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Knowledge attitude and behaviour regarding cyberchondria among dental students

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Abstract

Background: The internet is a source of valuable medical information. However, when its employed as a diagnostic procedure, it has the potential to increase health anxiety among individuals who have no medical knowledge.

Objective: To assess the knowledge, attitude, and behaviour regarding cyberchondria among undergraduate and postgraduate dental students.

Methodology: A descriptive cross sectional study was conducted among undergraduate and postgraduate dental students of private dental institution during October-December 2022. Responses were collected from 137 subjects. The data obtained was coded and fed into SPSS version 25 for analysis.

Results: There were 24(17.5%) males and 113(82.5%) females among the study participants. The study included 83.2% undergraduates and 16.8% post graduates. The overall knowledge attitude and behaviour scores among males and females were found to be 31.30 ± 10.27 and 29.91 ± 13.7 which was found to be higher in males.

The overall knowledge, attitude and behaviour score among undergraduates and postgraduates were found to be 30.21 ± 10.18 and 35.34 ± 13.38 which was higher in post graduates and it was found to be statistically significant.

Conclusion: Excessive searching for health information online has the potential to spread threat and it may lead to an increase in health anxiety. We can overcome this problem by creating awareness regarding proper usage of web search engines.

Keywords: Cyberchondria, internet, smartphones, E Health

Introduction

Individuals who have concerns about their health frequently use the internet to learn more about their symptoms, however it is unclear how much anxiety is related to online research and clinical factors. An excellent resource for medical knowledge is the internet. However when used as a diagnostic process it may make people who don't know much about medicine more anxious about their health [1].

Some people may feel relieved or gain a better knowledge of their medical situation as a result of this information. Others may experience high and unreasonable levels of anxiety relating to their health as a result of this information. Cyberchondria is a clinical condition characterized by excessive and recurrent internet searches for health related information coupled with symptoms of health anxiety, obsessive compulsive disorder and intolerance for uncertainty [2]. Cyberchondria is more prevalent in those who are depressed or anxious. A preoccupation on getting ill can result in a prediction that comes true. In general cyberchondria causes higher levels of stress. In turn stress can result in high blood pressure, headaches and compromised immune system. It has a bad impact on a person's relationships, profession and finances as well [1, 3].

Avoiding excessive online information seeking is the most crucial step in overcoming cyberchondria. General internet breaks can serve as a welcome diversion from health related worries. It is typically advisable to stick with reliable sources that are supported by scientific and medical research while looking up information online [2, 3].

It can be beneficial to use a variety of relaxation techniques, including breathing exercises, muscle-tension relaxation techniques and meditation.

A healthy sleep schedule, a balanced diet and the development of hobbies can all help the condition. If your personal life is being negatively impacted by excessive stress and anxiety, you can seek professional assistance. They can assist you in locating the trigger factors and a remedy for them^[4].

The internet is the most popular information source and a great location to learn about everything in the world. But there are pros and cons to using the internet. The way we communicate, obtain information and conduct businesses has been revolutionised, but there are drawbacks as well such as privacy issues, addiction and dissemination of false information. We aimed to assess the knowledge, attitude and behaviour regarding cyberchondria among undergraduate and postgraduate dental students of a private dental institution^[1, 5].

Methodology

A descriptive cross-sectional study was conducted among undergraduate and postgraduate dental Students of private dental institution using a structured closed ended questionnaire consisting of 22 questions assessing the knowledge, attitude and behaviour during October-December 2022.

The duration of the present study is 2 months which is a descriptive cross sectional study. The sampling method employed in the present study is convenience sampling method. Ethical clearance was obtained from the institutional ethical committee before the start of the study. Informed consent was taken from the study participants prior to the study.

After the collection of responses from subjects the data obtained was coded and Fed into the SPSS (Statistical Package for Social Sciences) version 25 for analysis. All statistical tests were performed at 95% confidence interval. A p value less than 0.05 was considered as statistically significant.

Results

The study questionnaire comprised of three parts, for assessing the knowledge, attitude and behaviour among study participants. There were 24 (17.5%) males and 113 (82.5%) females among the study participants. The study Included 115 (83.2%) undergraduates and 22 (16.8%) postgraduate students (Graph 1 & 2).

Knowledge Based Responses

For the question *are you aware of cyberchondria?* 51.1% answered yes, whereas 48.9% answered no. For the question *are you aware of the effects of cyberchondria on your health?* 65.7% answered yes and 34.3% answered no.

For the question *have you ever gotten messages on your social media regarding medical conditions and its remedies?* 21.9% answered no way, 24.8% answered rarely, 34.3% answered sometimes, whereas 17.5% answered frequently and 1.5% answered always. For the question *have you ever gotten confused between different diagnosis found on different sites?* 31.4% answered no way, 27.7% answered rarely, 31.4% answered sometimes, whereas 5.5% answered frequently and 4% answered always.

For the question *as a doctor, have you ever consulted your patients with the help of internet?* 66.4% answered no way, 17.5% answered rarely, 13.9% answered sometimes, and 2.2% answered frequently. (Table 1).

Attitude Based Responses

For the question *do you search the internet if you experience any bodily symptoms?* 11.7% answered no way, whereas 26.3% answered rarely, 47.4% answered sometimes, 10.2% answered frequently and 4.4% answered always. For the question *what is the first thing you do when you feel sick?* 33.6% answered that they will consult doctor, 12.4% answered that they will search internet, 15.3% answered the option ask your friend, 38.7% answered the option self-diagnosis.

For the question *have you ever suspected a doctor's diagnosis after searching about it on the internet?* 48.9% answered no way, whereas 27% answered rarely, 19.7% answered sometimes, 2.2% answered frequently and 2.2% answered always. For the question *have you ever scared searched for medication for your disease on the internet?* 31.4% answered no way, whereas 28.5% answered rarely, 32.1% answered sometimes, 6% answered frequently and 4% answered always.

For the question *I give more importance to my doctor's advice than my online research?* 6.6% answered no way, whereas 6.2% answered rarely, 2.6% answered sometimes, 14.6% answered frequently and 70.1% answered always. For the question *has the internet search about your symptom or suspected disease led you to a specialist?* 40.1% answered no way, whereas 26.3% answered rarely, 26.3% answered sometimes, 5.5% answered frequently (Table 2).

Behaviour Based Responses

For the question *does searching about your symptoms online make you feel stressed?* 30.7% answered no way, whereas 27.7% answered rarely, 35.8% of them answered sometimes, and 5.8% of them answered frequently. For the question *does searching online for information about symptoms or suspected disease disturb your leisure activities?* 46.6% answered no way, 27% answered rarely, 23.4% answered sometimes, and 2.9% answered frequently.

For the question *do you make sure the sites you visit your symptoms are trustworthy?* 16.1% answered no way, whereas 23.4% answered rarely, 20.4% of them answered sometimes, and 13.1% of them answered frequently and 27% answered always. For the question *do you discuss your online research knowledge with your family and friends?* 14.6% answered no way, 24.8% answered rarely, 43.8% answered sometimes, and 9.5% answered frequently and 7.3% answered always.

For the question *if your family doctor states that your online research is wrong, would you consider it?* 7.3% answered no way, whereas 7.3% answered rarely, 12.4% of them answered sometimes and 73% answered always. For the question *have you ever got a panic attack after searching about the seriousness of your symptoms online?* 63.5% answered no way, 21.2% answered rarely, 12.4% answered sometimes, and 2.9% answered frequently.

For the question *has your online search about your disease or symptoms affected your sleep?* 1% answered no way, whereas 14% answered rarely, 12.9% of them answered sometimes, and 2.1% of them answered frequently (Table 3)

The overall knowledge attitude and behaviour scores among males and females were found to be 31.30±10.27 and 29.91±13.7 which was found to be higher in males (Graph 4). The overall knowledge score among males and females was found to be 5.5% and 5.13%, whereas the attitude score among males and females were found to be 12.45% and 12.14% and the behaviour score among males and females were found to be 11.95 and 14.93% (Graph 3).

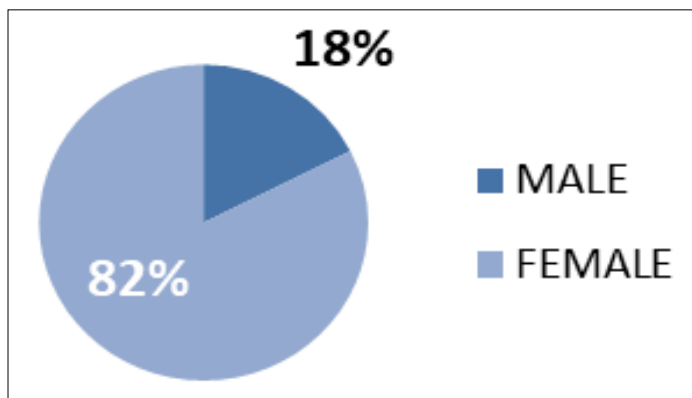
The overall knowledge attitude and behaviour score among undergraduates and postgraduates were found to be 30.21 ± 10.18 and 35.34 ± 13.38 which was higher in postgraduates and it was found to be statistically significant. Among the undergraduates it was higher in final year students (Graph 6).

The overall knowledge, attitude and behaviour score among 1st year undergraduates were found to be 4.4%, 10.7% and 13.3%. In 2nd year undergraduate it was found to be 5.6%, 11.45% and 13.3%. In 3rd year undergraduates it was found to

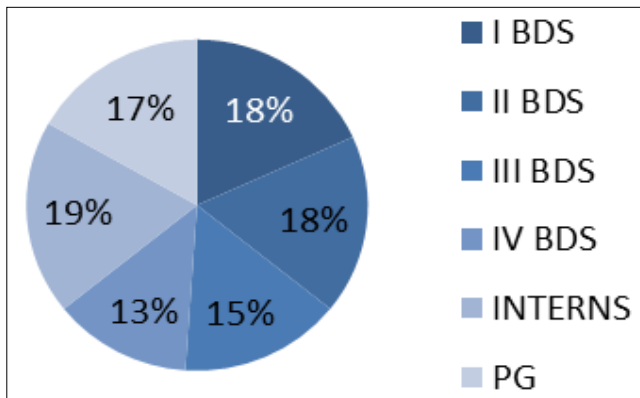
be 5.84%, 12.23% and 13.33%. In 4th year undergraduates it was found to be 4.55%, 12.77%, and 14.44%. In house surgeons it was found to be 5.5%, 12.96% and 13.23%. In post graduates it was found to be 6.47%, 13.17% and 15.63%. (Graph 5).

Among the undergraduates the knowledge, attitude and behaviour score was found to be 4.93%, 12% and 13.27%, where as in post graduates it was found to be 6.47%, 13.17% and 15.65% (Graph 7 & 8).

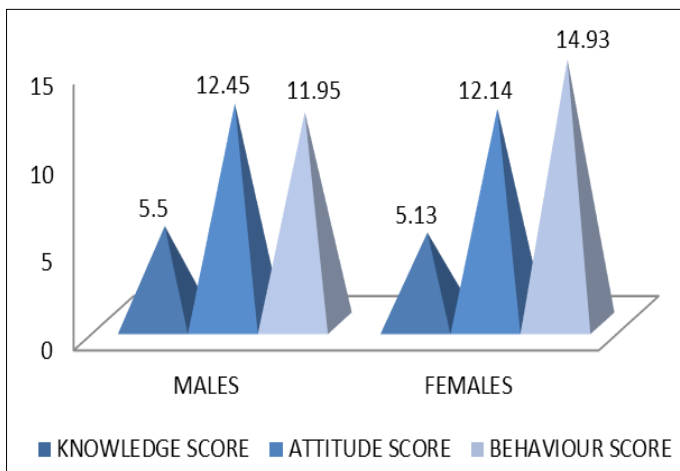
Graphs



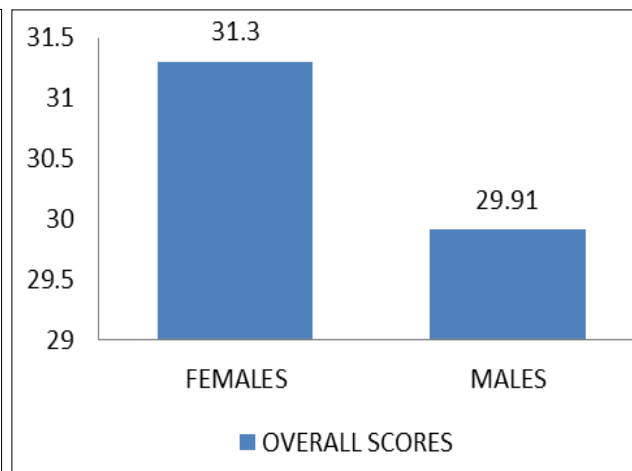
Graph 1: Distribution of study subjects based on gender



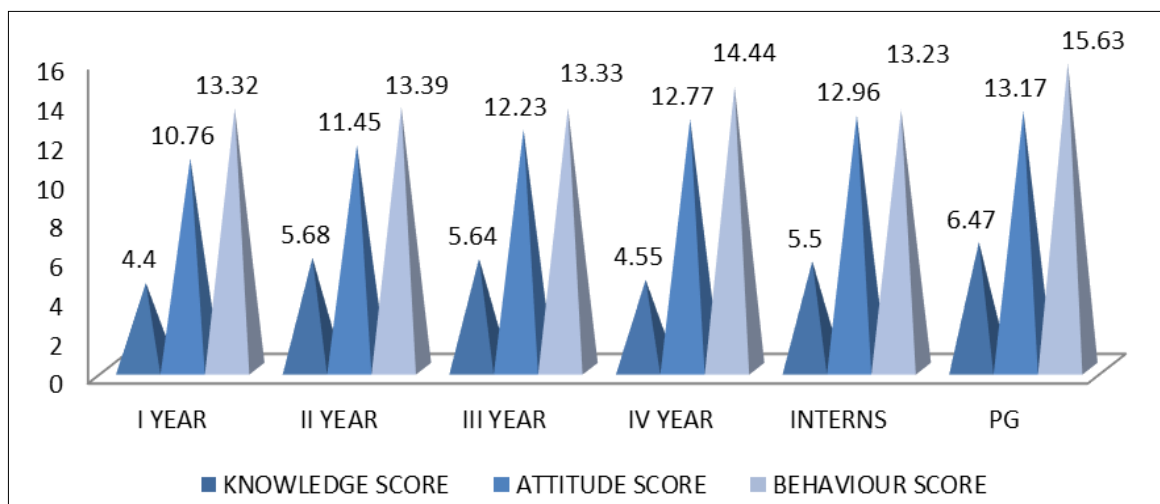
Graph 2: Distribution of study subjects based on the year of study



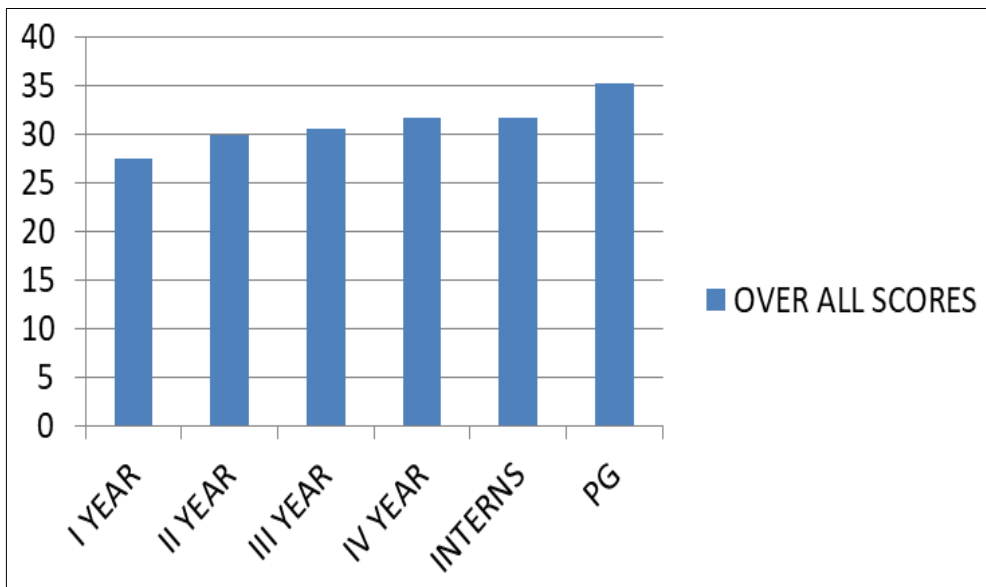
Graph 3: Knowledge, attitude and behaviour scores based on gender



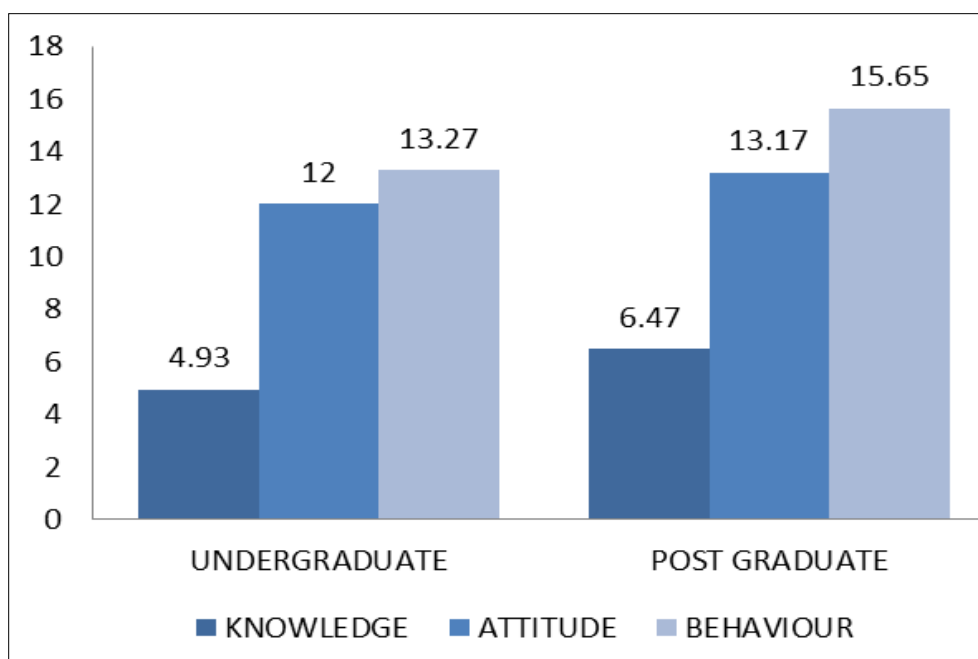
Graph 4: Overall scores based on gender



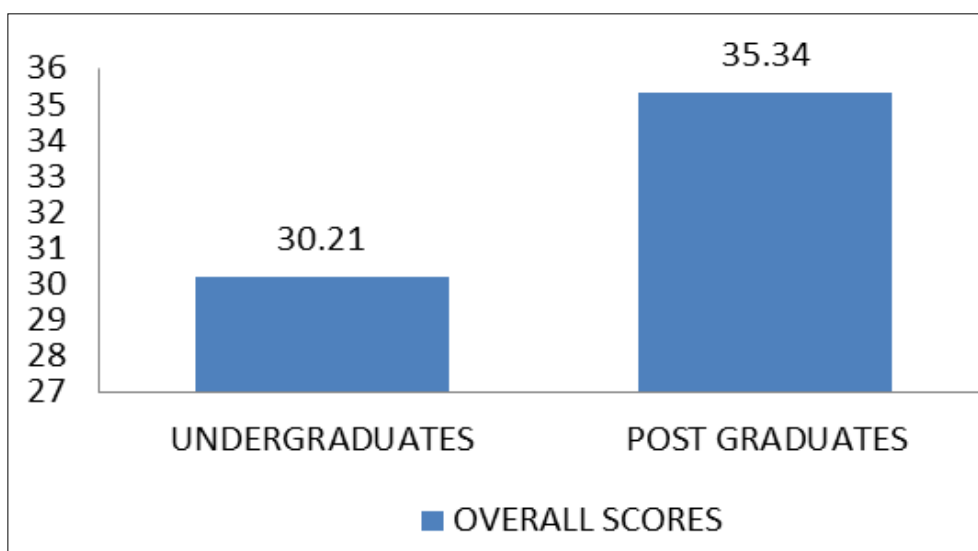
Graph 5: Knowledge, attitude and behaviour scores based on year of study



Graph 6: Overall scores based on year of study



Graph 7: Comparison of knowledge, attitude and behaviour scores between undergraduate and post graduate students



Graph 8: Overall comparison of scores within undergraduates and postgraduates

Table 1: Knowledge based questions

S No	Questions	Responses	Frequency
1	Are you aware of the term “cyberchondria”?	Yes	51.1%
		No	48.9%
2	Are you aware of the effects of cyberchondria on your health?	Yes	65.7%
		No	34.3%
3	Have you ever gotten messages on your social media regarding medical conditions and its remedies?	No way	21.9%
		Rarely	24.8%
		Sometimes	34.3%
		Frequently	17.5%
		Always	1.5%
4	Have you ever gotten confused between different diagnosis found on different sites?	No way	31.4%
		Rarely	27.7%
		Sometimes	31.4%
		Frequently	5.5%
		Always	4%
5	As a doctor, have you ever consulted your patients with the help of internet?	No way	66.4%
		Rarely	17.5%
		Sometimes	13.9%
		Frequently	2.2%
		Always	-

Table 2: Attitude based questions

6	Do you search the internet if you experience any bodily symptom?	No way	11.7%
		Rarely	26.3%
		sometimes	47.4%
		Frequently	10.2%
		Always	4.4%
7	What is the first thing you do when you feel sick?	Consult Doctor	33.6%
		Search Internet	12.4%
		Ask your friend	15.3%
		Self-Diagnosis	38.7%
8	Have you ever suspected a doctor’s diagnosis after searching about it on the internet?	No way	48.9%
		Rarely	27%
		sometimes	19.7%
		Frequently	2.2%
9	Have you ever searched for medications for your disease on the internet?	Always	2.2%
		No way	31.4%
		Rarely	28.5%
		sometimes	32.1%
10	I give more importance to my doctor’s advice than my online research?	Frequently	6%
		Always	4%
		No way	6.6%
		Rarely	6.2%
11	Has the internet search about your symptoms or suspected disease led you to a specialist?	sometimes	2.6%
		Frequently	14.6%
		Always	70.1%
		No way	40.1%
12	As a doctor, have you ever consulted your patients with the help of internet?	Rarely	26.3%
		sometimes	26.3%
		Frequently	5.5%
		Always	1.8%
13	Do you share your research knowledge with your consulting doctor?	No way	66.4%
		Rarely	17.5%
		sometimes	13.9%
		Frequently	2.2%
13	Do you share your research knowledge with your consulting doctor?	Always	-
		Yes	45.3%
		No	54.7%

Table 3: Behaviour based question

14	Does searching about your symptoms online make you feel stressed?	No way	30.7%
		Rarely	27.7%
		sometimes	35.8%
		Frequently	5.8%
		Always	-
15	Does searching online for information about symptoms or suspected disease disturb your leisure activities?	No way	46.7%
		Rarely	27%
		sometimes	23.4%
		Frequently	2.9%
		Always	-
16	How often do you forward those kinds of messages mentioned above?	No way	59.9%
		Rarely	23.4%
		sometimes	15.3%
		Frequently	1.4%
		Always	-
17	Do you make sure the sites you visit for your symptoms are trustworthy?	No way	16.1%
		Rarely	23.4%
		sometimes	20.4%
		Frequently	13.1%
		Always	27%
18	Do you discuss your online research knowledge with your family and friends?	No way	14.6%
		Rarely	24.8%
		sometimes	43.8%
		Frequently	9.5%
		Always	7.3%
19	If your family doctor states that your online research is wrong, would you consider it?	No way	7.3%
		Rarely	7.3%
		sometimes	12.4%
		Frequently	15.3%
		Always	57.7%
20	Have you ever purchased any product as remedy for your disease or symptoms as suggested online?	No way	74.5%
		Rarely	13.9%
		sometimes	8%
		Frequently	3.6%
		Always	-
21	Have you ever gotten a panic attack after searching about the seriousness of your symptoms online?	No way	63.5%
		Rarely	21.2%
		sometimes	12.4%
		Frequently	2.9%
		Always	-
22	Has your online research about your diseases or symptoms affected your sleep?	No way	71%
		Rarely	14%
		Sometimes	12.9%
		Frequently	2.1%
		Always	-

Discussion

These days social media other internet resource and the knowledge offered by many health websites all have an impact on students. According to Bessiere, *et al.* online health research was linked to a minor but persistent rise in hopelessness and anxiety, which might impair a student's ability to focus on their studies. They are probably more prone to search up medical symptoms online, which put them a higher risk of experiencing anxiety related to online health.

For many people, the internet has quickly replaced other sources of health-related information as a vital component of daily living. On the other hand, due to benefits such widely accessible, anonymous and affordable, new technological advancements have accelerated the usage of the internet to gather health-related information. Having easy access to cost effective health information has many benefits, including increased health literacy and the capacity to make informed health decisions.

However, there are also negatives to take into account, such as the uncontrolled material available, which might increase

anxiety and health related concerns. According to several experts, the internet negatively affects people's personal health through changing their communication, thoughts and daily existence as well as their behaviours. Online health research has been shown in studies to elicit unpleasant emotional reactions that feed into a person's initial worry, anxiety and suffering. Cyberchondria is brought on by an individual's increased anxiety over their own health status as a result of looking up health information online.

Cyberchondria is the term for an increase in health related anxiety brought on by regular online searches. It combines a comforting emotional state (health concern) with a behavioural tendency (excessive web searching). A person becomes more anxious as a result of conducting such searches more frequently and becoming more health-conscious. Mc elroy and Shelvin ^[8] created the scale (CSS) as a self-report psychometric tool to assess health anxiety brought on by in depth internet health research. It was anticipated that the CSS would have multiple dimensions and show uneasiness and a desire to look.

Numerous studies have found that social media and the internet have both beneficial and detrimental effects on people's lives. The widespread and simple availability to the internet, which regularly presents knowledge in numerous domains, has led to the emergence of a phenomenon known as cyberchondria in recent years. The person has access to information that fills them with dread and anxiety. This could seriously affect a student's personal and academic life and put crucial daily chores at danger.

The COVID-19 pandemic has brought to light the internet's ability to change people's lives. By enabling millions of people to work, learn, and socialise safely online, digital technology has saved lives. However, the pandemic has also highlighted the digital divide and the negative aspects of technology such as how quickly false information can spread and how it can be used to influence people's actions.

Our study's gender distribution matched that of a study by B Shailaja, *et al.* (2021) in Bangalore, where females made up the majority (82%) compared to males (18%).^[5] In line with our study of Brazilian and Portuguese dentists found that women were more likely than males to have high levels of cyberchondria^[7].

In a cross sectional investigation on the prevalence of cyberchondria and the factors influencing it among undergraduate medical students, it was discovered that more males than females had the condition, which had a prevalence of 37.5%. The findings are in contrast to our study, which found that 14.93% of women and 11.95% of men had cyberchondria respectively^[4].

According to a study by Halimeh Ghareghol *et al.* in Iran (2022), women scored higher on knowledge, attitude, and behaviour than men did^[6]. Our findings are consistent with this research. The findings are in contrast to those of B Shailaja *et al.* from Bangalore (2021) who found that males exhibited superior knowledge, attitude, and behaviour scores than females^[5].

The majority of the study's participants were undergraduate students (75%) compared to postgraduates (25%) according to B Shailaja, *et al.* (2021) in Bangalore^[5].

The outcomes are consistent with those published by B Shailaja *et al.* in Bangalore (2021), who found that postgraduate students scored higher on knowledge, attitude, and behaviour tests than undergraduate students^[5]. The findings contradict with those of Shahad Mohammed Halawani, *et al.* (2019), who found that postgraduates scored worse on knowledge, attitude, and behaviour than undergraduates in Saudi Arabia^[3].

Limitations

The sample size of this study is minimal and the study population is restricted because it only includes participants from one dental institution. Better findings and interpretation would have come from including students from other dental colleges across the nation.

Conclusion

With so much information available regarding illness and medical disorders, there are grave worries about how much information individuals are ingesting. In cyberchondria, one becomes addicted to the internet due to personal searches for a lot of information and doubts about its veracity. The appropriate educational institutions and bodies must assist in raising awareness of cyberchondria among the pupils.

The results of the current study on cyberchondria are important for health care practitioners to better understand

how many people self-diagnose their symptoms online, which causes them to feel more anxious. By raising awareness and assisting people in recognising this issue, we can lessen the impact this issue has on people.

Conflict of Interest

Not available

Financial Support

Not available

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