Original Article

Role of Anxiety Sensitivity, Intolerance of Uncertainty, and Cyberchondria Behaviors among Individuals Diagnosed with COVID-19

Nudrat Rashid[1], Amna Shahid[1], Mehwish Munir[1], Muhammad Umar Khan[1*] and Zoobia Ramzan[2]

[1]Department of Applied Psychology, Government College University, Faisalabad, Pakistan
[2]Institute of Behavioral Sciences, Dow University of Health Sciences, Ojha Campus, Karachi, Pakistan

ARTICLE INFO

ABSTRACT

The COVID-19 pandemic was a quick outbreak that affected individuals' mental health. **Objective:** To investigate the relationship between anxiety sensitivity, intolerance of uncertainty, and cyberchondria tendencies among individuals with and without COVID-19. **Methods:** A total of 411 COVID-19 individuals, including 185 men (45%) and 226 women (55%) from low, middle, and high socioeconomic statuses (103 men (25.1%), 155 men (37.7%), and 153 men (37.2%)) were recruited. The participants ranged in age from 18 to 30. Data were collected from different public sector hospitals and a public sector university of Faisalabad. We calculated the results through SPSS version 27. **Results:** The findings showed a significant positive association between cyberchondria tendencies and anxiety sensitivity (r = 0.61, p.001) and intolerance for uncertainty (r = 0.64, p.001). Moreover, significant differences were observed in the variable of anxiety sensitivity (t =–10.40, p.001), intolerance of uncertainty (t = –5.89, p.001), and cyberchondria tendency (t =–6.08, p.001) between individual diagnosed with and without COVID-19. **Conclusions:** It is concluded that there is a significant relationship of anxiety sensitivity and intolerance of uncertainty with cyberchondria tendencies and significant differences were found between gender and individuals diagnosed with and without COVID-19.

INTRODUCTION

The syndrome, known as "cyberchondria" is defined by a person's constant quest for health information online, which makes them more anxious about their health [1]. Cyberchondria is a multifaceted notion that includes compulsive behavior as well as worry. Cyberchondria causes time-consuming online reassurance seeking a dysfunctional emotional state, the person ignores the required tasks and remains consistent to search online material [2]. People who fear anxiety-related feelings (AS) and negative views about uncertainty (IU) may become obsessive information seekers on social media, which will make their anxiety worse and set off a difficult-to-break cycle of cyberchondria [3]. The COVID-19 pandemic was fast spreading, which caused anxiety and unrest among individuals [4]. Anxiety also exacerbated when the media was also saturated with unclear information [5]. Excessive online research for health-related information can be a form of safety-seeking behavior in and of itself (e.g., determining whether symptoms are indicative of a viral infection), and potentially upsetting information may encourage or trigger more help-seeking behaviors that promote excessive Internet use. According to recent studies, cyberchondria influences people's perceptions of hazard during pandemics like COVID-19 and encourages

Rashid N *et al.,*

them to take prescribed health precautions more quickly [4]. The excessive search leads to worries, the formation of dysfunctional beliefs, and social isolation that ultimately influences individual mental health [6]. Cyberchondria is an aberrant behavior that is considered present in 55.6% of people worldwide [7]. However, in Pakistan, the prevalence rate of cyberchondria is 40 (26.6%), indicating that participants had a lower level of the disorder whereas 35 (23.3%) of the individuals had a higher level [8]. During the pandemic, anxiety was prevalent in students at a rate of about 27% [9]. Additionally, information-seeking habits considerably increased; for example, during the first wave, 46% individuals frequently searched internet-based information and approximately 75% individuals pursued internet-based information, which was almost double from the first one [10]. The COVID-19 epidemic has also raised a lot of doubts about a lot of areas of daily life. Cyberchondria is known to be strongly predicted by an intolerance of uncertainty. The main driving force for Internet searches for health information is the need to reduce ambiguity [11]. People who are more tolerant of ambiguity may view unclear circumstances as frightening and unpleasant. In order to temper their perceptions of uncertainty and threat, people engage in actions that reduce uncertainty, such as frequently seeking reassurance [12]. While implementing lockdown procedures will increase anxiety sensitivity and cause behavioral changes in the majority of students, it has been noted that individuals with higher degrees of cyberchondria will continue to be more anxious and more likely to engage in safety activities –.

Anxiety sensitivity is the propensity to experience sensations of anxiety, whereas uncertainty intolerance is the inability to accept ambiguity and unpredictability. Cyberchondria activities include a compulsive search for medical information online. In order to create efficient treatments and assistance for those who are experiencing difficulties. It's a common trend for people to search for a minor symptom they experienced on the internet. In the present time due to COVID-19, the tendency of cyberchondriac behavior is enhanced. Cyberchondria increases mental illness in individuals which further leads them to visits hospitals and consults some general practitioner. The current study aimed to investigate the relationship and difference among anxiety sensitivity, intolerance of uncertainty, and cyberchondria tendencies among individuals diagnosed with COVID-19.

METHODS

This cross-sectional study was conducted in the Department of Applied Psychology, Government College University Faisalabad from October 2020 to February 2022. A total of 500 participants were targeted and screened out

for eligibility; 411 respondents met the inclusion criteria and they were recruited. The diagnosed people (after their full recovery) were 200, and were taken from different hospitals of Faisalabad i.e., DHQ Hospital Faisalabad (66), Allied Hospital Faisalabad (66), and General Hospital Ghulam Muhammad Abad (68) and the never diagnosed with COVID-19 group were 211 and were taken from the university students of GC University, Faisalabad. Only those participants were included who were diagnosed with COVID-19 (by the medical staff of the hospital) and experienced in-patient settings during COVID-19 were included in this study 'diagnosed with COVID-19' group. All the respondents were assessed and screened out for eligibility after the recovery process. Patients with medical comorbidities were excluded from the study. 'Never diagnosed with COVID-19' group was those who, as per their own report, were never diagnosed with the disease. The scoring system of variables was set as follows: 1. On the scale of anxiety sensitivity person's high score (72) indicated a higher level of anxiety sensitivity and a person's low score (0) indicated a lower level of anxiety sensitivity. 2. On the scale of intolerance of uncertainty person's high score (60) indicated a higher level of intolerance of uncertainty and a person's low score (12) indicated a lower level of intolerance of uncertainty. 3. On the scale of compulsion person's high score (40) indicated a higher level of compulsion and a person's low score (8) indicated a lower level of compulsion. 4. On the scale of excessiveness person's high score (40) indicated a higher level of excessiveness and a person's low score (8) indicated a lower level of excessiveness. 5. On the scale of reassurance person's high score (30) indicated a higher level of reassurance and a person's low score (6) indicated a lower level of reassurance. 6. On the scale of distress person's high score (40) indicated a higher level of distress and a person's low score (8) indicated a lower level of distress. 7. On the scale of mistrust person's high score (15) indicated a higher level of mistrust and a person's low score (3) indicated a lower level of mistrust. 8. On the scale of cyberchondria person's high score (165) indicated a higher level of cyberchondria and a person's low score (33) indicated a lower level of cyberchondria. We used different psychological instruments to assess and screened out the patients. For example, Anxiety Sensitivity Index (ASI) contained 18 items scored from 0=very little to 4=very much on a 5-point rating scale was used to assess physical, cognitive, and social domains [13]. ASI had good internal consistency from 0.76 to 0.86 and test re-test reliability between 0.83 to 0.85 respectively. The Intolerance of Uncertainty Scale (IUS) is a 12 items scale which is scored on 5-points rating scale [14]. IUS has two subscales prospective and inhibitory domains. The Intolerance of the

Uncertainty Scale (IUS) has a test-retest reliability of r =.77 [14]. IUS validity was evaluated at r =.53 and.63, while trait anxiety was estimated at r =.57. Moreover, Cyberchondria Severity Scale (CSS) isa 33-item scale which was used to measure cyberchondria. It is 5-points Likert scale. It has compulsion, distress, excessiveness, reassurance and mistrust subscales. According to the alpha tests, CSS is a high reliability overall (i.e., α=.94) and for subscales between .75 to .95 with test-retest reliability .65 [2]. After getting approval from Institutional Review Board (IRB), Government College University Faisalabad the study was initiated. Ethical review reference number of the study is GCUF/ERC/3014 and it was taken on the 5th of September 2020. The researcher briefly explained the participants about the study. The participants were informed that their participation in the study is voluntary and they have the right to withdraw at any time if they feel discomfort. Participants were assured their information will remain confidential. They were asked to read the informed consent and sign it if they want to participate in the study. For data collection 500 participants were targeted and screened out for eligibility; 411 respondents met the inclusion criteria and they were recruited. The diagnosed people were 200 and were taken from different hospitals of Faisalabad i.e., DHQ Hospital Faisalabad (66), Allied Hospital Faisalabad (66), and General Hospital Ghulam Muhammad Abad (68) and the never diagnosed with COVID-19 group were 211 and were taken from the university students of GC University, Faisalabad i.e., Bachelor (51), Master (95) and post-graduate (65). Only those participants were included who were diagnosed with COVID-19 and experienced in-patient settings during COVID-19 were included in this study. All the respondents were assessed and screened out for eligibility after the recovery process. Patients with medical co morbidities were excluded from the study. 'Never diagnosed with COVID-19' group was those who, as per their own report, were never diagnosed with the disease. The significant effect (p>0.5), as well as relationships between the variables, were examined using Pearson correlation and t-test. The SPSS version-27.0 was used to calculate all statistical calculations.

RESULTS

A total of 411 respondents were taken in this study. The sample was comprised of 185 men (45%) and 226 women (55%) with low 103 (25.1%), middle 155 (37.7%), and high socioeconomic status 153 (37.2%). Participants diagnosed with COVID-19 were 200(48.67%) and without were 211(51.33%). Participants' educational level was bachelor 25151(61.1%), master 95(23.1%) and postgraduate were 65(15.8%). Participants' ages ranged from 18 to 30 (M±SD=21.57±1.97). Findings reported that physical anxiety

sensitivity has significant positive relationship with compulsion, excessiveness, reassurance, distress and with overall Cyberchondria whereas significant negative relationship with mistrust. The cognitive anxiety sensitivity has significant positive relationship with compulsion, excessiveness, reassurance, distress and with overall cyberchondria but significant negative relationship with mistrust. The social anxiety sensitivity has significant positive relationship with compulsion, excessiveness, reassurance, distress and with overall cyberchondria whereas significant negative relationship with mistrust. The overall AS has significant positive relationship with compulsion, excessiveness, reassurance, distress and with overall cyberchondria whereas significant negative relationship with mistrust. The prospective intolerance of uncertainty has significant positive relationship with compulsion, excessiveness, reassurance, distress and with overall cyberchondria but has significant negative relationship with mistrust. The inhibitory intolerance of uncertainty has significant positive relationship with compulsion, excessiveness, reassurance, distress and with overall cyberchondria but significant negative relationship with mistrust. The overall Intolerance of uncertainty has significant positive relationship with compulsion, excessiveness, reassurance, distress and with overall cyberchondria but significant negative relationship with mistrust (table 1).

Table 1: : Inter correlation matrix among the study variables

Variables	COM.	EXC	REA	Distress	Mistrust	Cyberchondria
Physical	.537**	.547**	.489**	.583**	-.264**	.570**
Cognitive	.591**	.584**	.507**	.610**	-.338**	.601**
Social	.516**	.538**	.458**	.564**	-.445**	.524**
ASI	.603**	.612**	.533**	.644**	-.386**	.621**
Prospective	.555**	.525**	.472**	.625**	-.355**	.569**
Inhibitory	.588**	.568**	.490**	.651**	-.380**	.601**
IUT	.613**	.582**	.533*	.674**	-.425**	.626**

Note: **p < 0.01; COM: Compulsion, EXC: Excessiveness, REA: Reassurance, ASI: Anxiety Sensitivity Index, IUT: Intolerance of Uncertainty Total

Table 2 shows t-test statistics for male and female on anxiety sensitivity, intolerance of uncertainty and cyberchondria among individual. Results indicate significant mean differences on physical indicating that male significantly scored high on physical as compared to female. Results also indicate significant mean differences on cognitive indicating that male significantly scored high on cognitive as compared to female. Results also indicate significant mean differences on social indicating that male significantly scored high on social as compared to female. Further, significant mean differences on anxiety sensitivity index indicating that male significantly scored high on

Rashid N *et al.,*

anxiety sensitivity index as compared to female. The significant mean differences on prospective indicating that male significantly scored high on prospective as compared to female. Moreover, results showed significant mean differences on inhibitory indicating that male significantly scored high on inhibitory as compared to female. Findings showed significant mean differences on intolerance of uncertainty total indicating that male significantly scored high on intolerance of uncertainty total as compared to female. The results indicate significant mean differences on compulsion indicating that male significantly scored high on compulsion as compared to female. Results also showed significant mean differences on excessiveness indicating that male significantly scored high on excessiveness as compared to female. Results indicate significant mean differences on reassurance indicating that male significantly scored high on reassurance as compared to female. Results also indicate significant mean differences on distress indicating that male significantly scored high on distress as compared to female. The findings also indicate significant mean differences on mistrust indicating that male significantly scored high on mistrust as compared to female. Moreover, results indicate significant mean differences on cyberchondria indicating that male significantly scored high on cyberchondria as compared to female. In the table where male scored higher in anxiety sensitivity and intolerance of uncertainty, it reflects they have more cyberchondria tendencies as compared to females.

Table 2: Comparison between men and women on the scale of anxiety sensitivity, intolerance of uncertainty, and cyberchondria among individual

Variables	Male (n= 185) M ± SD	Female (n = 226) M ± SD	t (409)	p- value	95% CI LL	95% CI UL
Physical	10.35 ± 5.86	10.19 ± 5.61	.27	.783	-.96	1.27
Cognitive	11.25 ± 6.20	10.76 ± 6.04	.80	.420	-.70	1.68
Social	11.84 ± 6.27	11.68 ± 5.98	.26	.790	-1.03	1.35
ASI	33.45 ± 16.62	32.64 ± 16.09	.49	.618	-2.37	3.99
Prospective	18.33 ± 8.75	17.15 ± 8.45	1.39	.165	-.48	2.85
Inhibitory	13.69 ± 6.27	13.07 ± 6.06	1.00	.317	-.58	1.81
IUT	32.98 ± 14.15	31.85 ± 13.32	.82	.408	-1.54	3.79
Compulsion	20.16 ± 7.69	18.83 ± 7.77	1.73	.084	-.17	2.83
Excessiveness	20.91 ± 6.93	19.54 ± 7.34	1.93	.054	-.02	2.77
Reassurance	15.71 ± 5.66	14.47 ± 6.13	2.11	.035	.08	2.40
Distress	21.48 ± 8.08	19.74 ± 8.36	2.12	.034	.13	3.34
Mistrust	9.73 ± 3.47	9.61 ± 3.37	.35	.723	-.54	.78
Cyberchondria	87.07 ± 23.95	81.39 ± 25.46	2.30	.021	.84	10.51

ASI: Anxiety Sensitivity Index, IUT: Intolerance of Uncertainty Total, LL: lower Limit, UL: Upper Limit

Table 3 shows t-test statistics for male and female on anxiety sensitivity, intolerance of uncertainty and cyberchondria among individual without COVID-19. Results indicate significant mean differences on physical indicating that male significantly scored high on physical as compared to female. Results also indicate significant mean differences on cognitive indicating that male significantly scored high on cognitive as compared to female. Results also indicate significant mean differences on social indicating that female significantly scored high on social as compared to male. Further, significant mean differences on anxiety sensitivity index indicating that female significantly scored high on anxiety sensitivity index as compared to male. The significant mean differences on prospective indicating that male significantly scored high on prospective as compared to female. Moreover, results showed significant mean differences on inhibitory indicating that male significantly scored high on inhibitory as compared to female. Findings showed significant mean differences on intolerance of uncertainty total indicating that male significantly scored high on intolerance of uncertainty total as compared to female. The results indicate significant mean differences on compulsion indicating that male significantly scored high on compulsion as compared to female. Results also showed significant mean differences on excessiveness indicating that male significantly scored high on excessiveness as compared to female. Results indicate significant mean differences on reassurance indicating that male significantly scored high on reassurance as compared to female. Results also indicate significant mean differences on distress indicating that male significantly scored high on distress as compared to female. The findings also indicate significant mean differences on mistrust indicating that male significantly scored high on mistrust as compared to female. Moreover, results indicate significant mean differences on cyberchondria indicating that male significantly scored high on cyberchondria as compared to female. In the table where male scored higher in anxiety sensitivity and intolerance of uncertainty, it reflects they have more cyberchondria tendencies as compared to females.

Table 3: Comparison between men and women on the scale of anxiety sensitivity, intolerance of uncertainty, and cyberchondria among individual without COVID-19

Variables	Male (n= 95) M ± SD	Female (n = 116) M ± SD	t (209)	p- value	95% CI LL	95% CI UL
Physical	7.87 ± 3.83	7.84 ± 3.72	.05	.956	-1.00	1.05
Cognitive	8.60 ± 3.96	8.34 ± 3.93	.46	.641	-.82	1.33
Social	9.14 ± 4.28	9.67 ± 4.66	-.84	.400	-1.75	.702
ASI	25.62 ± 8.69	25.86 ± 9.68	-.18	.851	-2.76	2.28
Prospective	15.91 ± 7.48	14.96 ± 7.23	.93	.351	-1.05	2.95
Inhibitory	11.85 ± 5.32	11.55 ± 5.17	.41	.679	-1.12	1.73
IUT	28.95 ± 11.76	28.37 ± 11.29	.36	.717	-2.56	3.71

Rashid N et al.,

Compulsion	17.80 ± 6.68	17.06 ± 6.59	.80	.421	-1.06	2.54
Excessiveness	18.61 ± 6.03	17.63 ± 6.01	1.16	.245	-.67	2.61
Reassurance	14.05 ± 4.92	12.93 ± 4.97	1.62	.106	-.23	2.46
Distress	18.76 ± 6.77	17.84 ± 7.13	.95	.340	-.97	2.82
Mistrust	10.51 ± 3.44	9.87 ± 3.49	1.32	.187	-.31	1.58
Cyberchondria	79.30 ± 20.21	75.06 ± 20.59	1.50	.135	-1.32	9.81

ASI: Anxiety Sensitivity Index, IUT: Intolerance of Uncertainty Total, LL: lower Limit, UL: Upper Limit

Table 4 shows t-test statistics for male and female on anxiety sensitivity, intolerance of uncertainty and cyberchondria among individual without COVID-19. Results indicate significant mean differences on physical indicating that male significantly scored high on physical as compared to female. Results also indicate significant mean differences on cognitive indicating that male significantly scored high on cognitive as compared to female. Results also indicate significant mean differences on social indicating that female significantly scored high on social as compared to male. Further, significant mean differences on anxiety sensitivity index indicating that female significantly scored high on anxiety sensitivity index as compared to male. The significant mean differences on prospective indicating that male significantly scored high on prospective as compared to female. Moreover, results showed significant mean differences on inhibitory indicating that male significantly scored high on inhibitory as compared to female.

Table 4: Comparison between men and women on the scale of anxiety sensitivity, intolerance of uncertainty, and cyberchondria among individual diagnosed with COVID-19

Variables	Male (n= 90)	Female (n = 110)	t (198)	p-value	95% CI	
	M ± SD	M ± SD			LL	UL
Physical	12.96 ± 6.48	12.67 ± 6.20	.32	.74	-1.48	2.06
Cognitive	14.06 ± 6.88	13.32 ± 6.79	.76	.44	-1.17	2.65
Social	14.68 ± 6.78	13.80 ± 6.49	.94	.34	-.96	2.74
ASI	41.72 ± 18.89	39.80 ± 18.30	.72	.46	-3.28	7.12
Prospective	20.88 ± 9.29	19.45 ± 9.04	1.10	.27	-1.13	4.00
Inhibitory	15.63 ± 6.63	14.69 ± 6.52	1.00	.31	-.90	2.78
IUT	37.23 ± 15.25	35.52 ± 14.32	.81	.41	-2.42	5.84
Compulsion	22.65 ± 7.92	20.70 ± 8.49	1.66	.09	-.35	4.26
Excessiveness	23.35 ± 7.01	21.55 ± 8.08	1.66	.09	-.33	3.93
Reassurance	17.47 ± 5.88	16.09 ± 6.82	1.52	.13	-.41	3.18
Distress	24.35 ± 8.40	21.75 ± 9.08	2.08	.03	.138	5.06
Mistrust	8.91 ± 3.33	9.33 ± 3.22	-.91	.36	-1.34	.49
Cyberchondria	95.26 ± 24.95	88.07 ± 28.34	1.88	.06	-.33	14.72

ASI: Anxiety Sensitivity Index, IUT: Intolerance of Uncertainty Total, LL: lower Limit, UL: Upper Limit

Findings showed significant mean differences on intolerance of uncertainty total indicating that male significantly scored high on intolerance of uncertainty total as compared to female. The results indicate significant

mean differences on compulsion indicating that male significantly scored high on compulsion as compared to female. Results also showed significant mean differences on excessiveness indicating that male significantly scored high on excessiveness as compared to female. Results indicate significant mean differences on reassurance indicating that male significantly scored high on reassurance as compared to female. Results also indicate significant mean differences on distress indicating that male significantly scored high on distress as compared to female. The findings also indicate significant mean differences on mistrust indicating that female significantly scored high on mistrust as compared to male. Moreover, results indicate significant mean differences on cyberchondria indicating that male significantly scored high on cyberchondria as compared to female. In the table where male scored higher in anxiety sensitivity and intolerance of uncertainty, it reflects they have more cyberchondria tendencies as compared to females.

DISCUSSION

Findings reported anxiety sensitivity and intolerance of uncertainty have significant positive relationships and both variables are positively linked with cyberchondria(See table 1)[3]. It reflects that anxiety sensitivity provokes the tendency of cyberchondria among individuals as well as intolerance of uncertainty [5, 11]. Anxiety sensitivity predicts the presence of cyberchondria and these results are in line with those of the earlier investigations [15]. Compulsion, excessiveness, reassurance, and distressful behavior all significantly, positively, and adversely correlate with physical, cognitive, and social anxiety sensitivity types, while mistrust significantly negatively correlates [16]. Spending a lot of time online looking for health symptoms damages relationships with family and friends, interferes with daily activities, and lowers overall quality of life [17]. Increased social anxiety sensitivity can also lead to compulsive behavior. For example, some people obsessively search for health information online to assuage their fear of being judged negatively about their health, but this behavior can have negative effects on their daily activities, psychological health, interpersonal relationships, and home environment [18]. The study also revealed a significant difference between diagnosed with COVID -19 and never diagnosed with COVID-19 participants in anxiety sensitivity, intolerance of uncertainty, and cyberchondria tendencies among university students during COVID-19 (See table 3 and 4)[10]. High fear of illness and persistent worries about having a disease lead to the development of negative belief systems in people. In addition, the inclination to be a cyberchondriac may rise, which increases the risk of traumatic stress when people

are exposed to stressful events [19]. People who are more sensitive to physical anxiety worry more about bodily feelings, which forces them to look up the symptoms to see if they are physically healthy or suffering from any medical conditions [20]. However, adolescents with high levels of cognitive anxiety exhibit more compulsive behaviors, which negatively affect their psychological health [15]. Prospective and inhibitory types of intolerance of uncertainty indicated a strong positive link with compulsion, excessiveness, reassurance, and distressful conduct and a weak negative relationship with mistrust [21]. This anxiety had a negative impact on health, as it decreased the physical environment, physical health, increased mental illness, and decreased mental health. Results revealed a strong positive relationship between COVID-19 and Cyberchondria [5]. According to recent research, during pandemics like COVID-19, cyberchondria affects people's threat assessment and encourages them to take advised health precautions more rapidly [4]. However, it can also increase the risk of excessive concern, catastrophizing, and social isolation, all of which are detrimental to mental health [6]. Additional findings revealed a strong correlation between COVID-19 and intolerance of uncertainty [11]. These results are in line with earlier research [12]. The COVID-19 epidemic has raised concerns about a wide range of daily activities. People who are more tolerant of ambiguity may view unclear circumstances as frightening and unpleasant. To temper their feelings of threat and uncertainty, people engage in behaviors that reduce ambiguity, such as continually seeking consolation [22].

CONCLUSIONS

It is concluded that anxiety sensitivity and intolerance of uncertainty are the two factors that trigger the tendency of cyberchondria among individuals. Moreover, it shows that significant gender differences were investigated on the variables of anxiety sensitivity, intolerance of uncertainty, and cyberchondria among university students.

Acknowledgments

Authors Contribution

Conceptualization: MUK
Methodology: NR
Formal analysis: ZR
Writing-review and editing: AS, MM, MUK
All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

REFERENCES

[1] Starcevic V and Berle D. Cyberchondria: towards a better understanding of excessive health-related Internet use. Expert Review of Neurotherapeutics. 2013 Feb; 13(2): 205–13. doi: 10.1586/ern.12.162.

[2] McElroy E and Shevlin M. The development and initial validation of the cyberchondria severity scale (CSS). Journal of Anxiety Disorders. 2014 Mar; 28(2): 259–65. doi: 10.1016/j.janxdis.2013.12.007.

[3] Thompson RR, Jones NM, Holman EA, Silver RC. Media exposure to mass violence events can fuel a cycle of distress. Science Advances. 2019 Apr; 5(4): e aav3502. doi: 10.1126/sciadv.aav3502.

[4] Garfin DR, Silver RC, Holman EA. The novel coronavirus (COVID-2019) outbreak: Amplification of public health consequences by media exposure. Health Psychology. 2020; 39(5): 355–7. doi: 10.1037/h ea0000875.

[5] Laato S, Islam AKMN, Islam MN, Whelan E. What drives unverified information sharing and cyberchondria during the COVID-19 pandemic? European Journal of Information Systems. 2020 May; 29(3):

[6] 288–305. doi: 10.1080/0960085X.2020.1770632.
Abel T and McQueen D. The COVID-19 pandemic calls for spatial distancing and social closeness: not for social distancing! International Journal of Public Health. 2020 Apr; 65(3): 231–231. doi: 10.1007/s00038 -020-01366-7.

[7] Makarla S, Gopichandran V, Tondare D. Prevalence and correlates of cyberchondria among professionals working in the information technology sector in Chennai, India: A cross-sectional study. Journal of Postgraduate Medicine. 2019 Apr; 65(2): 87–92.

[8] Akhtar M and Fatima T. Exploring cyberchondria and worry about health among individuals with no diagnosed medical condition. Journal of Pakistan Medical Association. 2019; 70(3): 90-5. doi: 10.5455/J PMA.8682.

[9] Chang J, Yuan Y, Wang D. Mental health status and its influencing factors among college students during the epidemic of COVID-19. Nan Fang Yi Ke Da Xue Xue Bao. 2020; 171–6.

[10] Jokic-Begic N, Korajlija AL, Mikac U. Cyberchondria in the age of COVID-19. PLoS One. 2020 Dec; 15(12): e0243704. doi: 10.1371/journal.pone.0243704.

[11] Bajcar B and Babiak J. Neuroticism and cyberchondria: The mediating role of intolerance of

uncertainty and defensive pessimism. Personality and Individual Differences. 2020 Aug; 162: 110006. doi: 10.1016/j.paid.2020.110006.

[12] Lee SA. Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. Death Studies. 2020 Jul; 44(7): 393–401. doi: 10.1080/07481187.2020.1748481.

[13] Taylor S, Zvolensky MJ, Cox BJ, Deacon B, Heimberg RG, Ledley DR, et al. Robust dimensions of anxiety sensitivity: Development and initial validation of the Anxiety Sensitivity Index-3. Psychological Assessment. 2007 Jun; 19(2): 176–88. doi: 10.1037/1040-3590.19.2.176.

[14] Carleton RN, Norton MAPJ, Asmundson GJG. Fearing the unknown: A short version of the Intolerance of Uncertainty Scale. Journal of Anxiety Disorders. 2007 Jan; 21(1): 105–17. doi: 10.1016/j.janxdis.2006.03.014.

[15] Mathes BM, Norr AM, Allan NP, Albanese BJ, Schmidt NB. Cyberchondria: Overlap with health anxiety and unique relations with impairment, quality of life, and service utilization. Psychiatry Research. 2018 Mar; 261: 204–11. doi: 10.1016/j.psychres.2018.01.002.

[16] Fergus TA. Anxiety sensitivity and intolerance of uncertainty as potential risk factors for cyberchondria: A replication and extension examining dimensions of each construct. Journal of Affective Disorders. 2015 Sep; 184: 305–9. doi: 10.1016/j.jad.2015.06.017.

[17] Johnson AL, McLeish AC, Alsaid-Habia T, Shear PK, Privitera M. Anxiety Sensitivity as a Predictor of Epilepsy-Related Quality of Life and Illness Severity Among Adult Epilepsy. Cognitive Therapy and Research. 2019 Feb; 43(1): 6–13. doi: 10.1007/s10608-018-9951-4.

[18] Fergus TA. The Cyberchondria Severity Scale (CSS): An examination of structure and relations with health anxiety in a community sample. Journal of Anxiety Disorders. 2014 Aug; 28(6): 504–10. doi: 10.1016/j.janxdis.2014.05.006.

[19] Zvielli A, Bernstein A, Berenz EC. Exploration of a Factor Mixture-Based Taxonic-Dimensional Model of Anxiety Sensitivity and Transdiagnostic Psychopathology Vulnerability Among Trauma-Exposed Adults. Cognitive Behavior Therapy. 2012 Mar; 41(1): 63–78. doi: 10.1080/16506073.2011.632436.

[20] Muse K, McManus F, Leung C, Meghreblian B, Williams JMG. Cyberchondriasis: Fact or fiction? A preliminary examination of the relationship between health anxiety and searching for health information on the Internet. Journal of Anxiety Disorders. 2012 Jan; 26(1): 189–96. doi: 10.1016/j.janxdis.2011.11.005.

[21] Norr AM, Albanese BJ, Oglesby ME, Allan NP, Schmidt NB. Anxiety sensitivity and intolerance of uncertainty as potential risk factors for cyberchondria. Journal of Affective Disorders. 2015 Mar; 174: 64–9. doi: 10.1016/j.jad.2014.11.023.

[22] Lee SA and Crunk EA. Fear and Psychopathology During the COVID-19 Crisis: Neuroticism, Hypochondriasis, Reassurance-Seeking, and Coronaphobia as Fear Factors. Omega (Westport). 2022 Jun; 85(2): 483–96. doi: 10.1177/0030222820949350.