An examination of cyberchondria’s relationship with trait anxiety and psychological well-being in women of reproductive age
A cross-sectional study

Önder Sezer, MD, Mehmet Akif Baçoğlu, MD, Hamdi Nezih Dağdeviren, MD

Abstract

Online environments have become the main sources of health-related information. However, if used incorrectly, this can decrease the level of well-being. Cyberchondria corresponds to the hypochondriasis in the digital age. We aimed to investigate the relationship between cyberchondria and trait anxiety, psychological well-being, and other factors in women of reproductive age.

This study used a descriptive cross-sectional design. Face-to-face questionnaires were administered to women aged 18 to 49. The sample size was formed and stratified according to the population of the 47 family health centers to reflect the entire population. The questionnaire included a sociodemographic information form, the Cyberchondria Severity Scale (CSS), the State-Trait Anxiety Inventory, and the Psychological Well-Being Scale (PWBS).

This study included 422 participants. The average daily use of the Internet was 2.14 ± 1.837 hours, while that of social media was 2.69 ± 2.027 hours. The mean CSS score was 89.42 ± 21.688; the mean trait anxiety score was 44.34 ± 8.791, and the mean PWBS score was 324.26 ± 35.944. Factors that interacted with the level of cyberchondria were the trait anxiety score, PWBS score, alcohol consumption, and average daily use of the internet and social media.

Increased online time, alcohol consumption, trait anxiety levels, and psychological well-being increase cyberchondria levels. Improvements must be made in the accuracy of online information, which is unsupervised and easily accessible to society as a source of information. Future studies should focus on the prevention, detection, and treatment of cyberchondriasis. Identifying and improving the factors affecting women’s and mothers’ cyberchondria will also increase the chances of providing primary protection against certain diseases.

Abbreviations: B = the unstandardized beta, CI = confidence interval, CSS = Cyberchondria Severity Scale, PWBS = Psychological Well-Being Scale, SE = the standard error for the unstandardized beta.

Keywords: anxiety disorders, cyberchondria, hypochondriasis, psychological factors, women’s health

1. Introduction

Internet use is highest during childhood, adolescence, and young adulthood. This age group mainly used the Internet for social media, entertainment, health information, and professional development.[1]

According to previous studies, 50% of Europeans and 72% of Americans used the Internet to search for health information in the previous year.[6] According to data from the Organisation for Economic Cooperation and Development (OECD) countries, the proportion of online health-related searches more than doubled between 2008 and 2017.[11]

In Türkiye, approximately 38% of the population is female in the age group of 18 to 49. Women’s health is most at risk physically, mentally, and socially in this age group, as they are in their reproductive years.[8] Because of its widespread use, the Internet has become an indispensable source of information for women aged 18 to 49 who are considered the reproductive age group, and this can become a source of health risks.[2] Healthy lifestyle behaviors of women have an impact on child health, family health, and their own health.[5]

Searching for health information on the internet can have some benefits. This can lead to an increase in health knowledge and preventive health behaviors, improve self-management of health and well-being, early detection of serious problems, and provide a better understanding of disease management.[6] Nevertheless, the risks of seeking health information on the internet are more serious. Misinformation can lead to delays in...
the prevention, diagnosis, and treatment of diseases; increased costs; and increased anxiety due to incorrect information.\textsuperscript{7,8}

The concept of cyberchondria is used to describe a clinical phenomenon in which repeated internet searches for health information result in excessive concern about physical health. Given its origin, this corresponds to the hypochondria in the digital age.\textsuperscript{9,10} With the spread of concepts such as metaverse and digitalization, we can expect cyberchondria to increase, change in shape, and have serious consequences for psychological health in the coming years.

Psychological well-being has been defined as the evaluation of life as satisfaction with a high positive affect frequency and low negative affect frequency.\textsuperscript{11} Anxiety has been defined as “a nonobjective feeling of apprehension in the face of danger,” and it has negative effects on psychological well-being. Anxiety is divided into two as State anxiety and Trait Anxiety. State anxiety is anxiety that occurs when a dangerous, unwanted situation is encountered. Trait anxiety, on the other hand, is anxiety that exists even when there is no objective reason, and when there is such a reason, it is disproportionately prolonged and severe.\textsuperscript{12} Trait anxiety was also defined as the tendency to experience frequent, high-intensity anxiety and worry in stressful situations.\textsuperscript{13} Women are more prone to developing emotional disorders starting in adolescence and are 1.5 to 2 times more likely to have anxiety disorders than men.\textsuperscript{14}

Individuals with health concerns seek health-related information on the internet more frequently. However, the online health information they access can further increase their anxiety levels. This mutually interactive process can put cyberchondria patients into a vicious circle. However, websites created by reputable academic, medical, or scientific entities, which are nonprofit, constantly updated, have known authors and provide scientific evidence that can benefit people and reduce the level of cyberchondria.\textsuperscript{9,15,16}

This study examined the relationship between cyberchondria, trait anxiety, psychological well-being, and related factors in women aged 18 to 49.

2. Material and methods

2.1. Study design

Our study was conducted in 47 family health centers between January 01, 2018, and May 01, 2018, in Edirne/Turkiye. The study population consists of 46411 women between the ages of 18 to 49 living in the city center of Edirne. The sample size was calculated to be at least 384 using the Epi Info Statcalc program, with 5% type 1 error and 80% power. Individuals were categorized and stratified according to the female population aged 18 to 49 years and the 5-year age range in each family health center to reflect the entire universe. From the lowest population, the weighted numbers of participants from each family health center were calculated.

Being registered to a family health center in the center of Edirne, being a woman between the ages of 18 to 49, and being in the appropriate age group were taken as inclusion criteria. Women selected for inclusion in the study were contacted by phone, informed about the study, and asked to participate. Women who did not want to participate in the study were replaced with volunteers from the same region who met the specified criteria. A total of 550 women were included in the study, and 422 (76.72%) agreed to participate and completed the study (Fig. 1). Data were collected through face-to-face interviews with researchers in the living or working places of women.
the volunteers. Informed verbal consent was obtained from all participants prior to data collection.

Data were collected using a questionnaire consisting of 179 questions. The questionnaire had 22 items on sociodemographic information including age, marital status, education, employment status and monthly income, chronic diseases, social security, internet and social media usage, hours of internet and social media usage per day, and smoking status. The information about easy access to health services, the annual number of applications to health institutions, and easy communication with doctors were also asked. The questionnaire also included Cyberchondria Severity Scale (CSS) (33 questions), State-Trait Anxiety Inventory (40 questions), and Psychological Well-Being Scale (PWBS) (84 questions).

Written informed consent was obtained from the Scientific Research Ethics Committee of Trakya University (no. 2017/233) and the Ministry of Health General Directorate of Public Health in Turkey (no. 4964233-604.02).

2.2. Cyberchondria Severity Scale
The Cyberchondria Severity Scale was developed by McElroy and Shevlin in 2014 to assess cyberchondria status. Turkish validity and reliability were assessed by Uzun and Zencir, and Cronbach’s alpha value of the Turkish version of CSS is 0.93. The scale consisted of 33 Likert-type questions and 5 sub-factors as compulsion (8 questions), distress (8 questions), excessiveness (8 questions), reassurance (6 questions), and mistrust of medical professionals (3 questions). The results from the scale and sub-factors are continuous and non-categorical, and there is no cutoff value. The total Cyberchondria score for each participant was calculated by summing the scores obtained from each question. The mistrust of medical professionals factor is reverse scored (e.g., “If my family doctor/specialist tells me to ignore the information I get from the internet, my concern goes away.”; “I trust the diagnosis made by my family doctor/specialist more than the diagnosis made by myself on the internet.”). The total CSS score was used in our study. A higher score indicated a higher level of cyberchondria.

2.3. State-trait anxiety inventory
The State-Trait Anxiety Inventory is a Likert-type scale developed by Spielberger et al (1970) and adapted to Turkish society by Öner and Le Compte (1985). It consists of 40 questions, that measure state and trait anxiety levels separately with 20 questions, some of which are negatively scored. In the reliability analysis, Cronbach’s alpha internal consistency coefficient was between 0.83 and 0.87 for the State Anxiety Scale, and between 0.94 and 0.96 for the Trait Anxiety Scale. The scores on both the state anxiety and trait anxiety scales range from 20 to 80. High scores indicated high anxiety levels and low scores indicated low anxiety levels. In this study, only the trait anxiety levels of the participants were evaluated.

2.4. Psychological Well-Being Scale
The Psychological Well-Being Scale is a Likert-type scale developed by Ryff and adapted to Turkish by Akin, with 84 items. The Cronbach’s alpha value of the Turkish version of PWBS is 0.93. The lowest score that can be obtained from the scale is 84, and the highest is 504. There were no cutoff values. An increase in the total score indicates an increase in psychological well-being.

2.5. Statistical analysis
All data analyses were performed using the SPSS software (SPSS Inc., Chicago, IL). The Shapiro–Wilk test was used to assess the normality of the distribution. Descriptive statistics and chi-square, Kruskal–Wallis, Mann–Whitney U, and Spearman correlation analyses were used as statistical methods. Then, multiple linear regression analysis was conducted for CSS scores by including the independent variables that were found to be statistically significant. The statistical significance level (P) is shown together with the related tests and was considered significant when P < .05, and insignificant when P ≥ .05.

3. Results
After the stratification by population and age, 550 women were invited to the study until the required number was reached. The study included 422 women (76.72% of responses). The mean age of the participants was 33.72 ± 10.057 (minimum:18; maximum: 49) years. The mean CSS score was 89.42 ± 21.69. Table 1 shows the relationship between CSS and participants’ sociodemographic characteristics and their answers to questions about health services.

Among those with chronic diseases, seven people had three diseases, ten people had two diseases, and 96 people had one disease. Hypothyroidism and asthma are the most common conditions. When we asked the participants about the health services they received, 53.68% (n = 235) had easy access to health services, 31.75% (n = 134) applied to health institutions four or more times a year, and 47.63% (n = 201) easily provided their doctors with the information they needed, and 56.63% (n = 239) felt comfortable asking questions to their doctors.

The average daily Internet use of the participants, excluding social media, was 2.14 ± 1.837 hours, and the average use of social media was 2.69 ± 2.027 hours. Cyberchondria levels increased as internet use increased for both social (r = 0.292; P < .001) and excluding social media (r = 0.285; P < .001) purposes.

Table 2 shows CSS, trait anxiety scores, and PWBS scores. We found a significant positive correlation between CSS scores and psychological well-being (r = 0.238; P < .001) and trait anxiety levels (r = 0.262; P < .001). As the level of cyberchondria increased, the average number of family applications to health institutions for families also increased (r = 0.218, P = .003). Additionally, the level of cyberchondria increased when physicians provided more information about health or diseases (γ = 9.242; P = .026). Cyberchondria levels were higher in alcohol users than in non-users (Z = -3.237; P = .001).

According to the results of our analysis, there was no significant difference between the level of cyberchondria and age (r = -0.018; P = .717).

Table 3 shows the multiple linear regression analysis of CSS scores and significant data.

As the duration of daily internet use increases for both social media and excluding social media, cyberchondria increases (P = .003 and P = .036, respectively). Every hour spent on social media increases the CSS scores by 1.586 points; every hour spent online on the Internet excluding social media increases the CSS scores by 1.220 points. Alcohol use increases CSS levels (the unstandardized beta [B = 6.483]; P = .015; 95% CI: 1.252–11.713). As trait anxiety (B = 0.363; P < .001; 95% CI: 0.195–0.534), and PWBS (B = 0.107; P < .001; 95% CI: 0.052–0.162) scores increase, CSS scores also increase.

4. Discussion
In our study, we examined the relationship between Internet use and anxiety and found that 26.1% of the participants discontinued prescribed medicine because of the information they read on the Internet. Gökçe et al.[20] reported a similar rate of 19.4%. The increased number of health-related websites provided false and incomplete information increased anxiety levels in people with health concerns and low health literacy, which prevented...
**Table 1**
The relationship between Cyberchondria Severity Scale and participants’ sociodemographic characteristics and their answers to questions about health services.

|                      | Mean CSS scores | P     |
|----------------------|-----------------|-------|
| All participants     | 100%            |       |
| Age, mean            | 33.72 ± 10.057  |       |
| Age, median (range)  | 35 (18–49)      |       |
| Marital status       |                 |       |
| Single               | 42.65%          | .546  |
| Married              | 57.35%          |       |
| Income status*       |                 |       |
| Hunger line          | 4.03%           | .714  |
| Poverty line         | 64.22%          |       |
| Middle income        | 31.75%          |       |
| Education            |                 |       |
| Literate             | 1.19%           | .178  |
| Primary school       | 5.21%           |       |
| Secondary school     | 2.13%           |       |
| High school          | 45.02%          |       |
| University or higher | 46.45%          |       |
| Employment status    |                 |       |
| Yes                  | 47.63%          | .992  |
| No                   | 52.37%          |       |
| Self-perceived health status |   |       |
| Good                 | 82.94%          | .644  |
| Moderate             | 15.64%          |       |
| Poor                 | 1.42%           |       |
| Chronic disease      |                 |       |
| Yes                  | 26.78%          | .481  |
| No                   | 73.22%          |       |
| Regular medication use |             |       |
| Yes                  | 19.19%          | .073  |
| No                   | 80.81%          |       |
| Regular health examinations |   |       |
| Yes                  | 35.55%          | .091  |
| No                   | 64.45%          |       |
| Smoking              |                 |       |
| Yes                  | 16.11%          | .451  |
| No                   | 83.89%          |       |
| Alcohol consumption  |                 |       |
| Yes                  | 17.06%          | .001  |
| No                   | 82.94%          |       |
| Using the Internet before visiting a doctor |   |       |
| Yes                  | 66.11%          | .110  |
| No                   | 33.89%          |       |
| Easy access to health services |   |       |
| Yes                  | 87.44%          | .766  |
| No                   | 12.56%          |       |
| Easy communication with the doctor |   |       |
| Yes                  | 90.28%          | .496  |
| No                   | 9.72%           |       |
| Discontinued the prescribed medicine after Internet search |   |       |
| Yes                  | 26.07%          | .004  |
| No                   | 73.93%          |       |

CSS = Cyberchondria Severity Scale, n = number.
*According to 2018 data from the Confederation of Turkish Trade Unions.

**Table 2**
Mean Cyberchondria Severity Scale, trait anxiety, and Psychological Well-Being Scale scores of the participants.

|                      | CSS       | Trait anxiety | PWBS       |
|----------------------|-----------|---------------|------------|
| Mean score           | 89.42 ± 21.69 | 44.34 ± 8.79 | 324.26 ± 35.94 |
| Maximum score        | 143       | 66            | 448        |
| Minimum score        | 33        | 30            | 204        |
| High                 | 52.4%     | 47.5%         | 53.3%      |
| Low                  | 47.6%     | 52.6%         | 46.7%      |

CSS = Cyberchondria Severity Scale, PWBS = Psychological Well-Being Scale.
patients from using the medicines prescribed to them.\textsuperscript{21,22} As health literacy is insufficient, there must be strict supervision mechanisms on websites or their owners claiming to provide online health information. We believe that imposing legal sanctions on those who injure public and individual health by providing false information can provide solutions to this problem.

We found that the rate of discontinuation of prescribed medicines was higher in participants with high cyberchondria levels. The conflict between the information on the Internet and the information given by physicians and the resulting confusion has become a serious problem, especially for people with low health literacy. These individuals are at risk because they have difficulty recognizing medical facts and can be misdiagnosed. In our opinion, sparing some time on this issue during patient-physician meetings would be useful in preventing patients from discontinuing treatment.

We found that as the level of cyberchondria increased, the demand for information from physicians also increased. When people search on the Internet, their anxiety increases, and they demand more information. When physicians provide the necessary information, they encourage the patient to ask more questions. However, providing excessive medical information to individuals without medical education can increase anxiety. These individuals can perform more web searches and have higher anxiety levels. We should keep in mind that if the physician does not provide sufficient information about the prescribed medicine, the patient can access the internet to obtain information and discontinue the medicine. It is essential to inform patients about the treatment stages, drug use, and potential risks and benefits to facilitate correct decision-making.

In our study, the average daily internet use of the participants, excluding social media, was 2.14 ± 1.837 hours. The study by Uzun et al on cyberchondria found that it was 3.4 ± 2.5 hours a day.\textsuperscript{23} In the study by Gökçe et al on cyberchondria in Manisa/Turkiye, it was more than 2 hours per day.\textsuperscript{26} The study by Escofeery et al\textsuperscript{21} reported an average of 2.49 hours a day. In the multiple regression analysis, we found that every extra hour spent on Internet reduces psychological stress and increases psychological well-being.\textsuperscript{21}

| B        | SE     | β      | t      | P      | 95% CI  |
|----------|--------|--------|--------|--------|---------|
| PWBS     | 0.107  | 0.028  | 0.176  | 3.800  | <.001   | 0.052–0.162 |
| Alcohol  | 6.483  | 0.261  | 0.113  | 2.436  | .015    | 1.252–11.713 |
| Trait anxiety score | 0.365  | 0.086  | 0.194  | 4.231  | <.001   | 0.195–0.534 |
| Alcohol use | 6.483  | 0.261  | 0.113  | 2.436  | .015    | 1.252–11.713 |
| The average number of applications to health institutions | 0.579  | 0.546  | 0.049  | 1.060  | .290    | −0.495 to 1.652 |
| The average daily use of social media | 1.220  | 0.581  | 0.103  | 2.101  | .036    | 0.079–2.361 |
| The average daily Internet use of the participants (excluding social media) | 1.586  | 0.528  | 0.148  | 3.003  | .003    | 0.548–2.624 |

B = unstandardized beta, CI = confidence interval, PWBS = Psychological Well-Being Scale, SE = standard error, β = standardized coefficients beta.

Social media is commonly used for information purposes and is an important source of reference for health-related issues. Unfortunately, it also becomes a source of risk because of incompetent pages and patients. In the multiple regression analysis, we found that every extra hour spent on social media increases the cyberchondria score by 1.22 points. We believe that social media can be an effective tool for improving women’s health; therefore, health professionals, media, and legislators play important roles in supporting the correct use of social media and increasing the quality and accuracy of health information on social media.

We found that 17.1% of participants consumed alcohol. According to the 2019 Turkish Statistical Institute data, the rate of alcohol consumption in Turkey was 24.1%.\textsuperscript{24} In our study, the reason for the low rate of alcohol consumption was that it included only women, and the rate of alcohol consumption was generally lower in women.\textsuperscript{29,30} We found that the level of cyberchondria was higher in individuals who consumed alcohol. According to previous studies, the motive for alcohol consumption includes the desire to avoid fear experienced by people due to health anxiety or the negative health consequences of health anxiety.\textsuperscript{30,31} As cyberchondria increases alcohol consumption, alcohol-related health problems occur more frequently in people with cyberchondria. This situation must be carefully evaluated during patient-physician meetings.

The mean cyberchondria score of the participants was 89.42 ± 21.688 in our study. It was 74.0 ± 18.0 in the study by Gökçe et al on adults and 79.4 ± 16.9 in the study by Uzun et al on senior university students.\textsuperscript{20,23} The mean cyberchondria score was higher in this study. As women aged 18 to 49 experienced more mental health problems, they performed more searches on health websites.\textsuperscript{32} Seeking information about diseases, medical treatments, diets, vitamins, and nutritional supplements often leads to a higher prevalence of anxiety disorders in women, a significant increase in health-related internet use, and a high cyberchondria score.\textsuperscript{29,24} Our study was conducted on women aged 18 to 49 and in Turkish society, and searches could be made without revealing any identifying information. When we consider these facts in terms of privacy, we believe that they may have contributed to the higher cyberchondria score.

We found that the level of cyberchondria increased in parallel with participants' trait anxiety levels. Online environments containing a large amount of negative information that is not based on evidence can further increase anxiety in individuals with high anxiety levels. These people search the Internet excessively for health information to reassure themselves that their ailments are benign and harmless; therefore, high levels of trait anxiety and cyberchondria are expected.

In our study, psychological well-being increased with the level of cyberchondria. We believe that the search for diseases on the Internet reduces psychological stress and increases psychological...
well-being. With competent sources, the internet can be used as a tool for psychological well-being.

Family physicians must be careful with patients who have anxiety and seek information on the internet. Therefore, it is important to understand factors that increase anxiety. Individuals can use the Internet only not to manage their health conditions and get support for their diseases but also to prevent diseases and get preventive help. Training materials that provide accurate information on certain subjects and guide patients can be provided on the internet. They must be supervised by health care professionals.

4.1. Limitations
This study was conducted in Edirne city center. Therefore, sociocultural differences exist throughout the country and do not reflect the entire Türkiye population. Some of our questions, such as the annual average number of visits to health institutions, and the average daily use of the Internet and social media are based on personal statements and cannot be considered as exact values. Although we asked about the amount spent online, not only health information is searched on the internet and the results may differ if only health-related search is considered.

5. Conclusion
In our study, we found that increased online time, alcohol consumption, increased trait anxiety increase cyberchondria levels. Also, psychological well-being increases the level of cyberchondria. Our results indicate that the internet is an effective channel for behaviors related to the use of health services. Increasing health anxiety owing to unreliable information obtained from the Internet has become a serious threat because of the rapidly growing interest in Internet sources. Therefore, it is necessary to examine cyberchondria at different socioeconomic levels. We believe that improvements must be made in the accuracy of information on the Internet, which is easily accessible to society as a source of information but is unsupervised. Additionally, more support is needed to define cyberchondria as a disease that can create a significant health burden. Future studies should focus on the prevention, detection, and treatment of Cyberchondria. We believe that identifying and improving sociocultural factors affecting women’s cyberchondria, anxiety, and psychological states will improve their chances of providing primary protection against certain diseases.

Acknowledgments
We would like to thank Assoc. Prof Selçuk Korkmaz from Trakya University Department of Biostatistics for his evaluations and support during the statistical analysis of the study.

Author contributions
Conceptualization: Önder Sezer, Mehmet Akif Başoğlu.
Data curation: Önder Sezer, Mehmet Akif Başoğlu, Hamdi Nezih Dağdeviren.
Investigation: Önder Sezer, Mehmet Akif Başoğlu.
Methodology: Önder Sezer, Hamdi Nezih Dağdeviren.
Project administration: Hamdi Nezih Dağdeviren.
Software: Önder Sezer, Mehmet Akif Başoğlu.
Supervision: Önder Sezer, Hamdi Nezih Dağdeviren.
Visualization: Önder Sezer, Mehmet Akif Başoğlu.
Writing – original draft: Önder Sezer, Mehmet Akif Başoğlu.
Writing – review & editing: Önder Sezer, Hamdi Nezih Dağdeviren.

References
[1] AlMuammar SA, Noorsaeed AS, Alafif RA, Kamal YF, Daghshiyani GM. The use of internet and social media for health information and its consequences among the population in Saudi Arabia. Cureus. 2021;13:e18338.
[2] Alpaslan AH. Cyberchondria and adolescents. Int J Soc Psychiatry. 2016;62:679–80.
[3] Sherif RE, Pluye P, Ilkow F. Contexts and outcomes of proxy online health information seeking: mixed studies review with framework synthesis. J Med Internet Res. 2022;24:e34345.
[4] FitzPatrick KM, Brown S, Hegarty K, Mensah F, Garrland D. Physical and emotional intimate partner violence and women’s health in the first year after childbirth: an Australian pregnancy cohort study. J Interpers Violence. 2022;37:NP2147–76.
[5] Crandall A, Barlow M. Validation of the family health scale among heterosexual couples: a dyadic analysis. BMC Public Health. 2022;22:84.
[6] Deng WH, Lv P, Yi M. How online health discussions make people perceive benefits? Libr Inf Sci Res. 2022;44:101140.
[7] İnınacem S, Kamel Boulous MN. COVID-19 Misinformation online and health literacy: a brief overview. Int J Environ Res Public Health. 2021;18:8091.
[8] Tang L, Bie B, Park SE, Zhi D. Social media and outbreaks of emerging infectious diseases: a systematic review of literature. Am J Infect Control. 2018;46:962–72.
[9] Association for Computing Machinery (ACM) Digital Library. Predicting escalations of medical queries based on web page structure and content. Available at: https://dl.acm.org/doi/10.1145/1835449.1835607. [access date September 12, 2022].
[10] Mathes BM, Norr AM, Allan NR, Albanez BJ, Schmidt NB. Cyberchondria: overlap with health anxiety and unique relationships with impression, quality of life, and service utilization. Psychiatry Res. 2018;261:204–11.
[11] Kim ES, Tktach R, Martin D, MacLeod S, Sandy L, Yeh C. Resilient aging: psychological well-being and social well-being as targets for the promotion of healthy aging. Gerontol Geriatr Med. 2021;7:23337241211002951.
[12] Guinnayd F. An investigation of the effects of early maladaptive schemas on pre-counselling and trait anxiety levels of psychological counselors and counselling trainees. JASS Studies. 2020;13:469–82.
[13] Wu Y, Ma S, He X, Xiang S, Qi S. Trait anxiety modulates the temporal dynamics of Stroop task switching: an ERP study. Biol Psychol. 2021;163:108144.
[14] Thibaut F. Anxiety disorders: a review of current literature. Dialogues Clin Neurosci. 2017;19:87–8.
[15] Landro L. A better online diagnosis before the doctor visit. 2013. Available at: https://www.wsj.com/articles/SB10001424127887324324 8904578261743278445114 [access date May 13, 2022].
[16] White RW, Horvitz E. Experiences with web search on medical concerns and self diagnosis. AMIA Ann Symp Proc. 2009;2009:696–700.
[17] Uzun SU, Zencir M. Reliability and validity study of the Turkish version of Cyberchondria Severity Scale. Curr Psychol. 2018;47:65–71.
[18] Tomak L, Sari M, Cavus S, Bodur Guney HZ. Investigation of the factor structure of the Turkish version of the State-Trait Anxiety Inventory. Anatolia Klin. 2022;22:22–31.
[19] Telél BB. The adaptation of psychological well-being into Turkish: a validity and reliability study. HÜJ Educ. 2013;28:734–84.
[20] Gökçe E, Dundar Erbay P. Cyberchondria levels and related factors of adults in selected family health units at Manisa Şehzadeler Education and Research Community Health Center (EATMS). Antalya: National Congress of Public Health; 2017;536. Turkish. Available at: https://www.halksagligiokulu.org/Kitap/DownloadEBook/4e1f9c08-7b78-414b-90a6-4e6c404b7960 [access date June 28, 2022].
[21] Escoffery C, Miner KR, Adame DD, Butler S, McCormick L, Mendell E. Internet use for health information among college students. J Am Coll Health. 2005;53:183–8.
[22] Vismara M, Varinelli A, Pellegrini L, Enara A, Fineberg NA. New challenges in facing cyberchondria during the coronavirus disease pandemic. Curr Opin Behav Sci. 2022;10:1156. [Epub ahead of print]
[23] Uzun SU, Ozdemir C, Akbay B, Zencir M. The level of cyberchondria and influencing factors in university students. Antalya: National Congress of Public Health; 2017;527. Turkish. Available at: https://www.halksagligiokulu.org/Kitap/DownloadEBook/4e1f9c08-7b78-414b-90a6-4e6c404b7960 [access date June 29, 2022].
[24] Mano RS. Social media and online health services: a health empowerment perspective to online health information. Comput Human Behav. 2014;39:404–12.
[25] Şişman Eren E. Developing social media use purposes scale and examining based on some personal variables. Hacettepe Univ J Educ. 2014;29:230–43.
[26] Zülfikar H. The internet usage behaviour and access patterns of the patients to the health information on the internet. FN Hem Derg. 2014;22:46–52.
[27] Görkenli N. A study on internet usage in health communication. TOJDAC. 2017;7:122–38.
[28] Turkish Statistical Institute. Data portal for statistics. The percentage of individuals’ status of consuming alcoholic drinks by sex and age groups. 2020. Available at: https://data.tuik.gov.tr/Search/Search?text=alcohol [access date September 10, 2022].
[29] White AM. Gender differences in the epidemiology of alcohol use and related harms in the United States. Alcohol Res. 2020;40:01.
[30] Sæther SMM, Knapstad M, Askeland KG, Skogen JC. Alcohol consumption, life satisfaction and mental health among Norwegian college and university students. Addict Behav Rep. 2019;10:100216.
[31] Johannessen EL, Andersson HW, Bjorngaard JH, Pape K. Anxiety and depression symptoms and alcohol use among adolescents – a cross sectional study of Norwegian secondary school students. BMC Public Health. 2017;17:494.