

A cross-sectional study on prevalence of cyberchondria and factors influencing it among undergraduate students

Shameem R Kanganolli, Praveen Kumar N

Department of Community Medicine, Shimoga Institute of Medical Sciences, Shimoga, Karnataka, India

Correspondence to: Praveen Kumar N, E-mail: drpraveenbhat@yahoo.com

Received: January 13, 2020; Accepted: February 20, 2020

ABSTRACT

Background: The internet is a source of valuable medical information. However, when it is employed as a diagnostic procedure, it has the potential to increase health anxiety among individuals who have no medical knowledge. This is a concerning subject as a large number of people search for health information online. **Objectives:** The objectives of the study were (i) to estimate the prevalence of cyberchondria among undergraduate medical students. (ii) To assess the factors influencing cyberchondria among undergraduate medical students. **Materials and Methods:** A cross-sectional study was conducted among undergraduate medical students of Shivamogga Institute of Medical Sciences, during June 2018–August 2018. One hundred and thirty-six undergraduate medical students were selected and data were collected using a semi-structured questionnaire. A database was created in MS Excel and analysis was done using SPSS software v.20. Descriptive statistics such as frequency and percentage were calculated and Chi-square test was used. **Results:** The prevalence of cyberchondria was found to be 37.5%. Cyberchondria was found to be more among males, study participants belonging to Class I according to the modified B G Prasad classification, those having 24*7 access to internet, those using internet for more than 1 h during the night, and those who were using internet for ≤5 years and for ≤6 h/day. Cyberchondria was significantly associated with the use of internet during the night. **Conclusion:** Excessive searching for health information online has the potential to spread threat among the people and it may lead to an increase in health anxiety. We can overcome this problem by creating awareness among the general public regarding proper usage of web search engines.

KEY WORDS: Cyberchondria; Health Anxiety; Internet; Medical Search Online


INTRODUCTION

Among the general public, internet has become a popular source to access health information which is due to the rapid development in information and communications technology. A large amount of information related to health is available online, but it may mislead the patients as some of the information provided is erroneous.^[1] Such information not only misleads the searcher but also other individuals as

well; a study showed that 51% of the participants felt eager to share their new medical knowledge gained, with others.^[2]

The term cyberchondria refers to an increase in anxiety about one's own health status, as a result of excessive reviews of health information which is available online. It is defined by White and Horvitz as “the unfounded escalation of concerns about common symptomatology, based on the review of search results and literature on the web.”^[1] Cyberchondria reflects both anxiety and a component of compulsiveness, which is suggestive of its multidimensional construct.

Most people have easy access to internet, either by means of computer or smartphone; hence, cyberchondria is emerging to be an important problem. A large volume of the medical information provided by the World Wide Web can help

Access this article online	
Website: http://www.ijmsph.com	Quick Response code
DOI: 10.5455/ijmsph.2020.01010202020022020	

International Journal of Medical Science and Public Health Online 2020. © 2020 Shameem R Kanganolli and Praveen Kumar N. This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

people who are not health-care professionals to understand better about the health and disease state, and provides them with feasible explanations for their symptoms. Yet, when the web search is engaged as a diagnostic method, it has the potential to raise the level of health anxiety among people who have little or no medical knowledge.^[3]

Although there are many positive aspects of the information which is provided on the internet, increasing access to health information which is available online, may lead to an overload of medical knowledge among the general public.^[4] Many times, information from the web is of unregulated accuracy where inquiry of a benign symptom into a search engine is likely to return a disproportionately high rate of unlikely explanations, such as a life-threatening illness.^[5] Users have a tendency to search for more serious conditions; for example, one may start a search for headache-type symptoms and subsequently can end up reviewing information related to brain tumors. As the results of online searches are ranked by the frequency of search, the dissemination of health information on web depends on the health search technology. This escalation process, in turn, affects the search rankings.^[1]

In general, the quality of information obtained is often neglected by the users. Individuals who worry about their illnesses are even less likely to look into the validity of the source and are more anxious of what they see on the web. Further, it leads to worsening of health anxiety.^[6,7] This is a concerning subject as a large number of people search for health-related information online. There are limited studies regarding the prevalence of cyberchondria and factors influencing it. Hence, the present study was conducted among undergraduate medical students to estimate the prevalence of cyberchondria and to assess the factors influencing it.

MATERIALS AND METHODS

A cross-sectional study was conducted among the undergraduate medical students of Shivamogga Institute of Medical Sciences (SIMS), Shivamogga, for a period of 3 months, i.e., from June 2018 to August 2018.

All the 3rd term undergraduate medical students of SIMS were included in the study. Students who were not willing to participate in the study were excluded from the study. There were 150 undergraduate students studying in 3rd term MBBS. Considering inclusion and exclusion criteria, 136 students were interviewed. Convenient sampling technique was followed. The study participants were interviewed face to face using a pretested, semi-structured questionnaire.

Cyberchondria is a term used for elevated anxiety and distress about one's own health status due to the repeated online searches for health-related information.^[8] Most importantly,

increased health anxiety in response to the online health-related information is the hallmark of cyberchondria.

Ethical clearance was obtained from the Institutional Ethical Committee before the start of the study. Written informed consent was taken from the study participants prior to the study.

Data were entered in MS Excel and analyzed using SPSS software v.20.0. Results were expressed in terms of frequency and percentages. To assess the factors influencing cyberchondria, Chi-square test was applied and $P < 0.05$ was considered as statistically significant.

RESULTS

The prevalence of cyberchondria among the study participants was found to be 37.5% [Figure 1].

In the present study, the mean age of study participants was 18.95 ± 0.69 years. Among 136 study participants, 82 (60.3%) of them constituted males and 54 (39.7%) of them were females. The majority, i.e., 102 (75%) of the study participants, belonged to Class I socioeconomic status according to the modified B G Prasad classification [Table 1].

Among 51 study participants who had cyberchondria, majority 33 (64.7%) of them were males and 18 (35.3%)

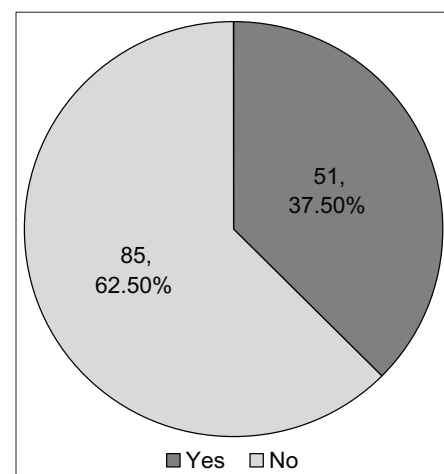


Figure 1: Prevalence of cyberchondria

Table 1: Sociodemographic profile of study subjects

Sociodemographic characteristics	Categories	Frequency n=136 (%)
Gender	Male	82 (60.3)
	Female	54 (39.7)
Socioeconomic status (modified B G Prasad classification 2018)	I	102 (75)
	II	18 (13.2)
	III	6 (4.4)
	IV	4 (3)
	V	6 (4.4)

of them were females. The maximum number of study participants, i.e., 36 (70.6%) of them belonged to Class I Socioeconomic status according to modified B G Prasad classification. Majority 47 (92.2%) of study participants who had cyberchondria had 24*7 access to the internet. Among the study participants who had cyberchondria 39 (76.5%) were using internet for ≤ 5 years and 36 (70.6%) were using internet for ≤ 6 h/day. Among the study participants who had cyberchondria, the majority 42 (82.4%) used internet for more than 1 h during the night. The association between cyberchondria and usage of internet during the night was found to be statistically significant ($P = 0.02$) [Table 2].

DISCUSSION

The present study revealed that the prevalence of cyberchondria among the undergraduate medical students was 37.5% and cyberchondria was found to be more among males and those belonging to Class I according to modified B G Prasad classification. The study also concluded that cyberchondria was found to be more among the study participants having 24*7 access to internet, those using internet for more than 1 h during the night, and those who were using internet for ≤ 5 years and for ≤ 6 h/day. Cyberchondria was significantly associated with the use of internet during the night.

Table 2: Factors influencing cyberchondria

Factors	Cyberchondria	
	Yes $n=51$ (%)	No $n=85$ (%)
Gender		
Male	33 (64.7)	49 (57.6)
Female	18 (35.3)	36 (42.4)
Socioeconomic status (modified B G Prasad classification 2018)		
I	36 (70.6)	66 (77.6)
II	9 (17.6)	9 (10.6)
III	4 (7.8)	2 (2.4)
IV	2 (3.9)	2 (2.4)
V	0 (0.0)	6 (7.1)
24*7 internet access		
Yes	47 (92.2)	73 (85.9)
No	4 (7.8)	12 (14.1)
Years of internet use		
<5 years	39 (76.5)	59 (69.4)
>5 years	12 (23.5)	26 (30.6)
Number of hours of internet usage per day		
<6 hours	36 (70.6)	71 (83.5)
>6 hours	15 (29.4)	14 (16.5)
Usage of internet during night*		
<1 hour	9 (17.6)	31 (36.5)
>1 hour	42 (82.4)	54 (63.5)

*Chi square test: $P < 0.05$

The prevalence of cyberchondria in the present study was 37.5%. This may be due to easy accessibility to the internet these days by means of smartphones and computers. A similar study conducted by Syeda SA on cyberchondria suggested that web search engines have the potential to shoot up medical concerns and cyberchondria has the potential to cause a severe state of fear which could lead to health anxiety.^[3] A study carried out by Fox S. found that 10% of participants became frightened by the grave nature of medical information they encountered online and it also stated that health information accessed online affected their decisions regarding medical consultation.^[2] Cyberchondria was found to be more among study participants belonging to Class I according to modified B G Prasad classification. The reason for this can be those belonging to higher socioeconomic class have more affordability to possess a smartphone or a computer, which act as means for accessing the internet. In 2010, a study of 12,262 people across 12 countries showed that nearly half of them used Google as the search engine for self-diagnosis.^[9] A study undertaken by Doherty-Torstrick *et al.* on cyberchondria found that individuals with high illness anxiety recalled feeling worse after online symptom checking while those with low illness anxiety recalled relief. Longer duration of online health-related search was associated with increased functional impairment, less education, and increased anxiety during and after checking of the symptoms.^[10] Knowledge and empowerment may be considered as positive aspects of health-related online searching, but it is debatable whether these benefits outweigh the anxiety that can be induced by it.^[1,4,11,12] A study conducted by Fergus concluded that for some individuals, these frequent searches for medical information on the internet are related to increased health anxiety.^[13,14] Abdulaziz ALrukban found that almost one-third of social media users discovered wrong health information on various social networking sites.^[15]

Strength and Limitations

People recurrently use the internet to investigate for medical information. However, for some individuals, searching for medical information on the internet is linked with an exaggeration of health anxiety. The present study tries to address this issue, wherein the existing knowledge is very limited. The limitation of the present study is the relatively small sample size.

CONCLUSION

The present study concluded that the prevalence of cyberchondria was 37.5%. The factors influencing cyberchondria were male gender, higher socioeconomic class, 24*7 access to internet, and usage of internet during the night. The findings of the present study on cyberchondria are relevant for health-care professionals, for better understanding regarding the use of web for self-diagnosis of the symptoms by many people which lead to increased anxiety in them. This

subject needs to be addressed to reduce its effect on individuals by simply building awareness and helping them recognize this problem. It is important that health professionals are involved in the design, dissemination and evaluation of web-based health, and medical information. The paucity of literature regarding the prevalence of cyberchondria needs to be addressed; further research study would empirically assess the extent and nature of cyberchondria.

REFERENCES

1. White RW, Horvitz E. Cyberchondria: Studies of the escalation of medical concerns in web search. *ACM Trans Inf Syst* 2009;27:1-37.
2. Fox S. Online Health Search; 2006. Available from: <http://www.pewinternet.org/~media/Files/Reports/2006/PIP.Pdf>. [Last accessed on 2018 May 15].
3. Syeda SA. Cyberchondria: A peril in our nation. *Glob J Pharmaceu Sci* 2017;2:1-2.
4. Belling C. Hypochondriac hermeneutics: Medicine and the anxiety of interpretation. *Lit Med* 2006;25:376-401.
5. White RW, Horvitz E. Cyberchondria: Studies of the escalations of medical concerns in web search. Microsoft Research; 2008. Available from: <http://www.research.microsoft.com/apps/pubs/default.aspx?id=76529>. [Last accessed on 2018 May 10].
6. Barsky AJ, Klerman GL. Overview: Hypochondriasis, bodily complaints, and somatic styles. *Am J Psychiatry* 1983;140:273-83.
7. Baumgartner SE, Hartmann T. The role of health anxiety in online health information search. *Cyberpsychol Behav Soc Netw* 2011;14:613-8.
8. McElroy E, Shevlin M. The development and initial validation of the cyberchondria severity scale (CSS). *J Anxiety Disord* 2014;28:259-65.
9. McDaid D, Park A. Online Health: Untangling the Web; 2011. Available from: http://www.epolitix.com/fileadmin/epolitix/stakeholders/Online_Health.pdf. [Last accessed on 2018 May 22].
10. Doherty-Torstrick ER, Walton KE, Fallon BA. Cyberchondria: Parsing Health Anxiety From Online Behavior. *Psychosomatics* 2016;57:390-400.
11. Sillence E, Briggs P. Examining the role of the internet in health behaviour. In: Joinson A, McKenna K, Postmes T, Reips U, editors. *The Oxford Handbook of Internet Psychology*. New York: Oxford University Press; 2007. p. 347-60.
12. Bastian H. Just how demanding can we get before we blow it? *BMJ* 2003;326:1277-8.
13. Fergus TA. Cyberchondria and intolerance of uncertainty: Examining when individuals experience health anxiety in response to internet searches for medical information. *Cyberpsychol Behav Soc Netw* 2013;16:735-9.
14. Harding KJ, Skritskaya N, Doherty E, Fallon BA. Advances in understanding illness anxiety. *Curr Psychiatry Rep* 2008;10:311-7.
15. ALrukban A. The health related uses of social media among users in Saudi Arabia. *Int J Med Sci Public Health* 2014;3:1492-7.

How to cite this article: Kanganolli SR, Kumar NP. A cross-sectional study on prevalence of cyberchondria and factors influencing it among undergraduate students. *Int J Med Sci Public Health* 2020;9(4):263-266.

Source of Support: Nil, **Conflicts of Interest:** None declared.