficulty falling asleep	39,2	10	8,3	6,7	35,8
Feeling angry	41,7	10	10	9,2	29,2
Muscle cramps	51,7	8,3	16,7	7,5	15,8
Worrying	53,3	10	7,5	5	24,2
Dryness in the skin	57,5	5	6,7	7,5	23,3
Itching	57,5	4,2	7,5	5	25,8
Feeling irritable	59,2	8,3	6,7	6,7	19,2
Drowsiness/Tingling in Feet	60,8	5,8	9,2	5	19,2
Bone-Joint Pain	62,5	8,3	10,8	5,8	12,5
Feeling sad	64,2	9,2	7,5	5	14,2
Feeling anxious	64,2	10,8	3,3	3,3	18,3
Constipation	66,7	5,8	10	6,7	10,8
Headache	67,5	10	11,7	5	5,8
Shortness of breath	68,3	12,5	10	1,7	7,5
Dry mouth	68,3	5	12,5	4,2	10
Muscle soreness	68,3	5,8	9,2	5,8	10,8
Swelling in the legs	69,2	10	9,2	9,2	2,5
Difficulty in keeping the legs still	69,2	9,2	0,8	5,8	15
Difficulty in concentrating	70	5,8	10,8	5	8,3
Drowsiness/Dizziness	71,7	10	8,3	6,7	3,3
Cough	75	6,7	10	5	3,3
Difficulty becoming sexually aroused	76,7	1,7	5	4,2	12,5
Decrease in interest in sex	77,5	3,3	3,3	5	10,8
Decrease in appetite	83,3	5,8	5	2,5	3,3
Vomiting	85	5,8	4,2	0,8	4,2
Diarrhea	88,3	5	1,7	0	5
Chest pain	88,3	4,2	5,8	0,8	0,8
Nausea	92,5	0,8	2,5	1,7	2,5

The mean DSI score of the participants was 28.44 ± 21.23 points, the mean PSQI Global sleep score was 7.40 ± 5.02 points, and the mean DBAS-16 total score was 5.34 ± 1.99 points (Table 3).

TABLE 3: Mean scores of Dialysis Symptom Index (DSI), Pittsburgh Sleep Quality Index (PSQI) and Dysfunctional Beliefs and Attitudes Scale-16 (DBAS-16).

Scale	Mean \pm SD	M (min-max)
Dialysis Symptom Index	28.44 \pm 21.23	24.50 (0-80)
PSQI Subjective sleep quality	1.42 \pm 1.07	1 (0-3)
PSQI Sleep latency	1.77 \pm 1.17	2 (0-3)
PSQI Sleep duration	1.04 \pm 1.16	0 (0-3)
PSQI Habitual sleep efficiency	0.83 \pm 1.16	0 (0-3)
PSQI Sleep disorder	1.14 \pm 0.58	1 (0-3)
PSQI Daytime dysfunction	0.81 \pm 0.85	1 (0-3)
PSQI Sleep medication usage	0.36 \pm 0.86	0 (0-3)
PSQI Global sleep score	7.40 \pm 5.02	7 (0-21)
DBAS-16 Perceived consequences of insomnia	7.71 \pm 2.41	5.17(1-17)
DBAS-16 Worry/helplessness about insomnia	62,5	8,3
DBAS-16 Sleep expectations	64,2	9,2
DBAS-16 Medication	64,2	10,8
DBAS-16 Total Score	5.35 \pm 2.70	5,8

mean \pm standart deviation ve Medyan (min- max)

There were statistically significant positive correlations between PSQI Global sleep score and DSI scale total scores ($r=0.649$ $p<0.001$), positive correlations between DBAS-16 and DSI scale total scores ($r=0.514$ $p<0.001$), and positive correlations between DBAS-16 and PSQI Global sleep scores ($r=0.485$ $p<0.001$) (Table 4).

TABLE 4: Correlation between total scores of DSI, PSQI, and DBAS-16 scales (N=120).

	DSI	PSQI
PSQI	$r=0.649$ $p<0.001$	
DBAS-16	$r=0.514$ $p<0.001$	$r=0.485$ $p<0.001$

r: Pearson correlation coefficient, Bolded sections are statistically significant ($p<0.05$).

DSI had a statistically significant positive effect of 0.05 ± 0.01 units on the PSQI ($z\beta=0.52$ $p<0.001$). DSI explained 26.5% of the change in PSQI in a statistically significant manner ($F=42.479$ $p<0.001$) (Table 5). In the mediator model, DSI had a statistically significant positive effect of 0.13 ± 0.02 units on the PSQI ($z\beta=0.54$ $p<0.001$). DBAS-16 had a statistically significant positive effect of 0.52 ± 0.20 units on PDSI ($z\beta=0.21$ $p<0.001$). The total scores of DSI and DBAS-16 statistically significantly explained 45.2% of the change in PDSI ($F=48.301$ $p<0.001$) (Table 5).

TABLE 5: Evaluation of the mediator role of DBAS-16 in the impact of DSI on PSQI.

Prediction Variables	Result Variables			
	DBAS-16		PSQI	
	$\beta \pm se$	p	$\beta \pm se$	p
DSI	0.05 \pm 0.01	<0.001	0.13 \pm 0.02	<0.001
DBAS-16	-	-	0.52 \pm 0.20	0.011
Constant	3.97 \pm 0.26	<0.001	0.98 \pm 0.98	0.324
	$R^2=0.265$		$R^2=0.452$	
	$F=42.479$ $p<0.001$		$F=48.301$ $p<0.001$	

β : Regression coefficient, se: Standard error, R2: Coefficient of determination, Bolded sections are statistically significant ($p<0.05$).

While the increase in the overall total score of DSI increases the DBAS-16 score, the increase in these two scales statistically significantly increases the PSQI Global sleep score. The model created is given in Figure 1.

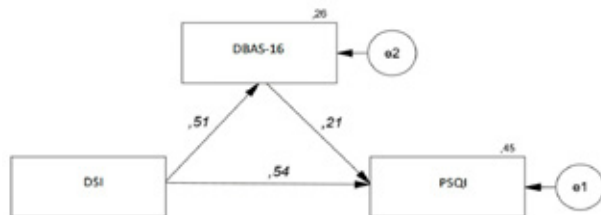


Figure 1. Structural Equation Model (SEM) for the mediating role of DBAS-16 in DSI's impact on PSQI

Discussion

In this study, it was determined that patients on hemodialysis most commonly experienced fatigue, difficulty maintaining and falling asleep, feeling irritable, and muscle cramps. In a recent study on the symptom burden of 620 patients undergoing hemodialysis, it was determined that the most common symptoms were muscle cramps, itching, nervousness and anxiety (2). Another study found that patients undergoing hemodialysis most frequently experienced symptoms of fatigue/lack of energy, muscle cramps, bone/joint pain, constipation and difficulty falling asleep (1). In a study evaluating the symptoms reported by 512 patients undergoing hemodialysis at three time points, it was found that the most common symptoms were fatigue, dry skin, difficulty maintaining sleep and muscle cramps (15). As seen in the studies, symptoms such as fatigue, muscle cramps and itching are common in patients undergoing hemodialysis. This shows the importance of symptom management in hemodialyzed patients.

In this study, it was determined that the PSQI global sleep score average of the participants was above 5 points. In the study of Pan et al., similar to the findings of this study, it was found that the global PSQI score average of patients undergoing hemodialysis was 5 points above (16). Primary insomnia may also occur at the beginning of HD treatment, and the incidence of HD-related insomnia may increase further (17). Studies have shown that most of the patients undergoing hemodialysis have poor sleep quality (18-20). In a meta-analysis evaluating the sleep quality of patients entering HD, it was found that 75.30% of the patients had poor sleep quality (21). Side effects such as fatigue, anxiety, muscle cramps and itching may negatively affect sleep quality (20, 22). In a study, they found that fatigue, anxiety, and depression were higher in patients with poor sleep quality, and that patients with insufficient sleep experienced 3.9 times more fatigue (20).

In another study, in patients entering HD, feeling tired/lack of energy and difficulty falling asleep; difficulty falling asleep and staying asleep; It was determined that feeling tired/lack of energy and difficulty in maintaining sleep constitute a symptom cluster (23). As can be seen, the side effects experienced in patients undergoing hemodialysis may cause sleep quality, and poor sleep quality may cause more adverse effects and adversely affect the quality of life (24). Cognitive Behavioral Therapy-Insomnia (CBT-I), which is applied with the use of various combinations such as stimulus control, sleep restriction, sleep hygiene, relaxation and psychoeducation of cognitive restructuring for dysfunctional beliefs and attitudes about sleep, is a treatment approach with proven effectiveness in eliminating sleep problems (8,25). In order to manage sleep problems and improve sleep quality, it is important to evaluate the sleep problem and the factors affecting it and to create a care plan according to the results of this evaluation. In this study, it was determined that dysfunctional beliefs and attitudes about sleep together with symptom burden negatively affect sleep quality in patients undergoing hemodialysis. Studies have shown that changing false beliefs and attitudes about sleep supports improvements in sleep (26,27) and cognitive behavioral therapy for insomnia has moderate to large effects on dysfunctional beliefs about sleep (28). In a study in which the effect of CBT on sleep-related cognitive status was evaluated, it was determined that DBA mediated the effect of CBT-I on the severity of insomnia and had a 6-month effect on sleep quality and sleep problems (29). Studies on improving sleep quality with CBT-I in HD patients are limited (30). According to the results of this study, it is thought that evaluating dysfunctional beliefs and attitudes about sleep and managing the symptoms that are thought to be effective on sleep quality will be effective in improving sleep quality in HD patients.

Conducting the study in a single HD center constituted the limitation of the study. In addition, patients may have been tired due to the use of a subjective form for symptoms, sleep quality and false belief attitudes.

Conclusion

This study investigated the effects of symptom burden and dysfunctional beliefs and attitudes about sleep on sleep quality. It was concluded that sleep quality was poor in HD patients and symptom burden and dysfunctional beliefs and attitudes about sleep negatively affected sleep quality. This result reveals the importance of improving sleep quality in patients undergoing HD. In improving sleep quality, it is recommended to reduce symptom burden and to conduct studies to identify symptoms associated with sleep quality in patients undergoing HD. In addition, in order to improve sleep quality in patients undergoing HD, it is recommended that symptoms, sleep

quality and false beliefs and attitudes about sleep should be evaluated regularly in patients undergoing HD and care should be planned according to the results of the evaluation.

Declarations

Funding: No financial support was received for the study.

Conflict of interest: No potential conflict of interest was reported by the authors.

Ethics Approval: The study was approved by KTO Karatay University Tıbbi Cihaz ve İlaç Dışı Ethics Committee, report number 2022/033 (date:15.06.2022).

Availability of Data and Material: The dataset of this study are available from the corresponding author on a reasonable request.

Authors Contributions: All authors contributed to the study's conceived and designed the analysis. Collected the data HGH, HH, contributed data or analysis tools, FG,HGH,HH, performed the analysis, FG, Wrote the paper FG, HGH, HH. All authors read and approved the final manuscript. The article was presented as an oral presentation at the 1st International Selcuk Health Sciences Congress on 13 November 2022.

References

- Hintistan S and Deniz A. Evaluation of Symptoms in Patients Undergoing Hemodialysis. *Bezmi Alem Sci.* 2018;6:112-8 DOI: 10.14235/bs.2018.1530.
- Karasneh R, Al-Azzam S, Altawalbeh SM, et al. Predictors of symptom burden among hemodialysis patients: a cross-sectional study at 13 hospitals. *Int Urol Nephrol.* 2020;52(5):959-967. DOI: 10.1007/s11255-020-02458-2.
- Merlino G, Piani A, Dolso P, et al. Sleep disorders in patients with end-stage renal disease undergoing dialysis therapy. *Nephrol Dial Transplant.* 2006;21(1):184-90. DOI: 10.1093/ndt/gfi144.
- Al-Jahdali HH, Khogeer HA, Al-Qadhi WA, et al. Insomnia in chronic renal patients on dialysis in Saudi Arabia. *J Circadian Rhythms.* 2010; 8:7. DOI: 10.1186/1740-3391-8-7.
- Parvan K, Lakdizaji S, Roshangar F, et al. Quality of sleep and its relationship to quality of life in hemodialysis patients. *J Caring Sci.* 2013;30:2(4):295-304. DOI: 10.5681/jcs.2013.035.
- Akyol A, Yurdusever S, Kirkayak AT, et al. Investigate of the factors affecting sleep problems of hemodialysis patients. *Journal of Nephrology Nursing.* 2017;12(2): 59-67.
- Flythe JE, Hilliard T, Lumby E, et al. Kidney health initiative prioritizing symptoms of ESRD patients for developing therapeutic interventions stakeholder meeting participants. fostering innovation in symptom management among hemodialysis patients: paths forward for insomnia, muscle cramps, and fatigue. *Clin J Am Soc Nephrol.* 2019; 7;14(1):150-160. DOI: 10.2215/CJN.07670618.
- Edinger JD, Arnedt JT, Bertisch SM, et al. Behavioral and psychological treatments for chronic insomnia disorder in adults: an American Academy of Sleep Medicine clinical practice guideline. *J Clin Sleep Med.* 2021;17(2):255-262. DOI: 10.5664/jcsm.8986.
- Weisbord SD, Fried LF, Arnold RM, et al. Development of a symptom assessment instrument for chronic hemodialysis patients: the Dialysis Symptom Index. *J Pain Symptom Manage.* 2004;27(3):226-40. DOI: 10.1016/j.jpainsymman.2003.07.004.
- Önsöz HB and Yeşilbalkan ÖU. Reliability and validity of the Turkish version of the Dialysis Symptom Index in chronic hemodialysis patients. *Turk Neph Dial Transpl* 2013; 22 (1): 60-67
- Buysse DJ, Reynolds CF, Monk TH, et al. The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry Res.* 1989;28(2):193-213.
- Ağargün MY, Kara H, Anlar O. The validity and reliability of the Pittsburgh Sleep Quality Index. *Turkish Journal of Psychiatry.* 1996; 7:107-115.
- Morin CM, Vallières A, Ivers H. Dysfunctional beliefs and attitudes about sleep (DBAS): validation of a brief version (DBAS-16). *Sleep.* 2007;30(11):1547-54. DOI: 10.1093/sleep/30.11.1547.
- Boysan M, Merey Z, Kalafat T, et al. Validation of a brief version of the dysfunctional beliefs and attitudes about sleep scale in Turkish sample. *Procedia-Social and Behavioral Sciences.* 2010;5:314-317.
- van der Willik EM, Hemmelder MH, Bart HAJ, et al. Routinely measuring symptom burden and health-related quality of life in dialysis patients: first results from the Dutch registry of patient-reported outcome measures. *Clin Kidney J.* 2020 Feb 3;14(6):1535-1544. DOI: 10.1093/ckj/sfz192.
- Pan KC, Hung SY, Chen CI, et al. Social support as a mediator between sleep disturbances, depressive symptoms, and health-related quality of life in patients undergoing hemodialysis. *PLoS One.* 2019 Apr 29;14(4):e0216045. DOI: 10.1371/journal.pone.0216045.
- Alkhuwaiter RS, Alsudais RA, Ismail AA. A prospective study on prevalence and causes of insomnia among end-stage renal failure patients on hemodialysis in selected dialysis centers in Qassim, Saudi Arabia. *Saudi J Kidney Dis Transpl.* 2020;31(2):454-459. DOI: 10.4103/1319-2442.284021.
- Anwar N and Mahmud SN. Quality of sleep in CKD patients on chronic hemodialysis and the effect of dialysis shift. *J Coll Physicians Surg Pak.* 2018;28(8):636-639. DOI: 10.29271/jcpsp.2018.08.636.
- Brekke FB, Waldum B, Amro A, et al. Self-perceived quality of sleep and mortality in Norwegian dialysis patients. *Hemodial Int.* 2014;18(1):87-94. doi: 10.1111/

- hdi.12066.
20. Al Naamani Z, Gormley K, Noble H, et al. Fatigue, anxiety, depression and sleep quality in patients undergoing haemodialysis. *BMC Nephrol.* 2021;22(1):157. DOI: 10.1186/s12882-021-02349-3.
 21. Mirghaed MT, Sepehrian R, Rakhshan A, et al. Sleep quality in Iranian hemodialysis patients: a systematic review and meta-analysis. *Iran J Nurs Midwifery Res.* 2019 Nov 7;24(6):403-409. DOI: 10.4103/ijnmr.IJNMR_184_18.
 22. Rehman IU, Chohan TA, Bukhsh A, Khan TM. Impact of pruritus on sleep quality of hemodialysis patients: a systematic review and meta-analysis. *Medicina (Kaunas).* 2019;55(10):699. DOI: 10.3390/medicina55100699.
 23. You AS, Kalantar SS, Norris KC, et al. Dialysis symptom index burden and symptom clusters in a prospective cohort of dialysis patients. *J Nephrol.* 2022;35(5):1427-1436. DOI: 10.1007/s40620-022-01313-0. Epub 2022 Apr 16.
 24. Jung HM and Kim HY. A health-related quality of life model for patients undergoing haemodialysis. *J Clin Nurs.* 2020;29(3-4):613-625. doi: 10.1111/jocn.15113.
 25. Parsons CE, Zachariae R, Landberger C, et al. How does cognitive behavioural therapy for insomnia work? A systematic review and meta-analysis of mediators of change. *Clin Psychol Rev.* 2021;86:102027. DOI: 10.1016/j.cpr.2021.102027.
 26. Espie CA, Inglis SJ, Harvey L. Predicting clinically significant response to cognitive behavior therapy for chronic insomnia in general medical practice: analysis of outcome data at 12 months posttreatment. *J Consult Clin Psychol.* 2001;69(1):58-66. DOI: 10.1037//0022-006x.69.1.58.
 27. Ramfjord LS, Faaland P, Scott J, et al. Digital cognitive behaviour therapy for insomnia in individuals with self-reported insomnia and chronic fatigue: A secondary analysis of a large scale randomized controlled trial. *J Sleep Res.* 2023:e13888. DOI: 10.1111/jsr.13888.
 28. Thakral M, Von Korff M, McCurry SM, et al. Changes in dysfunctional beliefs about sleep after cognitive behavioral therapy for insomnia: A systematic literature review and meta-analysis. *Sleep Med Rev.* 2020;49:101230. DOI: 10.1016/j.smr.2019.101230.
 29. Redeker NS, Jeon S, Andrews L, et al. Effects of cognitive behavioral therapy for insomnia on sleep-related cognitions among patients with stable heart failure. *Behav Sleep Med.* 2019;17(3):342-354. DOI: 10.1080/15402002.2017.1357120.
 30. Park HY, Lee H, Jhee JH, et al. Changes in resting-state brain connectivity following computerized cognitive behavioral therapy for insomnia in dialysis patients: A pilot study. *Gen Hosp Psychiatry.* 2020;66:24-29. DOI: 10.1016/j.genhosppsy.2020.05.013.

Traditional And Complementary Medicine Practices Used To Prevent Covid-19 Pandemic: A Cross-Sectional Study From Turkiye

Figen Türk Düdükçü¹, Rabia Şener², Ayşe Türkmen³, Canan Gazel⁴

¹Department of Nursing, Faculty of Health Sciences, KTO Karatay University, Konya-Turkey

²Private Rabia Health Cabin, Konya-Turkey
Ankara Etlik Zubeyde Hanım Gynecology Training and Research Hospital, Ankara-Turkey

³Department of Nursing, Faculty of Health Sciences, KTO Karatay University, Konya-Turkey

Figen Türk Düdükçü
0000-0003-1767-5197
Rabia Şener
0000-0002-8773-7042
Ayşe Türkmen
0000-0002-8823-5503
Canan Gazel
0000-0001-5464-3173

Abstract

Purpose: The COVID-19 pandemic has shown its effect worldwide and has caused people to experience hard times. This study aims to determine the traditional and complementary medicine (T&C) practices applied to protect from COVID-19 and attitudes toward them.

Methods: This is a cross-sectional study. Individuals aged 18 years and older were included in the study. A questionnaire form was delivered between April 1 and April 30, 2021, to the participants online through social media due to the measures implemented throughout the country due to the COVID-19 pandemic. In this study, descriptive statistics (mean, standard deviation, median value, minimum, maximum, number, and percentile) were given for categorical and continuous variables. Whether there is a difference between the ratios of a single categorical variable and the relationships between two categorical variables were analyzed using Fisher's exact and chi-square tests. A $p < 0.05$ was considered statistically significant.

Results: About half of those surveyed used T&C to ward off the COVID-19 outbreak. The most used method was herbal mixtures. The prevalence was strongly associated with gender and previous diagnosis of COVID-19. Most of the participants believed that T&C practices were necessary.

Conclusion: Societies' T&C experiences are valuable and worth learning. There is an opportunity to test the true value of T&C in prevention and treatment of COVID-19. Considering the frequency of use of T&C practices, it can be suggested that this should be implemented more frequently by health professionals as a policy.

Keywords: T&C, Complementary medicine, Traditional medicine, COVID-19, protection.

Özet

Amaç: COVID-19 pandemisi dünya genelinde etkisini göstermiş ve insanların zor zamanlar yaşamasına neden olmuştur. Bu çalışma, COVID-19'dan korunmak için uygulanan geleneksel ve tamamlayıcı tıp uygulamalarını ve bunlara yönelik tutumları belirlemeyi amaçlamaktadır.

Yöntemler: Bu, kesitsel bir çalışmadır. 18 yaş ve üzeri bireyler çalışmaya dahil edildi. COVID-19 pandemisi nedeniyle ülke genelinde uygulanan tedbirler nedeniyle katılımcılara 1 Nisan-30 Nisan 2021 tarihleri arasında sosyal medya üzerinden online olarak anket formu ulaştırıldı. Bu çalışmada kategorik ve sürekli değişkenler için tanımlayıcı istatistikler (ortalama, standart sapma, ortanca değer, minimum, maksimum, sayı ve yüzdelik) verilmiştir. Tek bir kategorik değişkenin oranları arasında fark olup olmadığı ve iki kategorik değişken arasındaki ilişkiler Fisher'in kesin ve ki-kare testleri kullanılarak analiz edildi. Bir $p < 0,05$ istatistiksel olarak anlamlı kabul edildi.

Bulgular: Ankete katılanların yaklaşık yarısı COVID-19 salgınına önlemek için geleneksel ve tamamlayıcı tıp uygulamaları kullandı. En çok kullanılan yöntem fitoterapi yani bitkisel karışımlardı. Prevalans, cinsiyet ve önceki COVID-19 tanısı ile güçlü bir şekilde ilişkiliydi. Katılımcıların çoğu geleneksel ve tamamlayıcı tıp uygulamalarının gerekli olduğuna inanıyordu.

Sonuç: Toplumların geleneksel ve tamamlayıcı tıp deneyimleri değerlidir ve öğrenmeye değerdir. COVID-19'un önlenmesi ve tedavisinde geleneksel ve tamamlayıcı tıp uygulamalarının gerçek değerini test etme fırsatı oldu. Geleneksel ve tamamlayıcı tıp uygulamaları kullanım sıklığı göz önüne alındığında bunun bir politika olarak sağlık profesyonelleri tarafından daha sık uygulanması önerilebilir.

Anahtar Kelimeler: COVID-19, Geleneksel ve Tamamlayıcı Tıp, korunma, salgın hastalıklar.

Correspondence:

Figen Türk Düdükçü
KTO Karatay Üniversitesi
Phone: +90 (553) 358 30 09
E-mail: figen.turkdudukcu@karatay.edu.tr

Received: 24 April 2023

Accepted: 13 September 2023

Introduction

COVID-19 was first reported on December 29, 2019, in Wuhan, Hubei Province, China, as cases of pneumonia of unknown cause at the time. On January 5, 2020, it was defined as a new coronavirus that had never been detected before (1). On March 12, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic. The first case was confirmed in Turkey on March 11, 2020 (2, 3). The spread of COVID-19 has varied in each country. The common idea about the transmission of COVID-19 is person-to-person and respiratory droplet transmission. Research shows that the virus is transmitted by respiratory droplets and direct contact, and this is the most important point in the transformation of COVID-19 into an epidemic. To break the chain of transmission, the WHO recommended washing hands frequently with soap for 20 seconds, covering the mouth with the inside of the arm when coughing or sneezing, not touching body cavities such as eyes, mouth, and nose, and keeping a minimum distance of six feet between people (4). In addition to these measures, in line with the COVID-19 guidelines and treatment algorithms prepared by the Scientific Committee of the Ministry of Health in Turkey, medical treatment is applied to patients diagnosed with or suspected of COVID-19 (3).

The WHO announced that \$1.96 billion under the COVID-19 Strategic Preparedness and Response Plan will be spent to prevent transmission, reduce exposure, counter misinformation and disinformation, protect vulnerable areas, reduce death and disease rates, and increase equity. Fighting against coronavirus, including prevention, treatment, and vaccine studies, is costly in all aspects (2). While the emergence of effective vaccines offers hope to governments, the scientific community, and the public, no definitive pharmacotherapy has yet been established to prevent and treat COVID-19 (5). However, many publications from different countries on the use of traditional and complementary medicine (T&CM), which are popular in some cultures, in the COVID-19 pandemic are entering the literature.

T&CM has been used to treat numerous epidemics in human history, which offers hope to combat COVID-19 in some regions. But governments often remain silent about these practices because of the potential harm. This difference results from inconsistency in culture, history, and philosophical views on healthcare and medicine (6). While some countries, including China and India, report the use of various T&CM practices (7-9), European and North American countries remain silent on these practices (10). There is also news that T&CM is being used in Turkey (11).

The WHO defines T&CM as “physical and mental therapy, which is the total of knowledge, skills, and practices used

in the prevention, diagnosis, improvement, or treatment of diseases as well as in the maintenance of health, based on theories, beliefs, and experiences specific to different cultures, whether explainable or not.” The WHO and the health ministries of many countries consider T&CM necessary (12).

The subject of curiosity, which is the basis of this study, is to determine the T&CM methods used by people living in Turkey within the scope of the measures during the COVID-19 epidemic, for which modern/scientific medicine has not yet found a full cure. This study aims to determine the T&CM uses and attitudes toward them to protect from COVID-19.

The study questions are as follows

1. Which T&CM methods have been used to protect from the COVID-19 pandemic?
2. Are T&CM methods used to protect from the COVID-19 pandemic related to sociodemographic characteristics?

Materials And Methods

Study Design

This is a cross-sectional study, which is one of the descriptive study types. The study included individuals aged 18 years and older. A survey form was prepared by the researchers using Google forms. The questionnaire form was delivered between April 1 and April 30, 2021, to the participants online through social media due to the measures implemented throughout the country due to the COVID-19 pandemic. The preliminary questionnaire that was tested in the pilot study. Later, the questionnaire was revised, and data were collected via Google form on social media.

Participants

Adults over the age of 18 were included in the study. The sample selection method was not used, and those who filled out the online questionnaires at the time of data collection constituted the study group. The data of 549 participants were collected. Five participants were excluded from the study group because they were under the age of 18, and the number of participants decreased to 544.

Ethical Aspect

For this research, which aims to collect data on the use of T&CM during the COVID-19 pandemic period, permission was obtained first from the Ministry of Health of the Republic of Turkey and then from the Ethics Committee of Non-Interventional Clinical Researches of KTO Karatay University. The participants were given written information about the study, and their consent was obtained before starting the survey.

Statistics

SPSS 25 (IBM SPSS Statistics for Windows, Released 2017, IBM Corp., Armonk, NY) statistical package program was used to evaluate the data. In this study, descriptive statistics (mean, standard deviation, median value, minimum, maximum, number, and percentile) were given for categorical and continuous variables. Whether there is a difference between the ratios of a single categorical variable and the relationships between two categorical variables were analyzed using Fisher's exact test and chi-square test. $p < 0.05$ was considered statistically significant.

Results

The demographic data of the 544 participants are presented in Table 1.

The data revealed that 51% of the participants were aged between 18 and 29 years, 21% between 30 and 39 years, 16% between 40 and 49 years, and 13% 50 years and over. 25% of the participants were males, and 75% were females. 9% of the participants had primary school education level, 4% secondary school education level, 9% high school education level, 76% university education level, and 2% postgraduate education level. 27% reported that their income was low, 61% reported that their income was equal to expenses, and 12% reported that their income was high. While 19% of the participants were diagnosed with COVID-19 at a previous time, 81% were undiagnosed. The rate of those with a chronic disease was 20%. 96% of the participants thought that they had enough information about the COVID-19. In the study, it was found that 63% of the participants took the recommended measures for COVID-19, while 36% took them partially and 1% did not take any precautions (Table 1).

TABLE 1: Demographic characteristics (n = 544).

		n	%
Age group (years)	18-29	273	51
	30-39	113	21
	40-49	89	16
	50 +	69	13
Gender	Male	134	25
	Female	410	75
Level of Education	Primary Level	48	9
	Middle School	24	4
	High School Level	49	9
	Undergraduate Leve	413	76
	Post-Graduate Level	10	2
Income perception	Low income	145	27
	Income equals expense	332	61
	High income	67	12
Being diagnosed with Covid-19 at a previous time	Yes	101	19
	No	443	81
Chronic disease	Yes	110	20
	No	434	80
Knowing what kind of disease COVID-19 is	Yes	521	96
	No	23	4
Complying with all necessary measures to protect from COVID-19	Yes	343	63
	No	5	1
	Partially	196	36

The beliefs and practices of the participants about T&CM are presented in Table 2. 36% of the participants stated that they had knowledge about T&CM, 51% had partial knowledge, and 13% did not have knowledge. 15% of the

participants found their knowledge sufficient, 55% found it partially sufficient, and 30% found it insufficient. While 96% of the participants stated that they had a source of information about T&CM, 4% stated that they did not have

any. The participant reported that the information sources were Internet (32%), physicians (16%), friends (15%), family (13%), books (13%), and herbalists (10%). 71% of the participants reported that T&CM was necessary, 28% were unsure, and 1% found it unnecessary. When they got sick, 44% of the participants first used T&CM and 56% applied to health institutions. In case of illness, 9% relied on T&CM, 38% on physician recommendations, and 53% on both. 79% of the participants thought that T&CM was beneficial, 20% had no idea, and 1% thought that it

was harmful. When the T&CM used by the participants to protect themselves from COVID-19 was examined, 65% of the participants reported that they used any method. 53% of the methods used were herbal mixtures, 28% okuma, 10% other methods, 4% acupuncture, 4% hijama, and 1% hirudotherapy. While 11% of the participants found T&CM sufficient, 89% thought that it was insufficient. 13% of those who used T&CM recommended it to others, 87% did not recommend it to anyone else (Table 2).

		n	%
Knowledge about T&CM	Yes	198	36
	No	71	13
	Partially	275	51
Status of finding sufficient T&CM related information	Yes	84	15
	No	163	30
	Partially	297	55
T&CM information resource	Family	195	13
	Herbalist	140	10
	Friends	222	15
	Physician	240	16
	Books	195	13
	Internet	475	32
Believing in the necessity of T&CM	Necessary	385	71
	Unnecessary	8	1
	To be not sure	151	28
The most trusted application in case of illness	T&CM	49	9
	Physician recommendations	205	38
	Both of them	290	53
Believing in the benefit of the T&CM used	Damaging	3	1
	No idea	111	20
	Beneficial	430	79
Using T&CM to protect Covid 19	Yes	353	65
	No	191	35
T&CM used to protect from Covid-19	Herbal Mixtures	232	53
	Okuma	121	28
	Acupuncture	16	4
	Hacamat	19	4
	Other	44	10
	Hirudoterapi	5	1
Believing in T&CM stand-alone sufficiency	Yes	58	11
	No	486	89
Recommend used T&CM to someone else	Yes	70	13
	No	474	87

Table 3 shows the T&CM used to protect from COVID-19 according to the participants' sociodemographic characteristics. The use of T&CM for protection from COVID-19 showed a statistically significant relationship with gender ($\chi^2 = 9.717$; $p = 0.002$) and being diagnosed with COVID-19 ($\chi^2 = 8.287$; $p = 0.004$). 20.4% of those who used T&CM to protect themselves from COVID-19 were men, and 79.6% were women. 32.5% of nonusers

were male, and 67.5% were female. 22.1% of those who used T&CM to protect themselves from COVID-19 had been diagnosed with COVID-19 before, and 77.9% had not. 12% of those who did not use T&CM were diagnosed with COVID-19, and 88% did not. There was no statistically significant relationship between other demographic characteristics and the use of T&CM to protect from COVID-19 ($p > 0.05$) (Table 3).

TABLE 3: Evaluation of demographic characteristics by T&CM use for protection from COVID-19					
		Using T&CM to protect Covid 19		Critical value	p*
		Yes (%)	No (%)		
Age group, years	18-29	171 (%48,4)	102 (%53,4)	5,177	0,270
	30-39	71 (%20,1)	42 (%22)		
	40-49	67 (%19)	22 (%11,5)		
	50 +	44 (%12,5)	25 (%13,1)		
Gender	Male	72 (%20,4)	62 (%32,5)	9,717	0,002 **
	Female	281 (%79,6)	129 (%67,5)		
Level of education	Primary Level	27 (%7,6)	21 (%11)	4,724	0,317
	Middle School	12 (%3,4)	12 (%6,3)		
	High School Level	34 (%9,6)	15 (%7,9)		
	Undergraduate Level	273 (%77,3)	140 (%73,3)		
	Post-Graduate Level	7 (%2)	3 (%1,6)		
Income perception	Low income	86 (%24,4)	59 (%30,9)	2,703	0,259
	Income equals expense	222 (%62,9)	110 (%57,6)		
	High income	45 (%12,7)	22 (%11,5)		
Being diagnosed with Covid-19 at a previous time	Yes	78 (%22,1)	23 (%12)	8,287	0,004 **
	No	275 (%77,9)	168 (%88)		
Chronic disease	Yes	69 (%19,5)	41 (%21,5)	0,283	0,595
	No	284 (%80,5)	150 (%78,5)		
Knowing what kind of disease COVID-19 is	Yes	339 (%96)	182 (%95,3)	0,17	0,68
	No	14 (%4)	9 (%4,7)		
Complying with all necessary measures to protect from COVID-19	Yes	224 (%63,5)	119 (%62,3)	1,386	0,500
	No	2 (%0,6)	3 (%1,6)		
	Partially	127 (%36)	69 (%36,1)		

It is the prayer done by a holistic person or by yourself.

^bAcupuncture: it is a healing therapy that is used around the world and dates back 3000 years. Acupuncture, which is used in various diseases, is a treatment method with needles placed at some special points of the body (13).

^cHijama: it is a treatment method dating back to BC. Hijama is the sunnah of Prophet Muhammad. It is a method in which blood is taken from the patient through the skin to prevent and treat diseases (14).

^dHirudotherapy: hirudotherapy is a form of treatment that has been used to treat diseases for centuries using medicinal leeches. Leeches have been used therapeutically for many years, but their use has decreased as pharmacotherapy progresses. Today, several biologically and pharmacologically active bioactive substances have been identified in the secretion of leeches they give to tissues they bite during blood sucking (15).

Others: other methods include apitherapy, yoga, and mesotherapy.

T&CM applications used to protect from COVID-19 were evaluated (Table 4). When T&CM applied to protect from COVID-19 was examined, it was determined that 53% of the participants used herbal mixtures, 28% reading, 4% acupuncture, 4% hijama, and 1% hirudotherapy, and 10% other methods. A statistically significant difference was observed between these rates ($\chi^2 = 538.419$; $p = 0.001$) (Table 4). The study findings support the literature information.

TABLE 4: Evaluation of T&CM according to use case for protection from COVID-19.

	n	%	Critical value	p [*]
Herbal Mixtures	232	53	538,419	0,001 **
^a Okuma	121	28		
^b Acupuncture	44	10		
^c Hacamat	19	4		
^d Hirudoterapi	5	1		
Other	16	4		
Total	437	100		

Discussion

This study was conducted to determine the T&CM practices used to protect from the COVID-19 pandemic in Turkey and attitudes toward them. More than half of the participants (65%) use T&CM to protect themselves from the COVID-19 pandemic. It is consistent with the results of studies investigating the frequency of T&CM use in Turkey (12, 16).

Considering the sociodemographic data in the study, it was found that only the gender factor made a significant difference in terms of T&CM use (Table 3). The study results showed that women use T&CM applications more frequently than men. This finding is consistent with different T&CM study results (12). In another study, no difference was found between the genders (17).

In a study by Cetin (2007) in Turkey, it was stated that the majority of people who turned to T&CM had a severe illness (cancer, asthma, kidney failure, etc.) in the last year (16). The fact that T&CM is among the types of treatment sought for the disease and the orientation of people shows us that these applications are necessary. This study shows that those who have been diagnosed with COVID-19 at a previous time tend to use T&CM at a high rate. COVID-19 is a difficult disease in many ways. Individuals who had the disease may once have resorted to more protective measures to avoid relapse.

In this study, very few participants recommended the method they used to someone else. In the study by Şimşek et al. (2017), more than half of the participants stated that they used T&CM applications with the advice of the individuals around them (12).

In this study, the source of information for one-third of the participants is the Internet. The reason why the Internet is an important source of information may be that COVID-19 was thought of as an uncertain disease in society for a long time. Another reason is that T&CM in Turkey started to be used in institutions affiliated to the Ministry of Health after the regulations were published by the ministry in 2014 (3), but its application is still uncommon in T&CM health institutions (12).

In a previous study, it was found that the majority of the participants thought that T&CM delayed the timely and correct treatment of sick individuals and that it should be used in cases where medical treatment was not sufficient (18). In this study, it was found that nearly half of the participants first applied T&CM in case of illness.

Since herbal mixtures, one of the T&CM methods, are natural products, it is thought that they will have more beneficial effects than harmful effects, so people have

turned to herbal products instead of using chemical drugs. At the same time, when people want to take a more active role in their health, they may turn to T&CM applications and natural health products based on the assumption that "it is harmless because it is natural." One of the reasons for this orientation may be the desire for a healthy lifestyle (19). In a study covering the whole of Vietnam, more than half of the participants used herbal medicines during the COVID-19 pandemic period (20).

In this study, more than half of the participants think that T&CM applications are beneficial. Similar to our study findings, participants in some studies find T&CM methods useful (19, 21). A very small part of the participants in this study think that T&CM applications are harmful. The underlying reasons for this thought may be the lack of knowledge in that area and how T&CM applications are used or information pollution. In a study parallel to this study, few participants stated that T&CM applications were harmful (22). In another study, a small number of participants reported that they did not find herbal medicines safe (20).

In this study, one of every two T&CM users preferred herbal mixtures. According to the study by Şimşek et al. (2017), the most commonly used T&CM method in Turkey is herbal mixtures (12). Herbal mixtures are widely used worldwide (12, 17, 20).

Limitations

There are several limitations to the studies included in this study. Research findings depend on participants' self-report. No observations were made.

Conclusion

T&CM has accumulated hundreds of years of experience in prevention and treatment of endemic and pandemic diseases. There is still a need to provide complementary and alternative therapies for prevention of COVID-19 and the management of infected patients. Societies' T&CM experiences are valuable and worth learning. There is an opportunity to test the true value of T&CM in prevention and treatment of COVID-19.

The tendency of people to T&CM has increased due to the sudden emergence of the COVID-19 epidemic and its rapid spread among countries and accordingly the slow development of treatment and vaccine methods in Turkey. During the pandemic period, T&CM was used extensively to protect from COVID-19. However, the participants learned and applied this information from unreliable sources such as the Internet, friends, or family, not from health professionals. Considering the frequency of use of T&CM, it can be recommended that it be carried out more widely by health professionals.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Financial support

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Ciotti M, Angeletti S, Minieri M, Giovannetti M, Benvenuto D, Pascarella S, et al. COVID-19 outbreak: an overview. 2019;64(5-6):215-23.
2. World Health Organization. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/donors-and-partners/funding>. 2021.
3. Republic of Turkey Ministry of Health. <https://covid19.saglik.gov.tr/TR-66299/COVID-19-tedavi.html> 2021.
4. Galbadage T, Peterson BM, Gunasekera RSJFip. Does COVID-19 spread through droplets alone? 2020;8:163.
5. Skipper CP, Boulware DRJAoim. Hydroxychloroquine in nonhospitalized adults with early COVID-19. 2021;174(3):434-5.
6. Xiong Y, Gao M, van Duijn B, Choi H, van Horsen F, Wang MJPr. International policies and challenges on the legalization of traditional medicine/herbal medicines in the fight against COVID-19. 2021:105472.
7. Liang F, Litscher G. COVID-19 (Coronavirus Disease-19): Traditional Chinese medicine including acupuncture for alleviation—A report from Wuhan, Hubei Province in China. LIDSEN Publishing Inc; 2020.
8. Xu J, Zhang Y. Traditional Chinese Medicine treatment of COVID-19. *Complement Ther Clin Pract*. 2020;39:101165.
9. Ganguly S, Bakhshi SJPR. Traditional and complementary medicine during COVID-19 pandemic. 2020: *Phytotherapy Research*, 34(12), 3083.
10. Weeks J. Call to action: Announcing the traditional, complementary and integrative health and medicine COVID-19 support registry. Mary Ann Liebert, Inc., publishers 140 Huguenot Street, 3rd Floor New ...; 2020.
11. Konakci G, Uran BNO, Erkin O. In the Turkish News: Coronavirus and "Alternative & complementary" medicine methods. *J Complementary Therapies in Medicine*. 2020;53:102545.
12. Şimşek, B., Aksoy, D. Y., Basaran, N. C., Taş, D., Albasan, D., & Kalaycı, M. Z. Mapping traditional and complementary medicine in Turkey. *European Journal of Integrative Medicine*, 2017: 15, 68-72.
13. Wang CC, Zhu R, Tan J-YJHnp. Nurses and holistic modalities: the history of Chinese medicine and

- acupuncture. 2019;33(2):90-4.
14. Yıldırım B. Hijama: Siyer Press Release Distribution Sab. and Tic. Ltd. Sti.; 2019.
 15. Ayhan H, Mollahaliloğlu S. Hirudoterapi. Ankara Medical Journal. 2018;18(1):141-8.
 16. Cetin OB. Use of Complementary and Alternative Medicin in Eskisehir. Sosyoekonomi Society. 2007;6(6).
 17. Gyasi R, Buor D, Adu-Gyamfi S, Adjei PO-W, Amoah PAJW, health. Sociocultural hegemony, gendered identity, and use of traditional and complementary medicine in Ghana. 2018;58(5):598-615.
 18. Araz NÇ, Tasdemir HS, Kilic SP. Evaluation of Opinions of The Faculty of Health Sciences Students About Non Medical Alternative and Traditional Therapies. Gümüşhane University Journal of Health Sciences. 2012;1(4):239-51.
 19. Sahan D, Ilhan MN. Traditional and Complementary Medicine Practices and Evaluation in Public Health. Gazi Journal of Health Sciences. 2019;4(3):12-9.
 20. Nguyen PH, De Tran V, Pham DT, Dao TNP, Dewey RSJEJoIM. Use of and attitudes towards herbal medicine during the COVID-19 pandemic: A cross-sectional study in Vietnam. 2021;44:101328.
 21. Yildiz P, Uzer F, Balbay EG. Evaluation of Traditional and Complementary Medicine Uses in Chronic Obstructive Pulmonary Patients. Online Turkish Journal of Health Sciences. 2020;5(1):147-54.
 22. Ilhan AO, Sirekbasan S, Tan TG. Evaluation of the Knowledge Levels and Attitudes of Health Services Vocational School Students about Traditional and Complementary Medicine. Ankara Medical Journal. 2019;19(4):736-44.

Evaluation Of The Knowledge And Attitudes About Hypospadias Of The Parents Of Children Diagnosed With Hypospadias: A Qualitative Study

Kadriye Tek¹, Çağrı Çöven Özçelik²

¹Marmara University Institute of Health Sciences, Istanbul-Turkey

²Marmara University Faculty of Health Sciences Department of Pediatric Nursing Istanbul-Turkey

Kadriye Tek

0000-0002-1576-4682

Çağrı Çöven Özçelik

0000-0002-7912-4553

Abstract

Purpose: The purpose of the study to determine the knowledge and attitudes of the parents of children diagnosed with hypospadias.

Methods: This descriptive study conducted on the families of children diagnosed with hypospadias and discharged from a pediatric surgery clinic in a state hospital in Istanbul between April 2018 and December 2018. Data collected with parent information form, type recorder, semi-structured interview. Content analysis was used to evaluate the qualitative data. Research results are reported according to the COREQ Checklist.

Results: After analyzing the interviews of the participants, eight themes have been created: "Inaccuracy of information about hypospadias", "The fact that the information is not clear and understandable by the family", "Anxiety about the surgery and the prognosis of the disease in the pre-operative period", "Fears about the process and after the surgery", "Positive emotions after surgery", "Negative emotions after surgery", "Supporting post-operative care", "Importance of cosmetic appearance",

Conclusion: It was found that the parents did not have enough information about hypospadias and the postoperative process adversely affected the attitudes of the parents towards the disease.

Keywords: Attitude; children; parents; hypospadias.

Özet

Giriş: Hipospadias 300 doğumda bir görülen konjetinal doğum anomalisidir. Toplumda görülme sıklığının fazla olması nedeniyle bu hastalığa sahip olan ailelerin bilgi ve tutumlarının bilinmesi önem taşımaktadır.

Amaç: Araştırma hipospadiaslı çocuğu olan ailelerin bilgi ve tutumlarının incelenmesi amacıyla yapılmıştır.

Yöntem: Tanımlayıcı olan araştırma Nisan 2018-Aralık 2018 tarihleri arasında İstanbul'da bir eğitim araştırma hastanesinin çocuk cerrahisi kliniğinden taburcu olmuş 31 hipospadiaslı çocuğun ebeveyni ile yapılmıştır. Veri toplama aracı olarak; Ebeveyni Tanıtıcı Bilgi Formu, Ses Kayıt Cihazı, Yarı Yapılandırılmış Görüşme Formu kullanılmıştır. Niteliksel verileri değerlendirmek için içerik analizi yapılmıştır. Araştırma sonuçları COREQ Checklist'e göre raporlanmıştır.

Bulgular: Katılımcıların görüşmeleri çözümlenmiş ve sekiz adet tema oluşturulmuştur: "Hipospadias Hakkında Doğru Bilgiye Sahip Olmama", "Yapılan Bilgilendirmenin Aile Tarafından Açık ve Anlaşılır Bulunmaması", "Ameliyat Öncesi Dönemde Ameliyat ve Hastalığın Prognozuna İlişkin Anksiyete", "Ameliyat Süreci ve Sonrasına İlişkin Korkular", "Ameliyat Sonrası Olumlu Duygular", "Ameliyat Sonrası Olumsuz Duygular", "Ameliyat Sonrası Bakımın Desteklenmesi", "Kozmetik Görünümün Önemi".

Sonuç: Ebeveynlerin hipospadiasla ilgili yeterli bilgiye sahip olmadıkları, ameliyat sonrası sürecin ebeveynlerin hastalığa karşı olan tutumlarını olumsuz etkilediği saptanmıştır.

Anahtar Kelimeler: Aile; çocuk; hipospadias; tutum.

Correspondence:

Çağrı Çöven Özçelik, Assoc. Prof.
Marmara University Faculty of Health Sciences
Department of Pediatric Nursing

Phone: +90 (532) 748 47 45

E-mail: ccovener@gmail.com

Received: 10 March 2023

Accepted: 16 September 2023

Introduction

Hypospadias is a congenital birth anomaly that is seen in approximately one in 300 births and is characterized by the urethral meatus being located proximal instead of ventral to the penis. (1). Although the etiology of hypospadias anomaly is not known exactly, it is thought to be affected by many factors such as environmental, genetic and endocrine causes (2,3). The only treatment method for hypospadias, which is easily diagnosed in the routine examination of the neonate (4), is surgery. (5).

Nursing care gains importance in hypospadias anomaly due to both the psychological status of the child and the parents and the variability of the surgical procedure. Hypospadias care includes pre and post-operative care (6). The nurse, who will carry out the care in a holistic manner during the operation, should ensure that the child and parents are informed about the pre and post-operative procedures and its complications. (7).

Attitude literally means "the way taken, the manner". (8). According to another definition, attitude is defined as "a relatively stable organization of beliefs, feelings, and tendencies towards something or someone, the object of attitude". (9). Attitudes are individual and cannot be observed. Observing attitudes is only possible if it is reflected in behaviour. It is difficult to change because they emerge as a result of experience. If the attitude that develops in the face of thoughts and objects is positive, positive behaviours emerge. Even if a negative attitude is developed, behaviours such as adopting, rejecting, and distancing can be seen. (10). As in hypospadias, the parents who experience stress due to the necessity of a surgical intervention may develop ignorance and negative attitudes towards the procedures performed in the hospital. For this reason, family-centred care should be applied in the care of the child, and the child and the family should be considered as a whole (11). Knowing the attitudes that may occur against any event or disease increases the quality of care by ensuring that the nursing care is effective. (12).

Based on this information, the study was planned to determine the knowledge and attitudes of the families of children diagnosed with hypospadias.

Research Questions

1. Is the knowledge of the families of children with hypospadias sufficient about the disease?
2. Does the postoperative period affect the attitudes of families about the disease?

The research, which was planned in the phenomenology design, which is one of the qualitative research methods, was carried out in the paediatric surgery service of a

training and research hospital in Istanbul between April 2018 and December 2018.

Participants

The population of the study consisted of the parents of children with hypospadias who had undergone surgery in the paediatric surgery service of a training and research hospital. Purposive sampling method was used in the research. Parents who met the criteria for the children of the families to have had hypospadias surgery and to voluntarily participate in the study were included in the study. Participants who did not complete the focus group interview were excluded from the study. The sample did not calculate. The study was concluded when the data were satisfactory. The study was concluded with 31 parents.

Data Collection Tools

Parent introductory information form: The form consists of 6 closed-ended questions containing sociodemographic characteristics of parents (age, education level) prepared by the researcher by the literature.

Semi-structured interview form: The form consists of 6 semi-structured interview questions prepared by the researcher in line with the literature:

1. Did you know about what hypospadias was before the diagnosis? Please explain.
 2. Were you sufficiently informed about the hypospadias surgery before the operation? Please explain.
 3. What were your preoperative concerns? Please explain.
 4. How did you feel on the day of the surgery? Please explain.
 5. How did you feel after the surgery? Please explain.
 6. How did you feel when you returned home after the surgery? Please explain.
- 6.1. Are you satisfied with the postoperative appearance and voiding function? Please explain.

Data Collection

Data collection was carried out in the presence of a moderator (researcher KT) and a reporter by means of a mini group interview consisting of 4-6 people. A pilot study was conducted with a group of 5 people in terms of the intelligibility of the questions. Since the participants stated that the questions were understandable, no correction was needed. The study was concluded when the data were satisfied with a total of 31 parents. Verbal permission was obtained from the parents for the interview and a common time frame was determined. The interviews were conducted in the form of face-to-face focus group discussions. Name badges were distributed to the parents participating in the study.

Before starting the interview, it was stated the purpose of the study, a voice recorder would be used during the interview, and that the information and ideas received would not be shared with anyone and would remain confidential. Written consent of the parents was obtained with the "Information Consent Form". First of all, demographic information of the parents was collected with the "Parent Introductory Information Form". During the interview, the parents' feelings, thoughts, attitudes and opinions about the research topic were obtained through semi-structured interview questions. The information was recorded on the voice recorder. The duration of the interviews was between 45 and 60 minutes. The interviews were concluded when the participants started to have similar feelings, thoughts and opinions, that is, when they reached satisfaction.

Data Analysis

In the analysis phase, all the answers, reactions, moments of silence, etc. of the participants were recorded by making use of the observation notes and it was translated into writing in a short time after the interview in order to avoid data loss. In the first stage of the analysis of the data, firstly, meaning extraction (1st level coding) was made from these data in line with the purpose of the research. In the second stage, the data were classified (2nd level coding). In the third stage, themes were created in line with the classified data (3rd level coding) (13). In terms of reliability, the data were analysed by another expert besides the researcher.

The records were listened to by a second expert who is an expert in pediatric nursing and has scientific studies on qualitative research method, and they were translated into writing independently of the researcher, and the themes were finalized by comparing them with the codes created by the researcher. In the analysis of sociodemographic characteristics, number, percentage, mean and standard deviation were used according to the normal distribution characteristics of the data. Research results are reported according to the COREQ Checklist.

Ethical Considerations

Ethical approval was obtained from the Ethics Committee of Marmara University Health Sciences Institute with the approval number 78 dated 05.03.2018. Written and verbal consent was obtained from all participants. Research and publication ethics were complied with in the article.

Results

Sociodemographic characteristics of the parents participating in the study are shown in Table 1.

TABLE 1: Sociodemographic characteristics of parents

Characteristic	n	%
Education		
Literate	1	3.23
Primary school	4	12.90
Secondary school	9	29.03
High school	10	32.25
Associate degree	2	6.46
Bachelor's degree	4	12.90
Master degree	1	3.23
Number of children whom parents have		
1	12	38.70
2	10	32.25
3	7	22.59
4	2	6.46
TOTAL	31	100

As a result of the focus interviews held during the research process eight themes namely "Inaccuracy of information about hypospadias", "The fact that the information is not clear and understandable by the family", "Anxiety about the surgery and the prognosis of the disease in the pre-operative period", "Fears about the process and after the surgery", "Positive emotions after surgery", "Negative emotions after surgery", "Supporting post-operative care", "Importance of cosmetic appearance", were created and related results were presented.

Theme 1 Inaccuracy of information about hypospadias

When the parents participating in the research were asked the question "Did you know about hypospadias?", the majority of them stated that they heard the disease from the internet source, from the people around them, from their relatives.

Theme 2 The fact that the information is not clear and understandable by the family

When the question of the adequacy of the information given to the parents was asked, they stated that they were not informed or that the information provided was not sufficiently understood.

Theme 3 Anxiety about the surgery and the prognosis of the disease in the pre-operative period

When the parents participating in the study were asked about their preoperative concerns, they expressed many concerns about the surgery and the prognosis of the disease. Some of these are: sexual problems, inability to

have a child, the psychological state of the child, the fear of being able to get out of the surgery.

Theme 4 Fears about the process and after the surgery

When parents were asked how they felt about the surgery on the day of the surgery, most of them stated that they were sad, stressed, fearful that the surgery might repeat, restless, distressed and nervous.

Theme 5 Positive emotions after surgery

When parents were asked how they felt after the surgery, most of them expressed positive emotions such as relief, gratitude and happiness.

Theme 6 Negative emotions after surgery

When parents were asked how they felt after the surgery, some of them stated that they cried, panicked and felt uncomfortable seeing their children with medical devices like foley catheter.

Theme 7 Supporting post-operative care

When parents were asked about what they experienced and felt on returning home, they stated that they had difficulty in providing post-operative care, the development of complications made care difficult, they had a bad period and they could not get support from physicians for home care.

Theme 8 Importance of cosmetic appearance

When parents were asked whether they were satisfied with the post-operative appearance, some stated that they were satisfied, while others stated that they were not.

Discussion

The discussion section was written under the theme titles obtained from the research results.

Theme 1 Inaccuracy of information about hypospadias

In a study evaluating the experiences of hypospadias surgery, it was concluded that only 28% of hypospadias was noticed by the family. (14). On the other hand, Özgör ve ark. found that the diagnosis was made mostly by the doctor and traditional circumciser (15). It was determined that parents generally searched for information about hypospadias from the internet, heard from their friends or learned during the doctor's examination when they went to the hospital to be circumcised. This suggests that families do not have enough information about hypospadias.

Illness perception and health beliefs are affected by the society and culture in which the person lives (16). Knowing hypospadias as the circumcision of the prophet in our society may cause delays in the diagnosis of the disease. These studies are similar to the findings of the research.

Theme 2 The fact that the information is not clear and understandable by the family

In the studies in which the literature was accessed, it was found that the information provided was not clear and intelligible because the information period was short, explanations were made using medical terms or the physicians did not inform sufficiently (17-18). Parents who participated in the study stated that the information provided by the physicians was generally insufficient and sometimes they could not get any information at all. Although the families signed the informed consent, they stated that the information was insufficient. These statements are consistent with the research.

Theme 3 Anxiety about the surgery and the prognosis of the disease in the pre-operative period

Fear of surgery, fear of repeat surgery, small child, fear of complications, etc. These situations cause families to experience fear and anxiety. Due to the importance given to the penis in Turkish society, families may feel high anxiety. In the literature, it is stated that preoperative anxiety is an expected situation and is generally moderate in severity (19-21).

Theme 4 Fears about the process and after the surgery

In studies on the subject, parents' concerns and fears about anesthesia were found to be quite high (19,21,22). It is thought that parents develop a fear of anesthesia because of their insufficient knowledge about anesthesia and their fear of its side effects. In the study of Karadağ Arlı, it was determined that the surgery creates different emotions in people and they feel different intensities according to the degree of surgery (23). These findings are the emotions that apply to the parents of the child who has undergone surgery. Families feel anxious and fearful when their children undergo surgery.

Theme 5 Positive emotions after surgery

Karaman Turan mentions that families experience anxiety for reasons such as not being able to help their children, reducing their pain, and invasive procedures (22). In the study of Karaca Çiftçi et al., it was concluded that the anxiety of the parents was high on the day of surgery (21). The same results were obtained in this study. After the surgery, it was determined that the anxiety left its place to the feeling of relaxation.

Theme 6 Negative emotions after surgery

In studies conducted on day case surgery, the causes of anxiety in parents were found to be inability to wake up after anesthesia and not being able to control pain at home (19). Mutlu and Savaşer concluded that emotional support was provided to parents by informing them about the appearance of their children after the surgery (24). It is thought that informing families about home care will reduce the anxiety of the family. It is thought that

informing families about how their children will look after hypospadias surgery will make them feel comfortable.

Theme 7 Supporting post-operative care

Studies have shown that the burden of caregiving varies from person to person (24, 25). It has been found that the burden of caregiving changes depending on the patient's illness, daily working process, and the effect on social life. In the study, families stated that they had difficulties in home care. Pfeil et al. stated that nurses take on many roles during the operation process and have important contributions to the success of the operation (preparation for surgery, pain control, wound care, preparation for discharge, etc.) (26). In a study, it was determined that the rate of giving information about home care was 57.1% (27). It is thought that providing information about home care while sending children with hypospadias home will help in the care of the family and increase the speed of recovery.

Theme 8 Importance of cosmetic appearance

When studies on this subject are examined, penile appearance and voiding function were found to be variable according to prognosis and mean age in cases operated for hypospadias. Appearance is evaluated differently according to individuals, and post-operative satisfaction is stated in general (28-30). The results are consistent with this research.

Limitations

The research is limited to the parents in the institution where the study was conducted and cannot be generalized to the country.

Conclusion

In the research, the answer of the question "Is the knowledge of the families of children diagnosed with hypospadias sufficient about the disease?" was "No" and; the answer of the question "Does the post-operative process affect the attitudes of families about the disease?" was "Yes". It was found that the parents did not have enough information about hypospadias and the postoperative process adversely affected the attitudes of the parents towards the disease.

Implications for Nursing Practice

According to the results, nurses' knowledge of parents' attitudes will increase the quality of care. For this reason, training on attitudes towards nurses should be organized. Primary nursing services related to hypospadias should be planned. Care plans should be established by determining the needs of the child and family, and standards of care should be established to provide quality care. Structured trainings should be organized before the operation in order to inform the families about the disease and the operation process. Educational brochures/mobile

applications should be prepared for families. Parents should be given the opportunity and time to express themselves. In the postoperative period, home visits and follow-ups should be made within the scope of home care services.

Declarations

Funding: Not applicable

Conflicts of interest: No conflict of interest between the authors.

Ethics approval: Marmara University Institute of Health Sciences Ethics Committee for Non-Interventional Studies (05.03.2018/ 78). Written and verbal consent was obtained from all participants. Research and publication ethics were complied with in the article.

Availability of data and material: Available upon request.

Authors' contributions: Concept - ÇÇÖ, KT; Design - ÇÇÖ, KT; Supervision –Data Collection and/or Processing - KT; Analysis and/or Interpretation - ÇÇÖ, KT; Literature Search - ÇÇÖ, KT; Writing Manuscript - ÇÇÖ, KT; Critical Review - ÇÇÖ

Acknowledgements: We thank all participants for their participation.

Table 2: Quotes, codes, subthemes and main themes obtained from parents		
Quotes	Subthemes	Main themes
<p>"When we took him for normal circumcision, they said that the child should have an operation and that there should not be a normal circumcision, so I learned that." (HG, 30 aged, mother)</p> <p>"I had no knowledge, I only knew the name of the circumcision of the prophet." (SA, 33 aged, mother)</p> <p>"I didn't know about it either, but it happened to a friend of mine, and we got information from him. His child also had this problem. The surgery was troublesome, and it happened 2-3 times. So, we waited for a while, but then we applied. After all, we chose this place because it was a surgery that needed to be done." (AY, 30 aged, father)</p> <p>"I always search online." (AY, 27 aged, mother)</p> <p>"It seems like a good thing at first, but when you start researching, you see that it is not so. So, it breaks you down a bit. So, it's completely destroyed. The name of the circumcision of the prophet attracts people. Oh, you say, my child, the prophet was born circumcised, but the truth of the matter is that it's not like that. (İÇ, 30 aged, father)</p> <p>"I even thought that if the prophet was circumcised, it would be good, but it was problematic. But then we found out what." (ZE, 29 aged, mother)</p>	<ul style="list-style-type: none"> • Inaccuracy of information about the disease • Sources of false information • Inaccuracy of information about hypospadias is a disease • Inaccuracy of information about the importance of hypospadias • Thinking that hypospadias is a good thing 	<p>Theme 1</p> <p>Inaccuracy of information about hypospadias</p>
<p>"I did not get very clear information below in the first place. So, while you're inspecting below. To be honest, they did not inform much." (SK, 30 aged, mother)</p> <p>"No notification has been made." (BÖ, 37 aged, mother)</p> <p>"Yes, but what we experienced had nothing to do with it, it was very different from what was told." (EÇ, 29 age, mother)</p>	<ul style="list-style-type: none"> • Insufficient information of physicians about the disease • The information is not clear and understandable. 	<p>Theme 2</p> <p>The fact that the information is not clear and understandable by the family</p>
<p>"I lived with that fear, the day of the surgery, I thought a lot if something would happen, could it hold up, could it take the body?" (AY, 27 aged, mother)</p> <p>"I wonder how can it remove the anesthesia? She was very small when we had the operation because, as a mother, you think about everything whether she plays or pulls that hose. We were shocked, but not as much as we feared, thank goodness." (SA, 33 aged, mother)</p> <p>"We were worried if there would be sexual problems in the marriage, but they said it had nothing to do with it, I hope not." (SS, 39 aged, mother)</p> <p>"The first thing that comes to my mind is the question of will there be infertility when he grow up?" (ÖĞ, 28 aged, mother)</p>	<ul style="list-style-type: none"> • Fear-anxiety related to the operation process • Health in advanced ages • fear-anxiety about problems 	<p>Theme 3</p> <p>Anxiety about the surgery and the prognosis of the disease in the pre-operative period</p>

Table 2: Quotes, codes, subthemes and main themes obtained from parents		
Quotes	Subthemes	Main themes
<p>"Will we go into the second surgery, will it stop?" (İÇ, 30 aged, father)</p> <p>"He was afraid of getting narcosis, in case he couldn't get out of the surgery. Thank goodness he survived." (BÖ, 37 aged, mother)</p> <p>"Mine was already crying until they got out of the way they took Batu. It was very bad, I don't know. There were problems after he came out, we spent 12-13 days in the hospital for the first operation with the foley catheter. Let's say we're worried." (ÖG, 28 aged, mother)</p> <p>"I was very nervous that day too. Ensar was very restless. he was crying and he was nervous because he had been hungry all day. I mean, if they let me go, I would go to the surgery with him. I wanted to stay downstairs all the time, and they even allowed me a little. It was a tense and troublesome process." (ZE, 29 aged, mother)</p>	<ul style="list-style-type: none"> • Fear of repeat surgery • Fear of giving anesthesia <p>Feeling different emotions on the day of surgery</p>	<p>Theme 4</p> <p>Fears about the process and after the surgery</p>
<p>"I was relieved after surgery. I saw him with my own eyes and he came to me. I don't know, the fear was gone a little bit." (AY, 27 aged, mother)</p> <p>"After the surgery, we felt a lot of relief. But when my son came to bed, he wasn't himself. He was afraid at first. He was not himself. But we relaxed a lot and the child was relieved too." (AY, 30 aged, father)</p> <p>"Either we experienced two emotions together. We were both sad and happy. Of course, we were happy that the doctor said that we were successful and that there will be no second time." (MK, 35 aged, father)</p> <p>"I am very happy that he finished a 2-3 session procedure in one session." (EY, 33 aged, father)</p>	<ul style="list-style-type: none"> • Post-operative relief • Post-operative happiness 	<p>Theme 5</p> <p>Positive emotions after surgery</p>
<p>"I was scared from foley catheter frankly, it sounded like something bad happened to me but then I get used to it as the hours pass of course." (ZE, 29 aged, mother)</p> <p>"A week after he went home, his stitches opened. When I brought it to the control, they said that two more surgeries may be needed. I mean, there are two surgeries at the moment, but I don't know, of course. That's a huge problem." (AY, 27 aged, mother)</p> <p>"It hurts a lot with the foley catheter. He wants it removed. But it has to stay there too, he gets used to it after a while, but we had some difficulties in the process of getting used to it, of course." (İÇ, 30 aged, mother)</p>	<ul style="list-style-type: none"> • Continuing anxiety after surgery • Unpleasant feelings after surgery 	<p>Theme 6</p> <p>Negative emotions after surgery</p>

Table 2: Quotes, codes, subthemes and main themes obtained from parents		
Quotes	Subthemes	Main themes
<p>"We learned something by living and started to act accordingly. This allowed the stitches to hold. We don't seem to have a problem now." (AA, 37 aged, mother)</p> <p>"We slept here for 7-8 days, but it was difficult to take care of her at home. Because the foley catheter was attached and we were drilling 2-3 times a day. We were soaking them in water, they had creams or something. got us so busy. (BG, 34 aged, father)</p> <p>"We were discharged in the first surgery, we went home and the stitches were opened. It was very bad, of course, we took it back again, the seams were still on it, the seams were still on it. Then he said to us that such things could happen, of course we were shocked. While I was waiting for it to get better, it got worse than before." (YB, 28 aged, mother)</p>	<ul style="list-style-type: none"> • Strain in post-operative caregiver role • Lack of knowledge about post-operative care 	<p>Theme 7 Supporting post-operative care</p>
<p>"Before the child had surgery, I felt that something was wrong, he was peeing intermittently. I could see he was peeing at his feet. We are happy with the normal look now." (BT, 30 aged, mother)</p> <p>"Since we were not informed, my child urinates intermittently and urinates very often. I am not satisfied. Frankly, I'm not very happy with the way it looks." (DK, 30 aged, mother)</p> <p>"Normal in appearance, normal in function. He said that it hurts for the first 6 months, but now there is no problem, everything is normal.." (MK, 35 aged, father)</p>	<ul style="list-style-type: none"> • Evaluation of penis appearance and voiding function evaluated differently by parents to parents 	<p>Theme 8 Importance of cosmetic appearance</p>

References

- Demir Z and Kibar Y. Hipospadiasın Tanım ve Sınıflandırması, Klinik Belirtiler ve Birlikte Olan Durumlar. Türk Üroloji Seminerleri. 2011; 2:181-184.
- Kalfa N, Sultan C and Baskin LS. Hypospadias: etiology and current research. Urol Clin North Am. 2010; 37:159-166, doi:10.1016/j.ucl.2010.03.010
- Özgör F, Sarılar Ö, Berberoğlu AY et al. Distal Hipospadias Cerrahisinin Devlet Hastanesinde Uygulanabilirliği: 48 Vakanın Geriye Dönük Analizi. Haseki Tıp Bülteni. 2014; 52(3), 195-198.
- Başaklar C. Hipospadias. Bebek ve Çocukların Cerrahi ve Ürolojik Hastalıkları. Ankara: Palme Yayıncılık; 2006.
- Karakan T, Bağcıoğlu M and Germiyanoğlu C. Hipospadias Tarihçesi. Türk Üroloji Seminerleri. 2011; 2: 162-169.
- Tsiligiri M. Nursing Care and Parents Contribution in the Care of their Children with Hypospadias. International Journal of Caring Sciences. 2010; 3(3): 106-109.
- Dönmez YC and Özbayır T. Kaliteli Perioperatif Hemşirelik Bakım Skalası'nın Türk Hemşire ve Hastaları İçin Geçerlik ve Güvenirliğinin İncelenmesi. Ege Üniversitesi Hemşirelik Yüksekokulu Dergisi. 2008; 24(2): 1-25.
- Türk Dil Kurumu. Tutum nedir? <https://sozluk.gov.tr/>
- Erişim tarihi: 02.03.2023
- Kumcağız H, Özenoğlu A, Aydın Avcı İ et al. Tip 2 diyabetes mellituslu hastalarda bunaltı düzeyleri ve stresle başetme. Cumhuriyet Tıp Dergisi. 2009; 31:122-129.
- Akgün Şahin Z. Tip 2 Diyabetli Hastaların, Hastalığa Karşı Tutumu ve Problem Alanları Arasındaki İlişki. ODÜ Tıp Dergisi/ODU Journal of Medicine. 2015; 2(3): 134-138.
- Kesgin Toka C. Akut Hastalıklı Çocuklarda Ebeveynlerin Sorunları ve Etkili Faktörlerin Değerlendirilmesi. İstanbul Bilim Üniversitesi Sağlık Bilimleri Enstitüsü. Yüksek lisans tezi. İstanbul; 2012.
- Sümer N, Gündoğdu Aktürk E and Helvacı E. Anne-Baba Tutum ve Davranışlarının Psikolojik Etkileri: Türkiye'de Yapılan Çalışmalara Toplu Bakış. Türk Psikoloji Yazıları. 2010; 13 (25): 42-59.
- Erdoğan S. Hemşirelikte Araştırma: Süreç, Uygulama ve Kritik. İstanbul: Nobel Tıp Kitabevi; 2014.
- Karavelioğlu A. Çocuklarda Distal Hipospadias Cerrahisi: Deneyimlerimiz. Kocatepe Tıp Dergisi. 2013; 14(2): 83-88.
- Özgör F, Sarılar Ö, Berberoğlu AY et al. Distal Hipospadias Cerrahisinin Devlet Hastanesinde Uygulanabilirliği: 48 Vakanın Geriye Dönük Analizi. Haseki Tıp Bülteni. 2014; 52.
- Bolsoy N and Sevil Ü. Sağlık-Hastalık ve Kültür

- Etkileşimi. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi. 2010; 9(3): 78-87.
17. Karaman Özlü Z, Kılıç M and Yayla A. Cerrahi Aydınlatılmış Onam Hakkında Hastaların Bilgi Düzeyinin İncelenmesi. Sağlık Bilimleri ve Meslekleri Dergisi. 2015; 2(3): 318-328.
 18. İncesu E. Konya Seydişehir Devlet Hastanesinde yatan hastaların bilgilendirilme ve aydınlatılmış onam alma süreçlerinin değerlendirilmesi. Adli Bilimler Dergisi. 2014; 13(1): 16-27.
 19. Gürol A and Binici Y. Günübürlük cerrahi geçirecek çocukların annelerinin anksiyete düzeyleri ve etkileyen faktörlerin belirlenmesi. İzmir Dr. Behçet Uz Çocuk Hastanesi Dergisi. 2017; 7(1): 29-38.
 20. Andsoy I and Alsawi M. Cerrahi girişim uygulanacak çocukların babalarının ameliyat hakkında bilgi ve anksiyete düzeylerinin belirlenmesi. Journal of Contemporary Medicine. 2018; 8(3), 264-270.
 21. Karaca Çiftçi E, Aydın D and Karataş H. Cerrahi Girişim Uygulanacak Çocukların Ebeveynlerinin Endişe Nedenleri ve Anksiyete Durumlarının Belirlenmesi. Journal Pediatric Research. 2016; 3(1): 23-29.
 22. Karaman Turan N. Cerrahi girişim uygulanan adölesanlar ile anne/ babalarının anksiyete düzeyleri arasındaki ilişki ve anksiyete nedenlerinin incelenmesi. Türkiye Klinikleri Journal Medicine Science. 2012; 32(2): 308-315.
 23. Karadağ Arlı Ş. Cerrahi Kliniklerde Yatan Hastaların Ameliyat Öncesi Bilgi Düzeylerinin ve Neler Hissettiklerinin Değerlendirilmesi. Samsun Sağlık Bilimleri Dergisi. 2017; 2(1): 14-22.
 24. Mutlu B and Savaşer S. Çocuğu Ameliyat Sonrası Yoğun Bakımda Olan Ebeveynlerde Stres Nedenleri ve Azaltma Girişimleri. İstanbul Üniversitesi Florence Nightingale Hemşirelik Dergisi. 2007; 15(60): 179-182.
 25. Beyazıt U, Taşcıoğlu G and Bütün Ayhan A. Hastanede tedavi gören çocukların ebeveynlerinde bakım verme yükünün incelenmesi. Adnan Menderes Üniversitesi Sağlık Bilimleri Fakültesi Dergisi. 2017; 1(1): 10-19.
 26. Pfeil M, Kulkarni M, Parr J et al. Hypospadias repair: The Nursing Contribution. International Journal of Urology Nursing. 2012; 6(3): 152-158.
 27. Dal Ü, Bulut H and Demir S. Cerrahi Girişim Sonrası Hastaların Evde Yaşadıkları Sorunlar. Bakırköy Tıp Dergisi. 2012; 8(1): 34-40.
 28. Thiry S, Saussez T, Dormeus S et al. Long-Term Functional, Cosmetic and Sexual Outcomes of Hypospadias Correction Performed in Childhood. Urologia Internationalis. 2015; 95: 137-141.
 29. Liu Mona MY, Holland Andrew JA and Cass Danny T. Assessment of Postoperative Outcomes of Hypospadias Repair with Validated Questionnaires. Journal of Pediatric Surgery. 2015; 50(12): 2071-2074. doi: 10.1016/j.jpedsurg.2015.08.047
 30. Rynja SP, Jong TP, Bosch JL et al. Functional, Coxmetic and Psychosexual Results in Adult Men Who Underwent Hypospadias Correction in Childhood. Journal of Pediatric Urology. 2011; 7(5): 504-515. doi: 10.1016/j.jpuro.2011.02.008

Quality of Sleep and Factors Affecting Sleep Quality in Hospitalized Patients in the Orthopedics and Traumatology Clinic

Serap Sayar¹, Ferhat Sayar², Fatma Gündoğdu¹, Ayşenur Demir Küçüköseler¹

¹KTO Karatay University Faculty of Health Sciences, Nursing Department, Konya-Turkey

²Konya City Hospital Orthopedics and Traumatology Clinic, Konya-Turkey

Serap Sayar¹

0000-0003-4195-0320

Ferhat Sayar²

0000-0002-0084-2414

Fatma Gündoğdu¹

0000-0001-8147-220X

Ayşenur Demir Küçüköseler¹

0000-0002-0514-4957

Abstract

Purpose: In this study, our purpose was to determine the sleep quality and the factors affecting sleep quality of the hospitalized patients orthopedics and traumatology clinic.

Methods: This study was conducted as a descriptive study in a hospital between March 30 and June 16, 2022. The sample of the study consisted of 200 patients hospitalized in the orthopedics and traumatology clinic. The data of the study were collected through face-to-face interviews with the patients using the "Sociodemographic and Descriptive Characteristics Questionnaire" and the "Richard-Campbell Sleep Questionnaire".

Results: The average Richard-Campbell Sleep Questionnaire scores of the patients were determined to be 43.33 ± 28.31 . While there was no statistically significant difference ($p > 0.05$) observed between the gender, preoperative or postoperative status, presence of noise, room lighting, room crowding, attached the body medical devices, treatment interventions during sleep hours, and Richard-Campbell Sleep Questionnaire score averages of the patients; a statistically significant difference was found in the Richard-Campbell Sleep Questionnaire score averages based on pain and medical diagnosis ($p < 0.05$). It was found that the variation in Richard-Campbell Sleep Questionnaire scores attributed to patient's pain and diagnosis variables is 8% ($R^2 = 0.082$). An increase of one unit in the presence of pain led to a decrease of 8.571 unit in sleep quality and the sleep quality of patients diagnosed with coxartrosis decreased by 12.298 units.

Conclusions: The patients' sleep quality was found to be below the moderate level, and it was observed that sleep quality was significantly affected by pain and diagnosis.

Keywords: Orthopedics, traumatology, patients, sleep quality, nursing

Özet

Amaç: Bu çalışmanın amacı; ortopedi ve travmatoloji kliniğinde yatan hastaların uyku kalitesini ve etkileyen faktörleri belirlemektir.

Yöntem: Bu çalışma, 30 Mart-16 Haziran 2022 tarihleri arasında bir hastanede tanımlayıcı bir çalışma olarak gerçekleştirildi. Çalışmanın örneklemini, ortopedi ve travmatoloji kliniğinde yatan 200 hasta oluşturdu. Çalışmanın verileri, hastalarla yüz yüze görüşme tekniğiyle "Sosyodemografik ve Tanımlayıcı Özellikler Anketi" ve "Richard-Campbell Uyku Anketi" kullanılarak toplandı.

Bulgular: Hastaların Richard-Campbell Uyku Anketi puan ortalamaları $43,33 \pm 28,31$ olarak belirlendi. Hastaların cinsiyetleri, ameliyat öncesi veya sonrası durumları, gürültü varlığı, oda kalabalığı, vücuda bağlı tıbbi cihazlar, uyku saatlerinde tedavi girişimleri ve Richard-Campbell Uyku Anketi puan ortalamaları arasında istatistiksel olarak anlamlı bir fark ($p > 0,05$) yok iken; ağrı ve tıbbi tanı, Richard-Campbell Uyku Anketi puan ortalamaları arasında istatistiksel olarak anlamlı bir fark vardı ($p < 0,05$). Hastaların ağrı ve tanı değişkenlerinin, Richard-Campbell Uyku Anketi puanlarındaki değişimin %8'ini açıkladığı bulundu ($R^2 = 0,082$). Ağrı varlığındaki bir birimlik artışın, uyku kalitesinde 8,571 birimlik azalmaya yol açtığı ve koksartroz tanısı alan hastalarda uyku kalitesinin 12,298 birim azaldığı belirlendi.

Sonuç: Hastaların uyku kalitesi orta seviyenin altında bulundu ve uyku kalitesinin ağrı ve tanı değişkeninden önemli ölçüde etkilendiği gözlemlendi.

Anahtar Kelimeler: Ortopedi, travmatoloji, hastalar, uyku kalitesi, hemşirelik

Correspondence:

Assistant Prof. Serap SAYAR, KTO Karatay University Faculty of Health Sciences, Nursing Department, Karatay, Konya, Turkey

Phone: +90 (505) 910 29 94

E-mail: oranserap@gmail.com

Received: 24 August 2023

Accepted: 09 September 2023

Introduction

Sleep is one of the essential daily life activities that affects individuals' quality of life and health, and is a physical requirement for all humans (1,2). Adequate sleep plays a significant role in healing, anabolic steroid production, and patient satisfaction. Furthermore, it contributes to overall well-being and optimal recovery (3). Adequate sleep also has an impact on sleep quality. Sleep quality is described as the efficiency of sleep, and it consists of components such as subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, and use of sleep medication. It is a factor that affects an individual's well-being, functional state, and quality of life (4,5).

There are many factors that influence an individual's sleep quality (5). Among these factors, difficulty in meeting sleep requirements is also present, particularly among hospitalized patients with health issues (1,6). The foreign environment of the hospital setting, pain, fear, frequent disruptions of the sleep cycle for treatment and care, visiting hours, and the side effects of medications used can lead to problems in patients' sleep patterns and quality (7,8). Poor sleep quality during hospitalization is associated with adverse health outcomes such as cardiometabolic complications and increased risk of delirium (9,10). In the study conducted by Şirin and Yüksel Deniz (5), it is indicated that 91% of patients experienced changes in their sleep patterns after being hospitalized, and 22% of the participating patients described their sleep quality as very poor. In a study by Alvetogt and Colten (11) aiming to examine the sleep status of individuals in the hospital, it is reported that patients couldn't sleep enough. In addition, it is known that in orthopedic and traumatology clinics, where patients suffering from pain are mostly treated, patients experience sleep problems, especially related to pain, both before and after surgical procedures (12, 13). In a study conducted by Kaya and Yılmaz (13), it was determined that 60.7% of total knee arthroplasty patients experienced sleep problems, and they had the most difficulty in falling asleep. In their study, Manning et al. (14). reported that patients experienced transient sleep disturbances in the early postoperative period following total joint arthroplasty. It has been reported that patients undergoing orthopedic surgery, especially during the first two nights postoperatively, experience a lack of REM sleep (10). In a study conducted by Vitale and colleagues (15), it was determined that the sleep quality of patients undergoing knee and hip arthroplasty significantly worsened on the first night after surgery compared to the night before the surgery, and high pain scores were associated with a decrease in overall sleep quality. Orthopedic and traumatology patients also experience sleep problems before surgery. Sleep problems can arise due to the psychological

impact of trauma, pre-surgical physiological effects, or pain. In their study, Yang et al. (16) indicated that many orthopedic trauma patients have difficulty falling asleep easily and quickly, or staying asleep because of post-traumatic stress disorder. Studies examining sleep disturbances in patients undergoing rotator cuff repair surgery (17), total hip, and knee arthroplasty have shown a high prevalence of sleep disturbances before these surgeries (18). In a systematic review conducted by Kunze and colleagues (19), investigating the sleep quality of patients before and after arthroscopic rotator cuff repair surgery, it was reported that patients had significantly low sleep quality before the surgery. Poor sleep quality, when combined with surgical stress, can lead to an increase in catabolic activity and tissue breakdown, as well as a reduction in anabolic activity, thereby affecting postoperative recovery in patients. Therefore, good sleep quality is crucial for patients admitted to the orthopedic and traumatology clinic. The assessment of sleep quality and factors influencing it in orthopedic and traumatology patients is believed to be important for planning and implementing nursing interventions aimed at ensuring better sleep quality for patients. The aim of this research is to determine the sleep quality of patients admitted to the orthopedic and traumatology clinic and identify the factors influencing sleep quality.

Materials And Methods

Study population and sample

The research was conducted as a descriptive study. The population of the study consisted of patients hospitalized in the Orthopedics and Traumatology Clinic at a hospital located in the Central Anatolia region of Turkey, between March 30 and June 16, 2022. The research sample size was calculated using Cohen's standardized effect size and the G*Power 3.1.9.7 software. In the calculation, an independent samples t-test was employed, considering a Type I error rate of 0.05 and a Type II error rate of 0.20 (80% power), with a moderate effect size (0.50). Accordingly, a minimum of 128 participants were required for the study. To enhance the research power and account for potential sample losses, the final sample size reached 200 individuals. Therefore, the research sample comprised 200 patients. The study included patients who were 18 years of age and older, capable of communication, without a psychiatric diagnosis, without neurological or cognitive impairments, without a diagnosed sleep disorder, and hospitalized for a minimum of two days. Only those who voluntarily agreed to participate in the research were included. Patients were provided with information about the face-to-face research in their hospital rooms. Patients who volunteered to participate in the study were informed about the data collection tools and asked to respond to the survey and scale questions. It took approximately 15-20 minutes for patients to complete the questionnaire.

Data collection tools

The data of the study were collected using the "Sociodemographic and Descriptive Characteristics Form" and the "Richards-Campbell Sleep Questionnaire"

Sociodemographic and Descriptive Characteristics Form
The researchers prepared a 15 item questionnaire that includes sociodemographic information such as patients' age, gender, marital status, education level, and employment status, as well as clinical characteristics including patients' length of hospital stay, diagnosis, type of surgery, and pre/post-operative period. This questionnaire also includes questions related to factors influencing sleep.

Richards-Campbell Sleep Questionnaire (RCSQ)

The RCSQ was developed by Richards (20) in 1987. It consists of six items that assess the depth of nocturnal sleep, sleep onset latency, frequency of awakenings, time awake after sleep onset, sleep quality, and ambient noise level. Each item is evaluated on a visual analog scale ranging from 0 to 100. Scores between "0-25" on the scale indicate very poor sleep, while scores between "76-100" represent very good sleep. As the scores on the scale increase, patients' sleep quality improves. Its Turkish validity and reliability were established by Karaman Özlü and Özer (21).

Statistical Analysis

The IBM SPSS 25 software was used for data analysis. The normal distribution of numerical data was assessed using the Shapiro-Wilk test. Descriptive statistics such as frequency, percentage, mean, standard deviation, minimum, and maximum were employed to analyze the data. For binary group comparisons, the independent samples t-test was utilized, while for comparisons involving more than two groups, one-way ANOVA was used. The relationship between numerical variables and the scale score average was examined through correlation testing, and the impact of variables on the scale score average was determined using multiple linear regression analysis.

Ethical Considerations

In order to conduct the research, ethical approval was obtained from the XXXX University Faculty of Medicine Ethics Committee for Non-Drug and Non-Medical Device Research, with approval number 2022/006 issued on March 22, 2022. Permission was also obtained from the institution where the research was conducted. Patients were informed that they could withdraw from the study at any time, and consent was obtained from participants before their involvement in the research.

Limitations of the Study

There is a limitation in current study. This study was conducted in a single hospital by one orthopedic clinic team. As such, these findings may not represent other orthopedic clinic teams. Therefore, the results cannot be generalized to the entire population. It is recommended to plan prospective studies related to the subject in larger orthopedic clinics with a broader sample group and a greater variety of different diagnoses.

Results

The mean age of the participating patients was 55.62 ± 17.92 , with 55% being female, 76% married, and 54% having completed primary education. The average length of hospital stay for the patients was 3.07 ± 3.09 days, with 30% admitted with a diagnosis of Gonarthrosis and 88% in the postoperative period. Among those in the postoperative period, 38% were on the first day after surgery. During the hospital stay, 76% of the patients reported not experiencing a restful sleep process while in the hospital, and 97% mentioned that they could not maintain their sleep habits in the hospital environment (Table 1).

TABLE 1: Sociodemographic and clinical characteristics of patients (n=200)

	Mean±SD (Min-Max)		
Age (year)	55.62±17.92 (19-91)		
Hospital stay duration	3.07±3.09 days		
		n	%
Gender	Female	111	55
	Male	89	45
Marital status	Married	152	76
	Single	48	24
Education status	Below primary school	40	20
	Primary school	108	54
	High school	41	20
	Bachelor and above	11	6
Surgery period	Before surgery	25	12
	After surgery	175	88
Day after surgery	0 day (Postop. 0)	33	19
	1st day (Postop.1)	67	38
	2nd day (Postop. 2)	35	20
	3th day (Postop. 3) and above	40	23
Diagnosis	Lower extremity fracture	31	16
	Upper extremity fracture	33	15
	Coxarthrosis	23	12
	Gonarthrosis	59	30
	Diabetic foot	5	3
	Joint/bone infection	6	3
	Meniscus tear	19	10
	Others (Rotatar cuff tear, Hallux valgus)	24	11
Room features	Single room	85	43
	Double room	115	57
Perception of having slept well during the hospital stay	Yes	49	24
	No	151	76
Perception of continuing sleep habits in the hospital	Yes	5	3
	No	147	97

The average RCSQ scores of the participating patients were determined to be 43.33 ± 28.31 . While there was no statistically significant difference ($p > 0.05$) observed between the gender, preoperative or postoperative status, presence of noise, room lighting, room crowding, attached medical devices, treatment interventions during sleep hours, and RCSQ score averages of the participating patients; a statistically significant difference was found in the RCSQ score averages based on pain and medical diagnosis ($p < 0.05$) (Table 2).

TABLE 2: Comparison of patients' sociodemographic, clinical characteristics and some factors related to sleep with mean scores of RCSQ (n=200)

		Mean±SD	Min.-Maks	
Richards – Campbell Sleep Questionnaire		43.33±28.1	0-100	
		Mean±SD	&t	p
Gender	Female Male	40.06±28.1 47.41±27.3	-1.83	0.06
Surgery period	Before surgery After surgery	48.92±30.82 42.53± 27.94	1.05	0.29
Presence of pain	Yes No	30.70±21.54 43.91±19.74	-2.58	0.01*
Presence of noise	Yes No	17± 13,07 32.40± 21.45	-1.23	0.21
Room crowding	Yes No	34.80± 10.63 32 ± 21.68	0.28	0.77
Room features	Single room Double room	45.33±31.74 41.86±25.53	0.85	0.39
Treatment during sleep hours	Yes No	13 ± 4.24 32.35 ±21.42	-1.27	0.20
Medical devices on the body	Yes No	35.45±22.67 31.64±21.27	0.70	0.48
Anxiety	Yes No	34.90±23.29 30.76±20.41	1.11	0.26
		Mean±SD	+ F	p
Diagnosis	Lower extremity fracture Upper extremity fracture Coxarthrosis Gonarthrosis Diabetic foot Joint/bone infection Meniscus tear Others (rotatar cuff tear, Hallux valgus)	45.51± 28 47.36±26.13 20.39±16.38 39.56±36.65 14±13.83 41.16±15.66 60.78±23.10 59.08±33.49	6.27	0.00*

t: Independent samples t-test; +F: One-way ANOVA; *p<0.05

When the relationship between age and RCSQ score average along with the duration of stay was examined; it was observed that there is a statistically significant, moderately strong, and negatively directed relationship between age and RCSQ score average ($r = -.31$; $p = 0.00$). However, it was found that there is no statistically significant relationship between the duration of stay and RCSQ score average ($r = .08$; $p = 0.25$) (Table 3).

RCSQ Total Mean Scores		
	r	p^*
Age	-.31	0.00*
Hospital Stay Duration	.08	0.25

r : Pearson's correlation coefficient; * $p < 0.05$

In the advanced analysis conducted for the factors affecting the RCSQ score; the model for RCSQ is statistically significant and has satisfied the assumptions of multiple linear regression analysis ($F = 4.459$; $p = 0.00$). It was determined that pain and diagnosis variables which were included in the model were significant predictors of sleep quality ($p < 0.05$). According to the established model, it was found that the variation in RCSQ scores attributed to patient's pain and diagnosis variables is 8% ($R^2 = 0.082$). An increase of one unit in the presence of pain led to a decrease of 8.571 unit in sleep quality and the sleep quality of patients diagnosed with coxarthrosis decreased by 12.298 units but there was no statistically significance effect on the RCSQ score due to the age variable (Table 4).

Sleep Quality	B	Se	Z β	t	P	95% Confidence Interval for β	
Richards – Campbell Sleep Questionnaire					0-100	Lower limit	Upper limit
Model							
Constant	49.430	4.303		11.488	0.00	40.928	57.932
Age	-.128	.099	-.106	-1.284	0.20	-.324	.069
Presence of pain	-8.571	4.683	-.148	-1.830	0.04	-17.825	.683
Diagnosis Coxarthrosis	-12.298	4.676	-.221	-2.630	0.00	-21.539	-3.058
Diagnosis Gonoarthrosis	.600	3.443	.015	.174	0.86	-6.202	7.403

Model Significance: $F = 4.459$; $p = 0.00$; $R^2 = 0.08$

β : Regression coefficient, Se: Standard error, z β : Standardized regression coefficient, R^2 : Coefficient of determination. Bold sections indicate statistically significant results ($p < 0.05$).

Discussion

In current study, it was determined that the sleep quality of orthopedic and traumatology patients hospitalized is below the moderate level (RCSQ score 43.33 ± 28.1). The majority of the patients (76%) also indicated that they did not experience a restful sleep during their time in the hospital. In a study conducted by Esen Büyükyılmaz and colleagues (22), which examined the pain level and sleep quality of orthopedic and traumatology patients, it was reported that the patients experienced severe pain at night, leading to a low quality of sleep. In another study that evaluated the sleep quality of patients hospitalized in the orthopedic and traumatology clinic due to musculoskeletal injuries, it was shown that patients had a moderate level of pain, and this condition reduced their sleep quality (23). In a conducted study, it was determined that 60.7% of patients with gonarthrosis experienced

sleep problems during their stay in the orthopedic ward. Among the patients who reported sleep problems, 56% had difficulty falling asleep, 4.4% woke up very early in the morning, 27.5% woke up frequently, and 12.1% mentioned that they couldn't sleep at all (13). In a study assessing the sleep quality of patients hospitalized in surgical clinics, it was indicated that the patients' total RCSQ score average was just below the midpoint of the scale (49.61 ± 25.34), thus indicating a moderate level of sleep quality for the patients (24). The current study yields similar results to the literature. It can be stated that the sleep quality of orthopedic and traumatology patients is poor based on these results.

In the current study, factors such as age, gender, length of hospital stay, noise, room occupancy, single or double occupancy, pre- or post-operative status, anxiety, and medical devices attached to the body, treatment during

sleep hours were found not to affect sleep quality. However, as observed in the multiple linear regression analysis, pain and diagnosis were identified as factors influencing sleep quality. In a study investigating the sleep quality of patients in the early postoperative period, it was noted that patients complained about factors such as pain, poor room ventilation, medical devices attached to the body, treatments administered at sleep time, crowded room conditions, and surrounding noise. These factors were reported to affect sleep (25). In a review examining perioperative sleep disorders, it was reported that noise, light, pain, perioperative mental disorders, anxiety, surgery, and anesthesia influence sleep quality (26). It is observed that the findings of this study differ from the literature in terms of environmental factors. The reason for this is thought to be that orthopedic and traumatology patients, compared to general surgical patient groups, experience more frequent and intense pain, which may lead them to pay less attention to environmental factors. The findings of the study related to orthopedic and trauma patients are consistent with the current study findings, indicating a negative impact of pain on sleep quality. Especially in patients with osteoarthritis (gonarthrosis or coxarthrosis), a decrease in sleep quality is observed. In a study, it has been reported that the sleep quality of patients with osteoarthritis is significantly compromised due to pain (27). Particularly, the pain and symptoms arising from hip osteoarthritis (coxarthrosis) significantly affect sleep quality, which is quite common (28). In a study evaluating sleep disturbances and risk factors in total hip and knee arthroplasty based on an enhanced recovery after surgery concept, it has been demonstrated that pain and anxiety are significantly associated with postoperative sleep disturbance (29). In a study investigating the relationship between pain, anger levels, and sleep quality among patients hospitalized in the orthopedics and traumatology clinic due to musculoskeletal injuries, it was indicated that the patients had moderate levels of pain and that it decreased sleep quality (23). While these findings are consistent with similar studies, it is believed that particularly in the orthopedic and trauma clinic where pain is intense, there is a need for more effective pain management both before and in the early postoperative period.

Conclusion

The data obtained from the study revealed that a significant majority of patients experienced sleep problems during their stay in the orthopedic and trauma clinic. The patients' sleep quality was found to be below the moderate level, and it was observed that sleep quality was significantly affected by pain and diagnosis. The sleep quality score was lower for patients with coxarthrosis and gonarthrosis, as well as those with pain compared to those without. Based on these results, it is considered

important to ensure effective pain management for achieving quality sleep in orthopedic patients. Therefore, for improving patients' sleep quality, it is recommended that pain be comprehensively assessed by orthopedic nurses, and appropriate interventions be planned. Additionally, evaluating patients' sleep quality and level using valid and reliable scales and collaborating with consultation-liaison psychiatric nurses when necessary is also suggested.

Declaration

This study was presented as an abstract oral presentation at the 10th National Orthopedics and Traumatology Nursing Congress (October 25-30, 2022, Antalya, Turkey).

Funding: No financial support was received for this study. **Conflicts of Interest:** The authors declare that they have no conflict of interest.

Ethical Approval: The ethics committee approval was received from the KTO Karatay University Faculty of Medicine Ethics Committee for Non-Drug and Non-Medical Device Research, on the date of March 22, 2022 with 2022/006 decision number.

Author Contributions: Idea/Concept: S.S. Design: S.S. Data Collection and/or Processing: S.S., F.S., A.D.K. Analysis and/or Interpretation: S.S. Literature Review: S.S., F.S., F.G., A.D.K. Writing of the Article: S.S., F.S., F.G., A.D.K. Critical Review: S.S., F.S., F.G.

References

- Doğan O, Ertekin Ş, Doğan, S. Sleep quality in hospitalized patients. *Journal of Clinical Nursing*. 2005;14(1):107-113. DOI: 10.1111/j.1365-2702.2004.01011.x
- Şayık D, Açıkgöz A, Mutlu, F. Sleep quality of medical staff during the coronavirus pandemic: a meta-analysis. *Journal of Turkish Sleep Medicine*. 2021; 1:1-6. DOI: 10.4274/jtsm.galenos.2021.51523
- Austin L. Editorial commentary: does orthopedic disease lead to sleep disturbance and how can we improve sleep quality following surgery?. *Arthroscopy*. 2019;35(2):47-55. DOI: 10.1016/j.arthro.2018.11.001
- Örsal Ö, Kök Eren H, Duru P. Examination of the factors affecting sleep quality of psychiatric patients using the structural equation model. *Journal of Psychiatric Nursing*. 2019;10(1):55-64. DOI: 10.14744/phd.2018.06978
- Şirin A, Deniz SY. Hospitalized patients sleep quality and evaluation of the factors affecting sleep state. *Interdisciplinary Journal of Innovation Research*. 2021;1(2): 148-155.
- Karan İ, Aştı T. Investigation of the effects of hospital physical environment on patients. *İstanbul University Florence Nightingale Journal of Nursing*. 2003; 13:15-27.

7. Drouot X, Cabello B, d'Ortho MP, et al. Sleep in the intensive care unit. *Sleep Medicine Reviews*. 2008;12(5):391-403. DOI: 10.1016/j.smr.2007.11.004
8. Karagözoğlu Ş, Çabuk S, Tahta Y, et al. Some factors influencing the sleep of hospitalized adult patients. *Toraks Journal*. 2007;8(4):234-240.
9. Stewart NH, Arora VM. Sleep in hospitalized older adults. *Sleep Med Clin*. 2018;13(1):127-135. DOI: 10.1016/j.jsmc.2017.09.012
10. Jensen PS, Specht K, Mainz H. Sleep quality among orthopaedic patients in Denmark-A nationwide cross-sectional study. *Int J Orthop Trauma Nurs*. 2021; 40:1-10. DOI: 10.1016/j.ijotn.2020.100812
11. Institute of Medicine (US) Committee on Sleep Medicine and Research. Sleep disorders and sleep deprivation: an unmet public health problem. Colten HR, Altevogt BM, editors. Washington (DC): National Academies Press (US); 2006. PMID: 20669438.
12. Önler E, Yılmaz, A. The sleep quality of the patients in surgical units. *Florence Nightingale Journal of Nursing*. 2008;16(62):114-121.
13. Kaya G, Yılmaz, M. Determination of sleep and depression in elderly individuals with total knee replacement. *Mersin Univ Journal of Health Sciences*.2021;14(1): 1-13. DOI: 10.26559/mersinsbd.733376
14. Manning BT, Kearns SM, Bohl DD, et al. Prospective assessment of sleep quality before and after primary total joint replacement. *Orthopedics*. 2017;40(4): 636-640. DOI: 10.3928/01477447-20170411-01
15. Vitale JA, Banfi G, Viganò M. et al. How do patients sleep after orthopaedic surgery? Changes in objective sleep parameters and pain in hospitalized patients undergoing hip and knee arthroplasty. *International Orthopaedics*. 2023; 47:1929-1938. DOI: 10.1007/s00264-023-05862-2
16. Yang H, Liu YJ, Ye JL, et al. Evaluation of sleep disorder in orthopedic trauma patients: a retrospective analysis of 1129 cases. *Journal of Orthopaedic Surgery and Research*. 2021;16(1):1-6. DOI: 10.1186/s13018-021-02487-2
17. Austin L, Pepe M, Tucker B, et al. Sleep disturbance associated with rotator cuff tear: 436 correction with arthroscopic rotator cuff repair. *Am J Sports Med*. 2015;43:1455-1459. DOI: 10.1177/0363546515572769
18. Chen AF, Orozco FR, Austin LS, et al. Prospective evaluation 473 of sleep disturbances after total knee arthroplasty. *J Arthroplasty*. 2016;31: 330-332. DOI: 10.1016/j.arth.2015.07.044
19. Kunze K, Movasagghi K, Rossi DM, et al. Systematic review of sleep quality before and after arthroscopic rotator cuff repair are improvements experienced and maintained? *The Orthopaedic Journal of Sports Medicine*. 2020;8(12):1-10. DOI: 10.1177/2325967120969224
20. Richards K. Techniques for measurement of sleep in critical care. *Focus Crit Care*. 1987; 14 (4):34-40.
21. Karaman ÖZ, Özer N. Richard-Campbell sleep questionnaire validity and reliability study. *Turkish Sleep Medical Journal*. 2015; 2:29-32. DOI:10.4274/jtsm.02.008
22. Esen Büyükyılmaz F, Şendir M, Acaroğlu R. Evaluation on night-time pain characteristics and quality of sleep in postoperative Turkish orthopedic patients. *Clinical Nursing Research*. 2011; 3: 326-42. DOI: 10.1177/1054773811406110
23. Yılmaz M, Gürler H, Bekmez F. The relationship between pain-anger levels and sleep quality of patients hospitalized in the orthopedics and traumatology clinic because of musculoskeletal injury. *Journal of Anatolian Nursing and Health Sciences*, 2019;22(2), 79-86.
25. Oral SE, Kıranşal N, Deniz M. The effect of pain and anxiety on sleep quality in hospitalized patients in surgical clinics. *Journal of Turkish Sleep Medicine*, 2022; 9(3),288-293. DOI:10.4274/jtsm.galenos.2022.38247
26. Ödül Özkaya B, Yüce Z, Gönenç M, et al. Factors affecting the sleep patterns of hospitalized patients during the early post-operational period. *Medical Journal of Bakırköy*, 2013; 9(3), 121-125. DOI: 10.5350/BTDMJB201309305
27. Lin D, Huang X, Sun Y, et al. Perioperative sleep disorder: a review. *Frontiers in Medicine*, 2021; 8, 640416. DOI: 10.3389/fmed.2021.640416
28. Er MS, Altinel EC, Altinel L, et al. Evaluation of preoperative and postoperative sleep quality in patients undergoing total knee arthroplasty. *Acta Orthop Traumatol Turc*, 2014; 48(1), 50-54. DOI: 10.3944/AOTT.2014.3163
29. Martinez R, Reddy N, Mulligan EP, et al. Sleep quality and nocturnal pain in patients with hip osteoarthritis. *Medicine*, 2019; 98(41). DOI: 10.1097/MD.00000000000017464
30. Wang Y, Liu Y, Li X, et al. Prospective assessment and risk factors of sleep disturbances in total hip and knee arthroplasty based on an Enhanced Recovery After Surgery concept. *Sleep and Breathing*, 2021; 25, 1231-1237. DOI: 10.1007/s11325-020-02213-y

Investigation of the Contribution of Radiotherapy Therapist Education to Working Life: A National Survey Study

Evren Ozan Göksel¹, 

¹Acıbadem Mehmet Ali Aydınlar University
Vocational Service Of Health School
Radiotherapy Program, Istanbul-Turkey

Evren Ozan Göksel
0000-0002-0674-1016

Abstract

Background/Purpose: To investigate the perception of working radiation therapists (RTTs) regarding the contribution of RTTs training provided in Turkey to their working lives.

Methods: The study employed a questionnaire consisting of 22 questions. The questionnaire was distributed via email to RTTs working in Turkey. The questionnaire explored various aspects of the participants' education, including their internship opportunities, the duration of their internships, the treatment devices they worked with, and the adequacy of their experiences.

Results: One hundred and eighty-one RTTs participated in the survey. The majority of participants (57.3%) completed their education at foundation universities, while 42.7% attended state universities. During their education, 80.5% of participants found the internship opportunities offered by their schools to be adequate. 92.6% of the participants reported that the experience they gained during their internship had a positive impact on their working life. A statistically significant relationship was observed between the adequacy of the treatment device variety used during the internship and the contribution of the internship to their working life ($p < 0.05$).

Conclusion: The majority of RTTs who participated in the survey found that the education they completed were largely sufficient in terms of contributing to their working lives.

Keywords: Radiation Therapist, Education, Training

Özet

Amaç: Bu çalışmada ülkemizde verilen radyoterapi teknikerliği (RTT) eğitiminin çalışma hayatına olan katkısının çalışan

RTT'ler tarafından nasıl algılandığı araştırılmıştır.

Yöntem ve Gereç: Ülkemizde çalışan RTT'lere 22 sorudan oluşan bir anket e-posta aracılığıyla gönderilmiştir. Katılımcılara eğitimleri sırasında okullarının sunduğu staj imkanları, staj yaptıkları süreler, staj yaptıkları klinikteki cihaz çeşitliliği ve kazandıkları tecrübenin yeterliliği yanı sıra aldıkları teorik derslerin klinik pratiğe olan katkılarıyla ilgili sorular yöneltilmiştir.

Bulgular: Ankete yüzseksenbir RTT katılmıştır. Katılımcıların %57,3'ü vakıf üniversitelerinde, %42,7'si devlet üniversitelerinde eğitimlerini tamamlamışlar ve eğitimleri sırasında okullarının sunduğu staj imkanlarını %80,5 oranında yeterli bulmuşlardır. Yüzde 92,6 gibi büyük bir çoğunluk stajları sırasında edindikleri tecrübenin çalışma hayatlarına katkısı olduğunu belirtmişlerdir. Staj yapılan klinikteki cihaz çeşitliliğinin yeterliliği ile stajın çalışma hayatına katkısı arasında istatistiksel olarak anlamlı bir ilişki bulunmuştur ($p < 0,05$).

Sonuç: Sonuç olarak, ankete katılan RTT'ler eğitimleri sırasında aldıkları teorik dersleri ve yaptıkları stajları çalışma hayatlarına olan katkıları açısından değerlendirdiklerinde çoğunlukla yeterli bulmuşlardır.

Anahtar kelimeler: Radyoterapi Teknikerliği, Eğitim, Öğretim

Correspondence:

Assistant Prof. Evren Ozan Göksel Acıbadem
Altunizade Hastanesi, Radyoterapi Bölümü,

Phone: +90 (535) 351 66 67

E-mail: e.ozangoksel@gmail.com

Received: 10 March 2023

Accepted: 16 September 2023

Introduction

Radiation therapy requires an interdisciplinary team effort, consisting primarily of radiation oncologists, medical physics specialists and radiation therapists (RTTs) (1). The success of treatment in radiotherapy depends equally on the knowledge and experience of the employees of these three disciplines. Radiation oncologists are responsible for determining the treatment scheme, medical physics specialists are responsible for ensuring the quality of treatment devices and creating treatment plans, while RTTs are responsible for accurately and precisely administering the prescribed radiation dose to the patient (2). In addition, since they are in contact with the patient in each fraction, they are also responsible for monitoring side effects and referring the patient to the nurse or physician (3).

In an era when imaging and treatment techniques are more complex due to technology, the role and level of responsibility of RTTs are constantly developing and expanding (4). Given the complexity of modern radiotherapy, it is necessary to develop special training programs specific to the RTTs profession. Educational programs should provide RTTs with the scientific theoretical basis of the profession and ensure that they, as practitioners, are able to synthesize, evaluate and apply their knowledge in a clinical setting (5).

RTTs training should include the steps of patient positioning and immobilization, image taking, contouring of organs at risk, control of compliance of treatment parameters with the planned one, verification of patient position and application of treatment, which they are responsible for in the clinic. In the RTTs course manual published by the International Atomic Energy Agency (IAEA), it is stated that when developing any training program, first of all, a short application survey should be conducted on the academic and clinical infrastructure that is already available. It has been pointed out that the information obtained from this survey will efficiently help identify needs and plan any new courses or expand existing programs (5).

Accordingly, in this survey study, it was aimed to investigate how the effects of the training provided in RTTs programs in Turkey on clinical practice are evaluated by working RTTs. This is the first study evaluating how the contribution of RTTs' training to working life is perceived in our country.

Materials And Methods

A questionnaire consisting of 22 questions was prepared on google forms (docs.google.com). The website link to the questionnaire was distributed via email and shared on social media platforms to radiation therapists employed

in Turkey through the Association of Radiotherapy Therapists. Based on personal communication with the association management, the number of association members in April 2023 was reported to be 168. For sample selection, the simple non-selective sampling method, which is one of the probability-based sampling methods, was employed. According to this method, a minimum sample size of 118 was calculated for a study involving a population of 168, with a 95% confidence interval and a margin of error of 0.05. The survey questions are designed to take about five minutes to complete. To ensure broad participation from RTTs working in diverse institutions across our country, the survey data collection was conducted over a week period. The first four questions directed to the participants were related to the institution they worked at, while the next three questions were related to the information about the school where they received RTTs training. The 14 questions in the second part question the contribution of the theoretical and practical trainings they received at their schools to their working lives with the Likert scale answer (from 1 to 5, completely agree, completely disagree). The questions related to theoretical courses were created by examining the information packages of the Turkish Higher Education Qualifications Framework of various state and foundation universities (6-9). Finally, there is an open-ended question in which recommendations for improving the contribution of RTTs training to clinical practice are questioned. The survey outputs were taken from the website and entered the SPSS program for statistical analysis.

This study was deemed ethically appropriate by the Acıbadem Mehmet Ali Aydınlar University Ethics Committee, with the reference number 2023-08/288, on May 12, 2023.

Statistical Analysis

Descriptive statistics were performed for all categorical variables. Correlations between the multiple independent categorical variables were evaluated by Chi-square test. Independent samples T-test was used for mean comparison. Statistically significant p value was accepted as <0.05 within %95 confidence interval.

Results

One hundred and eighty-one RTTs working in Turkey participated in the survey and all of them were taken into consideration. While 64.8% (n=116) of the participants are composed of those working in the Marmara region, the second rank is composed of those working in the Central Anatolia region with 15.6% (n=28). The lowest participation was from the Eastern 2.8% (n=5) and Southeastern Anatolian 0.6% (n=1) regions. The proportion of RTTs with up to five years of experience was found to be 57.1% and the proportion of those

with more than fifteen years of experience was found to be 18.6%. The answers given to the question "What tasks do you do in the institution you work for?" showed that RTTs mostly perform treatment, simulation, and contouring tasks. While 42.7% of the participants stated that they received education in state universities, 57.3% stated that they completed their education in foundation universities. When the participants are sorted according to the institutions they work, the most are 42.5% private hospital, 29.9% university hospital and 27.6% state hospital. There was a significant correlation observed between individuals who pursued their education at state universities (68.7%) and subsequently pursued careers in public hospitals, as well as individuals who attended foundation universities (73.9%) and later worked in private hospitals. ($p < 0.05$). When the adequacy of the internship opportunities of the institution they were trained in was questioned, only 8.9% of the participants stated that they were insufficient and 10.7% of them stated that they were very insufficient (Figure 1).

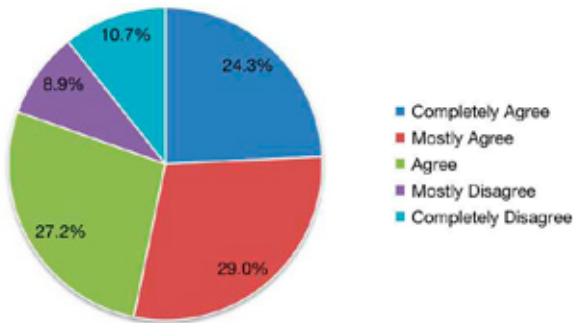


Figure 1 Percentage graph where the adequacy of internship opportunities provided by the school is evaluated

There was no significant correlation between the institution where the training was received and the adequacy of internship opportunities ($p > 0.05$). Both those who completed their education at state universities and those who completed their education at foundation universities found their internship experiences during their studies to be satisfactory, with percentages of 81% and 80%, respectively. It has been observed that 77% of students studying at foundation universities consider the diversity of equipment in the clinics where they conducted their internships to be sufficient, whereas for students from state universities, this percentage dropped to 68%. However, despite this differences, students from both state and foundation universities have reported that their internships had a positive impact on their professional lives, with percentages of 89.4% and 95%, respectively. Figure 2 also shows the percentage graph of the internship periods during their education.

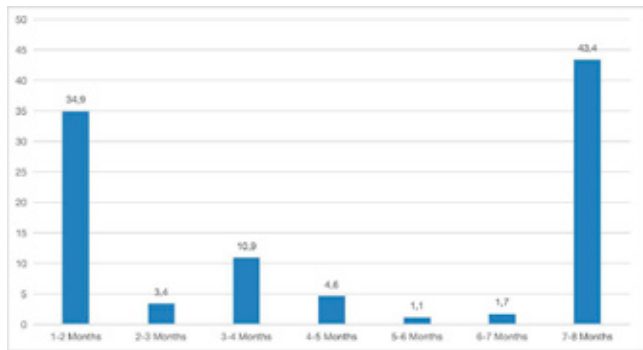


Figure 2 Percentage chart of internship periods during training

When the contributions of their internship experience to working life were questioned, it was stated that 36.4% were highly satisfied, 36.9% were very satisfied and 19.3% were satisfied. While 26.6% of the participants stated that the variety of treatment devices in the place where they did their internship was insufficient, 73.4% stated that it was sufficient (Figure3).

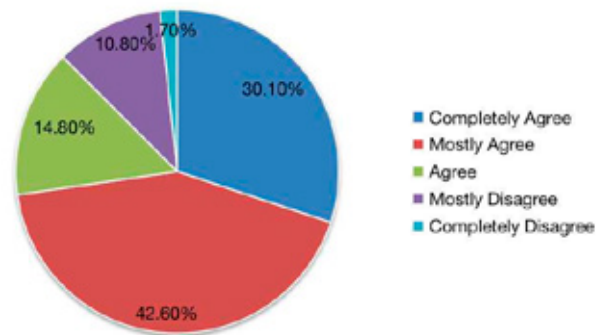


Figure 3 Percentage graph in which the adequacy of the treatment device variety in the clinic where the internship is performed is evaluated

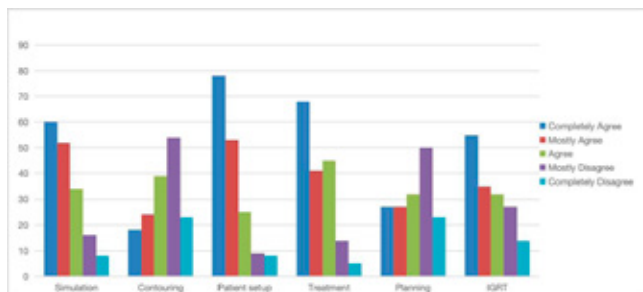


Figure 4 Percentage chart showing the adequacy of the experience gained in different fields during the internship period

A significant relationship was found between work experience and the perception that internship is beneficial to working life ($p = 0.04$). Those with 0-5 years of work experience stated that the internship they did during their education did not contribute to working life, while

those with 5-15 years of work experience stated that it contributed. The evaluation of the contribution of the theoretical courses they studied during their education to their working life is given in Table 1.

TABLE 1: Percentage distribution of the contribution of theoretical courses taken during RTTs trainings to working life.

Lectures	Highly Satisfied	Very Satisfied	Satisfied	Not Satisfied	Not at All Satisfied
Radiotherapy Physics	13%	22,6%	%40,7	%14,7%	9
Anatomy	%30,5	%26	%32,2	%8,5	%2,8
Radiological Anatomy	%36	%21,1	%29,1%	8	%5,7
Radiation Protection	%27,4	%21,7	%18,9	%5,7	%1,1
Radiation Oncology	%37,1	%27,4	%29,7	%5,1	%0,6
Quality Assurance	%18,6	%22,7	%34,9	%14,5	%9,3
Professional Ethics	%20,5	%25,1	%38,6	%12,3	%3,5
Medical Terminology	%25,9	%23,6	%35,6	%11,5	%3,4
Professional English	%6,9	%13,9	%28,3	%30,1	%20,8

To the expression "Having a radiotherapy laboratory in our school would have contributed to our education."; answers were given that 55.9% completely agree, 20% mostly agree, and 16.5% agree. The open-ended question "How do you think RTT education can be improved in Turkey?" was answered by 73 RTT. Mostly, the answers given are to increase the internship period (n=20), to reduce the quotas (n=11), to have undergraduate education (n=8) and to have laboratories in schools (n=7).

Discussion

In this study, we conducted a survey to investigate the impact of the education and training received by RTTs during their university education on their professional careers in Turkey. Our aim was to gain insights into the effectiveness of RTTs education and training in our country and identify areas that may require improvement. The results of this study could be used to inform future training programs and improve the overall quality of treatment provided by RTTs.

A total of 181 RTTs, predominantly from the Marmara and Central Anatolian regions, participated in this study, which aimed to investigate, for the first time, how RTTs training in Turkey was evaluated by working RTTs. A limitation of the study was the low participation rate from the Eastern and Southeastern Anatolia regions, which we believe is due to the limited number of radiotherapy clinics in these regions. Specifically, the Eastern Anatolia region has only nine radiation oncology clinics, and the Southeastern Anatolia region has only seven (10).

The ESTRO Young Committee stated that due to the absence of a consensus on the appropriate methodology to assess the quality of education programs, they used a non-validated, self-produced questionnaire (11). Similarly,

to measure how RTTs perceive the contribution of the education they receive to their working lives, we prepared an online questionnaire consisting of 22 questions. A significant relationship was found between RTTs who graduated from public schools and work in public hospitals, and those who graduated from foundation schools and work in private hospitals. We hypothesize that this may be because faculty members working in hospitals prefer to work with RTTs whom they have trained themselves.

According to the ESTRO Core Curriculum, "there are two components to an initial undergraduate education program for Radiation Therapists (RTTs): the academic and clinical components, and the learning outcomes of each should be complementary" (ESTRO Core, p9) (12). Additionally, according to the IAEA Handbook for the Education of Radiation Therapists, experienced clinical RTTs are expected to support students in gaining understanding and developing their technical and psychosocial skills. The clinical environment plays an essential role in providing students with practical learning experiences that will underpin their future practice. Students are expected to work the same hours as the clinical staff and full attendance is compulsory, unless otherwise notified (p51, 5). As emphasized in the ESTRO Core Curriculum and IAEA's Handbook, the proficiency of the internship is an important component of RTTs training.

When examining the results of the survey, it is evident that the majority of participants find their internships to be sufficient. However, only those with 5-15 years of experience stated that the internship is beneficial to

their working life. There may be two different reasons for this discrepancy between those with 5-15 years of work experience and those with 0-5 years of work experience who state that the internship does not contribute. One possible reason is that as RTTs gain more work experience, they better perceive the benefits of their internships during their education and more accurately evaluate their effects. The second reason could be that those with more than 5 years of work experience may have actually had a more beneficial internship period.

ESTRO emphasizes the importance of a variety of treatment devices being available in the clinic where internships are held, stating, "As a core requirement, students must spend a significant amount of time on dual modality multi-energy linear accelerators with imaging facilities and CT scanners/simulators for treatment planning purposes. It is also recommended that students have exposure to orthovoltage/superficial units, brachytherapy, and advanced technologies" (12, p.12). A large majority of the participants found the variety of treatment devices in the clinic where they completed their internships to be sufficient.

According to Coffey's study (3), 11 countries, including Turkey, indicated that their clinical departments set and fulfill standards in terms of equipment variety and practice to train students as part of the clinical component of the training program. However, when evaluating the adequacy of the experience gained during the internship in different areas, it was found to be sufficient for simulation, treatment, and IGRT, but insufficient, especially in the areas of contouring and planning (13). The knowledge of basic planning techniques gained during the internship is important for RTTs to accurately evaluate errors such as incorrect energy selection, higher than expected MU values, etc. that may arise during treatment planning (14). Additionally, RTTs who participated in the survey stated that they were mostly involved in contouring after treatment and simulation. Considering that in our country, tasks such as importing DICOM data to the planning system, registering different image sets, and OAR contouring are mostly performed by RTTs, it underscores the importance of students gaining sufficient experience in the fields of contouring and planning during internships. Therefore, it is crucial to ensure that students have more efficient internships in these areas as well. Dubois et al (15) conducted a similar study where they evaluated RTTs training using a questionnaire. They also concluded that RTTs require more hands-on teaching in areas such as planning, contouring, dose prescribing, and dosimetry, which is consistent with the findings of our study.

The ESTRO Core Curriculum states that "Laboratory-based education allows students to learn and train outside

of the clinical setting, without interfering with clinical patient data and with the added benefit of repetition of the exercises until the defined competence has been achieved. The students have the possibility to ask questions without disturbing the staff and the patient" (12, p.54). A large majority of the participants also agree that having a radiotherapy laboratory at the school will make a positive contribution to their education. Some even felt the need to reiterate the laboratory requirement in the open-ended question section. However, we could not find a statistically significant relationship between those who stated that the internship opportunities offered by their schools were insufficient and those who thought that having a radiotherapy laboratory in the school would be beneficial.

Another issue that stands out in the open-ended question section is the extension of the education period to the bachelor level. The International Atomic Energy Agency (IAEA) also endorsed the 2-year training program for Radiation Therapists (RTTs), while recommending that it may be increased to 3 years where possible. On the other hand, ESTRO recommends that the duration of training should be 3 years (5, 12). In their study, Coffey et al (3) presented the duration of RTTs training for 30 countries (26 European, 4 non-European) and emphasized that this period was 2 years in only 3 countries: the USA, Slovenia, and Turkey. It has been determined that the duration of education in only 5 countries is 4 years, while in others it is 3 years. Countries with a 4-year education period include Albania, Greece, Hungary, Malta, and The Netherlands. In a survey conducted by ESTRO for professionals working in the field of radiation oncology in Europe, the improvement of education was investigated (16). Four hundred and sixty-three respondents from 34 European countries participated in the survey, including 45% clinicians (n=210), 29% physicists (n=135), 24% RTTs (n=108), and 2% radiobiologists (n=10). When the participants were asked to evaluate the effectiveness of the training they received for different areas, it was seen that clinical practice was given the most importance (18% very important and 77% most important). In addition, when asked what could be done to improve education, it was stated that the duration of education should be increased, similar to the results of our study.

While the contribution of radiation oncology and radiation protection theoretical courses to the working life was mostly found to be satisfactory, the contribution of only the professional English course was mostly reported as unsatisfactory. This may be due to the short duration of the professional English course. However, no requests related to this issue were stated in the suggestions for improving

education. In fact, professional English is crucial for the working life of RTTs, as treatment devices and planning systems interfaces are in English. Additionally, operating manuals for these treatment devices and most scientific publications in the field of radiation oncology are also in English. Although the open-ended question "How can RTTs education be improved in Turkey?" was mostly answered by suggesting an increase in the duration of the internship, no statistically significant relationship could be found between the duration of the internship and the perceived benefit of the internship in working life.

Conclusion

Radiation therapy has become increasingly complex over time and is rapidly evolving with advances in technology. As radiation therapists play a vital role in the interdisciplinary team, their training must prepare them to work effectively in the future and provide safe and high-quality radiation therapy services. In conclusion, the participants of the survey largely found the education and internships they received during their RTTs training to be sufficient in terms of their contributions to their working lives.

Declarations

A part of this study was presented at the 3rd National Radiotherapy Congress and Training Seminars. 27-30 April 2023, Antalya, Turkey.

Funding: The author has no other relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. No writing assistance was utilized in the production of this manuscript.

Conflicts of interest/Competing interests: The author declare that they have no competing interests.

Ethics approval: The authors state that they have obtained appropriate institutional review board approval or have followed the principles outlined in the Declaration of Helsinki for all human or animal experimental investigations. This study was evaluated and approved by Acibadem Mehmet Ali Aydinlar University Ethics Committee. (Date: 12.05.2023, Registration number: 2023-08/228).

Availability of data and material: The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Authors' contributions: EG conceived and designed the study. EG prepared the first draft and subsequent drafts and the final paper.

References

1. Lievens Y, Defourny N, Coffey M, et al. Radiotherapy staffing in the European countries: final results from the ESTRO-HERO survey. *Radiother Oncol.* 2014;112(2):178-186. doi:10.1016/j.radonc.2014.08.034
2. Eriksen JG, Beavis AW, Coffey MA, et al. The updated ESTRO core curricula 2011 for clinicians, medical physicists and RTTs in radiotherapy/radiation oncology. *Radiother Oncol.* 2012;103(1):103-108. doi:10.1016/j.radonc.2012.02.007
3. Coffey M, Naseer A, Leech M. Exploring radiation therapist education and training. *Tech Innov Patient Support Radiat Oncol.* 2022;24:59-62. doi:10.1016/j.tipsro.2022.09.006
4. Oliveira C, Barbosa B, Couto JG, Bravo I, Khine R, McNair H. Advanced practice roles of therapeutic radiographers/radiation therapists: A systematic literature review. *Radiography (Lond).* 2022;28(3):605-619. doi:10.1016/j.radi.2022.04.009
5. A Handbook for The Education of Radiation Therapists (RTTs), Training Course Series No.58, IAEA, VIENNA, 2014
6. <https://obs.acibadem.edu.tr/oibs/bologna/index.aspx?lang=tr&curOp=showPac&curUnit=07&curSunit=42>; (accessed 2023 Apr 2023).
7. <https://www.medipol.edu.tr/akademik/meslek-yuksekokullari/imu-meslek-yuksekokulu/bolumler/radyoterapi/program-bilgileri#aktsKredileri>; (accessed 2023 Apr 2023).
8. https://akts.hacettepe.edu.tr/program_detay.php?birim_ref=AKDBRM_000000000000000000000000058&birim_kod=548&prg_oid=PRGRAM_000000000000000000000067&prg_kod=548&programduzey=1&submenuheader=2; (accessed 2023 Apr 2023).
9. https://debis.deu.edu.tr/ders-katalog/2022-2023/tr/bolum_1239_tr.html; (accessed 2023 Apr 2023).
10. https://www.trod.org.tr/app_society_oncology_centers; (accessed 2023 Apr 2023).
11. Bibault JE, Franco P, Borst GR, et al. Learning radiation oncology in Europe: Results of the ESTRO multidisciplinary survey. *Clin Transl Radiat Oncol.* 2018;9:61-67. doi:10.1016/j.ctro.2018.02.001; (accessed 2023 Apr 2023).
12. https://www.estro.org/ESTRO/media/ESTRO/Education/recommended_core_curriculum-radiationtherapists-3rd-edition-2011.pdf; (accessed 2023 Apr 2023).
13. Coffey M, Leech M; ESTRO Radiation Therapist Committee. The European Society of Radiotherapy and Oncology (ESTRO) European Higher Education Area levels 7 and 8 postgraduate benchmarking document for Radiation Therapists (RTTs). *Tech Innov Patient Support Radiat Oncol.* 2018;8:22-40. doi:10.1016/j.tipsro.2018.09.009

14. Couto JG, McFadden S, McClure P, Bezzina P, Hughes C. Competencies of therapeutic radiographers working in the linear accelerator across Europe: A systematic search of the literature and thematic analysis. *Radiography (Lond)*. 2020;26(1):82-91. doi:10.1016/j.radi.2019.06.004
15. Dubois N, Nguyet Diep A, Ghuysen A, et al. Training of radiotherapy professionals: status, content, satisfaction and improvement suggestions in the Greater Region. *BMC Med Educ*. 2022;22(1):485. doi:10.1186/s12909-022-03567-5
16. Bibault JE, Franco P, Borst GR, et al. Learning radiation oncology in Europe: Results of the ESTRO multidisciplinary survey. *Clin Transl Radiat Oncol*. 2018;9:61-67. doi:10.1016/j.ctro.2018.02.001