

An Exploratory Study to Assess the Prevalence of Cyberchondriasis and its Impact on Health Among Nursing Students in A Selected Nursing College of Delhi

Ms. Sheljy Shajan¹, Ms. Jaya Simon², Ms. Prachi³, Ms. Swati Khatak⁴, Ms. Chaitanya Singh⁵, Ms. Aarti⁶, Ms. Stuti Singh⁷, Ms. Sinu Mathew⁸

¹Associate Professor, HOD, Department of Mental Health Nursing, St. Stephen's Hospital College of Nursing, Tis Hazari, Delhi-110095

²Assistant Professor, Department of Mental Health Nursing, St. Stephen's Hospital College of Nursing, Tis Hazari, Delhi-110095

³Community Health Officer, Muzaffarpur, Bihar

⁴Nursing Officer, AIIMS Patna

⁵Nursing Officer Lok Nayak Hospital, Delhi

⁶Nursing Officer Babu Jagjivan Ram Memorial Hospital, Delhi

⁷Registered Nurse and Registered Midwifery

⁸Nurse Educator, Sehgal Neo Hospital, New Delhi

Abstract:

An exploratory study was conducted from January 13, 2022 to June 4, 2022 at a selected Nursing College. The study was conducted with an aim to assess the prevalence of Cyberchondriasis and its impact on health among nursing students. The objectives of the study were: 1) To assess the prevalence of Cyberchondriasis among nursing students in a selected Nursing College of Delhi. 2) To explore the impact of Cyberchondriasis on health of nursing students in a selected Nursing College of Delhi. 3) To determine the association of prevalence of Cyberchondriasis with selected socio-demographic variables. Total Enumerative Sampling Technique was used in the study. The tools used for data collection were the Socio-Demographic Questionnaire, the Cyberchondria Severity Scale-12 and Health Impact Assessment Scale of Cyberchondriasis. The reliability for the self-structured Health Impact Assessment Scale of Cyberchondriasis was found to be 0.76. The data obtained was analysed and interpreted using both descriptive and inferential statistics, in terms of frequency and percentage distribution; Chi-Square test with Yates' correction for continuity was done to find out association of prevalence of Cyberchondriasis with selected socio-demographic variables. Results showed that 63.50% of the participants had moderate levels of Cyberchondriasis, 22.26% had low levels and 14.23% had severe levels of Cyberchondriasis. On account of impact of Cyberchondriasis on health, 77.37% participants had moderate impact, 16.05% had mild impact and only 6.56% had severe impact on health. Chi-Square test showed that there exists a significant association between Cyberchondriasis and Frequency of Internet Search of Symptoms/Diseases at 0.05 level of significance.

Keywords: Cyberchondriacs, Prevalence, Cyberchondria Severity Scale, Health Impact Assessment

INTRODUCTION

Cyberchondriasis is the excessive engrossment with one's health, often caused by misguided and faulty internet information obtained after several hours of searching ample number of websites every day.¹ Cyberchondria means excessive and repeated online health-related searches linked with an increase in health anxiety. Such searches persist in those with Cyberchondria, despite the negative consequences; bear a resemblance to the pattern of compulsive internet use.² Numerous surveys concluded that almost 80% of Internet users used the Internet for medical appointments, while a sample of > 12,000 individuals suggested that almost half of the participants used the Google search engine for self-diagnosis.³

A study conducted by Arsenakis et. al. confirms that health anxiety, obsessive compulsive symptoms and intolerance of uncertainty are associated with severity of Cyberchondriasis, with health anxiety making the strongest unique contribution.⁴ People with health anxiety may demonstrate a series of cognitive, affective, and behavioural characteristics to various degrees, depending on the severity of the condition, especially in medical and nursing colleges where students are more exposed to online health information seeking behavioural pattern resulting in various changes in overall health. The young generation has better access to the internet due to which they spent ample amount of time, searching for perceived symptoms online. Due to busy schedules during student life, the students prefer online health information seeking over face-to-face consultation with physicians.

In view of the results of the previous studies, we felt that there is a need to conduct a similar study on Nursing students of the selected Nursing College of Delhi, to assess the prevalence of Cyberchondriasis and its impact on health.

PROBLEM STATEMENT

An Exploratory Study to Assess the Prevalence of Cyberchondriasis and its Impact on Health among Nursing Students in a Selected Nursing College of Delhi.

OBJECTIVES OF THE STUDY

- To assess the prevalence of Cyberchondriasis among nursing students in a selected Nursing College of Delhi.
- To explore the impact of Cyberchondriasis on health of nursing students in a selected Nursing College of Delhi.
- To determine the association of prevalence of Cyberchondriasis with selected socio-demographic variables.

ASSUMPTIONS

- Cyberchondriasis is prevalent among young adults.
- Cyberchondriasis has some impact on physical, mental and social aspects of health

DELIMITATIONS

- The study is delimited to a selected Nursing College of Delhi

CONCEPTUAL FRAMEWORK

The conceptual framework for the present study was established based on Cognitive-Behavioural model of Health Anxiety given by Salkovskis & Warwick in 2001.⁵

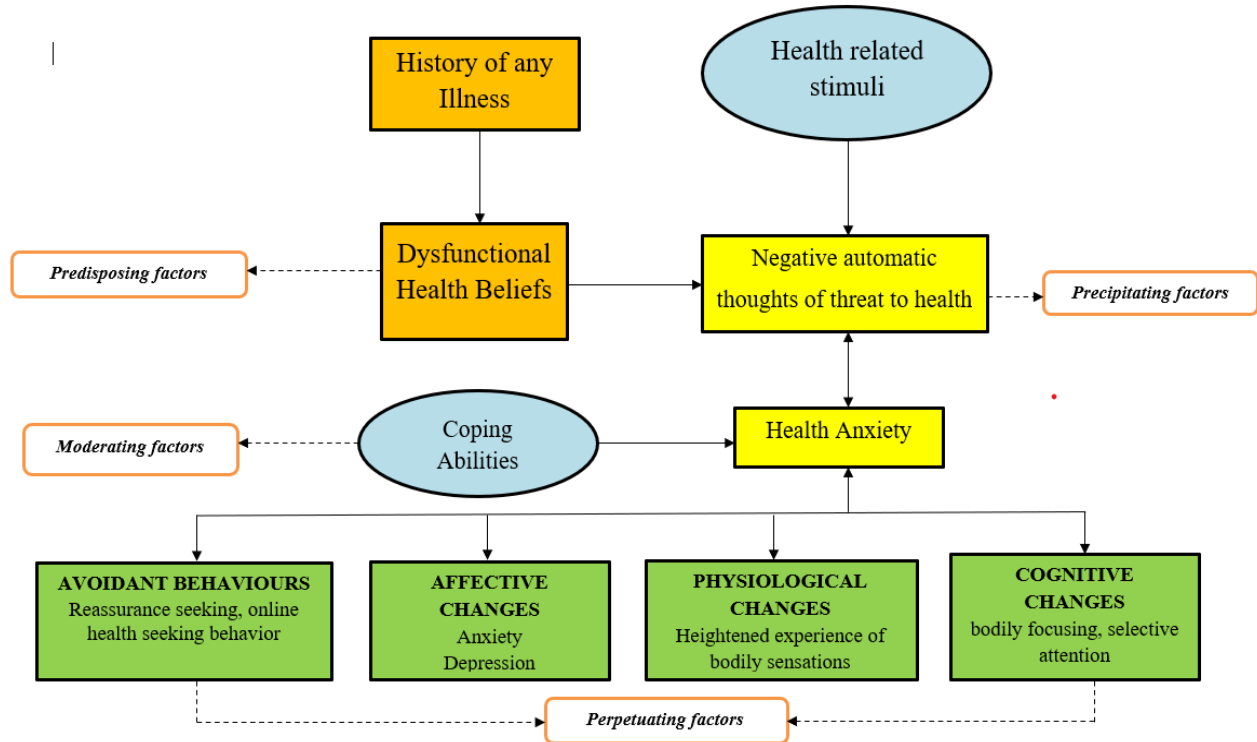


Figure 1: Conceptual Framework based on the Cognitive-Behavioral Model of Health Anxiety according to Salkovskis & Warwick, 2001.

RESEARCH METHODOLOGY

Research Approach: In view of the nature of the problem selected for the present study and the objective to be accomplished, a Quantitative approach was considered appropriate.

Research Design: The research design selected for the study is Exploratory Study.

Setting of the Study: The study was conducted in a selected Nursing College of Delhi from 13.01.2022-29.05.2022.

Study Population: Study population comprised of Nursing Students of a selected Nursing College of Delhi

Sample, sample size and sampling technique: 274 Nursing Students were selected using Total Enumerative Sampling Technique.

Variables under study:

- Socio-demographic variables: Year of nursing program, Type of family, Region, Area of Residence, Education of Father, Education of Mother, Occupation of Father, Occupation of Mother, Family monthly income in rupees, History of illnesses in family, Whether the subject uses internet for health information, Frequency of online health related search, Preferred health website.
- Research variables: Prevalence of Cyberchondriasis and Impact of Cyberchondriasis on health.

Development and Description of Tool

The tool was developed by reviewing the literatures and subject experts' opinion

Tool I: Tool 1 consisted of two sections

Section A- Socio-Demographic Data Questionnaire

It consisted of 13 items which ascertain information regarding year of nursing students, type of family, region, area of residence, education of father & mother, occupation of father & mother, family income, past medical, surgical & psychiatric illness etc.

Section B- Cyberchondria Severity Scale-12

McElroy and Shevlin⁶ developed the first multidimensional, self-report measure of this construct-the Cyberchondria Severity Scale-12 (CSS-12) in 2014. It contains 12 statements in form of a Likert Scale. The entire scale is divided into 4 Sub-scales namely Excessiveness, Distress, Reassurance and Compulsion, containing 3 questions each.

Tool II - Health Impact Assessment Scale of Cyberchondriasis

A self-structured tool containing 15 statements which is used to assess the impact of Cyberchondriasis on health. The entire scale is divided into 3 categories: Physical, Mental and Social Health. Each category contains 5 statements with a score range of 1-5 for each statement.

CRITERION MEASURES

The Cyberchondria Severity Scale-12 contains 12 questions each with a scoring from 1 to 5 representing responses.

Table 1: Total Grading Criteria of the Cyberchondria Severity Scale-12

CATEGORY	SCORE
Low	≤ 22
Moderate	23-38
High	39-60

Table 2: Sub-scales of the Cyberchondria Severity Scale-12

SUB-SCALE	DESCRIPTION	QUESTIONS
EXCESSIVENESS	Escalating/repeated nature of searches	1, 3, 6
DISTRESS	Anxiety/distress as a result of searches	4, 8, 9
REASSURANCE	Searches driving individual to seek out professional medical advice	5, 11, 12
COMPULSION	Web searches interfering with other aspects of life	2, 7, 10

Table 3: Grading Criteria of Health Impact Assessment Scale of Cyberchondriasis

CATEGORY	SCORE
Low	≤ 24
Moderate	25-49
High	50-75

Validity and Reliability of the Tool

Content validity of the tool was obtained from 7 experts for the relevance of the questionnaire. These experts were from the Department of Psychiatry, Clinical Psychology, Medicine, Medical Surgical Nursing and Mental Health Nursing. Necessary modifications were incorporated based on the suggestions of the experts.

The reliability of the CSS-12 is 0.93.⁶ Reliability of the Health Impact Assessment Scale of Cyberchondriasis was established by Cronbach's alpha formula. The value of 'r' (the estimated reliability of entire test) was 0.768. Hence, the tool was found to be reliable.

DATA COLLECTION PROCEDURE

Data was collected after obtaining formal informed consent from the participants. Final data collection was conducted from 30.05.2022 to 4.06.2022 on 274 nursing students of a selected College of Nursing, Delhi. During this time period, socio-demographic data questionnaire was administered along with the Cyberchondria Severity Scale-12 and Health Impact Assessment Scale of Cyberchondriasis.

DIFFICULTIES ENCOUNTERED

Researchers faced difficulty in data collection as subjects were on Clinical duties and some of were having academic examinations. One batch of nursing students was on annual vacations and hence data collection for those specific subjects was done on online basis via Google Forms.

STUDY RESULTS

The obtained data has been organized and presented under the following sections.

Section 1: Findings on socio-demographic data of nursing students.

- Frequency and Percentage Distribution of Socio-Demographic characteristics of Nursing Students.

Section 2: Findings related to the Prevalence of Cyberchondriasis among Nursing Students using the Cyberchondria Severity Scale- 12.

- Frequency and Percentage Distribution of Prevalence of Cyberchondriasis among Nursing Students.

Section 3: Findings related to Impact of Cyberchondriasis on Health of the Nursing Students using self-structured Health Impact Assessment Scale of Cyberchondriasis.

- Frequency and Percentage Distribution of Impact of Cyberchondriasis on Health of the Nursing Students.

Section 4: Findings related to the Association of Prevalence of Cyberchondriasis with selected Socio-Demographic data through Chi-Square Test

RESULTS AND FINDINGS

SECTION-1 FINDINGS ON SOCIO-DEMOGRAPHIC CHARACTERISTICS OF NURSING STUDENTS

Table 4: Frequency and Percentage Distribution of Socio-Demographic characteristics of Nursing Students. N=274

S.No.	Socio-Demographic Variable	Frequency (f)	Percentage (%)
1.	Year of Nursing Program		
	1 st Year	82	29.29

	2 nd Year	92	33.57
	3 rd Year	100	36.49
2.	Type of Family		
	Nuclear	215	78.46
	Joint	57	20.80
	Extended	2	0.72
3.	Region		
	Delhi	208	75.91
	Outside Delhi	66	24.08
4.	Area of Residence		
	Rural	25	9.12
	Urban	229	83.57
	Sub-Urban	20	7.29
5.	Education of Father		
	No formal education	11	4.01
	Up to 10 th standard	56	20.43
	Higher Secondary Education	68	24.81
	Diploma	24	8.75
	Graduation and above	115	41.97
6.	Education of Mother		
	No formal education	22	8.02
	Up to 10 th standard	64	23.35
	Higher Secondary Education	49	17.88
	Diploma	31	11.31
	Graduation and above	108	39.41
7.	Occupation of Father		
	Health Care Professional	18	6.56
	Other Professional	134	48.90
	Self-Employed	96	35.03
	Unemployed	7	2.55
	Homemaker	3	1.09
	Retired	16	5.83

8.	Occupation of Mother		
	Health Care Professional	59	21.53
	Other Professional	37	13.50
	Self-Employed	24	8.75
	Unemployed	6	2.18
	Homemaker	144	52.55
	Retired	4	1.45
9.	Family Monthly Income in Rupees		
	≤10,000	19	6.93
	10,000-30,000	68	24.81
	30,000-50,000	73	26.64
	50,000-100,000	70	25.54
	≥100,000	44	16.05
11.	Medical/ Surgical/ Psychiatric Illnesses in Family		
	Yes	73	26.64
	No	201	73.35
12.	Use of Internet for Health searches		
	Yes	270	98.54
	No	4	1.45
13.	Frequency of Internet Search of Symptoms/ Diseases		
	Never	3	1.09
	Rarely	33	12.04
	Sometimes	105	38.32
	Often	74	27.08
	Always	59	21.53
14.	Preferred Health Websites		
	wikipedia.org	120	43.79
	healthline.com	75	27.37
	webmd.com	12	4.37
	who.int	21	7.66

	Any Other	46	16.78
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1. In the present study it is evident that regarding the year of nursing program, majority of the subjects 100(36.49%) are studying in 3rd year, 92 (33.57%) in 2nd year and 82(29.29%) in 1st year.
2. In regard with types of family, out of the 274 subjects, maximum number of the subjects, 215 (78.46%) belonged to nuclear family, 57(20.8%) belonged to joint family and 2(0.72%) of them belonged to extended family.
3. With reference to region, majority of the subjects, 208 (75.91%) are from Delhi and 66(24.08%) are from outside Delhi.
4. In context with area of residence, majority of the subjects, 229(83.57%) resided in Urban community, 25(9.12%) in Rural community, 20(7.29%) in Sub-urban community.
5. With regards to education of father, majority of the subjects' fathers were graduates, 115(45.97%), 68(24.81%) completed higher secondary education, 56(20.43%) studied up to 10th standard, 24(8.75%) were diploma graduates, 11(4.01%) had no formal education.
6. With regards to education of mother, majority of the subjects' mothers were graduates, 108(39.41%), 64(23.35%) studied up to 10th standard, 49(17.88%) completed higher secondary education, 31(11.31%) were diploma graduates, 22(8.02%) had no formal education.
7. With regards to occupation of father, majority of the subjects' fathers were other professionals, 134(48.90%), 96(35.03%) were self-employed, 18(6.56%) were health care professionals, 16(5.83%) were retired, 7(2.55%) were unemployed, 3(1.09%) were homemakers.
8. With regards to occupation of mother, majority of the subjects' mothers were homemakers, 144(52.55%), 59(21.53%) were healthcare professionals, 37(13.50%) were other professionals, 24(8.75%) were self-employed, 6 (2.18%) were unemployed, 4(1.45%) were retired.
9. With regards to family monthly income in rupees, majority of the subjects' family monthly income was 30,000-50,000, 73(26.64%), 70(25.54%) was 50,000-1, 00,000, 68(24.81%) was 10,000-30,000, 44(16.05%) was >= 1, 00,000, 19(6.93%) were <= 10,000.
10. With regards to Medical/ Surgical/ Psychiatric illnesses in family, majority of the subjects' family members had no Medical/ Surgical/ Psychiatric illnesses, 201(73.35%), 73(26.64%) subjects' family members had Medical/ Surgical/ Psychiatric illnesses.
11. With regard to use of internet for health searches, majority of the subjects used internet to search for medical information, 270(98.54%), 4(1.45%) never used internet for health searches.
12. With regards to frequency of internet search of symptoms/ diseases, majority of subjects sometimes used internet to look up symptoms/ diseases, 105(38.32%), 74(27.08%) often used internet, 59(21.53%) always used internet, 33(12.04%) rarely used internet, 3(1.09%) never used internet to look up symptoms/ diseases.
13. With regards to preferred website as the basic medium of accessing health information, majority of the subjects preferred Wikipedia.org, 120(43.79%), 75(27.37%) used healthline.com, 21(7.66%) used who.int, 12(4.37%) used webmd.com, 46(16.78%) used any other website for accessing health information.

FREQUENCY & PERCENTAGE DISTRIBUTION OF NURSING STUDENTS AS PER CSS-12 SUBSCALES

SECTION 2 FINDINGS RELATED TO THE PREVALENCE OF CYBERCHONDRIASIS AMONG NURSING STUDENTS USING THE CYBERCHONDRIA SEVERITY SCALE- 12.

TABLE 5: Frequency and Percentage Distribution of prevalence of Cyberchondriasis among Nursing Students. N=274

SEVERITY OF CYBERCHONDRIASIS	FREQUENCY	PERCENTAGE
LOW	61	22.26%
MODERATE	174	63.50%
HIGH	39	14.23%

SECTION 2 (a): Findings related to Excessiveness sub scale on the basis of CSS-12

TABLE 6: Frequency & Percentage Distribution of Nursing Students as per the Excessiveness sub-scale of Cyberchondriasis assessed using Cyberchondria Severity Scale- 12.

N=274

CATEGORY	FREQUENCY	PERCENTAGE
NOT AFFECTED	9	3.28%
MILD	101	36.86%
MODERATE	130	47.44%
SEVERE	34	12.40%

According to excessiveness sub-scale, majority of subjects fall under moderate category i.e., 130(47.44%), 101(36.86%) fall under mild category, 34(12.40%) fall under the severe category and 9(3.28%) subjects were not affected.

SECTION 2 (b): Findings related to Distress sub scale on the basis of CSS-12

TABLE 7: Frequency & Percentage Distribution of Nursing Students as per the Distress sub-scale of Cyberchondriasis assessed using Cyberchondria Severity Scale- 12. N=274

CATEGORY	FREQUENCY	PERCENTAGE
NOT AFFECTED	20	7.29%
MILD	109	39.78%
MODERATE	120	43.79%
SEVERE	25	9.12%

According to distress sub-scale, majority of the subjects fall under moderate category 120(43.79%), 109(39.78%) fall under mild category, 25(9.12%) fall under the severe category and only 20(7.29%) subjects were not affected.

SECTION 2 (c): Findings related to Reassurance Sub-Scale on the basis of CSS-12

TABLE 8: Frequency & Percentage Distribution of Nursing Students as per the Reassurance sub-scale of Cyberchondriasis assessed using Cyberchondria Severity Scale- 12. N=274

CATEGORY	FREQUENCY	PERCENTAGE
NOT AFFECTED	34	12.40%
MILD	133	48.54%
MODERATE	93	33.94%
SEVERE	14	5.10%

According to reassurance sub-scale, majority of the subjects fall under the mild category i.e., 133 (48.54%), 93(33.94%) fall under the moderate category, 14(5.10%) fall under the severe category and 34(12.40%) subjects were not affected.

SECTION 2 (d): Findings related to Compulsion Sub-Scale on the basis of CSS-12

TABLE 9: Frequency & Percentage Distribution of Nursing Students as per the Compulsion sub-scale of Cyberchondriasis assessed using Cyberchondria Severity Scale- 12. N=274

CATEGORY	FREQUENCY	PERCENTAGE
NOT AFFECTED	41	14.96%
MILD	136	49.63%
MODERATE	87	31.75%
SEVERE	10	3.64%

According to compulsion sub-scale, majority of the subjects fall under mild category i.e., 136(49.63%), 87(31.75%) fall under moderate category, 10(3.64%) fall under severe category and 41(14.96%) subjects were not affected.

PREVALENCE OF CYBERCHONDRIASIS ACCORDING TO SUB-SCALES OF CYBERCHONDRIA SEVERITY SCALE- 12

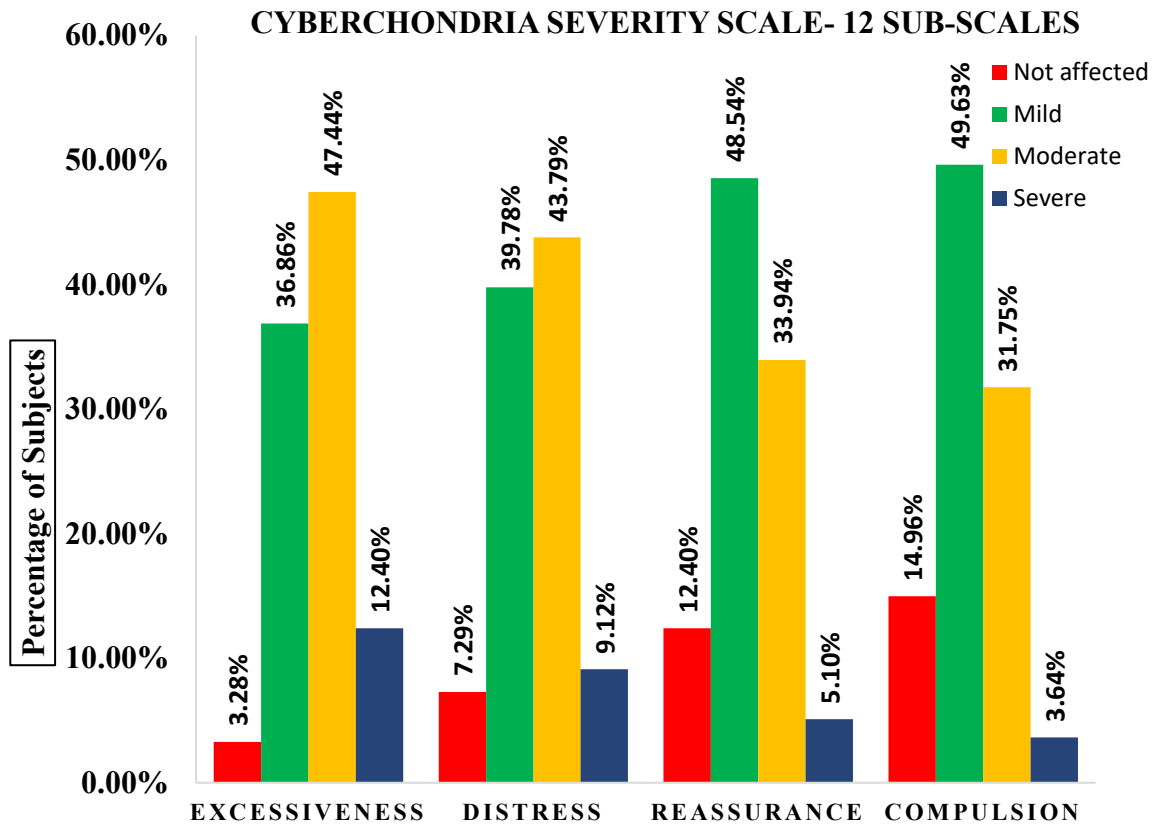


Figure 2: Bar graph depicting Prevalence of Cyberchondriasis according to sub-scales of Cyberchondria Severity Scale- 12

FINDINGS RELATED TO IMPACT OF CYBERCHONDRIASIS ON HEALTH OF THE NURSING STUDENTS USING SELF-STRUCTURED HEALTH IMPACT ASSESSMENT SCALE OF CYBERCHONDRIASIS.

TABLE 10: Frequency and Percentage Distribution of Impact of Cyberchondriasis on Health of the Nursing Students. N=274

LEVEL OF IMPACT	FREQUENCY	PERCENTAGE (%)
MILD	44	16.05
MODERATE	212	77.37
SEVERE	18	6.56

SECTION 3

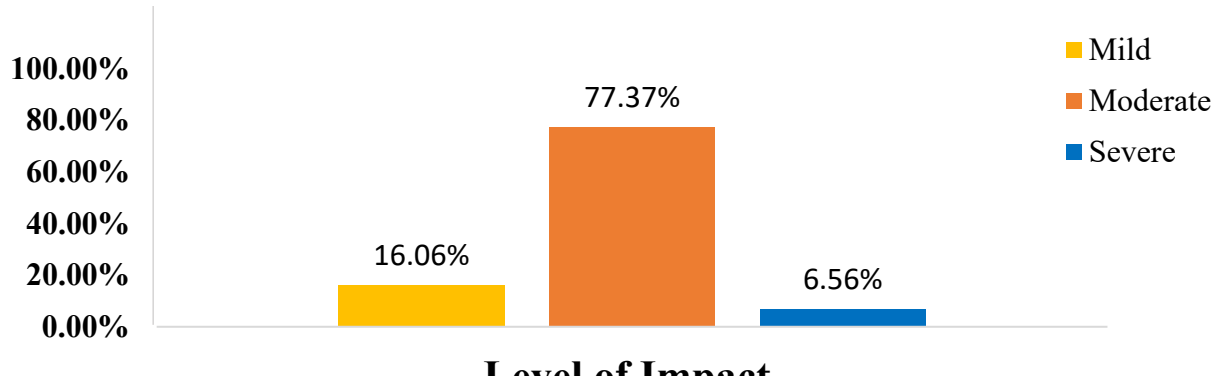


Figure 3: Bar Graph depicting the Level of Impact of Cyberchondriasis on Health among Nursing Students

FINDINGS RELATED TO THE ASSOCIATION OF PREVALENCE OF CYBERCHONDRIASIS WITH SELECTED SOCIO-DEMOGRAPHIC VARIABLES THROUGH CHI-SQUARE TEST.

SECTION 4

Table 12: Findings related to the Association of Prevalence of Cyberchondriasis with selected Socio-demographic variables through Chi-Square test.

274

N=

S. No	Selected Variables	Prevalence of cyberchondriasis			Chi Square Value	Df	Table Value
		Low	Moderate	High			
		Frequency (f)	Frequency (f)	Frequency (f)			
1.	Year of nursing program				8.2005 ^{NS}	4	9.49
	1st year	19	51	12			
	2nd year	25	50	17			
	3rd year	16	74	10			
2.	Type of family				0.2709 ^{NS}	4	9.49
	Nuclear	48	137	30			
	Joint	12	37	8			
	Extended	0	1	1			
3.	Region				0.4915 ^{NS}	2	5.99
	Delhi	44	133	31			
	Outside Delhi	16	42	8			

4.	Area of residence						
	Rural	6	16	3	3.8253 ^{NS}	4	9.49
	Urban	47	147	35			
	Sub-urban	7	12	1			
5.	Education of father						
	No education	2	8	1	2.5283 ^{NS}	8	15.51
	10th standard	13	35	8			
	Higher secondary	14	41	13			
	Diploma	4	16	4			
	Graduation	27	75	13			
6.	Education of mother						
	No education	6	12	4	5.731 ^{NS}	8	15.51
	10th standard	10	47	7			
	Higher secondary	12	29	8			
	Diploma	10	17	4			
	Graduation	22	70	16			
7.	Occupation of father						
	Healthcare professional	1	12	5	5.8515 ^{NS}	10	18.31
	Other	34	83	17			
	Self-employed	19	63	14			
	Unemployed	2	5	0			
	Homemaker	0	3	0			
	Retired	4	9	3			
8.	Occupation of mother						
	Healthcare professional	14	34	59	8.5325 ^{NS}	10	18.31
	Other	4	25	37			
	Self-employed	3	18	24			
	Unemployed	1	5	6			
	Homemaker	37	91	144			
	Retired	1	2	4			
9.	Family income						
	<10,000	6	10	3	3.5151 ^{NS}	8	15.51
	10,000-30,000	16	41	11			
	30,000-50,000	14	51	8			
	50,000-100,000	15	46	9			
	>100,000	9	27	8			
10.	Family history of illness						
	Yes	17	43	13	1.3651 ^{NS}	2	5.99
	No	43	132	26			

11.	Online search for medical information						
	Yes	58	173	39			
	No	2	2	0	0.4858 ^{NS}	2	5.99
12.	Frequency of internet search of symptoms/ diseases*						
	Never	0	3	0			
	Rarely	16	13	4			
	Sometimes	31	64	10	36.21*	8	15.51
	Often	9	56	9			
	Always	4	39	16			
13.	Preferred health website						
	wiki.org	22	76	22			
	healthline.com	17	47	11			
	webmd.com	3	8	1	5.0355 ^{NS}	8	15.51
	who.int	7	13	1			
	other	11	31	4			

NS = Not Significant; * Significant association at $p \leq 0.05$ level of significance

- The calculated Chi-Square value (36.21) of ‘Frequency of Internet search of symptoms/ diseases’ is higher than the Chi-Square table value (15.51) at 0.05 level of significance.
- Therefore, there exists an association of prevalence of Cyberchondriasis with Frequency of Internet Search of Symptoms/Diseases at 0.05 level of significance.
- There is no association between Cyberchondriasis and year of nursing program, type of family, region, area of residence, education of father, education of mother, occupation of father, occupation of mother, family income, family history of illness, online search for medical information, preferred health websites at 0.05 level of significance.

SOURCES OF FUNDING: NO FUNDING FOR THE PRESENT STUDY

CONFLICT OF INTEREST: NO CONFLICT OF INTEREST FROM THE RESEARCHERS

DISCUSSIONS

Kanganolli SR, Kumar NP⁷ conducted a cross-sectional study 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. Descriptive statistics such as frequency and percentage were calculated and Chi-square test was used. The prevalence of cyberchondria was found to be 37.5% and was found to be more among males. Cyberchondria was significantly associated with the use of internet during the night.

Baumgartner SE, Hartmann T, Tanis M.⁸ investigated the reciprocal relationship between online health information seeking and health anxiety, i.e., cyberchondria. Expectations were that health anxious individuals who go online to find health information, experience an increase in health anxiety, which in

turn will reinforce online seeking. A 4-wave longitudinal survey study among 5322 respondents aged 16–93 was conducted. The results showed that individuals who are more health anxious than others, search online for health information more. Moreover, the results provided initial evidence for the expected reciprocal relationship between health anxiety and online health information seeking in respondents with non-clinical levels of health anxiety at the start of the study. However, this reciprocal relationship could not be found in a sub-sample of clinically health anxious individuals.

CONCLUSION

The study concluded that health related internet searching can have moderate prevalence among nursing students which can impact health of students.

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