Cyberchondria and COVID-19 anxiety and internet addiction among nursing students

Ceren Varer Akpinar[1] · Aliye Mandiracioglu[2] · Safiye Ozvurmaz[3] · Fatma Kurt[3] · Nazife Koc[4]

Abstract

This study was conducted to determine the relationship between cyberchondria and COVID-19 anxiety and internet addiction in nursing students. This cross-sectional study was conducted with 843 students studying in the nursing department of Adnan Menderes University. The mean age of the students was 20.8 ± 1.72 years and 61.2% were female. The Cyberchondria Severity Scale-Short Form, Coronavirus Anxiety Scale, and the Young Internet Addiction Test-Short Form were used to collect data. The study found a positive association between internet addiction, cyberchondria severity, and anxiety about COVID-19. It was found that the anxiety of COVID-19 had a mediating role in the association between internet addiction and cyberchondria severity. It was found that the use of the internet as a source of information on health problems and trusting the health information found had a significant effect on high cyberchondria levels ($p < 0.05$). Taken together, the findings of previous studies and this study on the role of the association between internet addiction and cyberchondria exacerbating anxiety due to the pandemic provide further evidence for healthcare professionals that greater focus is needed on the problems of the new era related to people-internet interaction. To reduce the negative effects of the current health crisis and future health crises, interventions for nursing students to control their internet use and cyberchondria behaviors should be prioritized.

Keywords COVID-19 · Cyberchondria severity scale · Cyberchondria · Internet addiction · Nursing students

Introduction

Crises that affect the entire population such as pandemics increase fear and stress about health in society and negatively affect public mental health (Taha et al., 2014). Studies have shown that people experienced anxiety symptoms due to isolation and social distancing in previous pandemics such as the H1N1 and the Middle East respiratory syndrome (MERS) pandemics (Jeong et al., 2016). The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus that caused the coronavirus 2019 (COVID-19) pandemic

was a new, highly infectious virus that could be fatal for certain populations. There was no effective treatment, therefore, it caused anxiety similar to previous incurable and fatal infectious diseases. COVID-19 anxiety is related to being infected and dying from the disease. Anxiety can be caused by fear of infecting others, lack of necessary information about COVID-19, loneliness due to social isolation, and economic distress (Starcevic et al., 2021; Xiang et al., 2020).

In the beginning, COVID-19 was a new disease and healthcare systems and societies were not prepared; therefore, this caused an environment of uncertainty. People make online searches for health information to tolerate this uncertainty. Additionally, measures to prevent infection such as quarantine, isolation, and social distancing cause several psychological problems in people leading to an increased tendency to search for health information online (Starcevic et al., 2021). Although the internet allows easy access to information through a high number and wide variety of sources, it also presents serious problems in accessing sufficient and correct information (Lewis, 2006). Decreased trust in public institutions during the pandemic has led people to believe that information about COVID-19 from online

✉ Ceren Varer Akpinar
varerceren@gmail.com

[1] Department of Public Health, Faculty of Medicine, Giresun University, Giresun 28000, Turkey

[2] Department of Public Health, Faculty of Medicine, Ege University, Izmir, Turkey

[3] Department of Public Health Nursing, Faculty of Nursing, Adnan Menderes University, Aydın, Turkey

[4] Home Patient Care Services, Istanbul Rumeli University, Istanbul, Turkey

alternative sources such as social media and information from official sources is equally reliable. Incorrect and missing information about COVID-19 shared on several online platforms can increase anxiety about COVID-19 in people and worsen cyberchondria (Eysenbach et al., 2002). Incorrect, misleading information about COVID-19 has increasingly become a major public health problem and a risk on its own. After the disease was first detected in China and then in Europe, considerable information and news began to spread both on traditional media and the internet. The World Health Organization declared that we are under two major threats to our health, the pandemic and an infodemic (Jokic-Begic et al., 2020).

Both unknowns and uncertainties about the disease and social isolation measures during the COVID-19 pandemic have caused people to resort to online sources for information, spending increased time on the internet and social media platforms (Yam et al., 2021). This can increase internet dependency. Internet dependency is defined as one's losing control of internet use and excessive use of the internet to the extent that it has negative effects on one's life and causes problems (Vejmelka & Matković, 2021). Increasing internet addiction has resulted in the fast spread of incorrect information about COVID-19 and worsened cyberchondria by increasing the severity of COVID-19 anxiety.

With the fear of developing serious disease, there can be a continuous search for online health information. This can increase health anxiety and result in cyberchondria, which is defined as an excessive form of anxiety (Doherty-Torstrick et al., 2016). Cyberchondria can be defined as an excessive search for online health information leading to higher anxiety levels (McElroy & Shevlin, 2014). Fear of the COVID-19 pandemic, the increasing amount of online and unverified information about this global health threat, and internet addiction provide a suitable environment for cyberchondria, which is increasingly becoming a major public health problem.

The unavailability of in-person lessons for university students during the COVID-19 pandemic reduced social interaction and increased time spent at home increased the use of the internet both for social interaction and to obtain health information (Tahir et al., 2021). Schools were closed at the beginning of the pandemic and health sciences students had to stay at home having online education. Furthermore, students of health sciences are believed to conceptualize some signs on their bodies with the new information found and interpret them as symptoms of diseases and therefore have higher health anxiety levels (Waterman & Weinman, 2014). When health anxiety is high, online sources are used more often and online health searches increase anxiety, leading to a vicious circle in regard to cyberchondria.

Studies highlight that nursing students face a greater risk than the general population of experiencing psychological problems related to the COVID-19 pandemic. It is stated that even after the pandemic, nursing students may have concerns about fear of being infected and other strict public health measures such as social isolation (Falguera et al., 2020; Oducado & Soriano, 2021). In addition, there has been an increase in problematic internet use among nursing students during the pandemic period (Cai et al., 2021; Shehata & Abdeldaim, 2021). Many studies are showing that anxiety levels and social media addictions increased in university students during the pandemic period in Turkey (Durbas et al., 2021; Örgev & Kınalı, 2022; Parlak Sert & Başkale, 2022). In a study conducted on health sciences students during the pandemic period, health anxiety and cyberchondria levels were found to be higher in those who have not had COVID-19 before (Kurcer et al., 2022). However, no study has evaluated the concepts of internet addiction, COVID-19 anxiety, and cyberchondria together among nursing students in Turkey. The objective of this study was to examine the mediating role of COVID-19 anxiety in the association between internet addiction and cyberchondria and to determine the factors associated with cyberchondria in nursing students.

In the present study, the following hypotheses were examined:

H1: Internet addiction positively influences the severity of cyberchondria.
H2: Internet addiction positively influences the anxiety of COVID-19.
H3: The anxiety of COVID-19 positively influences the severity of cyberchondria.
H4: The anxiety of COVID-19 has a mediating role in the association between internet addiction and the severity of cyberchondria.

Methods

Design and participants

The population of this cross-sectional study consisted of 1037 students in the Department of Nursing at Adnan Menderes University in the 2021–2022 academic year. The convenience sampling method was used in this research and the researchers aimed to reach all nursing students at Adnan Menderes University. The convenience sampling method was preferred considering accessibility and time factors (Yıldırım & Şimşek, 2011). Students who agreed to participate in the study and completed the questionnaire were included in the study. The response rate of the study was 81.3% (843 nursing students). In addition, the participation rate by year level (1st, 2nd, 3rd, and 4th) was similar (82.2%, 85.6%, 79.1%,and 77.8%, respectively).

Procedure

The study data was collected by the researchers in the 2021–2022 academic year (between November 2021 and December 2021). In this period, nursing faculty students were receiving hybrid (online and face-to-face) education. The data were collected by the two researchers involved in the study during face-to-face lessons. Two of the researchers are actively working with the relevant faculty and are in one-on-one communication with the students.

The study was conducted according to the Helsinki Declaration for Ethical Principles of Research. After obtaining approval from the Clinical Research Ethics Committee of the Department of Medicine of Ege University (22.11.2021–424578), permission was obtained from the Head of Nursing of Adnan Menderes University to conduct the study. Additionally, participants were asked to sign informed voluntary consent forms and necessary information about the study was given.

Instruments

The first part of the questionnaire was designed by researchers, including 18 questions related to socio-demographic characteristics, health status, and online health searches and internet use. The second part of the questionnaire comprised the Cyberchondria Severity Scale-Short Form (CSS-SF), Coronavirus Anxiety Scale (CAS), and Young Internet Addiction Test-Short Form (YIAT-SF). The survey took approximately 20 min to complete.

The short version of the CSS developed by McElroy and Shevlin (2014) and adapted into Turkish by Uzun and Zencir (2021) was used to determine cyberchondria levels, which is the dependent variable in our study. The CSS consists of five sub-scales called compulsion, distress, excessiveness, reassurance, and mistrust of medical professionals. The validity and reliability study of the short form was performed by McElroy et al. (2019). The Turkish adaptation of the short form was performed by Söyler et al. (2021). Cronbach's alpha value of the scale is 0.94. The scale is a 5-point Likert scale where 1 means never and 5 means always. Points from each question are added to calculate the total cyberchondria score of each participant. The total score on the scale ranges between 12–60. Higher scores represent higher cyberchondria levels. Cronbach's alpha value of the CSS-SF was 0.84 for the current study.

CAS, developed by Lee (2020), was used to determine the COVID-19 anxiety levels of the students. The validity and reliability study of the Turkish version of the scale was performed by Biçer et al. (2020). Cronbach's alpha value of the unidimensional scale is 0.83. The scale is a 5-point Likert scale where 0 = never, 1 = rare/less than 1 or 2 days, 2 = a couple of days, 3 = more than 7 days, and 4 = almost every day in the last 2 weeks. The lowest possible score is 0 and the highest possible score is 20 points on the scale. Higher scores represent higher anxiety levels. A score of nine or higher denotes a high anxiety level. Cronbach's alpha value of CAS was 0.90 for the current study.

The YIAT-SF was developed by Young (1998). The short version, developed by Pawlikowski et al. (2013), was used to evaluate the internet addiction of the students in our study. The scale was adapted to Turkish by Kutlu et al. (2016). The scale is a 5-point Likert scale with 12 items where 1 means never and 5 means always. The internal consistency coefficient of the scale was calculated as 0.85. Higher scores represent higher internet addiction levels. Cronbach's alpha value of the YIAT-SF was 0.87 for the current study.

Data analysis

Study data were analyzed using the SPSS 24.0 and AMOS 24 software packages. For descriptive analysis, numeric variables are shown as mean and standard deviation, and categorical variables are shown as numbers and percentages. The normality of data distribution was examined using the Shapiro–Wilk and Kolmogorov–Smirnov tests, histograms, and skewness and kurtosis coefficients. If kurtosis and skewness values are between -1.5 and + 1.5, it is accepted that data are normally distributed (Tabachnick & Fidell, 2013). The correlation between cyberchondria, internet addiction, and COVID-19 anxiety scores was calculated using Pearson's correlation coefficient. Structural equation modeling was used to test the research model. In the examination of the goodness-of-fit values of the structural equation model, χ^2/df < 5; Goodness-of-fit index (GFI), Tucker Levinson fit index (TLI), Comparative fit index (CFI) > 0.90, and root mean square of error approximation (RMSEA) ≤ 0.08 values were taken as the basis for good fits (Hu & Bentler, 1999). Bootstrapping techniques were used to examine whether the anxiety of COVID-19 mediated the relationship between internet addiction and cyberchondria severity (Hayes, 2013). To test the total, direct, and indirect effects, bootstrapping 95% confidence intervals were calculated (5.000 resamples) (Hayes, 2018). T-tests and one-way analysis of variance (ANOVA) were used to evaluate the difference between the mean scores of cyberchondria severity because the data were normally distributed. Multiple linear regression analysis was performed to evaluate factors related to the cyberchondria scores. Multiple linear regression was performed using the enter approach. All variables with a p-value less than 0.05 were included in the regression model at the same time after bivariate analysis to evaluate the differences between the mean scores of cyberchondria. Thirty-six data identified by their Mahalanobis values before regression were not included in the analysis. Significance was set at $p < 0.05$ in the analyses.

Results

The mean age of the study group was 20.8 ± 1.72 (minimum: 17, maximum: 29) years and 61.2% were female. Table 1 shows the distribution of students according to their sociodemographic characteristics, health status and online health research behavior, and cyberchondria scores. The distribution of the participants by year level was similar. More than half of the parents of the participants (61.1% of mothers and 56.7% of fathers) were primary and secondary school graduates. About half (51.2%) of the students

stayed in dormitories, 6.8% had a chronic disease, and 40.8% had someone in the family with a chronic disease. Just over one-quarter (27.2%) of the parents were healthcare workers. Sixty percent of the students described their health as good-very good. Some (19.2%) of the students reported that they used the internet when they had a health problem and 43.2% reported that they searched for probable causes of their symptoms; 19.5% of the students reported that they often/always trusted online health information. One-quarter (23.5%) of the students had had COVID-19, 43.5% took dietary supplements to protect themselves from COVID-19,

Table 1 Students' sociodemographic characteristics, health status, and online health research behavior and their cyberchondria scores

		n	%	CSS-SF Mean ± SD	p
Sex	Female	516	61.2	36.16 ± 8.29	0.121
	Male	327	38.8	37.07 ± 8.54	
Year level	1	235	27.9	37.32 ± 8.65	0.223
	2	225	26.7	36.54 ± 8.87	
	3	201	23.8	37.24 ± 8.15	
	4	182	21.6	37.54 ± 8.21	
Education level of the mother	No Education/Preschool	143	17.0	37.41 ± 8.85	0.100
	Primary/Secondary	515	61.1	36.90 ± 8.28	
	High/ Faculty	185	21.9	37.52 ± 8.25	
Education level of the father	No Education/Preschool	37	4.4	38.02 ± 10.15	0.491
	Primary/Secondary	478	56.7	36.22 ± 8.38	
	High/ Faculty	328	38.9	36.77 ± 8.21	
Who do they live with?	Family	159	18.9	36.03 ± 8.75	0.205
	Dormitory/ Friends	617	73.1	36.46 ± 8.39	
	Alone	67	7.9	38.11 ± 7.50	
Presence of a chronic disease	Yes	57	6.8	35.36 ± 8.60	0.281
	No	786	93.2	36.59 ± 8.38	
Presence of a chronic disease in the family	Yes	344	40.8	36.38 ± 8.81	0.773
	No	499	59.2	36.60 ± 8.11	
Presence of healthcare worker in family	Yes	229	27.2	36.76 ± 8.58	0.596
	No	614	72.8	36.42 ± 8.33	
Perceived health status	Bad	47	5.6	36.91 ± 7.69	0.080
	Average	289	34.3	37.39 ± 8.45	
	Good	507	60.2	35.97 ± 8.41	
Resource used in case of health problems	Healthcare worker	601	71.3	35.53 ± 8.25	**< 0.001**
	Relatives/Friends Internet	69	8.2	38.65 ± 8.89	
		162	19.2	39.47 ± 8.01	
Online health information seeking reasons	Symptoms	364	43.2	36.88 ± 8.13	0.262
	Health service	182	21.6	36.54 ± 9.21	0.953
	Diagnosis	238	28.2	37.71 ± 8.02	0.095
	Treatment	208	24.7	36.10 ± 8.44	0.412
	Health histories of others	89	10.6	38.62 ± 8.73	**0.012**
Perceived reliability of online health information	Never/Rarely	247	29.3	34.32 ± 8.84	**< 0.001**
	Sometimes	432	51.2	36.71 ± 8.06	
	Often/Always	164	19.5	39.28 ± 7.71	
Ever had COVID-19	Yes	198	23.5	37.22 ± 9.12	0.252
	No	645	76.5	36.31 ± 8.16	
Vitamin and mineral supplement use against COVID-19	Yes	450	53.4	37.02 ± 8.34	**0.021**
	No	393	46.6	35.93 ± 8.44	
Tests without a physician's recommendation (e.g. CT, MRI, blood tests)	Yes	131	15.5	37.90 ± 7.83	**0.040**
	No	712	84.5	36.25 ± 8.48	

and 15.5% had taken a test without medical advice. The level of cyberchondria in the students who used the internet as an information source when they had a health problem ($p < 0.001$), who searched for personal health stories online ($p = 0.012$), and who reported that they often/always trusted online health information was significantly higher than in the other students ($p < 0.001$). Furthermore, students who took vitamin and mineral supplements to protect against COVID-19 ($p = 0.021$) and had taken tests without medical advice ($p = 0.040$) during the pandemic were found to have significantly higher levels of cyberchondria (Table 1).

Table 2 shows the scores of the cyberchondria and internet addiction scales and the inter-correlations of the scales. The mean cyberchondria scale score of the students in the study was 28.67 ± 8.58, the mean score for internet addiction was 27.34 ± 8.59, and the mean score for COVID-19 anxiety was 2.49 ± 3.85. There was a significant, positive,

and moderate level of correlation between the scores on the cyberchondria scale and internet addiction scale and the COVID-19 anxiety scale (respectively; $r = 0.505$, $p < 0.001$; $r = 0.503$, $p < 0.001$). Moreover, there was a significant and positive level of correlation between the scores on the cyberchondria scale and the internet addiction scale ($r = 0.361$, $p < 0.001$).

The mediating role of anxiety of COVID-19 in the association between internet addiction and cyberchondria severity was tested. The figure containing the findings of the research model is shown in Fig. 1. The goodness-of-fit values of the model were acceptable ($\chi2/df = 3.941$; $GFI = 0.954$; $CFI = 0.931$; $TLI = 0.957$; $RMSEA = 0.070$).

Path coefficients for total, indirect and direct effects are shown in Table 3. Looking at the direct effects in the model that were examined, it was found that internet addiction predicted cyberchondria severity ($\beta = 0.527$,

Table 2 Inter-correlations of the scales and descriptive statistics

	Minimum	Maximum	Mean ± SD	CSS-SF	YIAT-SF	CAS
CSS-SF	12	60	28.67 ± 8.58	1.00		
YIAT-SF	12	60	27.34 ± 8.59	0.505*	1.00	
CAS	0	19	2.49 ± 3.85	0.361*	0.503*	1.00

*$p < 0.001$

CSS-SF Cyberchondria Severity Scale-Short Form; YIAT-SF Young Internet Addiction Test-Short Form; CAS Coronavirus Anxiety Scale
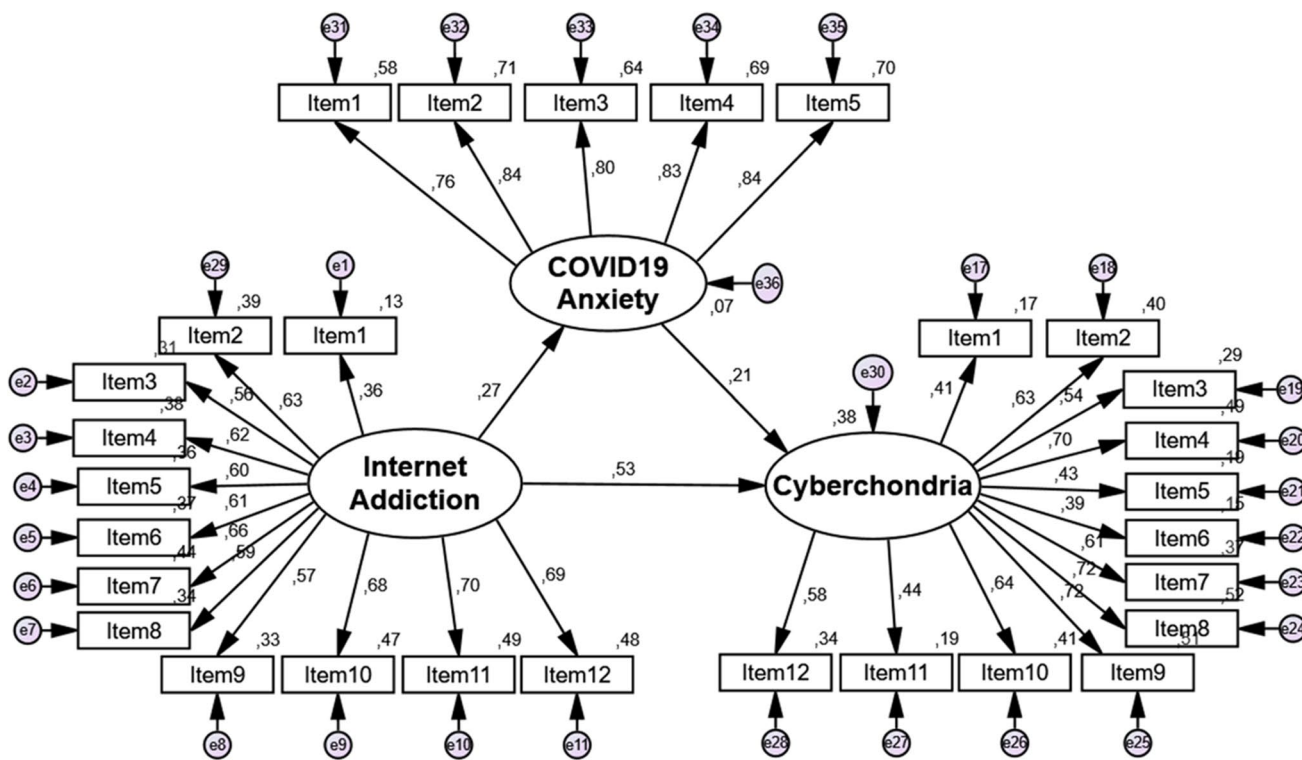

Fig. 1 Mediation model

Table 3 The mediating role of the anxiety of COVID-19 in the association between internet addiction and the severity of cyberchondria

Pathway	Coefficient	Lower bound	Upper bound
Total effects			
Internet Addiction ➜ Cyberchondria	0.383*	0.298	0.475
Direct effects			
Internet Addiction ➜ COVID-19 Anxiety	0.271*	0.192	0.349
COVID-19 Anxiety ➜ Cyberchondria	0.206*	0.132	0.282
Internet Addiction ➜ Cyberchondria	0.527*	0.451	0.599
Indirect effect			
Internet Addiction ➜ COVID-19 Anxiety ➜ Cyberchondria	0.156*	0.133	0.181

$^{*}p < 0.001$

$p < 0.001$) and anxiety of COVID-19 ($\beta = 0.271$, $p < 0.001$). Similarly, the anxiety of COVID-19 predicted cyberchondria severity ($\beta = 0.206$, $p < 0.001$). When the findings regarding the indirect effects were examined, it was found that internet addiction predicted cyberchondria severity via anxiety of COVID-19 ($\beta = 0.156$, $p < 0.001$) (Table 3).

A model was created by conducting multiple linear regression analyses with the variables that were found to be statistically significant in univariate analysis to estimate cyberchondria levels. According to the regression analysis, COVID-19 anxiety, internet addiction, use of the internet as a source of information for health problems, searching personal health stories on the internet, and often/always trusting health information obtained online had a significant effect on high cyberchondria levels ($p < 0.05$). These factors explained 37.5% of the change in cyberchondria levels (Table 4).

Discussion

This study investigated the relationship between cyberchondria and COVID-19 anxiety and internet addiction in nursing students.

According to the findings of this study, there is a linear and positive relationship between internet addiction and the severity of cyberchondria. This finding supports H1. A study conducted during the pandemic reported that people with severe cyberchondria tended to search for information online in an addictive manner (Seyed Hashemi et al., 2020). In a similar study, a significant relationship was found between cyberchondria levels and conducting online searches two or more times per week (Köse & Murat, 2021). Some studies concluded that smartphone, internet and/or social media addiction was related to the severity of cyberchondria (Khazaal et al., 2021). Similarly, another study found a correlation between cyberchondria severity and technology addiction (Vismara et al., 2020).

Table 4 Multiple linear regression analysis of cyberchondria

	Unstandardized Coefficient		Standardized Coefficient		95% Confidence Interval
	B	SE	Beta	p	
COVID-19 anxiety	3.92	1.11	0.10	**< 0.001**	**1.73 – 6.10**
Internet addiction	0.44	0.03	0.43	**< 0.001**	**0.38 – 0.51**
Resource used in case of health problems					
Health worker (ref)					
Internet	2.79	0.65	0.13	**< 0.001**	**1.50 – 4.08**
Relatives/Friends	0.80	1.03	0.02	0.433	-1.22 – 2.82
Online health scanning reason—Health histories of others	2.36	0.87	0.08	**< 0.001**	**0.65 – 4.08**
Reliability of online health information					
Never/Rarely (ref)					
Sometimes	1.57	0.58	0.09	**< 0.001**	**0.43 – 2.72**
Often/Always	2.46	0.76	0.11	**< 0.001**	**0.97 – 3.96**
Herbal medicine use against COVID-19	0.66	0.51	0.04	0.191	-0.33 – 1.66
Examination without a physician's recommendation	1.05	0.71	0.04	0.144	-0.34 – 2.44

Another finding of our study was that there was a linear and positive relationship between internet addiction and COVID-19 anxiety. H2 was therefore supported. Previous studies showed that internet use and internet addiction rates had increased in nursing students during the pandemic (Cai et al., 2021; Rasouli et al., 2022). Studies in the literature show that people have increased levels of fear and anxiety during pandemics and tend to meet their needs for information by making online searches (Lau et al., 2010; Saadatian-Elahi et al., 2010). Regarding the behavior model, Brand et al. (2016) stated that individuals tended to use the internet and smartphones excessively to manage mood states such as anxiety and fears (Yam et al., 2021).

Another finding of our study was that there was a linear and positive relationship between cyberchondria levels and COVID-19 anxiety. This finding shows that students with high COVID-19 anxiety have higher levels of cyberchondria. These results show that H3 is supported. People are exposed to excessive information about COVID-19 during the pandemic and anxiety and online health searches become a habit. This worsens anxiety, which then can lead to cyberchondria. In the literature, studies are reporting similar results. A study found a two-way relationship between major fear of COVID-19 and COVID-19 anxiety and cyberchondria (Wu et al., 2021). Another study found a positive correlation between the severity of cyberchondria and COVID-19 anxiety (Yam et al., 2021).

Another main finding of the study was the mediating role of anxiety of COVID-19 in the association between internet addiction and cyberchondria severity. This result supports H4. Measures such as isolation and social distancing to prevent the spread of the virus during the COVID-19 pandemic led people to spend more time on the internet. On the other hand, some studies reported that significant amounts of incorrect information about the COVID-19 pandemic were shared online and people who were exposed to this information had increased COVID-19 anxiety and fear (Brown et al., 2020; Garfin et al., 2020). In a systemic review related to cyberchondria, it was stated that individuals exhibited more cyberchondriac behaviors during epidemic periods that affected the whole world (Yam et al., 2021; Zheng et al., 2020). Our study findings also suggest that the severity of cyberchondria among individuals with internet addiction increases, but with high COVID-19 anxiety, the severity of cyberchondria among individuals increases even more.

In addition to the above, the cyberchondria levels of the students who reported that they used the internet as a source of reference for health information when they had a medical condition were significantly higher in our study. People with high anxiety levels can be inclined to increase health information searches online to reduce their anxiety about the causes of symptoms in their bodies. Like a vicious circle, searching for health information online to reduce anxiety can

be related to higher levels of anxiety and increased cyberchondria levels. A study found that people with more severe cyberchondria made more online searches for information about diseases (Elhai et al., 2020). Another study reported that people who used the internet as a source of information when they had health problems had higher levels of cyberchondria (Köse & Murat, 2021; Kurcer et al., 2022).

In our study, one-fifth of the students believed that online health information was reliable and half of the students reported that they were indecisive. This result shows that the majority of the students have the potential to trust online health information even though they can be somewhat skeptical. Additionally, the cyberchondria levels of this group were found to be significantly higher than those who believed that online information was not reliable. Another study found that cyberchondria levels of people who trusted online information were higher than those who did not trust it or who were indecisive (Kurcer et al., 2022). Especially during the pandemic period, considerable misinformation was produced, which spread rapidly online (Brown et al., 2020; Garfin et al., 2020; WHO, 2020). The WHO (2020) has recommended countries consider the information needs of all individuals related to COVID-19 and provide accurate and reliable information in all media channels. In a review by Yılmaz and Candan (2020), it was shown that excessive and incorrect online health information was shared during the pandemic period in Turkey. Increased levels of anxiety and higher cyberchondria levels in people who trust such incorrect information is an expected result.

The findings of this study should be interpreted in light of several limitations. One of the prominent limitations of the study is that the participants were nursing students only. At the same time, convenience sampling, one of the purposeful sampling methods, was used in this study. For these reasons, care should be taken when generalizing to populations with different socio-demographic characteristics. In addition, students who did not attend face-to-face education during the data collection period could not participate in the study. These individuals may be students who would not attend face-to-face education due to COVID-19 anxiety or being cyberchondriac, which may cause non-response bias. On the other hand, the higher number of participants (> 80%) in the study allows important insight into nursing students. In future research, this study can be repeated in different age and individual groups in the population to confirm the power of the mediating model.

Another limitation is the cross-sectional design of this study, which resulted in limitations in explaining causality. Additionally, all data were obtained using the self-reporting method. Therefore, future studies in different methodologies can be planned. Experimental studies may also examine the effect of seeking online health information on the anxiety of individuals. Qualitative studies can provide a better understanding of how people who have anxiety about the pandemic use the internet to seek health-related information.

Conclusion

This study clearly shows that there is a relationship between COVID-19 anxiety and internet addiction and both affect cyberchondria in nursing students. Along with previous studies, this study observed that the anxiety of COVID-19 has a mediating role in the relationship between internet addiction and cyberchondria severity. These findings are important in terms of creating an educational environment where these young people who will be future healthcare professionals can cope with such situations. To reduce the negative effects of the current health crisis and future health crises, interventions for nursing students to control their internet use and cyberchondria behaviors should be prioritized. Additionally, services provided by mental health professionals to students with high levels of COVID-19 anxiety can prevent an increase in cyberchondria.

Declarations

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