Ampirik Araştırma / Original Empirical Research

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Yükseköğretim Dergisi
Journal of Higher Education (Turkey)

Views and Anxiety Levels of University Students Regarding Distance Education during the Covid-19 Pandemic

Covid-19 Salgını Sürecinde Üniversite Öğrencilerinin Uzaktan Eğitim Yöntemi ile İlgili Görüşleri ve Kaygı Düzeyleri

Ceyda Uzun Şahin[1], Ayşe Nur Serbest Baz[2]

[1]Department of Vocational School of Health Services, Recep Tayyip Erdoğan University, Rize, Turkey
[2]Department of Vocational School of Health Services, Hatay Mustafa Kemal University, Hatay, Turkey

Özet

Bu çalışma, Covid-19 salgınının üniversite öğrencilerinin uzaktan eğitim yöntemi ile ilgili görüşleri ve kaygı düzeylerini belirlemek amacıyla gerçekleştirildi. Tanımlayıcı ve kesitsel tipte tasarlanan araştırmanın evrenini Türkiye'deki iki farklı devlet üniversitesinin sağlıkla ilgili yedi farklı bölümlerinde öğrenim gören öğrenciler oluşturdu. Çalışma verileri araştırmacılar tarafından geliştirilen soru formu ve Durumluluk Kaygı Ölçeği (DKÖ) kullanılarak çevrimiçi toplandı. Öğrencilerin %50.2'sinin birinci sınıfta, %30'unun ilk ve acil yardım programında öğrenim gördüğü, %79.3'ünün ailesinin gelir durumunun orta seviyede olduğu, %50.1'inin büyükşehirde yaşadığı, %83'ünün çekirdek aile yapısına sahip olduğu belirlendi. Öğrencilerin %50.9'unun uzaktan eğitim sisteminden memnun olduğu, %52.1'inin dersleri kısmen anlaşılır bulduğu, %46.7'sinin derslerin anlatım dilini kısmen anlaşılır bulduğu ve %72.7'sinin sınav kaygısı yaşadıkları saptandı. Öğrencilerin DKÖ puanının 59.0±5.30 (aralık 29–73) olduğu ve %52.8'inin orta düzeyde kaygı yaşadığı görüldü. Öğrencilerin yaşadığı kaygı ile ilgili olarak; cinsiyet, öğrenim görülen bölüm, ailenin gelir durumuna göre anlamlı bir fark tespit edilirken; yaş, öğrenim görülen sınıf, aile türü, yaşanılan yer, kronik hastalık ve psikolojik hastalığa göre anlamlı bir farklılık bulunmadı. Uzaktan eğitim yönteminden memnun olmayan, sınav kaygısı yaşayan, dersleri kısmen anladığını belirten ve derslere katılan öğrencilerin kaygı puanlarının anlamlı olarak yüksek olduğu belirlendi. Araştırma sonucunda, Covid-19 salgını sürecinde üniversite öğrencilerinin uzaktan eğitim yöntemi ve sınav ile ilgili kaygı yaşadıkları görülmüştür.

Anahtar sözcükler: Anksiyete, Covid-19, uzaktan eğitim, üniversite öğrencisi.

Abstract

This study was conducted to identify the views and anxiety levels of university students regarding distance education during the Covid-19 pandemic. The population of this descriptive and cross-sectional study consisted of the students studying at seven health-related departments at two state universities in Turkey. The data were collected using a questionnaire developed by the researchers and the State Anxiety Inventory (SAI). The results revealed that 50.2% of the students were first-year students, 30% were studying at the first and emergency aid program, 79.3% had a medium-income level, 50.1% lived in a metropolitan area, and 83% had a nuclear family. 50.9% of the students were satisfied with the distance education system, 52.1% found the lessons given through the distance education method partially understandable, 46.7% found the lecturing styles partially plain and understandable, and 72.7% had exam anxiety. The SAI score of the students was found to be 59.0±5.30 (range 29–73), and 52.8% of them had a moderate anxiety level. While the level of anxiety in students varied significantly according to gender, department, and family income, no significant difference was found among the participants in terms of age, year of study, family type, place of residence, and the presence of chronic and psychological illnesses. The anxiety scores of those who were not satisfied with the distance education, who experienced exam anxiety, who understood the online lessons partially, and who attended the lessons were found to be significantly higher. The study demonstrated that university students experienced anxiety about distance education and exams during the Covid-19 pandemic.

Keywords: Anxiety, Covid-19, distance education, university student.

The novel 2019 Coronavirus disease (now called as Covid-19) that can lead to a serious respiratory disease in humans has become a worldwide threat to human health after the severe acute respiratory syndrome (SARS) pandemic in 2003 (World Health Organization [WHO], 2004), and the Middle East respiratory syndrome (MERS) in 2012 (WHO, 2013). Covid-19 was first diagnosed on January 13, 2020 in Wuhan Province in some patients with respiratory symptoms (fever, cough, shortness of breath) in late December (Nemati, Ebrahimi, & Nemati, 2020). WHO

İletişim / Correspondence:
Ceyda Uzun Şahin, PhD
Department of Vocational School of Health Services, Recep Tayyip Erdoğan University, 53000, Rize, Turkey
e-mail: ceyda.sahin@erdogan.edu.tr

Yükseköğretim Dergisi / Journal of Higher Education (Turkey), *11*(3), 617–624. © 2021 Deomed
Geliş tarihi / Received: Ağustos / August 29, 2020; **Kabul tarihi / Accepted:** Aralık / December 22, 2020
Bu makalenin atıf künyesi / How to cite this article: Uzun Şahin, C., & Serbest Baz, A. N. (2021). Views and anxiety levels of university students regarding distance education during the Covid-19 pandemic. *Yükseköğretim Dergisi*, *11*(3), 617–624. doi:10.2399/yod.20.019000

ORCID ID: C. Uzun Şahin 0000-0002-1392-7409; A. N. Sebest Baz 0000-0001-8465-077X

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announced that the Coronavirus was an International Health Emergency and that the disease would be called as "Coronavirus disease-2019 pandemic (Covid-19)" on February 11 (WHO, 2020). In Turkey, the first case was detected on March 11, 2020.

A series of measures such as social distancing, travel restrictions for those coming from high-risk counties, lockdown for nationals returning from high-risk locations, and closing schools and some workplaces were taken to combat the epidemic in Turkey. In addition, the government declared that all educational institutions would be closed as of March 16, 2020, and distance education started at schools including universities on March 23, 2020 (Republic of Turkey Ministry of Health, 2020).

Education institutions traditionally train health personnel through face-to-face education, and use professional training spaces such as laboratories, simulation centers, classrooms, and internship hospitals. However, due to the Covid-19 pandemic, such traditional methods have been replaced by distance education, with students and lecturers suddenly becoming a part of this new system (Newman & Lattouf, 2020).

The rapid spread of the epidemic, strict isolation measures, lockdown, the interruption of face-to-face education in schools have obliged students to learn through distance education methods and experience exam anxiety (Cao et al., 2020; Savitsky, Findling, Ereli, & Hendel, 2020). Most of the research literature regarding the pandemic has focused on the determination of the epidemiology and clinical characteristics of infected patients, the mental health of healthcare workers and students, and challenges for global health management (Ageron, Sarasin, Pasquier, & Carron, 2020; Cao et al., 2020; Chen et al., 2020; Huang et al., 2020; Kisely et al., 2020; Rubin & Wessely, 2020); however, no studies to our knowledge have directly investigated university students' views and anxiety levels regarding the distance education method during the Covid-19 pandemic.

This study was carried out to determine university students' views and anxiety levels about distance education during the Covid-19 pandemic. We hope that the research findings will provide valuable data for the education system and the literature to identify the experiences and concerns of university students regarding distance education during and after the pandemic.

Method

Design

This study is a descriptive quantitative cross-sectional study.

Setting and Time

The research data were collected at two universities in the Eastern Black Sea and Mediterranean region in Turkey between June 1, 2020 and June 30, 2020. All the participants gave their informed consent prior to their inclusion in the study. Then, self-reported questionnaires were distributed to students via Google Forms.

Sample

The target population consisting of undergraduate students studying at the health-related departments of the targeted universities were sampled by cluster sampling. We evaluated the views and anxiety levels of these students during the Covid-19 pandemic by using structured questionnaires. The questionnaires were anonymous to ensure data confidentiality and reliability. 866 respondents that completed the questionnaires were included in the final analysis (100% response rate).

Being 18 years old or above and volunteering in the study were the criteria for inclusion in the study.

Measurement Tool

The data were collected using the State Anxiety Inventory (SAI), and a questionnaire developed by the researchers.

The Questionnaire Form

The questionnaire[1] consists of 3 parts and 17 questions. The first part includes 9 questions to determine the socio-demographic characteristics of the students, and in the second part, there are 2 questions about the experiences of the students in the Covid-19, and the third part has 6 questions on students' views about distance education.

The State Anxiety Inventory (SAI)

The State Anxiety Inventory is a self-assessment survey including short statements to identify the state anxiety levels of individuals. It was developed by Spielberger and his colleagues in 1970 and adapted for Turkey with the validity and reliability analysis of Öner and Le Compte in 1977 (Öner & Compte, 1985; Spielberger, Gorsuch, & Lushene, 1970).

The 20-item SAI and the 20-item Trait Anxiety Inventory are independent of each other. In SAI, each item is scored in four-point Likert-type responses as follows: none: 1, a little: 2, a lot: 3, and completely: 4. In the Trait Anxiety Inventory, each item is scored in four-point Likert-type responses: rarely: 1, sometimes: 2, most of the time: 3, and almost always: 4. Higher

[1] *See* the link of the survey form: https://docs.google.com/forms/d/1Z0LsV8zvWyzcf5-zliNQCrhGVtV4C5nFLKu5Tso26oU/edit

scores indicate a higher level of anxiety, whereas low scores indicate that the anxiety level is low. In this study, Cronbach's alpha value of the state anxiety inventory was found to be 0.937.

Ethical Considerations

Ethical approval was obtained from the Human Research Ethics Committee of Recep Tayyip Erdoğan University (Date: 07.05.2020 No: 21817443-050.99-). Electronic informed consent was obtained from each participant prior to the study. The participants were informed that they could withdraw from the survey at any moment without providing any justification.

Data Analysis

The data were analyzed using the SPSS 22.0 statistical package program. Descriptive statistical methods such as percentage, mean, standard deviation, and median (25th–75th percentile) were used in the evaluation of the data, and the Kolmogorov-Smirnov distribution test was used to examine the normal distribution. For the comparison of variables without a normal distribution between groups, Whitney-U and Kruskal-Wallis tests were used, and Spearman correlation analysis was used for the relationship between numerical variables. $p<0.05$ was considered as statistically significant.

Results

The study demonstrated that the mean age of the students was 20.0±6.04 (range 18–34), 78.2% of them were female, 50.2% of them were first-year students, 30% were in the first and emergency aid program, 79.3% had a medium-income level, 50.1% lived in a metropolitan area, 83% had a nuclear family structure, 94.7% had no chronic illness, and 94.2% had no mental illness. 50.9% of the students were satisfied with the distance education system, 52.1% found the lessons given through the distance education method partially understandable, 46.7% found the lecturing styles partially plain and understandable, and 72.7% had exam anxiety during the distance education process.

The SAI score was determined as 59.0±5.30 (range 29–73), and 52.8% of the students were found to experience moderate anxiety (Table 1).

The female students' anxiety levels were found to be significantly higher ($p=0.002$). There was a significant difference between the anxiety levels of the students according to their departments, and the students studying in the department of elderly care got higher scores ($p=0.017$). However, no significant difference was found between the anxiety levels of the students according to their age, year, family type, place of residence, and presence of chronic and psychological illness ($p>0.05$). Those with moderate family income had significantly higher anxiety levels ($p<0.001$) (Table 2).

The results revealed that the anxiety levels of the students who were not satisfied with the distance education method ($p<0.001$) and those who had test anxiety during the distance education process ($p<0.001$) were significantly higher. Besides, the anxiety scores of those who partially understood the distance education lessons ($p<0.001$) and who participated in the lessons ($p<0.001$) were also found to be significantly higher (Table 3).

Discussion

This study was conducted to identify university students' views and anxiety levels about distance education during the Covid-19 pandemic. This section includes the discussion of the results of the research and the literature.

Although the online education system is relatively new, it offers many advantages for students and educational institutions. It provides both new educational strategies for educational institutions and new learning and skill development opportunities for students (Farzaneh, 2012; Jaiswal, 2013). Our study revealed that 50.9% of the students were satisfied with the distance education provided. This result is possibly due to the fact that the students stay with their families during the pandemic, it is easy to be at home, and they feel financially comfortable. Contrary to our study, in a study comparing online education and the traditional method of face-to-face

Table 1. Distribution of students' State Anxiety Inventory scores ($n=866$).

Inventory	*n (%)*	Mean ± SD	Median (min–max)
The State Anxiety Inventory	866	59.00±29.00	58.52 (29–73)
No anxiety	0	-	-
Low anxiety level	2 (0.2)	29.50±0.70	29.50 (29–30)
Moderate anxiety level	457 (52.8)	56.0±3.68	54.82 (43–59)
High anxiety level	407 (47)	62.0±2.54	62.83 (60–73)

Table 2. Distribution of State Anxiety Inventory scores by some socio-demographic characteristics of students (*n*=866).

Characteristics	*n* (%)	State Anxiety Inventory Median (25th–75th percentile)	*p*-value	Multiple comparison	*p*-value
Gender					
Female	677 (78.2)	59.0 (56–62)	**0.002***		
Male	189 (21.8)	58.0 (54–61)			
Department					
Anesthesia (1)	100 (11.5)	58.0 (54–61)			
Physiotherapy (2)	25 (2.9)	58.5 (55–61)			
First and Emergency Aid (3)	260 (30)	58.0 (54–62)			
Medical Documentation and Secretariat (4)	93 (10.7)	59.0 (56–62)	**0.017†**	**(3–7)**	**0.021**
Medical Imaging and Radiology (5)	104 (12)	59.0 (55–62)			
Medical Laboratory (6)	125 (14.4)	59.0 (57–62)			
Department of Elderly Care (7)	159 (18.4)	60.0 (57–62)			
Year of study					
1st year (Freshmen)	435 (50.2)	59.0 (56–62)	0.186*		
2nd year (Sophomore)	431 (49.8)	59.0 (55–62)			
Family income					
High (1)	111 (12.8)	57.0 (53–60)‡		**(1–2)**	**<0.001**
Moderate (2)	687 (79.3)	60.0 (56–62)‡	**<0.001†**	**(2–3)**	**0.030**
Low (3)	68 (7.9)	56.0 (53–60)§		(1–3)	0.993
Family type					
Nuclear	719 (83)	59.0 (55–62)	0.978†		
Extended	147 (147)	59.0 (55–62)			
Place of residence					
Metropolitan	434 (50.1)	59.0 (53–60)			
Rural area	193 (22.3)	59.0 (56–62)	0.662†		
City	239 (27.6)	59.0 (56–62)			
Presence of chronic illness‡					
Yes	46 (5.3)	58.0 (54–61)	0.178*		
No	820 (94.7)	59.0 (55–62)			
Presence of psychological illness§					
Yes	50 (5.8)	58.0 (54–62)	0.643*		
No	816	59.0 (55–62)			
Age (Mean ± SD)	20.0±6.04 (min: 18 – max: 34)		*p*=0.171 *r*=-0.47		

*Mann-Whitney U test; †Kruskal-Wallis test, ‡Chronic illness, §Psychological illness.

education for nursing students, the level of satisfaction was found to be higher in students who attended their lessons with the traditional method (Zhou, Huang, Cheng, & Xiao, 2020a).

As in the rest of the world, the Covid-19 pandemic has affected the education system in Turkey. Especially universities have faced challenges regarding distance education (Talidong & Toquero, 2020). A study investigating the advantages and limitations of distance learning emphasized that there are some deficiencies in learning with the distance learning method, and students and lecturers need instant feedback, which are the factors that cause students not to understand the lessons (Mukhtar, Javed, Arooj, & Sethi, 2020). In our study, 52.1% of the students found the lessons given through the distance education method partially understandable. Students who were familiar with the face-to-face education system have switched to an unfamiliar method with the sudden change of the education system, they had never used this method and the technology before, and they faced uncertainty. We think that all these

Table 3. Distribution of State Anxiety Inventory Scores by students' experiences of distance education in the Covid-19 pandemic (*n*= 866).

Characteristics	*n (%)*	State Anxiety Inventory Median (25th–75th percentile)	*p*-value	Multiple comparison	*p*-value
Satisfaction with the distance education method					
Yes	441 (50.9)	58.0 (55–61)	<0.001		
No	425 (49.1)	60.0 (56–62)			
Exam anxiety during the distance education process					
Yes	632 (72.9)	60.0 (56–62)	<0.001		
No	234 (27.1)	58.0 (54–61)			
The plain and understandable lecturing styles given through the distance education method					
Yes, I partially understand	404 (46.7)	60.0 (56–62)		**(1–2)**	**<0.001**
Yes, I understand easily	382 (44.1)	58.0 (54–61)	**<0.001**	(2–3)	0.979
No, I don't understand at all	80 (9.2)	59.0 (54–62)		(1–3)	0.093
Being able to follow the lessons in distance education					
Yes, I follow them easily	431 (49.8)	60.0 (57–63)		**(1–2)**	**<0.001**
Yes, but I only partially follow them	333 (38.5)	58.0 (54–61)	**<0.001**	(2–3)	0.542
No, I cannot follow them at all	102 (11.8)	59.0 (55–61)		**(1–3)**	**0.010**

have increased their anxiety levels and negatively affected their learning.

E-learning can be ideal for people who do not have enough time for traditional learning methods. A relevant study reported that 49% of the students thought that distance education increased the quality of education, and 44% found lectures more efficient (Kumar, 2019). In our study, 46.7% of the students found the lecturing styles partially plain and understandable.

Assessment is an important component of education systems in determining teacher effectiveness and providing feedback to students and professors. Students may experience negative feelings during this assessment process such as test anxiety, which is one of the most common feelings. These unfavorable reactions can influence students' academic performances and their mental states (Hahn, Kropp, Kirschstein, Rücker, & Müller-Hilke, 2017; Kolagari, Modanloo, Rahmati, Sabzi, & Ataee, 2018; Yates, 2012).

A study conducted with nursing students suggested that students' levels of anxiety were significantly higher in electronic exams (Kolagari et al., 2018). In another study in which students were taught through distance education, it was observed that 70% of the students preferred to participate in distance education, but they tended to choose the exam they were most familiar with (Attardi, Choi, Barnett, & Rogers, 2016). In our study, 72.7% of the students experienced exam anxiety during the distance education process. The results of our study are consistent with the literature. However, contrary to our study, a study conducted with emergency nursing internship students revealed no significant difference between the exam scores of those who took lessons with the distance education method and the traditional method (Zhou et al., 2020a).

The Covid-19 pandemic, not only caused the risk of death from infection but also had a severe psychological impact on individuals (Cao et al., 2020). Many studies show that outbreaks cause many psychological effects on the public, healthcare workers, children, older adults, and students (Mei, Yu, He, & Li, 2011; Kang et al., 2020; Bao, Sun, Meng, Shi, & Lu, 2020; Shigemura, Ursano, Morganstein, Kurosawa, & Benedek, 2020). A study conducted with university students in China reported that the average anxiety level of students was significantly higher during the Covid-19 pandemic (Wang & Zhao, 2020). Another study with medical students demonstrated that 0.9% of the students experienced severe anxiety, 2.7% moderate anxiety, and 21.3% low-level anxiety due to the Covid-19 pandemic (Cao et al., 2020).

In a study with university students, it was reported that although 69.47% of the students had a keen awareness of Covid-19, 26.60% usually experienced anxiety, and 21.16% had depression (Chang, Yuan, & Wang, 2020). Our study showed that students experienced moderate anxiety during the Covid-19 pandemic, which is similar to those in the relevant literature. We think that the fear of the unknown, the high risk of transmission of the virus, the presence of sensational news and, too much information about the epidemic in the media are factors that increase students' anxiety level.

During the Covid-19 pandemic, the increase in the number of cities and countries affected by the epidemic, and the rapid increase in the number of cases and deaths has caused great concern in the public (Bao et al., 2020). Many studies have reported that women are exposed to stress, anxiety, and depression more, which are the psychological effects of the epidemic (Chang et al., 2020; Lim et al., 2018; Wang et al., 2020; Zhou et al., 2020b). In our study, the anxiety levels of the female students were also found to be significantly higher than those of the male students.

Students are members of the healthcare team and play a significant role in patient care. Therefore, they are involved in the decision-making process within a multidisciplinary health group and are responsible for medication management and evaluation of patient care (Hamza, Badary, & Elmazar 2021). Savitsky and others highlighted that students who had future anxiety experienced significantly higher anxiety during the Covid-19 pandemic (Savitsky et al., 2020). In our study, when we examined the difference between the anxiety levels of the students according to their departments, we found that the anxiety level score of the students studying in the department of elderly care was higher. It is possible to explain this situation by the fact that almost all the students studying in the department of elderly care were female.

Postponing formal education and important exams due to the Covid-19 pandemic have been reported to cause more anxiety in second-year students than third-year students. The reason why third-year students experience less anxiety can be explained with their being more mature and older than second-year students (Wang & Zhao, 2020). Advanced age during the epidemic is associated with less anxiety and depression, and students living in rural areas have higher anxiety levels (Chang et al., 2020; Zhou et al., 2020b). This result is explained by the difference in accessing economic, cultural, and educational resources. It is easy to access health services, masks, and disinfectants, and all kinds of information about contamination, prevention, and treatment in urban areas (Cao et al., 2020; Shigemura et al., 2020; Tang et al., 2020). In our study, unlike the literature, no significant difference was detected between the anxiety levels of the students according to their age, year of study, family type, place of residence, and presence of chronic and psychological illness.

There is a relationship between family income and students' anxiety levels. In a study, the anxiety levels of students with low-income levels were found to be high (Mao et al., 2019). In our study, the anxiety levels of the students with moderate family income levels were found to be significantly high. Covid-19 has caused many crises. The most important of them is the economic crisis. We think that factors such as the closure of workplaces during the lockdown process, a decrease in income level, and dismissals from work have caused anxiety in students and their families due to the problems in covering their living and education expenses.

Psychological distress is an increasing problem in universities in terms of prevalence and severity. Academic factors are reported as more significant stress factors than non-academic factors such as finance and personal relationships. A certain amount of stress is known to be unavoidable and potentially useful; however, stress leads to anxiety, including test anxiety (Beiter et al., 2014; Deasy, Coughlan, Pironom, Jourdan, & Mannix-McNamara, 2015; Roick & Ringeisen, 2017). Our study showed that the anxiety levels of the students who were not satisfied with the distance education method and those who had test anxiety during the distance education process were significantly higher.

During the Covid-19 pandemic, learning difficulties experienced in distance education has caused an increase in anxiety levels as well as the fear of being infected, uncertainty about the future, and economic instability (Savitsky et al., 2020). The anxiety scores of the students who stated that they partially understood the distance education lessons were significantly higher in our study. Contrary to our study, in a study conducted with medical faculty students, the students were found to have a high level of anxiety in the pre-test after it was announced that they were to take their courses through distance education. However, in the post-test, students were determined to transform the lessons they used to take with the traditional education system into distance education, and 100% of the students were able to complete the education period (Gomez, Azadi, & Magid, 2020).

Conclusion

Due to the Covid-19 pandemic, university students have experienced anxiety about the distance education method and exams. The factors affecting their anxiety levels were identified as gender, department, and the income status of the family, but factors such as age, year of study, family type, place of residence, and the presence of chronic and psychological illness did not affect their anxiety levels. Students who were not satisfied with the distance education method, who had test anxiety, who understood the lessons partially and who attended the lessons experienced more anxiety. We must be aware of the challenge and concerns caused by Covid-19. In this difficult period, determining the views and anxiety levels of university students, who are candidates for healthcare professionals, about the education they are receiving is of great importance in ensuring that

it is managed better. Creating psychosocial programs during and after the pandemic, providing psychosocial support to students with online training, and making explanations about the distance education situations that students experience anxiety about are some highly-recommended strategies for higher education institutions.

Acknowledgements

We would like to thank all the students who participated in this study.

Yazar Katkıları / Author Contributions: CUŞ: Araştırma fikri, araştırmanın tasarlanması, literatür taraması, verilerin toplanması ve analizi, bulguların yorumlanması, makalenin yazılması; eleştirel inceleme ve son kontrollerin gerçekleştirilmesi; ANSB: Literatür taraması, verilerin toplanması ve analizi, bulguların yorumlanması, makalenin yazılması ve son kontrollerin gerçekleştirilmesi. / *CUŞ: Project idea, conceiving and designing research, literature search, data collection and analysis, interpreting the results, writing manuscript, study monitoring, interpreting the results, critical reading and final check of the manuscript; ANSB: Literature search, data collection and analysis, interpreting the results, writing manuscript, and final check of the manuscript.*

Araştırma Fonu Desteği / Funding: Bu çalışma herhangi bir resmi, ticari ya da kar amacı gütmeyen organizasyondan araştırma fonu desteği almamıştır. / *This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.*

Etik Standartlara Uygunluk / Compliance with Ethical Standards: Yazarlar bu makalede araştırma ve yayın etiğine bağlı kalındığını, Kişisel Verilerin Korunması Kanunu'na ve fikir ve sanat eserleri için geçerli telif hakları düzenlemelerine uyulduğunu ve herhangi bir çıkar çakışması bulunmadığını belirtmiştir. / *The authors stated that the standards regarding research and publication ethics, the Personal Data Protection Law and the copyright regulations applicable to intellectual and artistic works are complied with and there is no conflict of interest.*

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