Kocatepe Tıp Dergisi
Kocatepe Medical Journal
24:300-304/Temmuz 2023 Sayısı

ARAŞTIRMA YAZISI / RESEARCH ARTICLE

# TIP FAKÜLTESİ ÖĞRENCİLERİNDE SİBERKONDRİA, SAĞLIK ANKSİYETESİ VE İNTERNET BAĞIMLILIĞI DÜZEYLERİ

# LEVELS OF CYBERCHONDRIA, HEALTH ANXIETY AND INTERNET ADDICTION IN MEDICAL FACULTY STUDENTS

Semih ÇALHAN[1], Ali ERDOĞAN[2]

[1]Akdeniz Üniversitesi Tıp Fakültesi 6. Sınıf Öğrencisi
[2]Akdeniz Üniversitesi Tıp Fakültesi, Psikiyatri Ana Bilim Dalı

**ÖZET**

**AMAÇ:** Bu çalışmada tıp fakültesi öğrencilerinin siberkondria, sağlık kaygısı ve internet bağımlılığı düzeylerinin diğer fakülte öğrencileri ile karşılaştırılması amaçlanmıştır.

**GEREÇ VE YÖNTEM:** Çalışmaya tıp fakültesinde eğitim gören 223 öğrenci ve diğer fakültelerde eğitim gören 211 öğrenci dahil edilmiştir. Hemşirelik vb. gibi sağlıkla ilgili fakültelerde okuyan öğrenciler çalışmaya dahil edilmemiştir. Tüm katılımcılara sosyo-demografik veri formu, Siberkondria Şiddet Ölçeği (SŞÖ), Sağlık Anksiyetesi Envanteri (SAE) ve Young İnternet Bağımlılığı Ölçeği (YİBÖ) uygulanmıştır.

**BULGULAR:** Tıp fakültesi öğrencilerinin yaş ortalaması (21.27±2.27 yıl) diğer fakülte öğrencilerinin yaş ortalaması ile (21.38±2.05 yıl) benzer bulundu (p=0.440). SAE puan ortalamaları tıp fakültesi öğrencilerinde diğer fakülte öğrencilerinden anlamlı olarak yüksek saptanmıştır (p=0.007). Her iki grupta YİBÖ ve SŞÖ puanları benzer saptanmıştır (sırayla; p=0.536, p=0.960). Pre-klinik sınıflardaki tıp fakültesi öğrencilerinde YİBÖ puanları ve SŞÖ puanları klinik sınıflardaki öğrencilerden yüksek saptanmıştır (sırayla; p=0.017, p<0.001). Tüm katılımcılarda yaş arttıkça YİBÖ puanları azalmıştır (r= -0.119, p=0.013).

**SONUÇ:** Tıp fakültesi öğrencilerinde sağlık kaygısının daha fazla olduğu söylenebilir. Ayrıca pre-klinik sınıflardaki tıp fakültesi öğrencilerinde siberkondria düzeyleri ve internet bağımlılığı düzeyleri klinik sınıflardan daha yüksektir. Hastalıklarla ilgili bilgilerin yoğun şekilde arttığı tıp fakültesi eğitiminde sağlık kaygısı ve siberkondria hakkında öğrencilerin farkındalık düzeylerinin arttırılmasını öneriyoruz.

**ANAHTAR KELİMELER:** İnternet, Tıp Fakültesi, Anksiyete, Siberkondria, Sağlık kaygısı.

**ABSTRACT**

**OBJECTIVE:** In this study, it was aimed to compare the levels of cyberchondria, health anxiety and internet addiction of medical faculty students with other faculty students.

**MATERIAL AND METHODS:** 223 students studying at the faculty of medicine and 211 students studying at other faculties were included in the study. Students studying in health-related faculties such as nursing etc. were not included in the study. Socio-demographic data form, Cyberchondria Severity Scale (CSS), Health Anxiety Inventory (HAI), and Young Internet Addiction Scale (YIAS) were administered to all participants.

**RESULTS:** The mean age of medical faculty students (21.27±2.27 years) was found to be similar to the mean age of other faculty students (21.38±2.05 years) (p=0.440). HAI mean scores were found to be significantly higher in medical faculty students than in other faculties (p=0.007). YIAS and CSS scores were found to be similar in both groups (respectively; p=0.536, p=0.960). YIAS scores and CSS scores of medical faculty students in pre-clinical classes were higher than those in clinical classes (respectively; p=0.017, p<0.001). As the age increased in all participants, the YIAS scores decreased (r= -0.119, p=0.013).

**CONCLUSIONS:** It can be said that health anxiety is higher in medical faculty students. In addition, cyberchondria levels and internet addiction levels are higher in medical school students in pre-clinical classes than in clinical classes. We suggest that the awareness levels of students about health anxiety and cyberchondria should be increased in medical school education, where the knowledge about diseases increases intensively.

**KEYWORDS:** Internet, Medical Faculty, Anxiety, Cyberchondria, Health anxiety.

**Geliş Tarihi / Received:** 12.05.2022
**Kabul Tarihi / Accepted:** 01.10.2022
**Yazışma Adresi / Correspondence:** Dr. Öğr.Üyesi Ali ERDOĞAN
Akdeniz Üniversitesi Tıp Fakültesi, Psikiyatri Ana Bilim Dalı
**E-mail:** erdoganali006@hotmail.com
**Orcid No (Sırasıyla):** 0000-0002-7284-622X, 0000-0003-0329-6778
**Etik Kurul / Ethical Committee:** Akdeniz Üniversitesi Etik Kurulu (13.10.2021/729).

## INTRODUCTION

Medical school students are under many stresses, such as a long and challenging education, academic pressure, and difficulties in clinical practice (1). For all these reasons, it is reported that medical school students experience more depression and anxiety compared to their peers (2). It has been reported that health anxiety is also high among medical faculty students. In a study conducted with 270 medical faculty students, health anxiety was reported in 17% of the participants (3). Medical students are more likely to associate the signs and symptoms of medical illness with their body sensations therefore, more likely to develop health anxiety. It is interpreted as a condition caused by excessive exposure to medical information (4, 5).

Cyberchondria is excessive or repetitive online health-related information seeking associated with increased health anxiety (6). Medical faculty students are exposed to more medical information that can increase susceptibility to cyberchondria, especially in the early years of medical education (7). Although studies report a relatively high prevalence of cyberchondria among medical faculty students, cyberchondria in this group has not been adequately studied (8). The literature also reported a relationship between cyberchondria and health anxiety (9). It is reported that internet addiction is also high among medical faculty students. A meta-analysis reported that the prevalence of internet addiction among medical faculty students was approximately five times higher than the general population (10). It is also known that there are relationships between internet addiction and health anxiety, as well as internet addiction and cyberchondria (11, 12).

In this study, we aimed to investigate the difference in health anxiety, cyberchondria, and internet addiction levels between medical school students and other faculty students.

## MATERIAL AND METHODS

### *Sample*

We contacted the student representatives of each faculty face-to-face and reached the students who agreed to participate in the study via messaging programs using their phone numbers. Since the faculty representative directed the students who accepted to participate, the department they studied was known. We also talked to the students on the phone and confirmed the faculty they were studying. Other departments included in the study are the faculty of law, the faculty of sports sciences, and the faculty of communication. The total number of students in these departments is around 3000. The number of students in the faculty of medicine is approximately 1500. Our study is a cross-sectional type and was conducted between November 1, 2021, and April 1, 2022. Inclusion criteria for the study were being between the ages of 18-30, having voluntary participation in the study, having no history of psychiatric disease and chronic physical disease, and having internet access. Exclusion criteria for the study were being a health-related faculty-student (nursing faculty, faculty of health sciences, etc.) and receiving treatment for a disease. Socio-demographic data form, Young Internet Addiction Scale (YIAS) (13), Cyberchondria Severity Scale (CSS) (14), and Health Anxiety Inventory (HAI) (15) were administered to all participants. The surveys were created using Google Docs. We sent an introductory note explaining the purpose of the study in detail and an assurance note that the confidentiality of the data would be protected to all participants. A confirmation tab was added stating that participation in the study was on a voluntary basis, and online consent was obtained from those who voluntarily agreed to participate. Those who did not give consent could not have participated in the study. After obtaining informed consent, those who agreed to participate in the study were able to continue to fill out the scales. This survey was sent to the respondents via WhatsApp Messenger, an American free messaging software owned by Facebook Inc.

#### Ethical Committee

All stages of this study were carried out in accordance with the Declaration of Helsinki. Written ethics committee approval was obtained for our study from Akdeniz University Faculty of Medicine Clinical Research Ethics Committee with the decision number KAEK-729 on 13.10.2021.

### Statistical Analysis

SPSS (Statistical Package for the Social Sciences) 23.0 program was used for statistical analysis. Categorical data have been given as numbers and percentages and continuous variables have been given as mean and standard deviation. The conformity of the data to the normal distribution was evaluated with the Kolmogorov-Smirnov test. The Mann-Whitney U Test was used as a non-parametric test to compare the numerical data of the two groups. Chi-square test was used to compare the categorical data. The relationship between the numerical data that did not conform to the normal distribution was evaluated with the Spearman correlation test. The statistical significance level (p-value) was accepted as 0.05 in the analyzes.

## RESULTS

The mean age of medical faculty students was 21.27±2.27 years, and the mean age of students from other faculties was 21.38±2.05 years (p=0.440). All participants are single, and other socio-demographic data are summarized in **Table 1**.

**Table 1:** Comparison of the groups in terms of socio-demographic characteristics

| | | Medical School (n=223) | | Other Faculties (n=211) | | |
|---|---|---|---|---|---|---|
| | | n | % | n | % | p |
| **Gender** | Male | 93 | 41.7 | 65 | 30.8 | 0.018 |
| | Female | 130 | 58.3 | 146 | 69.2 | |
| **Life style** | Alone | 55 | 24.7 | 32 | 15.2 | 0.015 |
| | With family | 65 | 29.1 | 86 | 40.8 | |
| | With friends | 33 | 14.8 | 23 | 10.9 | |
| | Student hostel | 70 | 31.4 | 70 | 33.1 | |
| **Medical school classes** | Pre-clinical | 122 | 54.7 | | | |
| | Clinical | 101 | 45.3 | | | |
| **Age (years) (mean±SD)** | | 21.27±2.27 | | 21.38±2.05 | | 0.440 |

The comparison of medical school students and other faculty students in terms of internet usage time, CSS scores, YIAS scores, and HAI scores is summarized in **Table 2**.

**Table 2:** Comparison of the groups in terms of duration of internet use, cyberchondria, internet addiction, and health anxiety

| | Medical School (n=223) (mean±SD) | Other Faculties (n=211) (mean±SD) | p |
|---|---|---|---|
| **Young Internet Addiction Scale** | 32.12±16.21 | 30.44±14.30 | 0.536 |
| **Cyberchondria Severity Scale** | 43.98±21.77 | 43.27±21.64 | 0.960 |
| **Health Anxiety Inventory** | 18.52±7.58 | 16.46±7.40 | 0.007 |
| **Daily Internet Usage Time (hours)** | 4.87±2.62 | 5.18±3.23 | 0.784 |

The relationships between age, duration of internet use, CSS, YIAS, and HAI scores of all participants are summarized in **Table 3**.

**Table 3:** Relationships between age, duration of internet use, cyberchondria, internet addiction, and health anxiety in all participants

| | Age | YIAS* | Internet time | CSS* | HAI* |
|---|---|---|---|---|---|
| **Age** | | ***-0.119**** | -0.019 | ***-0.124**** | 0.011 |
| **YIAS*** | ***-0.119**** | | ***0.280***** | ***0.217***** | ***0.114**** |
| **Internet time** | -0.019 | ***0.280***** | | 0.050 | ***0.095**** |
| **CSS*** | ***-0.124**** | ***0.217***** | 0.050 | | ***0.405***** |
| **HAI*** | 0.011 | ***0.114**** | ***0.095**** | ***0.405***** | |

-All values are correlation coefficients.
*YIAS: Young Internet Addiction Scale, CSS: Cyberchondria Severity Scale, HAI: Health Anxiety Inventory
**p<0.05
***p<0.001

Medical faculty students were divided into two groups as pre-clinical period (1st, 2nd, and 3rd grade) (n=122) and clinical period (4th, 5th, and 6th grades) (n=101). The mean YIAS score was found to be significantly higher in the pre-clinical period (34.12±15.73) than in the clinical period (29.71±16.52) (p=0.017). The mean duration of internet use was similar in the pre-clinical period (4.99±2.79 hours) and in the clinical period (4.73±2.41 hours) (p=0.625). The mean CSS scores were found to be significantly higher in the pre-clinical period (47.98±19.67) than in the clinical period (39.14±23.26) (p<0.001). HAI mean scores were similar in the pre-clinical period (18.77±7.31) and in the clinical period (18.22±7.91) (p=0.694). In addition, CSS scores decreased significantly from grade 1 to grade 6 (r=-0.199, p=0.003). Men and women were compared among all participants. CSS, YIAS, and HAI scores were found similar between men and women (respectively; p=0.624, p=0.190, p=0.814).

## DISCUSSION

In our study, health anxiety scores were higher in medical faculty students than students from other faculties, and no difference was found in cyberchondria and internet addiction scores. Cyberchondria and internet addiction scores of medical faculty students studying in the preclinical years were found higher than the students studying in the clinical years. Internet addiction scores decreased as age increased in all participants, and health anxiety scores increased as cyberchondria scores increased. Moreover, cyberchondria and health anxiety scores increased as internet addiction scores increased.

It is reported as medical students learn about diseases during their medical education, they experience health anxiety about them. In the literature, this is called "medical student syndro-

me" (16). In a study, health anxiety was reported to be slightly higher among medical students (17.4%) than those studying at non-medical faculties (15%), which was not statistically significant (17). In our study, health anxiety was significantly higher in medical faculty students than in other faculty students. Medical faculty students are constantly exposed to disease information due to their education. This exposure may cause them to associate even the slightest sensation in their body with illness and reciprocally increase the health anxiety of medical students.

Health anxiety was also investigated according to academic years, and different results were found. A study reported that the rate of health anxiety was 11.9% among 513 medical students, and the academic year did not have a significant effect (4). In another study, health anxiety was reported more in the preclinical years than in the clinical years (17). In our study, health anxiety was similar in between preclinical and clinical years. In medical faculty, students encounter various new information during the preclinical and clinical years and could associate them with bodily sensations. Therefore, it can be expected that health anxiety would be similar in the preclinical and clinical years.

In a study conducted with a total of 280 medical students during the pandemic, it was reported that 39% of the students had moderate cyberchondria, and 50% had severe cyberchondria (18). However, to the best of our knowledge, the literature lacks a study that compares medical faculty students with other faculty students in terms of cyberchondria. Our results showed no difference between medical faculty students and other faculty students regarding cyberchondria. In the literature, it is reported that cyberchondria is associated with health anxiety (9). In our study, health anxiety was higher in medical faculty students than in other faculty students, but cyberchondria levels were not higher. Cyberchondria is associated with distinguishing between reliable and unreliable online information sources. This situation could also be affected by the individual's education level, ability to process information, and technological knowledge (19). Compared to other faculty students, health anxiety is high in medical school students, while cyberchondria is not and might be related to medical faculty students' ability to interpret online information correctly. In addition, the level of cyberchondria was higher in our study's preclinical years. The fact that medical information is less in the preclinical years compared to the clinical years may increase the risk of misinterpreting online information in the preclinical period.

In our study, internet addiction levels were similar in medical faculty and other faculty students, and internet addiction was higher in the preclinical years than in the clinical years. Furthermore, as age increased, internet addiction scores decreased. In a study conducted with 282 medical students, the prevalence of internet addiction was reported as 58.87% (mild: 51.42%, moderate: 7.45%) (20). In another study conducted with 148 medical school students, 7.86% of the students met the criteria for internet addiction (21). Internet addiction is a common problem among university students (22). The lack of difference between faculties in our study might be related to this situation. We think it is necessary to raise university students' awareness about internet addiction, regardless of the faculty. In our study, the increase in internet addiction with decreasing age is compatible with the literature (23).

The critical feature of our work is that this is the first study in the literature that evaluates cyberchondria, health anxiety, and internet addiction in medical faculty students. Our study's limitations are that it is a cross-sectional study based on self-report scales.

We can say that health anxiety is higher in medical faculty students compared to other faculties, and the levels of cyberchondria and internet addiction are similar to other faculties. Also, in the pre-clinical period, medical school students have higher levels of cyberchondria and internet addiction. We recommend conducting seminar programs that inform medical faculty students in terms of health anxiety. In addition, prospective studies with very large samples from different regions are needed on these issues.

**REFERENCES**


**1.** Fawzy M, Hamed SA. Prevalence of psychological stress, depression and anxiety among medical students in Egypt. Psychiatry Res. 2017;255:186-94.

**2.** Rotenstein LS, Ramos MA, Torre M, et al. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students: A Systematic Review and Meta-Analysis. JAMA. 2016;316(21):2214-226.

**3.** Ezmeirlly HA, Farahat FM. Illness anxiety disorder and perception of disease and distress among medical students in western Saudi Arabia. Saudi Med J. 2019;40(11):1144-149.

**4.** Zahid MF, Haque A, Aslam M, et al. Health-Related Anxiety and Hypochondriacal Concerns in Medical Students: A Cross-Sectional Study From Pakistan. Teach Learn Med. 2016;28(3):252-59.

**5.** Waterman LZ, Weinman JA. Medical student syndrome: fact or fiction? A cross-sectional study. JRSM Open. 2014;5(2):2042533313512480.

**6.** Erdoğan A, Hocaoğlu Ç. Cyberchondria: a review. Psikiyatride Güncel Yaklasımlar. 2020;12(4):435-43.

**7.** Aulia A, Marchira CR, Supriyanto I, Pratiti B. Cyberchondria in first year medical students of Yogyakarta. Journal of Consumer Health on the Internet. 2020; 24(1):1-9.

**8.** Heshmati K, Reisi S, Taheri AA, Lotfi M, Kheirabadi Z. The prevalence of Cyberchondria during the COVID-19 Pandemic: A cross-sectional study among a sample of Students of Kermanshah University of Medical Sciences. Shenakht Journal of Psychology and Psychiatry. 2021;8(4):63-74.

**9.** McMullan RD, Berle D, Arnáez S, Starcevic V. The relationships between health anxiety, online health information seeking, and cyberchondria: Systematic review and meta-analysis. J Affect Disord. 2019;245:270-8.

**10.** Zhang MWB, Lim RBC, Lee C, Ho RCM. Prevalence of Internet Addiction in Medical Students: a Meta-analysis. Acad Psychiatry. 2018;42(1):88-93.

**11.** Mrayyan MT, Al-Atiyyat N, Abu Khait A, Al-Rawashdeh S, Algunmeeyn A, Abunab HY. Does cyberchondria predict Internet addiction among students during the COVID-19 pandemic? A web-based survey study. Nurs Forum. 2022;57(3):337-43.

**12.** Khodabakhsh S, Ramasamy S, Teng TY, Leng CS. Impact of internet addiction on health anxiety in Malaysian youth during COVID-19 pandemic. Malaysian Journal of Medical Research (MJMR). 2021;5(2):12-18.

**13.** Young KS. Internet addiction: The emergence of a new clinical disorder. CyberpsycholBehav. 1996;3:237244.

**14.** McElroy E, Shevlin M. The development and initial validation of the cyberchondria severity scale (CSS). J Anxiety Disord. 2014;28(2):259-65.

**15.** Salkovskis PM, Rimes KA, Warwick HM, Clark DM. The Health Anxiety Inventory: development and validation of scales for the measurement of health anxiety and hypochondriasis. Psychol Med. 2002;32(5):843-53.

**16.** Collier R. Imagined illnesses can cause real problems for medical students. CMAJ. 2008;178(7):820.

**17.** Althagafi SS, AlSufyani MH, Shawky OA, et al. The health anxiety in medical students, a comparative study from Taif University: Medical student's syndrome revisited. Br J Med Pract. 2019;12(1):a003.

**18.** Sravani D, Reddy CG, Murthy PS, Chaudhury S. Coronavirus anxiety and cyberchondria among undergraduate medical students during covid-19 pandemic in a tertiary care hospital: A cross sectional study. Medical Journal of Dr DY Patil Vidyapeeth. 2022;15(8):240-7.

**19.** Starcevic V, Aboujaoude E. Cyberchondria, cyberbullying, cybersuicide, cybersex: "new" psychopathologies for the 21st century? World Psychiatry. 2015;14(1):97-100.

**20.** Chaudhari B, Menon P, Saldanha D, Tewari A, Bhattacharya L. Internet addiction and its determinants among medical students. Ind Psychiatry J. 2015;24(2):158-62.

**21.** Haroon MZ, Zeb Z, Javed Z, et al. Internet Addiction In Medical Students. J Ayub Med Coll Abbottabad. 2018;(4):659-63.

**22.** Zenebe Y, Kunno K, Mekonnen M, et al. Prevalence and associated factors of internet addiction among undergraduate university students in Ethiopia: a community university-based cross-sectional study. BMC Psychol. 2021;9(1):4.

**23.** De Vries HT, Nakamae T, Fukui K, Denys D, Narumoto J. Problematic internet use and psychiatric co-morbidity in a population of Japanese adult psychiatric patients. BMC Psychiatry. 2018;18(1):9.