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Prevalence and Factors Influencing Cyberchondria among Adult Patients Attending Urban Health Training Centre in Central India

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ABSTRACT

Background: Growing reliance on the internet for health information has increased cyberchondria—excessive online health searching that heightens anxiety. In urban India, widespread digital access encourages self-diagnosis and online consultations, raising concerns about misinformation, unnecessary worry, and increased healthcare use. This study assessed the prevalence and determinants of cyberchondria among adults attending an Urban Health Training Centre in Central India. **Methods:** A cross-sectional study was conducted from October–November 2025 among 200 adults aged 18–40 years selected through purposive sampling. Data were collected using a semi-structured questionnaire and the Cyberchondria Severity Scale-12. Analysis was done using STATA 14, with $p<0.05$ considered significant. **Results:** Cyberchondria prevalence was 18%. Higher severity was significantly linked to younger age, Hindu religion, daily and prolonged internet use, and chronic illness. **Conclusion:** Cyberchondria is frequent among young adults and those with chronic conditions, underscoring the need for improved digital health literacy.

Keywords: Cyberchondria, Health Anxiety, Online Health Information, Urban Adults, CSS-12, Central India

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Introduction

The increasing availability and use of the internet have dramatically transformed how people obtain information about health. Although digital platforms provide quick and easy access to a vast array of medical knowledge, they have also contributed to the emergence of cyberchondria—a condition characterized by frequent or excessive searching for health information online, often resulting in heightened worry or anxiety about one's health condition[1].

Cyberchondria is more than just a general interest in health matters; it often appears as a repetitive and compulsive behaviour that resembles characteristics seen in anxiety and obsessive-compulsive disorders [2]. People may wrongly interpret minor or harmless symptoms as signs of serious illness based on online information, which can lead to unwarranted concern, frequent visits to healthcare providers, or even the avoidance of medical advice due to fear [3].

In India, where internet access is expanding rapidly—particularly in urban and semi-urban locations—the relevance of cyberchondria is steadily growing. According to the Internet and Mobile Association of India (IAMAI), by 2022, India had over 759 million internet users, with many of them turning to online sources for health-related content [4]. The presence of unreliable or

unverified information online further worsens the problem by spreading misinformation and increasing anxiety, especially among young adults who commonly use the internet for self-diagnosis [5].

Urban Health Training Centre, which serve both as centres for primary healthcare delivery and as learning hubs for medical trainees, are well-suited environments to investigate cyberchondria. Even though individuals who visit these centres are exposed to health education, they may still rely heavily on digital sources, which can result in conflicting information and increased psychological stress. Research indicates a significant link between extensive internet usage, rising health anxiety, and cyberchondria, especially in urban populations [6].

Several factors contribute to the development and severity of cyberchondria, including a person's education level, occupation, familiarity with digital tools, pre-existing mental health issues like anxiety or depression, and how frequently they access the internet[7,8]. Given the rising prevalence of non-communicable diseases, mental health concerns, and lifestyle disorders in India, there is a pressing need to understand how widespread cyberchondria is and what drives it, in order to design effective education and intervention strategies [9].

Despite growing awareness, there is a lack of comprehensive Indian research examining the extent and causes of cyberchondria, particularly in structured public health environments. Therefore, the present study seeks to assess the prevalence of cyberchondria and explore the factors influencing its development among adults attending an Urban Health Training Centre in Central India.

Materials and Methods

Study setting and study population: This cross-sectional study was conducted at the Urban Health Training Centre of a tertiary healthcare facility in central India. The study population included adult patients aged 18 to 40 years, with a sample size of 200 participants, selected through purposive sampling. The study was carried out over a period of two months, from October 2025 to November 2025.

Inclusion Criteria: The study included adult patients aged 18 years and above who were attending the Urban Health Training Centre. Participants were required to have been residents of the urban locality selected for a minimum duration of six months. Additionally, participation was limited to those who provided informed written consent.

Exclusion Criteria: Individuals below the age of eighteen were excluded from the study. Those who were medically unstable or critically ill during the data collection period were also not considered eligible. Additionally, Participants who had been diagnosed with serious mental conditions were also excluded from the study.

Sample size estimation: The sample size of 200 was calculated using the formula $4pq/l^2$, based on findings from the study titled "Prevalence and correlates of cyberchondria among professionals working in the information technology sector in Chennai, India: A cross-sectional study." The estimation was made using a prevalence rate (P) of 55.6%, with a 95% confidence interval and an absolute precision of 7%.

Data Collection Tool and Method: The present study was conducted at the Urban Health Training Centre (UHTC) of a tertiary care center in central India after obtaining approval from the Institutional Ethical Committee. Informed consent was obtained from all participants after clearly explaining the purpose, nature, and objectives of the study in their local language, ensuring confidentiality. Data collection was carried out through face-to-face interviews using a pre-designed, semi-structured, and pre-tested questionnaire. The tool was translated into the local language to ensure clarity and comprehension. The questionnaire included sections on socio-demographic characteristics, internet usage habits, and the Cyberchondria Severity Scale (CSS-12) to assess levels of cyberchondria, thus ensuring comprehensive coverage of study variables aligned with the research objectives.

Statistical analyses: The collected data were entered into Microsoft Excel and analysed using STATA version 14. Descriptive statistics were used to summarize the data and were presented as frequencies and percentages. To assess the association between cyberchondria and various influencing factors, bivariate analysis was performed. A p-value of less than 0.05 was considered statistically significant for analyses.

Results

Table-1: The study involved 200 participants, primarily young adults, with 70% aged between 18–30 years and 60% being female. A majority were Hindus (82%) and lived in joint (47%) or nuclear families (41%). Most had at least primary education, with 25% having completed only primary school and 20% being graduates or postgraduates. Occupationally, the majority were semi-skilled (29%) or skilled workers (27%). Socioeconomic assessment showed that most belonged to Class II (39%) and Class III (33%) under the Modified BG Prasad Classification, reflecting a predominantly middle-income group.

Table -1: Sociodemographic profile of study subjects (N=200)

Sociodemographic Factors	Characteristics	No.	%
Age (years)	18-25	62	31
	26-30	78	39
	>30	60	30
Gender	Male	80	40
	Female	120	60
Religion	Hindu	164	82
	Buddhist	14	7
	Christian	4	2
	Muslim	18	9
Type of family	Nuclear	82	41
	Joint	94	47
	Three Generation	24	12
Education of Participants	Primary School	50	25
	Middle School	32	16
	High School	38	19
	Intermediate or post high school diploma	32	16
	Graduate or post graduate	40	20
	Professional	8	4
Occupation	Unemployed	4	2
	Unskilled worker	30	15
	Semi-skilled worker	58	29
	Skilled worker	54	27
	Clerical, Shop Owner, Farmer	26	13
	Semi-professional	18	9
	Professional	10	5
Socioeconomic status (Modified BG Prasad Classification)	Class I	18	9
	Class II	78	39
	Class III	66	33
	Class IV	34	17
	Class V	4	2

Table-2, highlights key factors influencing cyberchondria among participants. Most (92%) used the internet daily, with 88.5% having 24/7 access. About 75% had over five years of internet experience, and 61% spent more than four hours online daily. Notably, 70% used the internet at night for non-work purposes. Around 37% had a healthcare professional in the family, and 32% had a medical illness. Health-related searches were done daily (17%), weekly (45%), or monthly (22%). While 60%

consulted a doctor after online searches and 55% reported improved health management, 53% faced negative effects like anxiety, stress, or financial burden.

Table- 2: Factors influencing cyberchondria (N=200)

Factors	Characteristics	No.	%
Frequency of Internet Use	Daily	184	92
	Weekly	16	8
Internet access available 24/7	Yes	177	88.5
	No	23	11.5
Duration of Internet use (in years)	> 5 years	150	75
	< 5 years	50	25
Daily Internet Usage (Hours)	> 4 hours	122	61
	< 4 hours	78	39
Internet Use at Night (Non-work)	> 1 hour	140	70
	< 1 hour	60	30
Healthcare Professional in Family/Relative	Yes	74	37
	No	126	63
Presence of Underlying Medical Illness	Yes	64	32
	No	136	68
Frequency of Health-related Web Searches	Daily	34	17
	Weekly	42	45
	Monthly	44	22
	Rarely	80	21
Consulted Doctor After Online Search	Yes	120	60
	No	80	40
Improved Health Management via Internet	Yes	110	55
	No	90	45
Adverse Outcomes of Health Info Search (e.g., anxiety, stress, financial burden)	Yes	106	53
	No	94	47

Table-3, assessed the association between various sociodemographic and internet usage factors with the severity of cyberchondria. Statistically significant associations were observed with several variables. Age showed a significant association (P = 0.0038), where participants aged 18–30 years exhibited higher levels of moderate cyberchondria compared to those above 30 years. Religion was also significantly associated (P = 0.0316), with Hindu participants showing a greater prevalence of moderate and severe levels of cyberchondria. The frequency of internet use demonstrated a significant link (P = 0.0342), with daily users more likely to show higher severity than weekly users. Similarly, a longer duration of internet use (more than five years) was significantly associated (P = 0.0346) with moderate and severe levels of cyberchondria. The presence of an underlying medical illness was strongly associated (P = 0.00001) with severe cyberchondria, suggesting that individuals with health conditions are more prone to anxiety and excessive online health searching. Additionally, participants who consulted a doctor after online search showed a significant association with cyberchondria severity (P = 0.0001), indicating the behavioral impact of online health information.

Table- 3: Association between various sociodemographic and internet usage factors with the severity of cyberchondria

Factors	Characteristics	No.	Cyberchondria			χ^2	P Value
			Mild	Moderate	Severe		
Age (years}	18-30	140	24	98	18	8.362	**0.0038**
	>30	60	16	26	18		
Gender	Male	80	14	48	18	1.829	0.1762
	Female	120	26	76	18		
Religion	Hindu	164	34	96	34	--	**0.0316**
	Other Religion	36	6	28	2		
Type of family	Nuclear	82	18	50	14	0.081	0.7761
	Joint & Three Generation	118	22	74	22		
Socio-economic status (Modified BG Prasad Classification)	Class I, II	96	14	66	16	0.222	0.6372
	Class III, IV, V	104	26	58	20		
Frequency of Internet Use	Daily	184	38	116	30	4.480	**0.0342**
	Weekly	16	2	8	6		
Internet access available 24/7	Yes	177	33	112	32	--	1
	No	23	7	12	4		
Duration of Internet Use (in years)	> 5 years	150	26	92	32	--	**0.0346**
	< 5 years	50	14	32	4		
Daily Internet Usage (Hours)	> 4 hours	122	18	82	22	0.0002	0.987
	< 4 hours	78	22	42	14		
Internet Use at Night (Non-work)	> 1 hour	140	24	94	22	1.651	0.1987
	< 1 hour	60	16	30	14		
Healthcare Professional in Family/Relative	Yes	74	12	52	10	1.601	0.205
	No	126	28	72	26		
Presence of Under-lying Medical Illness	Yes	64	4	37	23	20.516	**0.00001**
	No	136	36	87	13		
Frequency of Health-related Web Searches	Daily, Weekly	76	16	44	16	0.773	0.3790
	Monthly, rarely	124	24	80	20		
Consulted Doctor After Online Search	Yes	120	14	74	32	--	**0.0001**
	No	80	26	50	4		
Improved Health Management via Internet	Yes	110	16	78	16	1.697	0.1597
	No	90	24	46	20		
Adverse Outcomes of Health Info Search (e.g., anxiety, stress, financial burden)	Yes	106	8	74	24	3.291	0.0692
	No	94	32	50	12		

On the other hand, factors such as gender (P=0.1762), type of family (P=0.7761), socioeconomic status (P=0.6372), internet access 24/7 (P=1), daily internet usage hours (P=0.987), internet use at night for non-work purposes (P=0.1987), presence of healthcare professional in family (P = 0.205), frequency of health-related web searches (P=0.3790), improved health management via internet (P=0.1597), and adverse outcomes of health information search (P=0.0692) were not found to be significantly associated with the severity of cyberchondria. These findings highlight that younger age, certain religious backgrounds, prolonged and frequent internet usage, presence of illness, and post-search consultation behaviors are key determinants of cyberchondria severity.

Discussion

The prevalence of cyberchondria in the present study was 18%. This study explored the factors that influence the severity of cyberchondria, which refers to increased anxiety due to excessive online searching about health. We looked at how different social, demographic, and internet-use-related factors are linked to this behaviour.

We found that younger age 18–30 years was significantly associated with higher cyberchondria scores. This may be because younger people are more used to the internet and often turn to it for health-related questions. Their frequent use of online platforms could lead to greater anxiety about their health. Similar findings were reported by Gandla et al[11] among medical students, and by Kulsum et al[16] and Geetha et al[15] among students and young adults.

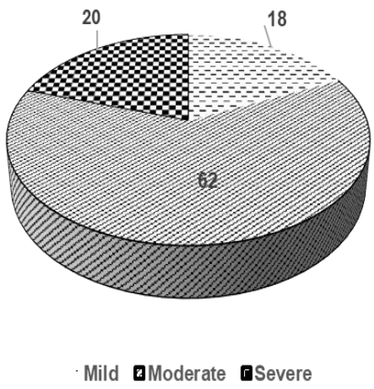
Religion was another factor that showed significant links with majority are Hindus. Although not often reported in earlier studies, this may suggest that spiritual or cultural beliefs shape how people perceive illness and use health information online.

We also found that both daily use of internet and more duration of internet use (in years) were associated with higher cyberchondria. Participants who used the internet daily and for longer periods had more symptoms of cyberchondria. These results are similar to those by Kanganolli et al[10] and Kumar et al[13], who noted a link between high internet use (especially at night) and increased anxiety related to health. Vemuri et al[12] also observed that constant online searching can trap users in a cycle of reassurance-seeking and fear.

A very strong association was seen between pre-existing medical illness and cyberchondria severity. Participants with ongoing health problems had more anxiety and were more likely to repeatedly search for symptoms online. This finding supports earlier research by Gandla et al[11] and Pawar et al[17], who found similar patterns among patients with chronic conditions.

Interestingly, some factors like gender, family type, education, occupation, and socioeconomic status did not show any significant association. This suggests that cyberchondria can affect people from all backgrounds and may depend more on personal behaviors and mental health than on external social factors. These observations are consistent with studies by Vemuri et al[12] and Kulsum et al[16].

Figure-1: Prevalence of Cyberchondria (CSS 12 Scale)



Other factors like internet use at night, having a healthcare professional in the family, searching symptoms before a doctor visit, and feeling better after online searching also did not show strong associations. Although earlier studies in Kanganolli et al[10] noted a link with nighttime usage, the differences in our findings could be due to variations in the study population or definitions used. Also, having a healthcare professional in the family didn't seem to protect against cyberchondria, possibly due to lack of direct consultation or distrust in professional advice, as also suggested by Pawar et al[17].

Conclusion

Cyberchondria was more common among younger adults, frequent internet users, and people with existing health conditions. Religious beliefs may also influence how people search for health information online. However, factors like gender, family structure, education, occupation, and economic status were not significantly linked. These findings highlight the need for public health efforts to increase awareness about the risks of excessive online health searching. Promoting digital health literacy and offering mental health support, especially for young adults and chronically ill patients, may help reduce the burden of cyberchondria. Screening for cyberchondria in such groups could improve their overall well-being and health-seeking behaviour.

Strengths: The study used a validated tool (CSS-12) for assessment, ensuring reliability of findings. It addressed a relevant and emerging public health issue—cyberchondria—highlighting its significance in the digital age. The study collected comprehensive data on internet behavior and demographic factors, allowing for a detailed analysis. Additionally, appropriate statistical methods were used to establish significant associations.

Limitations: The use of purposive sampling limits the generalizability of the findings. As a cross-sectional study, it cannot establish causal relationships. The reliance on self-reported data may introduce recall or reporting bias. The study was restricted to participants aged 18–40 years, excluding other age groups. Being a single-center study, the results may not be representative of the wider population. Moreover, the study did not assess mental health conditions such as anxiety or obsessive-compulsive disorder, which are closely related to cyberchondria.

Ethical approval: The study was approved by Institutional ethics committee

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