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Prevalence and Psychosocial Predictors of Cyberchondria in Nigeria During the COVID-19 Pandemic

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ABSTRACT

The uncertainties surrounding the COVID-19 pandemic and frequently changing information about the virus heighten the potentials cyberchondria. This study investigated the prevalence and predictors of cyberchondria among Nigerians during the COVID-19 pandemic. Participants (n=406, 268 males, M_{age} = 37.68 years, SD = 10.78) completed an online survey consisting of validated measures of cyberchondria, health anxiety, neuroticism, quality of life, medical history, and socio-demographic information. Participants (M_{score}= 27.44±7.31) reported moderate to high levels of cyberchondria. Results of hierarchical regression showed that although all predictor variables collectively predicted cyberchondria with 22% of explained variance, the strongest predictors of cyberchondria were health anxiety and the number of prior hospital visits. Reducing the level of cyberchondria during the COVID-19 pandemic requires the ability to deal with health-related fear and effectively managing the uncertainties surrounding online health information.

KEYWORDS

COVID-19 Pandemic, Cyberchondria, Health Anxiety, Nigeria

INTRODUCTION

The Internet revolution has so many positive characteristics that make human life more comfortable and very easy to obtain information on virtually any subject or issue. Understandably, searching for information about health online is now a common phenomenon. The use of the Internet is relatively cheaper than conventional modes of obtaining information. The Internet also affords easy access to information easily and quickly without administrative bottlenecks to navigate. Even more importantly for many users, the Internet provides anonymity since they can make any form of investigation without shame and stigma that are often associated with presenting at a facility to make health-related inquiries. It has been estimated that as many as 75% of people in countries such as India, China, Russia, Brazil,

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Mexico, United States, Germany, Australia, and Italy use the Internet for health-related inquiries (McDaid & Park, 2010). According to the Harris Poll, about 90% of internet use in the United States was for health-related information (Harris, 2010), indicating that the internet is fast becoming the most popular and important source of information about health (Howell, 2013).

These initial positive impacts have varied influence on different people with respect to several domains of their lives such as body image, psychological health, adjustment and social connectedness. With time, the user may enter into a specific response, then into a habitual response, and finally into a compulsive response. One of these adverse effects is cyberchondria – excessive use of the Internet to search for health-related information. In some extreme conceptualizations, cyberchondria has been viewed as the current form of hypochondriasis (Koehler, 2005), with Valley (2001) contending that it is a mental disorder. Conversely, it has occasionally been regarded as merely looking for health information online (Taylor, 2002). A more balanced definition is the one which considers the major ingredients of cyberchondria - health anxiety and searching for health information online. It has been suggested that individuals with cyberchondria are prone to experiencing intense health anxiety, which motivates the affected individuals to continually search for pertinent information on Internet but which, interestingly, simply aggravates their nervousness (White & Horvitz, 2009a; Starcevic & Berle, 2013; McElroy & Shevlin, 2014). Additional definitions suggest that a preoccupation with searching for information about health online can predispose individuals to elevated levels of anxiety (Aiken & Kirwan, 2014), and that individuals without pre-morbid health anxiety might result to having greater levels of health anxiety due to excessive search for health-related information online. McElroy and Shevlin (2014) defined cyberchondria as a rise in anxiety about an individual's own health status, due to excessive online checks for health-related information.

It has been demonstrated in various studies across countries (e.g. Brooks et al., 2020; Khazaal et al., 2020; Lawal et al., 2020; Lin et al., 2020; Zhang et al., 2020) that COVID-19 pandemic had some significant psychological implications on people. The pandemic has caused high levels of distress, financial worry, anxiety, depression, poor self-esteem, loneliness, confusion, poor coping and aggression (Brooks et al., 2020; Lawal et al., 2020; Lin et al., 2020; Zhang et al., 2020). The high level of unpredictability surrounding the COVID-19 and the associated negative emotionality may predispose people to excessively seeking heath information online. Thus, neuroticism which has been argued to mirror the propensity to have negative reactions, thoughts with maladaptive behavior (Bajcar & Babiak, 2020), may be strongly associated with cyberchondria in the era of COVID-19 pandemic. Studies have shown that people who are high in neuroticism might show increased negative effects in the period of the COVID-19 pandemic (Aschwanden et al., 2020; Kroencke et al., 2020). In a recent study, a positive association was found between cyberchondria and neuroticism (Maftel & Holman, 2020), implying that individuals who worry a lot during this pandemic are more likely to excessively search for health-related information online in order to reduce their concerns.

It is logical to assume that a strong relationship exists between cyberchondria and health anxiety with results from several studies indicating that higher health anxiety was associated with cyberchondria (Aiken & Kirwan, 2014; Baumgartner & Hartmann, 2011; Eastin & Guinsler, 2006; White & Horvitz, 2009b). The two constructs are, however, not synonymous. Also, not much has been done to empirically explore the relationship or substantiate the path of connectedness, including the primacy in the association between online health search and elevated health anxiety. It should be expected, however, that individuals with high level of cyberchondria would experience high levels of health anxiety. Generally, moderate to strong relationships between health anxiety and cyberchondria have been reported in different populations (Bajcar & Babiak, 2019, Fergus, 2014). Specifically during COVID-19 pandemic, Jungmann and Witthoft (2020) reported significant positive relationships among health anxiety, cyberchondria and coronavirus anxiety.

The association between meaning in life and cyberchondria has not been explored. A line of thinking is that meaning in life should inhibit the psychological distress associated with uncertainties, such as those associated with anxiety about one's health during a pandemic (Hirsh et al., 2012).

Conversely, unpleasant feelings from meaning violations could elicit drive to bring back meaning in order to reduce the stressful state (Hirsh et al., 2012; Park, 2010; Proulxet al., 2012). In line with this reasoning, previous studies showed that anxiety is significantly associated with meaning in life and that meaning in life influences anxiety (Ahmadpoor et al., 2013). It was reported that meaning in life was the main psychosocial correlate of individuals' perception of social benefits of health care use (Steger et al., 2009). Results of a recent study indicated that significant but inverse relationship exists between meaning in life and repetitive negative thinking and mental distress (Ostafin & Proulx, 2020). While life meaning is negatively related to distress as well as repetitive negative thinking (Ostafin & Proulx, 2020), psychological distress also mediate the relationship between meaning in life and repetitive negative thinking (Ostafin & Proulx, 2020). Thus, having meaning in life might predispose an individual to earnestly seek health information online during COVID-19 pandemic; perhaps to have in-depth understanding of the virus and to be able to take proper preventive measures.

Quality of life is another variable that can predict cyberchondria during the COVID-19 pandemic. Although there is no universal definition of quality of life (Abikoye, 2007; Gill & Feinstein, 1994), there is a degree of consensus that the scope of the idea of quality of life should focus on a person's subjective perception of the quality of his/her own individual's life. This agreement emanates from the reports made from several sociological studies that have shown that objective conditions of life which may include education and income are only marginally associated with the subjective experience of a greater quality of life (Larson, 1978; Palmore & Luikart, 1972). It is plausible, therefore, to opine that individuals who perceive low quality of life would experience increased health anxiety (Błachnio et al., 2016; Durak & Senol-Durak, 2014; Marcus, 1999; Mei et al., 2016; Ostafin & Proulx, 2020; Sideli et al., 2017), and may display behaviors symptomatic of cyberchondria during the ongoing pandemic.

Globally, the COVID-19 pandemic impacted people and countries in so many ways - mandatory performance of ritualistic, uncomfortable activities such as hand washing, wearing of face masks, use of hand sanitizers; increased physical and social; suspicion of political and social institutions; loss of jobs; reduced profits and other forms of economic devastation; proliferation of the public space with fake news, misinformation and the attendant emotional impacts. Unlike previous large-scale epidemics, a very big mental health issue in COVID-19 is its potential to engender increased problematic use of the Internet (Király et al., 2020; Starcevic et al., 2020). Indeed, Starcevic et al., (2020) have succinctly described the COVID-19 pandemic and cyberchondria as "natural bedfellows" for many reasons. First, the virus has only recently been identified and, and until recently, was not well-understood by the societies and healthcare systems across the world. Second, the virus is highly contagious with potential for a lethal outcome especially for the elderly and individuals with pre-morbid health conditions. Furthermore, the Internet, which many people rely on for COVID-19-related information, is a repository of a huge amount of information, a bulk of which, are unreliable, misleading and sometimes flagrantly deceitful (e.g., Starcevic & Berle, 2013), thereby necessitating frequent checks and cross-checks across many sites.

Few studies have been conducted outside Nigeria regarding cyberchondria and its psychosocial correlates during the current COVID-19 pandemic (Hashemi et al., 2020; Jokic-Begic et al., 2020; Laato et al., 2020; Maftel & Holman, 2020). However, there is no documented empirical investigation in Nigeria on cyberchondria and its predictors during the COVID-19 pandemic. This study investigated the prevalence and predictors of cyberchondria in the period of COVID-19 pandemic, and the extent to which prior hospital visit, neuroticism, health anxiety, meaning in life as well as quality of life predict cyberchondria in a non-clinical population.

METHOD

Participants

Participants were 406 literate Nigerians who took part in an online survey, using a snowball method, whereby a Google form was generated and the link was sent to social networks requesting people to

complete the survey. Of the 406 participants, 268 (66%) were males while 138 (34%) were females. Participants mean age was 37.68 years (SD = 10.78). Participants were healthy people as none was on admission as at the time of conducting the survey. Indeed, 146 (36%) did not visit the hospital 12 months prior to the survey, 158 (38.90) reported between one or two hospital visits in the past 12 months while 102 (25.10) had visited the hospital at least three times in the past 12 months. Other respondent characteristics are shown in Table 1.

Table 1. Participants' demographic profile

Participants' Characteristics	Mean (SD)	Frequency	Percent
Age	37.68 (10.78)		
Gender			
Male		268	66.00
Female		138	34.00
Marital Status			
Single		158	38.90
Married		240	59.10
Separated		02	0.50
Widowed		06	1.50
Occupation			
Lecturers		68	16.70
Civil Servants		94	23.20
Teachers		30	7.40
Students		68	16.70
Psychologists		24	5.90
Others		122	30.00
Nationality			
Nigerian		398	98.00
Foreigners		08	02.00
Education			
Less than B. Sc.	4.47 (0.88)	36	08.90
B. Sc or equivalents		116	28.60
Higher than B. Sc		248	61.10
Hospital Visit in the past 12 months			
None	1.41 (1.39)	146	36.00
Once or Twice		158	38.90
Thrice or more		102	25.10
Hospital Admission in the past 12 months			
None	0.15 (0.45)	360	88.70
Once or Twice		44	10.80
Thrice or more		02	0.50

Instruments

A questionnaire consisting of standardized measures of cyberchondria, health anxiety, neuroticism, meaning in life as well as quality of life was administered as an instrument for data collection in the study. A section of the questionnaire was also designed to collect background information such as age, education, average monthly income, sex, prior hospital visit, and prior hospital admission.

Cyberchondria was measured by the15-item Short Cyberchondria Scale (SCS: Dagar et al., 2019). Respondents were instructed to indicate their engagement in the use of the internet for health concerns since the COVID-19 pandemic started. Response options ranged from "Never" (0), "Rarely" (1), "Sometimes" (2), "Frequently" (3) to "Always" (4) with higher scores denoting greater tendency to cyberchondria, except on items 5 and 12 that were reverse scored. The SCS has been reported to be psychometrically robust (Dagar et al., 2019). In the present study, we obtained a reliability coefficient alpha of .65 for the scale.

Health anxiety was assessed using the Short Health Anxiety Inventory (SHAI: Salkovskis et al., 2002). The SHAI is a self-report measure and it contains 18 items that assess health anxiety separately from physical health status. Test items cover worry about health, person's awareness of bodily sensations or changes, including feared consequences of having an illness. Responses are made using a multiple-choice format (Not at all = 0, Sometimes = 1, Often = 2, Most of the time = 3). The SHAI has been shown to demonstrate robust psychometric properties in non-clinical and clinical samples (Salkovskis et al, 2002). In this study, a coefficient alpha of .90 was obtained for the SHAI.

Neuroticism was assessed using the Neuroticism Subscale of the Eysenck Personality Questionnaire (EPQ: Eysenck & Eysenck, 1975). This is a 12-itemchoice scale (Yes or No), with higher scores indicating more tendencies toward neuroticism. The EPQ, both in its complete form or as subscales, has been widely used and is reputed for its psychometric adequacy. In the present study, a coefficient alpha of .86 was obtained for the neuroticism subscale of the EPQ.

Meaning in life was assessed by the 10-item meaning in life questionnaire (MLQ: Steger et al., 2006). The scale measures meaning in life along two dimensions – "presence of meaning" and "search for meaning" – although the composite score is usually considered to be an indicator of the degree to which a person considers his/her life to be meaningful. Responding to the scale is along a 5-point Likert format with options ranging from "Untrue"(1), "Somewhat Untrue"(2), "Can't Say"(3), "Somewhat True"(4) to "True"(5).The MLQ was reported to have been translated into different languages as much as over two dozens and robust psychometric properties were established across age, racial, gender, and national groups (Steger & Shin, 2010). We reported a reliability coefficient alpha of .48 for the scale in the present research.

Quality of life was assessed by the 16-item Quality of Life Scale (QOLS: Burckhardt et al., 1989). Respondents indicated the number that best describes how satisfied they were across the 16 important life domains using the following scale: "Dissatisfied" (1), "Fairly Dissatisfied"(2), "Mixed"(3), "Fairly Satisfied"(4), and "Satisfied"(5). Respondents' scores are summed together to arrive at a composite score representing the individual's quality of life score. The interpretation is that higher scores suggest better quality of life, while lower scores imply poor quality of life. In the current study, we obtained a coefficient alpha of .90 for QOLS.

Procedure

Data collection was conducted with the use of an online survey in Google Survey from. Nigerian professionals, working class people and university students who are conversant with the use of the Internet and who were at least 18 years of age were the targeted groups. The online questionnaire was disseminated to prospective respondents using different social networks on *Whatsapps*. The study was conducted in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. In order to prevent multiple participation, the survey was linked to respondents' email addresses in such a way that an email address could respond only once. The confidentiality and anonymity attached to the survey as well as the voluntary nature of participation

was emphasized. Informed consent was obtained by checking an initial box on the survey to indicate willingness to participate in the Survey. Only individuals who checked the box were granted access to the main survey. All responses were completely anonymized to protect respondents' identities and responses. Statistical computation was done using SPSS (Version 24). Inter-correlation analyses were performed to examine relationships among study variables and to justify the use of hierarchical multiple regression analysis. Hierarchical multiple regression was conducted to evaluate the separate and joint contribution of predictor variables on cyberchondria.

RESULTS

The mean score obtained for the sample (27.44±7.31) indicated moderate to high level of cyberchondria. According to the norms of the SCS, a composite score of 0 – 4 indicates "Not Affected", 5 – 30 indicates "Moderately Affected", and 31 – 60 indicates "Severely Affected". Female participants (M =29.29) reported higher cyberchondria than male participants (M =26.49), t_{404}= -3.71, p <.01. Bivariate correlations among variables were computed. Table 2 shows the relationships among age, education, hospital visits, hospital admission, health anxiety, neuroticism, meaning in life, quality of life and cyberchondria.

Table 3 presents the five-model hierarchical multiple regression showing hospital visit, neuroticism, health anxiety, meaning in life and quality of life as predictors of cyberchondria. In the first model, hospital visit was added and this significantly contributed to the regression model $F_{(1, 404)} = 27.38$, $p < .01$; accounting for 6% of the variation in cyberchondria. In the second model, neuroticism was added and both hospital visit and neuroticism significantly contributed to the regression model $F(2, 403) = 22.61$, $p < .01$; accounting for 10% of the variation in cyberchondria. In the third model, health anxiety was included along with hospital visits and neuroticism; and they significantly contributed to the regression model $F(3, 402) = 38.77$, $p < .01$; accounting for 22% of the variation in cyberchondria. In the fourth model, meaning in life was added along with hospital visit, neuroticism and health anxiety and they jointly contributed to the regression model $F(4, 401) = 29.32$, $p < .01$; accounting for 22% of the variation in cyberchondria. In the fifth model, quality of life was added along with the previous four predictor variables; and they jointly contributed to the regression model $F(5, 400) = 23.41$, $p < .01$; accounting for 22% of the variation in cyberchondria. Statistically, the overall model was significant, implying that the five predictor variables collectively predicted cyberchondria with 22% variance; where hospital visit accounted for 6%, neuroticism

Table 2. Zero-order correlation showing relationships among study variables (*n = 406*)

Variable	Age	Educ	Hosp. Visit	HospAdm	Health Anx	Neur	MiL	QoL	Cyb.	Mean	SD
Age		.57**	.03	-.11*	-.16**	-.30**	-.12*	.19**	-.04	37.68	10.77
Educ.			.14**	-.15**	-.13**	-.28**	-.11*	.17**	.00	4.47	.88
Hosp Visit				.27**	.09	.06	.02	-.15**	.25**	1.42	1.39
HospAdm					.14**	.18**	.11*	-.21**	.11*	.15	.45
Health Anx						.50**	.20**	-.29**	.42**	10.78	7.61
Neur							.20**	-.30**	.21**	14.99	3.16
MiL								.04	.13*	33.69	5.36
QoL									-.15**	67.35	9.65
Cyb										27.44	7.31

NB: Educ. = Education; HospVisit = Hospital Visit; Hosp Adm. = Hospital Admission; Health Anx = Health Anxiety; Neur. = Neuroticism; MiL = Meaning in Life; QoL = Quality of Life; Cyb = Cyberchondria

** P< 0.01, * P< 0.05

accounted for 4%, health anxiety accounted for 12%, while meaning in life and quality of life separately accounted for 0%.

Table 4 presents gender differences in cyberchondria, health anxiety, neuroticism, meaning in life, and quality of life. Significant gender differences in cyberchondria, neuroticism, and meaning in life were found, but there were no significant gender difference in health anxiety and quality of life.

Table 3. Hierarchical multiple regression showing prediction of Cyberchondria by hospital visit, neuroticism, health anxiety, meaning in life and quality of life

Model	Variable	β	t	R	R^2	F	$R^2\Delta$	FΔ
1	Hospital visit	.25**	5.23**	.25	.06	27.38**	.06	27.38**
2	Hospital visit	.24**	5.07**	.32	.10	22.61**	.04	16.77**
	Neuroticism	.19**	4.10**					
3	Hospital visit	.21**	4.85**	.47	.22	38.77**	.12	64.03**
	Neuroticism	-.01	-.11					
	Health anxiety	.41**	8.00**					
4	Hospital visit	.21**	4.85**	.48	.22	29.32**	.00	.97
	Neuroticism	-.01	-.22					
	Health anxiety	.40**	7.83**					
	Meaning in life	.04	.99					
5	Hospital visit	.21**	4.78**	.48	.22	23.41**	.00	.05
	Neuroticism	-.01	-.26					
	Health anxiety	.40**	7.65**					
	Meaning in life	.05	1.00					
	Quality of life	-.01	-.22					

*** P< 0.01*

Table 4. Gender difference in health anxiety, neuroticism, meaning in life, quality of life and cyberchondria

	Gender	n	Mean	SD	df	t
Health anxiety	Male	268	10.54	7.26	404	-0.93
	Female	138	11.28	8.24		
Neuroticism	Male	268	14.62	2.94	404	-3.38**
	Female	138	15.72	3.46		
Meaning in life	Male	268	34.19	5.31	404	2.60*
	Female	138	32.74	5.33		
Quality of life	Male	268	67.51	9.50	404	0.44
	Female	138	67.06	9.97		
Cyberchondria	Male	268	26.49	7.31	404	-3.71**
	Female	138	29.29	6.98		

*** P<0.01; *P< 0.05*

DISCUSSION

This study investigated the prevalence, gender differences and predictors of cyberchondria during the COVID-19 pandemic. Results indicated a moderately high level of cyberchondria among respondents. This was not unexpected considering the nature of the COVID-19 and the fear, uncertainties and the huge amounts of information that people are bombarded with on a daily basis (Starcevic et al., 2020). Consistent with Khazaal et al., (2020) and Maftel & Holman (2020), our findings indicated significant gender-related influence on cyberchondria, with females reporting higher cyberchondria than males.

Examining prior hospital visit, neuroticism, health anxiety, meaning in life and quality of life as predictors of cyberchondria, our finding revealed that all the predictors jointly explained cyberchondria among people in Nigeria during COVID-19 pandemic with 22% variance. Extent of the contribution describes the relevance of psychosocial factors investigated in explaining level at which people search for health information on internet during COVID-19 in Nigeria. In the first model of regression, findings indicated that hospital visit in the past 12 months were associated with higher cyberchondria scores. Previous hospital visit emerged as one of the strongest predictors of cyberchondria – with or without other variables added. Although we found no empirical evidence during COVID-19 pandemic to support this finding, it may be that previous hospital visit is an indication of actual or perceived health concerns, which could make people worry more and engage more in Internet exploration for health-related information in this period of COVID-19.

In the second model, higher level of neuroticism was associated with increased cyberchondria. In other words, the more emotionally unstable people are during this COVID-19 pandemic, the more they are likely to engage in excessive Internet search for health care. Our finding supports that of Maftel and Holman (2020) which has equally shown a positive relationship between neuroticism and cyberchondria. This suggests that individuals with higher neuroticism are more likely to respond worse to stressors or have negative interpretations of events happening to them. Expectedly in the third model, heightened health anxiety was related to higher levels of cyberchondria and was the most consistent predictor of cyberchondria across the five models. The strong link between health anxiety and cyberchondria has been previously established (Aiken & Kirwan, 2014; Baumgartner & Hartmann, 2011; Eastin & Guinsler, 2006; White & Horvitz, 2009b). Indeed, anxiety has been shown to be one of the motivating factors in cyberchondria (McElroy & Shevlin, 2014; Starcevic & Berle, 2013; White & Horvitz, 2009a) and compulsive Internet search for health-related information that typifies cyberchondria (McElroy & Shevlin, 2014) is actually aimed at reducing the underlying anxiety about health concerns. The current finding corresponds with Jungmann and Witthoft's (2020) report that there is positive relationship between health anxiety and cyberchondria.

Findings indicated that more meaning in life is not a significant predictor of cyberchondria. Although no prior study had identified such an association during COVID-19 pandemic, it was expected that persons who find meaning in life would report less susceptibility to the health concerns and related anxiety as well as the urge to reduce such anxiety through frequent, uncontrollable Internet search to mitigate such anxiety (Ahmadpoor et al., 2013; Hirsh et al., 2012; Park, 2010; Proulx et al., 2012). The slightly positive (though not significant) prediction of cyberchondria by meaning in life could mean that high meaning in life persons are more prone to Internet information search aimed at gaining insights into things (COVID-19-related information). In order words, finding meaning in life also entails trying to find meaning or understanding health-related matters with a view to verifying or validating existing psychological state of the individual, thereby engaging in more Internet search for health-related issues.

Although quality of life was not a significant independent predictor of cyberchondria and it did not add to the predicted variance in cyberchondria, the moderate association observed implies that increasing quality of life is related to lower level of cyberchondria. This line of thinking is consistent with earlier postulations (Błachnio et al., 2016; Durak & Senol-Durak, 2014; Mei et al., 2016; Ostafin & Proulx, 2020; Sideli et al., 2017) that quality of life, which has been shown to be more of subjective

evaluation than objective reality (Ostafin & Proulx, 2020), can potentially reduce anxiety, including health-anxiety and the urge to engage in Internet search for health-related information in this period of COVID-19 pandemic.

Public Health Implications and Recommendations

The anxiety and uncertainties surrounding the COVID-19 pandemic and the huge amount of online, largely unsubstantiated and frequently changing information about the virus and its bio-psychosocial aspects constitute a veritable ground for the development of cyberchondria. Cyberchondria is being progressively known as a serious public health issue, especially during the COVID-19 pandemic. Healthcare practitioners and relevant stakeholders in Nigeria should ensure credible and all-inclusive information is given to people about the virus at every opportunity. This may help dispel health-related fear, provide accurate health information and reduce internet search for symptoms and diagnosis purpose. Another way of tackling cyberchondria and its potential deleterious impacts is to address, through evidence-based approaches, the mostly exaggerated perception of threat and by effectively managing the uncertainties surrounding online health information.

CONCLUSION

The present study on prevalence, gender differences and predictors of cyberchondria during the COVID-19 pandemic in Nigeria has made useful contributions to empirical literature by throwing more light on an under-researched issue of public health concern. Findings have provided situation-specific perspectives on cyberchondria (a relatively new line of research in Nigeria) that could prove valuable for shaping policy and intervention aimed at reducing the psychologically-debilitating use of the Internet especially during the pandemic. Given the several attributes of COVID-19, prevalence of cyberchondria is moderately high among the non-clinical sample investigated in the study. The two most important predictors of cyberchondria were hospital visit 12 months prior to the time of completing the survey and health anxiety. Like other non-experimental studies, the study utilized self-reported information that is susceptible to certain person-related influences, especially when sensitive issues are involved. However, we are persuaded that these potential limitations could not impact the findings and conclusions of the study in any significant way.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported for the study.

REFERENCES

Abikoye, G. E. (2007). Subjective quality of life among caregivers of mentally ill persons in southwestern Nigeria. *Psychology in Africa*, *15*(1), 213–226. doi:10.4314/ifep.v15i1.23738

Ahmadpoor, J., Dehdari, T., Yarahmadi, R., Taghdisi, M. H., & Daneshvar, R. (2013). The relationship between meaning in life and depression, anxiety and stress status among college students of Iran University of Medical Sciences. *Iranian Journal of Health Education and Health Promotion*, *1*(3), 25–36.

Aiken, M., & Kirwan, G. (2014). The psychology of cyberchondria and "cyberchondria by proxy.". In A. Power & G. Kirwan (Eds.), *Cyberpsychology and New Media: A Thematic Reader* (pp. 158–169). Psychology Press.

Aschwanden, D., Strickhouser, J. E., Sesker, A. A., Lee, J., Luchetti, M., & Stephan, Y. (2020). Psychological and behavioral responses to Coronavirus Disease 2019: The role of personality. *European Journal of Personality*, *2281*. doi:10.1002/per.2281 PMID:32836766

Bajcar, B., & Babiak, J. (2019). Self-esteem and cyberchondria: The mediation effects of health anxiety and obsessive-compulsive symptoms in a community sample. *Current Psychology (New Brunswick, N.J.)*. doi:10.1007/s12144-019-00216-x

Bajcar, B., & Babiak, J. (2020). Neuroticism and cyberchondria: The mediatingrole of intolerance of uncertainty and defensive pessimism. *Personality and Individual Differences*, *162*, 110006. doi:10.1016/j.paid.2020.110006

Baumgartner, S. E., & Hartmann, T. (2011). The role of health anxiety in online health information search. *Cyberpsychology, Behavior, and Social Networking*, *14*(10), 613–618. doi:10.1089/cyber.2010.0425 PMID:21548797

Błachnio, A., Przepiórka, A., Senol-Durak, E., Durak, M., & Sherstyuk, L. (2016). The role of personality traits in Facebook and internet addictions: A study on polish, Turkish, and Ukrainian samples. *Computers in Human Behavior*, *68*, 269–275. doi:10.1016/j.chb.2016.11.037

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg,N., et al. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet 395*, 912–920. doi: 30460-810.1016/S0140-6736(20)

Burckhardt, C. S., Woods, S. L., Schultz, A. A., & Ziebarth, D. M. (1989). Quality of life of adults with chronic illness: A psychometric study. *Research in Nursing & Health*, *12*(6), 347–354. doi:10.1002/nur.4770120604 PMID:2602575

Dagar, D., Kakodkar, P., & Shetiya, S. H. (2019). Evaluating the cyberchondria construct among computer engineering students in Pune (India) Using Cyberchondria Severity Scale (CSS-15). *Indian Journal of Occupational and Environmental Medicine*, *23*(3), 117–120. doi:10.4103/ijoem.IJOEM_217_19 PMID:31920260

Durak, M., & Senol-Durak, E. (2014). Which personality traits are associated with cognitions related to problematic Internet use? *Asian Journal of Social Psychology*, *17*(3), 206–218. doi:10.1111/ajsp.12056

Eastin, M. S., & Guinsler, N. M. (2006). Worried and wired: Effects of health anxiety on information-seeking and health care utilization behaviors. *Cyberpsychology & Behavior*, *9*(4), 494–498. doi:10.1089/cpb.2006.9.494 PMID:16901253

Eysenck, H. J., & Eysenck, S. B. G. (1975). *Manual of the Eysenck Personality Questionnaire (Junior and Adult)*. Hodder & Stoughton.

Fergus, T. A. (2014). The Cyberchondria Severity Scale (CSS): An examination of structure and relations with health anxiety in a community sample. *Journal of Anxiety Disorders*, *28*(6), 504–510. doi:10.1016/j.janxdis.2014.05.006 PMID:24956357

Gill, T. M., & Feinstein, A. R. (1994). A critical appraisal of the quality of quality-of-life measurements. *Journal of the American Medical Association*, *272*(8), 619–626. doi:10.1001/jama.1994.03520080061045 PMID:7726894

Harris, P. (2010). Cyberchondriacs on the rise? Those who go online for healthcare information continues to increase. http://www.harrisinteractive.com/vault/HI-Harris-PollCyberchondriacs-2010-08-04.pdf

Hashemi, S. G. S., Hosseinnezhad, S., Dini, S., Griffiths, M. D., Lin, C., & Pakpour, A. H. (2020). The mediating effect of the cyberchondria and anxiety sensitivity in the association between problematic internet use, metacognition beliefs, and fear of COVID-19 among Iranian online population. *Heliyon*, *6*(10), e05135. doi:10.1016/j.heliyon.2020.e05135 PMID:33072911

Hirsh, J. B., Mar, R. A., & Peterson, J. B. (2012). Psychological entropy: A framework for understanding uncertainty-related anxiety. *Psychological Review*, *119*(2), 304–320. doi:10.1037/a0026767 PMID:22250757

Howell, D. (2013). *Why WebMD tops stock gains with Aruba.* Shutterstock. https://news.investors.com/technology/022213-645435-webmd-health-arubashutterstock-top-stock-market-today.htm

Jokic-Begic, N., Korajlija, A. L., & Mikac, U. (2020). Cyberchondria in the age of COVID-19. *PLoS One*, *15*(12), e0243704. doi:10.1371/journal.pone.0243704 PMID:33332400

Jungmann, S. M., & Witthoft, M. (2020). Health anxiety, cyberchondria, and coping in the current COVID-19 pandemic: Which factors are related to coronavirus anxiety? *Journal of Anxiety Disorders*, *73*(10), 22–39. doi:10.1016/j.janxdis.2020.102239 PMID:32502806

Khazaal, Y., Chatton, A., Rochat, L., Hede, V., Viswasam, K., Penzenstadler, L., Berle, D., & Starcevic, V. (2020). Compulsive health-related internet use and cyberchondria. *European Addiction Research*, *27*(1), 58–66. doi:10.1159/000510922 PMID:33120393

Király, O., Potenza, M. N., Stein, D. J., King, D. L., Hodgins, D. C., Saunders, J. B., & Demetrovics, Z. (2020). Preventing problematic internet use during the COVID-19 pandemic: Consensus guidance. *Comprehensive Psychiatry*, *100*(15), 21–80. doi:10.1016/j.comppsych.2020.152180 PMID:32422427

Koehler, S. (2005). A look into cyberchondria: using the Internet to diagnose your health symptoms. http://www.voices.yahoo.com/a-look-into-cyberchondriausing-internet-diagnose-2747.html

KroenckeL.GeukesK.UteschT.KuperN.BackM. (2020). Neuroticism and emotional risk during the COVID-19 pandemic. PsyArXiv [Preprint]. doi:10.31234/osf.io/8c6nh

Laato, S., Islam, A. K. M., Islam, M. N., & Whelan, E. (2020). What drives unverified information sharing and cyberchondria during the COVID-19 pandemic? *European Journal of Information Systems*, *29*(3), 288–305. doi:10.1080/0960085X.2020.1770632

Larson, R. (1978). Thirty years of research on the subjective well-being of older Americans. *Journal of Gerontology*, *33*(1), 109–125. doi:10.1093/geronj/33.1.109 PMID:618959

Lawal, A. M., Alhassan, E. O., Mogaji, H. O., Odoh, I. M., & Essien, E. A. (2020). Differential effect of gender, marital status, religion, ethnicity, education and employment status on mental health during COVID-19 lockdown in Nigeria. *Psychology Health and Medicine*. doi:10.1080/13548506.2020.1865548 PMID:33351644

Lin, Y., Hu, Z., Alias, H., & Wong, L. P. (2020). Knowledge, attitudes, impact, and anxiety regarding COVID-19 infection among the public in China. *Frontiers in Public Health*, *8*, 236. doi:10.3389/fpubh.2020.00236 PMID:32574305

Maftel, A., & Holman, A. C. (2020). Cyberchondria During theCoronavirus Pandemic: The Effects of Neuroticism and Optimism. *Frontiers in Psychology*, *11*, 1–7.

Marcus, D. K. (1999). The cognitive-behavioral model of hypochondriasis: Misinformation and triggers. *Journal of Psychosomatic Research*, *47*(1), 79–91. doi:10.1016/S0022-3999(99)00008-2 PMID:10511423

McDaidD.ParkA. L. (2010). Online health: untangling the web. http://www.bupa.com.au/staticfiles/Bupa/HealthAndWellness/MediaFiles/PDF/LSE_ Report_Online_Health.pdf

McElroy, E., & Shevlin, M. (2014). The development and initial validation of the Cyberchondria Severity Scale (CSS). *Journal of Anxiety Disorders*, *28*(2), 259–265. doi:10.1016/j.janxdis.2013.12.007 PMID:24508033

Mei, S., Yau, Y. H., Chai, J., Guo, J., & Potenza, M. N. (2016). Problematic Internet use, well-being, self-esteem and self-control: Data from a high-school survey in China. *Addictive Behaviors*, *61*, 74–79. doi:10.1016/j.addbeh.2016.05.009 PMID:27249805

Ostafin, B. D., & Proulx, T. (2020). Meaning in life and resilience to stressors. *Anxiety, Stress, and Coping*, *33*(6), 603–622. doi:10.1080/10615806.2020.1800655 PMID:32755239

Palmore, E., & Luikart, C. (1972). Health and social factors related to life satisfaction. *Journal of Health and Social Behavior*, *13*(1), 68–80. doi:10.2307/2136974 PMID:5025756

Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin*, *136*(2), 257–301. doi:10.1037/a0018301 PMID:20192563

Proulx, T., Inzlicht, M., & Harmon-Jones, E. (2012). Understanding all inconsistency compensation as a palliative response to violated expectations. *Trends in Cognitive Sciences*, *16*(5), 285–291. doi:10.1016/j.tics.2012.04.002 PMID:22516239

Salkovskis, P. M., Rimes, K. A., Warwick, H. M., & Clark, D. M. (2002). The Health Anxiety Inventory: Development and validation of scales for the measurement of health anxiety and hypochondriasis. *Psychological Medicine*, *32*(5), 843–853. doi:10.1017/S0033291702005822 PMID:12171378

Sideli, L., La Cascia, C., Sartorio, C., Tripoli, G., Mulè, A., Taffaro, L., Ruggirello, I., Mangiapane, D., Piro, E., Inguglia, M., & La Barbera, D. (2017). Internet out of control: The role of self-esteem and personality traits in pathological Internet use. *Clinical Neuropsychiatry*, *14*, 88–93.

Starcevic, V., & Berle, D. (2013). Cyberchondria: Towards a better understanding of excessive health-related internet use. *Expert Review of Neurotherapeutics*, *13*(2), 205–213. doi:10.1586/ern.12.162 PMID:23368807

Starcevic, V., Schimmenti, A., Billieux, J., & Berle, D. (2020). Cyberchondria in the time of the COVID-19 pandemic. *Human Behavior and Emerging Technologies*, 1–10. doi:10.1002/hbe2.233 PMID:33363277

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life Questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, *53*(1), 80–93. doi:10.1037/0022-0167.53.1.80

Steger, M. F., Mann, J. R., Michels, P., & Cooper, T. C. (2009). Meaning in life, anxiety, depression, and general health among smoking cessation patients. *Journal of Psychosomatic Research*, *67*(4), 353–358. doi:10.1016/j.jpsychores.2009.02.006 PMID:19773029

Steger, M. F., & Shin, J. Y. (2010). The relevance of the Meaning in Life Questionnaire to therapeutic practice: A look at the initial evidence. *International Forum for Logotherapy*, *33*, 95–104.

Taylor, H. (2002). *Cyberchondriacs update*. Harris Interactive. http://www.harrisinteractive.com/vault/Harris-Interactive-Poll-Research-Cyberchondriacs-Update-2002-05.pdf Retrieved on May 22, 2020.

Valley, P. (2001). New disorder, cyberchondria, sweeps the Internet. *NZ Herald*. https://www.nzherald.co.nz/technology/news/article.cfm?c_id=5&objectid=185422

White, R. W., & Horvitz, E. (2009a). Cyberchondria: Studies of the escalation of medical concerns in Web search. *ACM Transactions on Information Systems*, *27*(4), 1–37. doi:10.1145/1629096.1629101

White, R. W., & Horvitz, E. (2009b). Experiences with Web search on medical concerns and self diagnosis. *In: Proceedings from the American Medical Informatics Association Annual Symposium 2009 (AMIA 2009)*, (pp. 696-700). Curran Associates, Red Hook, NY.

Zhang, S. X., Wang, Y., Rauch, A., & Wei, F. (2020). Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak. *Psychiatry Research*, *288*, 112958. doi:10.1016/j.psychres.2020.112958 PMID:32283450

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