Özgün Çalışma / Original Article

Ankara Eğt. Arş. Hast. Derg., 2026 ; 59(1) :
DOI: 10.20492/aeahtd.1543876

Comparison of Psychological Well-Being of Prosthetic Dentistry Students Receiving Clinical and Pre-Clinical Education During the COVID-19 Pandemic

COVID-19 Döneminde Klinik ve Klinik Öncesi Eğitim Alan Protetik Diş Hekimliği Öğrencilerinde Psikolojik İyi Oluşun Karşılaştırılması

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Objective: This research aimed to compare the Psychological Well-Being of Dental Students Receiving Clinical or Preclinical Training in Prosthetic Dentistry during the COVID-19 Pandemic.

Materials and Methods: A total of 200 students (n=100; gender balanced) who were in school at the time of the COVID-19 pandemic participated in the study. Research data were gathered using the Beck Anxiety Inventory (BAI), Pittsburgh Sleep Quality Index (PUKI), Beck Depression Inventory (BDI), World Health Organization Quality of Life Scale Short Form-Turkish Version (WHOQOL-BREF-TR), and the Arizona Sexual Experiences Scale (ASEX).

Results: Substantial differences were observed between students in terms of sleep duration, with the clinical dental students sleeping for longer durations. Female students showed higher BAI, BDI, ASEX, and total PSQI scores compared to their male counterparts.

Conclusion: The transition to a prosthetic internship during the period of the global pandemic caused an increase in anxiety and stress levels, as well as depression and poor sleep quality, among dental students, particularly among females. During the transition period to a prosthodontic internship during the pandemic, an increase in anxiety and stress, depression, and poor sleep quality was observed among dental students, particularly among females.

Keywords: PSQI, Prosthetic Dental Treatment, Arizona, Beck Depression, Beck Anxiety

Amaç: Bu araştırma, COVID-19 Pandemisi sırasında Protetik Diş Hekimliği alanında Klinik veya Klinik Öncesi Eğitim alan Diş Hekimliği Öğrencilerinin Psikolojik İyi Oluşlarını karşılaştırmayı amaçlamaktadır.

Gereç ve Yöntemler: Çalışmaya COVID-19 pandemisi sırasında okulda olan toplam 200 öğrenci (n=100; cinsiyet dengeli) katılmıştır. Araştırma verileri Beck Anksiyete Envanteri (BAI), Pittsburgh Uyku Kalitesi İndeksi (PUKI), Beck Depresyon Ölçeği (BDI), Dünya Sağlık Örgütü Yaşam Kalitesi Ölçeği Kısa Form-Türkçe Versiyonu (WHOQOL-BREF-TR) ve Arizona Cinsel Deneyimler Ölçeği (ASEX) kullanılarak toplanmıştır.

Bulgular: Öğrenciler arasında uyku süresi açısından önemli farklılıklar gözlenmiş olup, klinik diş hekimliği öğrencileri daha uzun süre uyumuştur. Kadın öğrenciler, erkek meslektaşlarına kıyasla daha yüksek BAI, BDI, ASEX ve toplam PSQI puanları göstermiştir.

Sonuç: Küresel pandemi döneminde protez stajına geçiş, diş hekimliği öğrencileri arasında, özellikle de kadınlarda, anksiyete ve stres seviyelerinin yanı sıra depresyon ve kötü uyku kalitesinde artışa neden oldu. Pandemi sırasında protez stajına geçiş döneminde, diş hekimliği öğrencileri arasında, özellikle de kadınlarda, anksiyete ve stres, depresyon ve kötü uyku kalitesinde artış gözlemlendi.

Anahtar kelimeler: PSQI, Protetik Diş Tedavisi, Arizona, Beck Depresyon, Beck Anksiyete

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Makale geliş tarihi / Submitted: Eylül / September 2024

Makale kabul tarihi / Accepted: Nisan / April 2026

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INTRODUCTION

The COVID-19 pandemic, which emerged in late 2019, caused an unprecedented global health crisis and significantly disrupted education and daily life. The pandemic led to unprecedented changes in how people lived their lives due to isolation, restrictions on social events, uncertainty about the future, and the fear of infection and death, all leading to stress among individuals (1,2).

During this period, healthcare professionals—particularly those in dentistry—faced increased psychological challenges due to close patient contact and a high risk of infection despite strict protective protocols. This has raised concerns about potential psychological problems among healthcare workers, such as stress and anxiety, as well as sleep disturbances, reduced quality of life, and decreased sexual satisfaction (3,4).

Due to the nature of their profession, dental practitioners are at a high risk of infection, as dental procedures require close face-to-face interaction and frequent exposure to saliva, blood, and aerosols (5).

Long working hours, demanding environmental conditions, and sleep disorders associated with dental education are among the factors that can significantly affect an individual's daily life. Dental education itself is also highly demanding; long working hours, challenging clinical environments, and sleep disturbances can negatively influence students' mental, emotional, and physical well-being. Compared with other disciplines, dental training imposes considerable physical and psychological stress, which may reduce students' overall quality of life (6,7).

Dental students are regarded as being at an elevated risk of exposure to and transmission of the virus, relative to other healthcare professionals. This is attributed to their lack of experience, technical limitations, and knowledge gaps. Given the existing stress levels among the student body, it was hypothesised that this augmented risk could precipitate more severe, and potentially irreversible, psychological issues (8).

Several international studies have explored the psychological impact of the COVID-19 pandemic on dental students. For example, Shrivastava et al. reported elevated anxiety and sleep problems among Indian dental students during online education, while Mekhemar et al. observed increased stress and reduced life satisfaction among German dental students (9,10). Despite these findings, few studies have directly compared preclinical and clinical students within the field of prosthetic dentistry, which uniquely combines laboratory-based manual work and direct patient treatment. This gap in the literature limits understanding of how different stages of prosthodontic education may influence students' psychological well-being under pandemic conditions.

To ensure the continuity of dental education and clinical practice in environments with potential infection risks, it is essential to understand how such conditions affect students' psychological well-being. Therefore, this study aimed to examine the impact of the SARS-CoV-2 pandemic on anxiety, depression, sleep quality, sexual satisfaction, and quality of life among preclinical and clinical undergraduate students at the Department of Prosthetic Dentistry. To this end, the World Health Organization Quality of Life Scale Short Form-Turkish Version (WHOQOL-BREF-TR) was employed. The instruments used in this study were the Beck Depression Inventory (BDI), the Beck Anxiety Inventory (BAI), the Pittsburgh Sleep Quality Index (PSQI), and the Arizona Sexual Experiences Scale (ASEX).

The null hypothesis tested in this research was that there would not be any difference in the results of the psychological data analysis between clinical and preclinical dental students receiving prosthetic dentistry education at the times of the COVID-19 pandemic.

MATERIALS AND METHODS

The study was conducted among fourth- and fifth-year clinical students and first-, second-, and third-year preclinical students who continued their prosthetic dentistry training at the Faculty of Dentistry during the COVID-19 lockdown. Data collection took place between April and June 2022. A priori power analysis using G*Power 3.1 indicated that 128 participants (64 per group) were required to detect a medium effect size (d = 0.50) with 80% power at a 0.05 significance level. Since 200 students (100 from each group) participated in the study, the achieved power was approximately 0.93, confirming that the sample size was sufficient. The male-to-female ratio was equal across the study groups. All participants were informed about the study and provided written consent prior to enrolment. Data collection tools included a sociodemographic form, the Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), Pittsburgh Sleep Quality Index (PSQI), WHOQOL-BREF-TR, and the Arizona Sexual Experiences Scale (ASEX).

Sociodemographic data form

The sociodemographic data form used in the study was constructed based on the information obtained from the literature. The form collects data on sociodemographic characteristics such as age, sex, education level, occupation, family structure, place of residence, economic status, marital status, and clinical details. However, for the study purposes, only the students' age and sex were taken into consideration.

Beck anxiety inventory (BAI)

The BAI was adapted to Turkish in 1998. The Turkish version consists of 21 questions. Each question has four response options, which are scored from 0 to 3. Higher scores indicate greater anxiety (11).

Beck depression inventory (BDI)

The BDI developed in 1996 consists of 21 questions. Each question has the same set of four responses, and the questions are scored between 0 and 3. The total scores for the BDI can be categorized as follows: 0 to 13, minimal; 14 to 19, mild; 20 to 28, moderate; 29 to 63, severe depressive symptoms (12)

Pittsburgh sleep quality index (PSQI)

The PSQI was developed by Buysse et al. in 1989 and adapted into Turkish by Ağargün in 1996. It is a tool that evaluates sleep quality and sleep disorders over one month. The original version of the scale showed a Cronbach's alpha internal consistency coefficient of 0.80, indicating a good reliability. The PSQI is composed of seven subscales: subjective sleep quality, sleep latency, sleep disturbance, habitual sleep efficiency, use of sleep medication, sleep duration, and daytime dysfunction. The sum of these subscales provides the overall PSQI score. A PSQI score of 5 or lower shows good sleep quality, while a score higher than 5 denotes poor sleep quality (13,14)

World health organization quality of life scale short form- turkish version (WHOQOL-BREF-TR)

The WHOQOL is an instrument produced by the World Health Organization (WHO), and its Turkish version was generated in 1999. The WHOQOL is a comprehensive scale that assesses an individual's well-being and allows for comparisons. It consists of 100 items, from which a shorter version called WHOQOL-BREF with 26 items was derived. The WHOQOL has two different versions: the long version (WHOQOL-100) and the short version (WHOQOL-27). The scale is comprised of five subscales: Physical Health, General Health, Psychological Health, Social Relationships and Environmental Health. Each subscale independently represents the quality of life in its respective domain and is calculated on a scale ranging from 4 to 20 (min-max). If the score is high, the quality of life is good. The scale's internal consistency coefficient is α=0.89 (15).

Arizona sexual experiences scale (ASEX)

McGahuey et al. (2014) introduced the ASEX to assess sexual function issues among psychiatric patients, comprising five fundamental aspects (arousal, libido, penile erection/vaginal lubrication), graded from low to high (16). Lower scores signify effortless, robust, and gratifying sexual responsiveness, while higher scores denote greater sexual dysfunction severity. In 2004, Soykan validated and confirmed the reliability of the Turkish adaptation of the scale, reporting Cronbach's alpha coefficients of 0.89 and 0.90, respectively (17).

Faculty of Dentistry has been the only public institution providing perioral and dental healthcare services in the province of Elazig during the COVID-19 lockdown. Throughout the closure period, dental treatment of patients was not discontinued but reduced to a lower capacity, and clinical education continued. In order to prevent the transmission of infection to oral-dental health workers, clinical dental students, and patients, units with isolated closed glass cabinets were constructed in the entire clinic, where aerosol-generating procedures with a high risk of contamination are carried out, powerful chairside vacuum devices were placed to absorb the aerosol, and the protective barriers for the dental practitioner were increased to the maximum level (N95 masks, coveralls, and protective transparent face shields). UV-C ultraviolet-led air sterilizer (AeroRAD, Istanbul, Turkey), which sterilizes the ambient air with UV light at regular intervals, has been installed in all clinics. In line with the COVID-19 measures, preclinical students received online training during the lockdown and hybrid training (online and

face-to-face) at other times.

Statistical Analyses

Statistical analysis of the study data was conducted utilizing IBM SPSS Statistics for Windows, Version 22.0 (IBM Corp., Armonk, NY). The normality of data distribution was evaluated using the Kolmogorov-Smirnov and Shapiro-Wilk tests, indicating that the parameters did not adhere to a normal distribution. Descriptive statistics were provided, encompassing the range from minimum to maximum values, as well as the mean, standard deviation, and median. Group comparisons for quantitative data were conducted using the Kruskal-Wallis test, with subsequent identification of specific group differences via Dunn's test.

To compare the two groups pairwise, the Mann-Whitney U test was employed. Spearman's rho correlation analysis was utilized to evaluate scale score correlations. Statistical significance was established at $p<0.05$.

RESULTS

The study included 200 students (100 clinical and 100 preclinical; 100 females and 100 males) aged between 19 and 28 years (mean = 22.49 ± 1.37).

According to Table 1 there were no significant differences between clinical and preclinical students in terms of BDI, BAI, WHOQOL-BREF-TR, and ASEX scores ($p > 0.05$). However, clinical students had significantly higher PSQI sleep duration scores than preclinical students ($p = 0.019$). No significant differences were found in other PSQI subscales ($p > 0.05$).

Table 1: Comparison of scale scores by training

	Clinical (n=100)	Preclinical (n=100)	
	Mean ±SD (median)	Mean ±SD (median)	p
Beck Depression Inventory	17.9±10.59 (15.5)	19.29±14.84 (17)	0.822
Beck Anxiety Inventory	15.59±10.81 (12)	18.08±14.19 (15)	0.478
PSQI total score	9.97±3.37 (9.5)	9.08±3.16 (9)	0.139
General health	44.88±20.8 (50)	45.38±22.8 (50)	0.768
Physical health	42.43±14.62 (42.9)	41.37±16.16 (42.9)	0.719
Psychological health	48.52±16.94 (50)	47.33±18.04 (50)	0.675
Social relationships	47.33±19.74 (50)	47.58±22.98 (50)	0.777
Environmental health	46.56±16.92 (48.4)	47.28±17.73 (50)	0.729
ASEX	16.33±5.95 (15)	15.34±5.5 (15)	0.272

Mann-Whitney U test **p<0.05*

As shown in Table 2 when the results were analyzed by sex and training level, female preclinical students had significantly higher BDI and BAI scores compared to both male clinical and male preclinical students ($p < 0.05$). Female clinical students also exhibited higher anxiety and depression scores than male clinical students ($p < 0.05$).

Table 2: Comparison of scale scores by sex and training

	Female Clinical Students (n=50)	Male Clinical Students (n=50)	Female Preclinical Students (n=50)	Male Preclinical Students (n=50)	
	Mean ±SD (median)	Mean ±SD (median)	Mean ±SD (median)	Mean ±SD (median)	p
Beck Depression Inventory	20.28±11.35 (17)^{ac}	15.52±9.28 (14)^{bc}	25.22±15.75 (20)^{a}	13.36±11.18 (10.5)^{b}	0.001 *
Beck Anxiety Inventory	20±11.59 (20)^{a}	11.18±7.87 (10)^{b}	24.64±13.39 (24)^{a}	11.52±11.82 (7.5)^{b}	0.001 *
Sleep duration	1.08±1.05 (1)^{b}	0.92±0.99 (1)^{b}	0.8±0.88 (1)^{b}	0.54±0.81 (0)^{a}	0.033 *
Sleep disturbance	2.52±0.5 (3)^{bc}	2.36±0.53 (2)^{ac}	2.7±0.51 (3)^{b}	2.16±0.65 (2)^{a}	0.001 *
Daytime dysfunction	2.5±0.68 (3)^{bc}	2.3±0.71 (2)^{ac}	2.58±0.61 (3)^{bc}	1.94±0.87 (2)^{a}	0.001 *
PSQI total score	10.24±3.39 (9)^{b}	9.7±3.37 (10)^{ab}	9.92±2.55 (9.5)^{b}	8.24±3.5 (8)^{a}	0.020 *
General health	42.5±20.36 (50)^{b}	47.25±21.17 (50)^{ab}	38.75±21.32 (50)^{b}	52±22.5 (50)^{a}	0.028 *
Physical health	41.25±15.6 (39.3)	43.6±13.63 (42.9)	38.33±15.31 (39.3)	44.42±16.57 (46.4)	0.123
Psychological health	45.16±16.61 (45.8)^{ab}	51.88±16.75 (54.2)^{b}	43.83±16.9 (45.8)^{a}	50.84±18.62 (56.2)^{b}	0.021 *
Social relationships	44.83±18.36 (41.7)	49.83±20.93 (50)	43.16±23.55 (45.8)	52±21.73 (50)	0.107
Environmental health	44±17.47 (45.3)	49.12±16.12 (50)	43.81±17.64 (46.9)	50.75±17.31 (53.1)	0.140
ASEX	19.65±7.17 (20)^{b}	13.65±2.63 (14)a	17.33±6.46 (16.5)^{b}	13.69±3.89 (14)^{a}	0.001 *

Mann-Whitney U test **p<0.05*

Sleep duration, sleep disturbance, and daytime dysfunction scores were significantly poorer in female students, particularly among preclinical participants ($p < 0.05$). Male preclinical students reported better sleep quality and lower PSQI total scores ($p = 0.020$).

Regarding quality of life, male preclinical students had higher general and psychological health scores than female students ($p < 0.05$). No differences were found in physical, social, or environmental domains ($p > 0.05$).

ASEX results indicated significantly lower scores in male students of both groups compared to females ($p < 0.05$), suggesting better sexual satisfaction among males.

DISCUSSION

The COVID-19 pandemic profoundly affected the educational and psychological experiences of healthcare students. Dental education, which inherently involves face-to-face interaction and direct patient contact, posed particular challenges during this period. The transition from preclinical to clinical training represents a critical stage that exposes students to both biological risks and psychological stress. In this study, clinical prosthodontic students who began treating patients under strict infection-control measures showed lower anxiety levels compared to preclinical students, suggesting that patient care within a structured and protected environment may have fostered psychological adaptation.

Preclinical students, on the other hand, demonstrated higher anxiety and depression levels. This may be attributed to uncertainty about future clinical responsibilities, fear of infection, and limited practical experience during lockdown restrictions. The lack

of direct patient contact, combined with the rapid shift to online learning, likely increased perceived helplessness and decreased self-efficacy—two key predictors of anxiety and depressive symptoms in health professions education.

Gender-related differences were also prominent in our findings. Female students exhibited higher BDI, BAI, and PSQI scores compared to males, consistent with previous studies conducted in Germany, India, and Turkey (9,18). In our study, female clinical and preclinical students showed higher BAI and BDI scores, suggesting that they were more affected by the pandemic than their male counterparts. This pattern can be explained by multiple interacting factors: hormonal fluctuations influencing emotional regulation, greater social role expectations, and the disproportionate burden of family responsibilities often placed on women during the pandemic. Cultural norms in Türkiye that emphasize emotional expression and empathy among women may also have contributed to higher self-reported stress and anxiety levels.

Mekhemar et al. examined depression, stress, anxiety, intrusion, avoidance, and hyperarousal caused by the COVID-19 pandemic among dental students in German universities. They reported that female students, those with chronic conditions or smoking habits, and those who perceived COVID-19 as an economic threat were more likely to experience psychological problems (10). Our observation that clinical students who were aware of the efficacy of preventive measures exhibited lower stress levels suggests that these measures possess both anti-contagion and psychologically protective properties. The implementation of protective protocols in environments with biological or occupational risk may mitigate adverse psychological effects and enhance overall mental well-being.

Cody et al. investigated depression, anxiety, and suicidal ideation among dental students during the online education period of the pandemic. They reported that a significant proportion of students experienced moderate to severe anxiety and depression, with female gender, lack of social support, and isolation being major contributing factors (18). In our research, mandatory use of N95 masks, isolation of dental units, and enhanced ventilation systems were associated with lower stress levels among clinical students. Their longer sleep duration suggests that clinical experience within a well-regulated environment may promote professional discipline and psychological stability. In contrast, higher anxiety levels were observed among preclinical students who had limited patient contact.

Eyüboğlu et al. compared depression, anxiety, and sleep quality between first- and sixth-year medical students, reporting significantly higher depression scores among senior students (19). Given that the PSQI total scores of both preclinical and clinical prosthodontic students exceeded 5 (9.08–9.97), poor sleep quality appears to be a significant concern among dental students. Similarly, Uyar et al. found that over 70% of medical students had PSQI scores above five, emphasizing the need for institutional support for improving sleep quality (20). In our study, male preclinical students had significantly lower total PSQI scores compared to female students, while the highest PSQI scores were observed in male clinical students. These findings suggest that clinical routines and time management should be emphasized during the early years of training, particularly for male students.

Sleep quality, an essential component of mental health, was significantly poorer among female and preclinical students. Although the total PSQI scores did not differ significantly between clinical and preclinical groups, clinical students reported longer sleep duration possibly due to structured schedules and psychological stability associated with clinical discipline. In contrast, preclinical students, whose academic activities were largely online and irregular, experienced disrupted sleep patterns reflecting heightened uncertainty and stress. Similar associations between anxiety, depression, and poor sleep quality have been consistently reported among medical and dental students worldwide.

The findings of this study also highlight the psychologically protective effects of institutional infection-control measures. The use of N95 masks, isolated dental units, and enhanced ventilation systems likely reduced perceived infection risk among clinical students, contributing to lower anxiety and improved sleep. This supports the idea that confidence in preventive strategies functions as a psychological buffer during health crises.

Omar et al. compared the stress levels of dental students from Bangladesh and other countries, reporting lower stress levels overall but higher anxiety and depression among female and urban students (21). Similarly, our study demonstrated higher stress levels in female students, consistent with global findings.

Şalvan et al. evaluated sleep quality between first- and sixth-year medical students and found that 73% had high PSQI scores, indicating poor sleep quality (22). In our research, although sleep disturbance scores did not differ significantly between clinical and preclinical students, female and clinical groups exhibited higher PSQI scores. Given the close link between sleep disturbance and psychiatric symptoms, these findings suggest that female students may be at greater risk for anxiety and sleep disorders.

Gaş et al. examined the association between temporomandibular disorders (TMD) and anxiety, depression, and sleep quality among Turkish dental students during the pandemic, reporting that these issues were more prevalent among females (23). Consistent with their findings, we observed higher stress levels among female students; however, female clinical students had lower stress levels than their preclinical peers. This may be due to the stabilizing effect of clinical engagement and the reassurance provided by mandatory protective measures.

Regarding sexual satisfaction, male students showed significantly lower ASEX scores than females, indicating higher satisfaction levels. These findings are consistent with Rose et al, who reported gender-based differences in sexual well-being influenced by stress, fatigue, and occupational exposure (24). In our study, reduced social interaction and academic stress may have differently affected sexual function across genders.

From a broader perspective, the present study makes an original contribution by simultaneously evaluating anxiety, depression, sleep quality, sexual satisfaction, and quality of life among prosthodontic students during the pandemic. While previous research has examined these parameters individually, few studies have compared clinical and preclinical subgroups within the same dental specialty. Our findings emphasize that psychological well-being is closely related to educational stage and perceived infection risk, providing valuable insights for curriculum design and student support strategies in dental education.

This study has several limitations. Firstly, it was conducted among students from a single faculty, which restricts the generalizability of the findings to other dental or health sciences faculties. Secondly, due to its cross-sectional design, the study cannot establish causal relationships between the variables examined. In addition, important confounding factors such as psychiatric history, socioeconomic status, individual stressors, and chronic diseases were not evaluated, which may have influenced the results. Future studies with larger and more diverse samples, including longitudinal designs and additional psychological and medical variables, are recommended to provide a more comprehensive understanding of the topic.

CONCLUSIONS

Clinical exposure under strict infection-control measures during the COVID-19 pandemic appeared to protect dental students' psychological well-being, improving sleep and reducing anxiety. In contrast, preclinical and female students were more vulnerable to stress, depression, and poor sleep quality, while male students reported higher sexual satisfaction (lower ASEX scores). Strengthening preventive protocols, maintaining structured clinical training, and providing targeted psychological counseling may enhance students' mental resilience and overall well-being in dental education.

Funding
Nil.

Conflicts of interest
There are no conflicts of interest.

Acknowledgements
Nil.

Authorship contributions

Data availability statement
Nil

Ethics statement
Approval for the study was obtained from the Institutional Review Board of Fırat University (Date: 07.04.2022, No. 2022/05-18).

Researchers' Contribution Rate Statement

Concept/Design: ARK, EA, MGG
Analysis/Interpretation: ARK, MGG
Data Collection: ARK, EA

Writer: ARK
Critical Review: ARK, EA
Approver: ARK, EA, MGG

REFERENCES

1. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. jama. 2020;323(13):1239-42.
2. Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, et al. Mental health care for medical staff in China during the COVID-19 outbreak. The Lancet Psychiatry. 2020;7(4):e15-e6.
3. Çelik SŞ, Özbaş AA, Çelik B, Karahan A, Bulut H, Koç G, et al. COVID-19 pandemi süreci: Türk hemşireler derneği. Koç Üniversitesi Hemşirelikte Eğitim ve Araştırma Dergisi. 2020;17(3):279-83.
4. Cocci A, Presicce F, Russo GI, Cacciamani G, Cimino S, Minervini A. How sexual medicine is facing the outbreak of COVID-19: experience of Italian urological community and future perspectives. International Journal of Impotence Research. 2020;32(5):480-2.
5. POLAT ÖP, COŞKUN Flz. COVID-19 Salgınında sağlık çalışanlarının kişisel koruyucu ekipman kullanımları ile depresyon, anksiyete, stres düzeyleri arasındaki ilişkinin belirlenmesi. Batı Karadeniz Tıp Dergisi. 2020;4(2):51-8.
6. Didin M, Yavuz B, YAZICI HG. Covid-19'un Öğrencilerin Stres, Anksiyete, Depresyon, Korku Düzeylerine Etkisi: Sistematik Derleme. Psikiyatride Güncel Yaklaşımlar. 2022;14(1):38-45.
7. Ömer A, Sezerol MA, TAŞÇI Y, Hayran O. COVID-19 pandemisinde görev yapan sağlık çalışanlarında anksiyete belirtileri ve uykusuzluk. Turkish Journal of Public Health. 2020;18(COVID-19 Special):47-57.
8. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry research. 2020;287:112934.
9. Shrivastava KJ, Nahar R, Parlani S, Murthy VJ. A crosssectional virtual survey to evaluate the outcome of online dental education system among undergraduate dental students across India amid COVID 19 pandemic. European Journal of Dental Education. 2022;26(1):123-30.
10. Mekhemar M, Attia S, Dörfer C, Conrad J. Dental students in Germany throughout the COVID-19 pandemic: a psychological assessment and cross-sectional survey. Biology. 2021;10(7):611.
11. Ulusoy M, Sahin NH, Erkmen H. Turkish version of the Beck Anxiety Inventory: psychometric properties. Journal of cognitive psychotherapy. 1998;12(2):163.
12. Beck AT, Steer RA, Brown G. Beck depression inventory–II. Psychological assessment. 1996.
13. Agargun M. Pittsburgh uyku kalitesi indeksinin gecerligi ve guvenirligi. Turk Psikiyatri Dergisi. 1996;7:107-15.
14. Buysse DJ, Reynolds III CF, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. Psychiatry research. 1989;28(2):193-213.
15. Fidaner H. Measuring quality of life WHOQOL-100 and WHOQOL-bref. J Psychiatr Psychol Psychopharmacol. 1999;7:23-41.
16. A. McGahuey AJG, Cindi A. Laukes, Francisco A. Moreno, Pedro L. Delgado, Kathy M. McKnight, Rachel Manber, Cynthia. The Arizona sexual experience scale (ASEX): reliability and validity. Journal of Sex &Marital Therapy. 2000;26(1):25-40.
17. Soykan A. The reliability and validity of Arizona sexual experiences scale in Turkish ESRD patients undergoing hemodialysis. International Journal of Impotence Research. 2004;16(6):531-4.
18. Cody K, Scott JM, Simmer-Beck M. Examining the mental health of university students: A quantitative and qualitative approach to identifying prevalence, associations, stressors, and interventions. Journal of American College Health. 2024;72(3):776-86.
19. Eyüboğlu M, Eyüboğlu D, Duran O, Karademir SB, Karaaslan F, Alyu FM. Tıp fakültesi öğrencilerinde depresyon, anksiyete, uyku sorunları ve intihar davranışının değerlendirilmesi: Birinci ve altıncı sınıf öğrencilerinin karşılaştırıldığı kesitsel bir çalışma. Klinik Psikiyatri Dergisi. 2021;24(1).
20. Betül U, BUDAK EA. Sleep quality of medical students in Turkey during the Covid-19 pandemic. MAS Journal of Applied Sciences. 2021;6(4):940-9.
21. Ataç Ö, Sezerol MA, Taşçı Y, Hayran O. COVID-19 pandemisinde görev yapan sağlık çalışanlarında anksiyete belirtileri ve uykusuzluk. Turkish Journal of Public Health. 2020;18(COVID-19 Special):47-57.
22. Şalva T, Güllüoğlu MA, Mert K, ÖZDEMİR KU. Maltepe Üniversitesi tıp fakültesi 1. ve 6. sınıf öğrencilerinde uyku kalitesi ve etkileyen faktörler. Maltepe Tıp Dergisi. 2020;12(2):27-33.
23. Gaş S, Ekşi Özsoy H, Cesur Aydın K. The association between sleep quality, depression, anxiety and stress levels, and temporomandibular joint disorders among Turkish dental students during the COVID-19 pandemic. CRANIO®. 2021:1-6.
24. De Rose AF, Chierigo F, Ambrosini F, Mantica G, Borghesi M, Suardi N, et al. Sexuality during COVID lockdown: a cross-sectional Italian study among hospital workers and their relatives. International journal of impotence research. 2021;33(1):131-6.