

Cyberchondria and its Relationship to Health Anxiety

By

Ranya Abdulkarim Sahan

University of Baghdad/ College of Arts/ Department of Psychology/Iraq

Email: raneaalkarem@gmail.com

Ahmed Latif Jasim

University of Baghdad/ College of Arts/ Department of Psychology/Iraq

Email: ahmed.l@coart.uobaghdad.edu.iq

Abstract

Cybercondria can be described as excessive or frequent use of the Internet to reduce stress or health anxiety, leading to further deterioration of existing symptoms that determine a behavioral, emotional, and cognitive pattern, resulting from excessive distress or anxiety associated with an individual's health as a result of misinterpretation of their physical sensations and the consequent belief that he is ill. Recently, excessive search for health-related information on the Internet has been accompanied by an increasingly widespread health concern among adult Internet users. It is associated with worrying thoughts and feelings about health. If anxiety intensifies, it can stop research or quite the contrary, it can lead to more online research, and the associated psychological stress of fear of getting sick, or fear of transmitting infections to others, general anxiety, feeling helpless to protect oneself, and feeling depressed, lonely and negative impacts._

Keywords: health anxiety, cyberchondria, internet addiction

Introduction

Due to the ubiquity of the Internet, its evolving nature as a modern tool for society, and the issues surrounding its excessive use and misuse of the Internet by others, addiction to the Internet has recently increased and the number of Internet users continues to increase, inviting numerous research in several scientific fields including psychology, psychiatry, neuroscience and mental health (Kuss et al., 2014, p.4027).

People use health-related websites for a variety of purposes including receiving information about illnesses, prescriptions written by their doctors, general health conditions or medications before an examination, or search for other medicines with similar qualities to those prescribed by a prescription, or buying medicines without a prescription (Zheng et al., 2021, p.1).

Interest in Internet use in the past few years has become a major source of valuable medical information. However, when it is used as a diagnostic procedure, it is likely to increase health concerns among individuals without medical knowledge. This is a worrisome topic as several people search for health information online (Shameem & Praveen, 2020, p.263), it turns out that searching for information about health on the Internet causes a vicious circle by increasing anxiety and uncertainty in individuals. Several studies, including Ivanova (2013), reported that health-related anxiety may lead to information seeking online and subsequently deteriorate performance and that higher cyberchondria scores were associated with lower psychological well-being (Durak & Burcu, 2018, pp.149-150).

Searching for health information online is very popular, with one survey indicating that more than 75% of participants in nine countries are: (Russia, China, India, Mexico, Brazil, the United States, Italy, Australia, and Germany) use the Internet for health-related inquiries, and nearly 90% of US adult Internet users report that they search for health information on the Internet at least once (60 Howell, 2013, p.). Statistics indicate that the number of visits to health websites continues to increase and this may make the Internet the most popular, if not the most important, source of health-related information (405Norr, 2014, p.).

Recently, the excessive search for health-related information on the Internet, coupled with health concerns, has become increasingly prevalent among adult Internet users. It is associated with exacerbation of disturbing thoughts and feelings about health, if the anxiety intensifies, it can stop research or quite the contrary, lead to more online research, with the associated psychological stress of fear of contracting the disease, or fear of transmitting the infection to others, general anxiety, feeling powerless to protect oneself and close associates, feeling depressed, lonely and negative effects of home quarantine.

Therefore, the current research aims to:

1. Measuring the research and budget variables according to the variable of gender (male/female) and age groups (20-30) (31-40) (41-50) (51-60).
2. Detect the correlation between search variables.
3. The extent to which health anxiety contributes to predicting cyberchondria.

Cyberchondria

(Information Management Theory (2021))

This theory focuses on the distinction between cyberchondria, which is defined as (excessive searches for medical health information over the Internet), and health care, which means (medical advice from specialists about the health symptoms experienced by the individual) (5Zheng et al., 2021, p.). Wang et al. (2020) believe that when individuals do not feel uncertain about the medical diagnosis of their health condition, they resort to searching for their health problems via the Internet (Wang et al., 2020, p.12). It is assumed by So et al. (2019) that people begin to seek information when they feel uncertainty (inconsistency), which is defined as (the difference between actual and desired levels of the individual) (So et al., 2019, p. 665).

Based on this, Starcevic et al. (2020) show that excessive search for medical health information via the Internet (cyberchondria) causes depression, which leads to the interruption of daily activities such as (study or work) (Starcevic et al. 2020, p.9). The view of Starcevic et al (2020) is confirmed by Vismara et al. (2020), who assert that individuals with cyberchondria may display symptoms of high anxiety, and the malaise that comes from following up on threatening medical health information on websites, meaning that cyberchondria leads to some negative consequences for a person's health (Vismara et al., 2020, p.99).

Health concern

(The cognitive-behavioral theory of health anxiety, 2018)

Tyrer (2018) argues that the cognitive explanation for the development of health anxiety stems directly from the tendency to misinterpret sensations and bodily changes as evidence of

serious physical illness. The effect of these misinterpretations depends on the degree of threat these changes pose, and the extent to which the person is apprehensive about the consequences if he or she suffers from that particular condition. The concerns include not only pain and suffering, but also broader consequences such as general disruption of life functions (Tyrer, 2018, p.75), with the potential for inability to continue working or maintain a role within the family, especially in the long term. Individuals with health anxiety may admit that the risk to them may be small, but it is greatly magnified and reaches beyond the possibility of disease if the risk of contracting the feared disease is much higher. For example, when there is a family history of breast cancer, the resulting anxiety can be quite overwhelming for members of that family (Beck et al., 1985, p.895).

The cognitive-behavioral theory of health anxiety predicts atypical responses in health anxious individuals when exposed to health-related information and that individuals concerned about their health may display predictable awareness. For example, negatively interpreted information and behavioral responses (eg, the pursuit of increased reassurance). People who are worried about their health are generally more likely to get sick because they give so much time to look for health-related information. The Cognitive Behavioral Theory asserts that health anxiety is associated with decreased use of positive body monitoring of symptoms. This suggests that health anxiety may be related to failure to engage in protective strategies. Hence, health anxiety did not result in cognitive or behavioral avoidance of disease information (Craig, 1995, p.316).

Rachman (2012) suggests that the cognitive explanation for uncontrollable anxiety can be classified as a generalized anxiety disorder. Health anxiety is the result of catastrophic misinterpretations of the importance of sensations and changes in body function and appearance (such as swelling, pain, loss of energy, and dizzy spells) (Rachman, 2012, p.506).

(Cognitive Behavioral Theoretical Model, 2003)

Some researchers have suggested that some people's health concerns may increase their fears because they believe they are less likely to be taken seriously by those they seek to help. Individuals who suffer from health anxiety feel that their health concerns are not being taken into consideration properly. They are more likely to look for other sources of help, and individuals may feel anger due to the lack of attention to their health concerns, which in the future leads to refraining from participating in any psychological treatment session, if this is achieved by individuals who have a health concern, the primary function of the health institution is to absolve the doctor from responsibility after he failed to create a successful therapeutic relationship with patients who suffer from health concerns. Accordingly, the therapist should be able to discover those pathological fears of the affected individuals when assessing and diagnosing, that is, there are direct ways to establish a successful therapeutic relationship between the therapist and the patient (Salkovskis, 2003, pp.354-355). It is believed that successfully reassuring individuals are one of the most common goals in medicine, as frequent reassurance should be a component of psychotherapy for health anxiety (70, p.1983Kellner,). Salkovskis & Warwick (1986) indicated that reassurances without new information may lead not only to a short-term decrease in health anxiety but also to a long-term increase in the degree of health anxiety and the need for reassurance and psychological stability (Salkovskis & Warwick, 1986, p .599).

The cognitive-behavioral model used as a basis for treatment suggests that people with severe and persistent health anxiety have a relatively persistent tendency to misinterpret symptoms and physical changes, as well as misinterpret medical and other health-related

information as evidence that they are currently suffering or at risk of developing a serious physical illness, they will feel when they encounter an ambiguous situation that causes a bodily sensation for which the reason cannot be known, thus, it can be argued that health anxiety occurs as a result of a catastrophic misinterpretation of medical information related to health (356Salkovskis, 2003, p.).

The sample

In selecting her applied research sample, the researcher relied on a simple random sampling method of equal distribution by selecting (200) staff members disaggregated by sex (male/female), by (100) male and female (100) female employees, as the sample was chosen from two ministries, with (100) male and female employees from each ministry.

Search tools

Cyberchondria scale

The researcher adopted the Durak scale (2018), as the scale in its initial form consisted of (28) items, and item (27) was excluded from the scale because it obtained a weak correlation coefficient compared to the rest of the items that obtained a high correlation coefficient. The researcher extracted the validity of the scale by the method of apparent validity and construct validity through confirmatory factor analysis. The researcher extracted the stability using the Facronbach method, and the stability value was (0.89).

Health anxiety scale

The researcher adopted (the Salkovskis et al. (2003) scale, which in its initial form consisted of (18) items. The researcher extracted the apparent validity and construction validity through exploratory factor analysis and deleted the paragraphs (18, 16, 15) because they were not saturated on the only scale factor, and the researcher extracted the stability by the Facronbach method, and the value of the stability was (0.78).

Results

Second: Identify the difference in the level of cyberchondria in the research sample according to the variables of gender and age.

To identify the differences, the researcher applied the cyberchondria scale to the research sample of (200) individuals, and the results showed that their average score on the scale amounted to (79.89) degrees and a standard deviation of (15.49) degrees. When comparing this average with the hypothetical mean of the scale of (81) degrees using the t-test for one sample, it was found that the difference was not statistically significant, as the calculated t-value (1.01) was less than the tabular t-value of (1.96) with a degree of freedom (199) and a level of significance (0.05), and Table (1) shows this.

Table (1) *T-test for the difference between the sample mean and the hypothetical mean of the cybernetic scale*

Sample size	arithmetic mean	standard deviation	hypothetical mean	Calculated T-value	Table T-value	degree of freedom	Sig.
200	79.89	15.49	81	1.01	1.96	199	Not sig.

The result of Table (1) indicates that the level of cyberchondria in the research sample is below the mean.

To achieve this goal, the researcher used the two-way analysis of variance to identify the significance of the difference in cyberchondria according to the variables of gender and age, tables (2-3) show that.

Table (2) *Arithmetic averages and standard deviations of the cyberchondria scale according to the variables of gender and age*

Variables	Number	Arithmetic mean	standard deviation
Male 20-30	14	79.36	19.92
Male 31-40	38	74.95	15.25
Male 41-50	29	74.45	17.14
Male 51-60	19	74.79	17.42
all males	100	75.39	16.73
female 20-30	13	91.85	12.08
Female 31-40	29	83.41	11.42
Female 41-50	41	82.51	11.63
Female 51-60	17	84.88	16.39
all females	100	84.39	12.72
total 20-30	27	85.37	17.50
Total 31-40	67	78.61	14.26
Total 41-50	70	79.17	14.62
Total 51-60	36	79.56	17.46
total	200	79.89	15.49

Table (3) *The results of the two-way analysis of variance revealed the significance of differences in cyberchondria according to the variables of gender and age*

s.of.v	s.of.s	D.F	M.S	F value	Sig
Gender	4138.046	1	4138.046	18.67	Sig
Age	1048.588	3	349.529	1.58	Not sig
gender * age	110.817	3	36.939	0.17	Not sig
Error	42552.175	192	221.626	---	---
Total	1324244	200	---	---	---

The results of Table (3) indicate the following:

1. There is a statistically significant difference in cyberchondria according to the gender variable and in favor of females, as the calculated t-value reached (18.67), which is higher than the tabular t-value of (3.84) at the significance level (0.05), and the degree of freedom (1-192).
2. There is no statistically significant difference in cyberchondria according to the variable of age, as the calculated t value was (1.58), which is less than the tabular t value of (2.60) at the level of significance (0.05), and the degree of freedom (3-192).
3. There is no significant interaction between the gender and age variables, as the calculated t-value was (0.17) which is less than the tabular t-value of (2.60) at the significance level (0.05), and the degree of freedom (3-192).

The difference in the level of health anxiety among the research sample according to the variables of gender and age

To identify the differences, the researcher applied the health anxiety scale to the research sample of (200) individuals. The results showed that their average score on the scale was (43.03), with a standard deviation of (7.66) degrees. When comparing this means with the hypothetical mean of the scale of (45) degrees using the t-test for one sample, it was found that

the difference is statistically significant and in favor of the hypothetical mean. As the calculated t-value was (3.64) higher than the tabulated t-value of (1.96) with a degree of freedom (199) and a level of significance (0.05), and Table (4) illustrates this.

Table (4) *T-test for the difference between the sample mean and the hypothetical mean of the Health Anxiety Scale*

Sample size	arithmetical mean	standard deviation	hypothetical mean	Calculated T-value	Table T-value	degree of freedom	Sig.
200	43.03	7.66	45	3.64	1.96	199	sig.

The result of Table (4) indicates that the level of health anxiety in the research sample is below the mean.

To achieve this goal, the researcher used the two-way analysis of variance to identify the significance of the differences in health anxiety according to the variables of gender and age, and the two tables (5-6) explain that.

Table (5) *Arithmetic averages and standard deviations of the health anxiety scale according to the variables of gender and age*

Variables	Number	Arithmetic mean	standard deviation
Male 20-30	14	44.64	10.23
Male 31-40	38	40.21	6.27
Male 41-50	29	41.00	9.50
Male 51-60	19	41.84	8.53
all males	100	41.37	8.33
female 20-30	13	47.38	4.89
Female 31-40	29	44.59	6.70
Female 41-50	41	43.85	5.82
Female 51-60	17	44.82	8.82
all females	100	44.69	6.57
total 20-30	27	45.96	8.08
Total 31-40	67	42.10	6.77
Total 41-50	70	42.67	7.64
Total 51-60	36	43.25	8.67
total	200	43.03	7.66

Table (6) *The results of the two-way analysis of variance revealed the significance of the difference in health anxiety according to the variables of gender and age*

s.of.v	s.of.s	D.F	M.S	F value	Sig
Gender	558.485	1	558.485	9.93	Sig
Age	307.761	3	102.587	1.82	Not sig
gender * age	25.179	3	8.393	0.15	Not sig
Error	10799.760	192	56.249	---	---
Total	382000	200	---	---	---

The results of Table (6) indicate the following:

1. There is a statistically significant difference in health anxiety according to the gender variable and in favor of females, as the calculated t-value reached (9.93) which is higher than the tabular t-value of (3.84) at the significance level (0.05), and the degree of freedom (1-192).
2. There is no statistically significant difference in health anxiety according to the age variable, as the calculated t-value reached (1.82) which is less than the tabular t-value of (2.60) at the level of significance (0.05), and the degree of freedom (3-192).
3. There is no significant interaction between the gender and age variables, as the calculated t-value was (0.15) which is less than the tabular t-value of (2.60) at the significance level (0.05), and the degree of freedom (3-192).
4. The correlation between cyberchondria and health anxiety among the research sample:
5. To identify the differences, the Pearson correlation coefficient was used to calculate the correlation coefficient between the total scores obtained by the sample members on the cyberchondria scale and health anxiety. It was found from the results that there is a direct statistically significant correlation between cyberchondria and health anxiety, as the value of the calculated correlation coefficient reached (0.61), which is the highest comparison with the value of the tabular Pearson correlation coefficient of (0.14) at the level (0.05) and the degree of freedom (198). This means that the higher the level of cyberchondria, the higher the level of health anxiety, and vice versa.
6. Recognize the extent to which health anxiety contributes to cyberchondria:

To know the difference, the researcher extracted the Pearson correlation coefficient between the total scores obtained by the research sample members on the health anxiety scale and their scores on the cyberchondria scale. The correlation coefficient reached (0.61), which is the highest comparison with the value of the Pearson tabular correlation coefficient of (0.14) at the level (0.05) and the degree of freedom (198), which indicates the existence of a direct statistically significant relationship.

To find out the extent of the contribution of health anxiety to cyberchondria, a simple regression analysis was conducted, and the two tables (7-8) show that.

Table (7) *Regression variance analysis to determine the statistical significance of the contribution of health anxiety to cyberchondria*

s.of.v	s.of.s	D.F	M.S	F value	Sig
Regression	4383.671	1	4383.671		
The remaining	7300.149	198	36.869	118.90	Sig
Total	11683.820	199			

From the above table, it is clear that health anxiety contributes significantly to cyberchondria. The calculated value of the regression variance analysis reached (118.90), which is higher than the tabular value of (3.84) at the level (0.05) and the degree of freedom (1-198).

To identify the relative contribution of health anxiety to cyberchondria, the beta coefficient has been extracted, and table (8) illustrates this.

Table (8) *The beta coefficient of the relative contribution and its statistical significance*

Independent Variable	correlation coefficient	Determination coefficient	beta value	Calculated T	Sig.
health anxiety	0.61	0.38	0.61	10.90	Sig. 0.05

It is clear from the above table that health anxiety has a statistically significant inverse contribution to cyberchondria, as its (beta) value is (0.61), which is a statistical function according to the calculated T-value index of (1.96) at the level (0.05). This means that (0.38) of the change in cyberchondria is due to health anxiety after squaring its standard beta value, while the remaining percentage (0.62) is due to other factors that were not included in the research.

Discussion

The results of this study examined whether employees have cyberchondria, according to Kim (2019) who believes that individuals have a cognitive drive that makes them subjectively feel the adequacy of information and certainty that plays an important and decisive role in information-seeking behaviors. They feel that the current level of knowledge is sufficient to manage the risks, and they do not need to obtain more knowledge by searching for information on the Internet (Kim, 2019). Lack of information according to Li & Zheng's perspective (2020) Pushes individuals to search for medical information online, this would have a direct effect leading to a relationship between cyberchondria and searching for information, that is, people who care for cyberdria realize that they do not have sufficient knowledge of their symptoms, and this deficiency can lead to the search for some relevant health information on the Internet (Li & Zheng, 2020).

The result of this study agreed with the Eestin & Guinsler study. (2006) which found that individuals even if they were suffering from health symptoms did not tend to search for medical information online because they believed that that information was not reassuring to them, and the outcome of this study varied from the Li & Zheng study (2020) in which they found (that cyberchondria is positively associated with lack of information), as well as with the study of Weinstein et al. (2014) in which they concluded that cyberchondria leads to social anxiety. According to Salkovskis (2003), people who do not have symptoms of health anxiety do not tend to misinterpret symptoms and physical changes, nor do they misinterpret medical and other health-related information. The model also assumes that negative or even catastrophic interpretations of health-related information are not common to most individuals from time to time, as most people may be preoccupied for a short period with unexplained physical changes. However, these episodes of health anxiety are usually transient in which the symptoms disappear if help is provided and the condition of individuals suffering from health anxiety is understood by doctors. Individuals who suffer from bouts of acute health anxiety are the result of a set of processes that exacerbate these catastrophic interpretations of health-related medical information that form a vicious circle.

Conclusions

1. There may be an increase in people's cyberchondria levels in the future, because of the diversity of health information across Internet sites, but precision and caution must be exercised when obtaining that information.
2. In the years to come, health anxiety among all segments of society may rise due to the frequent use of the Internet, which has come to play an important role in people's lives

- and it is difficult for them to reduce its use, as it has become a necessary need that has recently floated on the surface of their lives.
3. Some members of society who use the Internet may suffer from (Internet Addiction Disorder) because they spend more of their time browsing various information, especially medical ones, and owning social networking pages. This would make them feel alienated from reality as they fell easy prey to those virtual sites that destroyed the body (psychologically, environmentally, and socially).
 4. The uncertainty of life and the lack of clarity about the future of individuals and the prevalence of unemployment and poverty under the current conditions (political, economic, security, etc.) can lead them to seek areas (safe) that can be called "passive comfort", i.e. ditching inside the virtual information network cell (Internet), which may overshadow their lack of sense of life, losing the purpose for which the human person was created, and this may make them feel false happiness, but they see it as a reality saturated with their pleasures and psychological needs.
 5. Health anxiety is subject to what is called in psychology (relativism), meaning that it may be positive to its reasonable extent and negative to its unreasonable extent.
 6. Individuals may fall into the focus of loss, due to their failure to benefit from the World Wide Web (Internet).

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