

Google the Symptoms: The Causes and Implications of Online Symptoms of Diseases Searching

Nasar Khan Corresponding author nasar_s12@yahoo.com

Lecturer in Sociology, University of Chitral, Pakistan

Sanaullah

Lecturer in Sociology, University of Malakand, Pakistan

Asmat Pasha

MPhil Scholar, Khyber Medical University, Pakistan

Muhammad Tariq

PhD Scholar, Agriculture University Peshawar, Pakistan

Faiza Ashraf

MPhil Scholar, UMT, Pakistan

Abstract

Anxiety is one of the most prevailing types of mental illnesses. Hypochondria (health anxiety is one of them and exacerbated by online searching for symptoms of different illnesses currently termed as cyberchondria. This study aims to find out prevalence of hypochondria/cyberchondria (its causes and implications) in Dir, Lower Khyber, Pakhtunkhwa, Pakistan. This study is framed under mix-method design and is cross-sectional. Using purposive sampling technique a total 82 patients were sampled for quantitative data collection while 5 individuals were sampled (3 patients and 2 doctors). The patients were diagnosed as hypochondriac by medical professionals. An interview schedule and an interview guide were used as tools for data collection. Data has been analyzed into tables and inferential statistics are applied whereas the qualitative data has been transcribed and findings are extracted. Findings show that health anxiety in shape of hypochondria prevail in the study area and can be termed as cyberchondria as it is because of access to and use of internet. Educational level, access to and use of internet and reading health contents on social media are significantly associated with hypochondria among the sampled patients.

Key Words: Anxiety, Hypochondria, Cyberchondria, Internet, Google, Symptoms

1.1. Background of the study

Individual and communal health is one the key indicators of socio-economic development. Developed, developing and poor countries are differentiated from each other on the basis of many indicators whereby health is one of them. It is evident that developed regions rates far better than developing and poor regions while considering the physical and mental health of people and health care system including health infrastructure, medicine, diagnosis, end life care, and skilled medical staff etc. (Guettou, 2018; Amba, 2015).

Technological advancement brought a significant improvement in health care system. It helped in better diagnosis, dealing with highly complicated illnesses and most importantly the life expectancy has improved significantly during last century particularly for developed regions and in many developing regions as well. The use of computers in health care system is a significant contributing factor (Starcevic and Berle, 2013).

Internet is an eminent component of modern health system. There is no doubt in arguing that internet revolutionized the modern health care system. Internet has connected doctors with patients, diagnostic agencies with patients, reduced health care costs and so on (Prasad, 2018). However, Starvec (2017) point outs that internet is has raised the number of anxiety patients particularly illness health anxiety or hypochondriasis. When illness health anxiety or hypochondriasis is the outcome of searching online for the symptoms of different illnesses then it is termed as cybercondriasis. Cyberchndriasis is presented with the same medical protocols as illness health anxiety or hypochondriasis. Internet provides people with ease of access to health information (White and Horvitz, 2009); thereby, certain people who are more sensitive or already having mental issues such as Obsessive Compulsive Disorder, Generalized Anxiety Disorder, Social Anxiety Disorder and depression are vulnerable to develop illness anxiety disorder or hypochondriasis.

In last two decades it has been noted that many people prefer to Google their symptoms in case of illness they have or a friend or family member have it. Google offers hundred and thousands of search engines where people can get information about different illness the symptoms of their illness. Relatively it offers an easy way to know about an illness. However, it has led to another medical issue termed as *Cyberchondria*. Another term *Hypochondria* is an older term which refers to a mental state whereby people suffer from excessive thoughts about their health. The thoughts are often unrealistic which leads to anxiety disorder as well particularly Generalized Anxiety Disorder and Panic disorder (Akhtar & Fatima, 2020).

1.2. Statement of the Problem

Cyberchondria is one of the recent global mental health epidemic. Access to health information on internet is the significant contributing factor(White and Horvitz, 2009). Cyberchondria is producing a significant burden on health care system particularly it is more hazardous for health care system of developing countries.

In countries like Pakistan whereby poor socio-economic conditions do not allow the people to avail standard health care facilities and whereby mental health is already an ignored section of health. The issues of mental health are often stigmatized and therefore are not diagnosed. On the other hand, the introduction of technology such as internet and access to internet all day and everywhere is creating a bulk of issues in Pakistani society including obsession to internet, mental health issues, games obsessions, obsessions to pornography etc. Lack of education with regard to internet usage is one of the key reasons for it. In this regard, this study aims to find out about various prevalence of hypochondria/cyberchondria (its causes and implications) in Dir, Lower Khyber, Pakhtunkhwa, Pakistan.

1.3. Objectives of the Study

- To find out the vulnerable section of population to search for symptoms online

- To find out the consequences for the individuals searching online for symptoms of illness

1.4. Methodology

Nature of the Study: this study is framed under mix-method research design and is cross-sectional.

Population: young adults aging between 18-50 years suffering from anxiety as diagnosed by a registered medical professional.

Sampling and sample size: purposive sampling technique has been utilized in order to select samples from the population. The purposeful criteria included:

- An individual being diagnosed as an anxiety patient by a medical professional.
- The type of anxiety diagnosed must be health anxiety specifically related to use of internet.
- The patient must be literate up to extent that he can read contents about health on internet.

In accordance to above mentioned criteria a total of 89 health anxiety patients as diagnosed by medical professionals and were pointed out and accessed through medical professionals. 82 respondents were accessible and agreed to give information. Besides, for further in-depth investigation 3 patients and two doctors were interviewed.

Tool for Data Collection: An interview schedule (for anxiety patients) and an in-depth interviews of respondents and doctors.

Data Analysis: tabulation of information collected through an interview schedule (including frequency and percentages) and correlation for inferences. Besides, thematic analysis has been utilized for data collected through in-depth interviews, for example, the interviews were transcribed and findings were extracted.

1.5. Data Analysis

Table 01: Age and Gender wise Distribution of the Respondents

Age (in years)	Male	Female	Total
18-22	03	01	04
23-26	21	02	23
27-30	33	02	35
31 and above	18	02	20
Total	75	07	82

Table 02: Educational Level of the Respondents

Education	Frequency	Percentage
Only able to read	02	2.43
Able to read and write as well	03	3.65
School level education	03	3.65
College level education	22	26.82
University level education	52	63.41
Total	82	100

Table 03 : Access to and Time Spent on internet

Respondents access to/use of internet	Frequency	Percentage
Yes	76	92.68
No	06	7.32
Total	82	100
Time spent online surfing	Frequency	Percentage

Less than an hour	06	7.89
2-3 hours	33	43.42
4-5 hours	34	44.73
6-7 hours	02	2.63
8-12 hours	01	1.31
Total	76	100
Reading health content on Internet	Frequency	Percentage
Never	02	2.63
Rarely	13	17.56
Sometimes	22	29.72
Regularly	38	51.35
Total	76	100

Table 04: Social Media Usage

Social Media Usage	Frequency	Percentage
Yes	74	97.36
No	02	2.64
Total	76	100
Time spent on social media	Frequency	Percentage
Less than an hour	03	4.05
2-3 hours	40	54.05
4-5 hours	27	36.48
6-7 hours	03	4.05
8-12 hours	01	1.35

Total	74	100
Reading health content on social media	Frequency	Percentage
Never	01	1.35
Rarely	13	17.56
Sometimes	22	29.72
Regularly	38	51.35
Total	74	100

Table 05: Feeling fear and anxiety after reading/viewing health contents on Internet

Statements	Not at all	Sometimes	Always	Total
After reading symptoms of illnesses on internet you feel fear	00	39	35	74
After reading symptoms of illnesses on internet you sweat	31	39	04	74
After reading symptoms of illnesses on internet you heart rate increases	04	46	24	74
After reading symptoms of illnesses on internet you feel dizzy	49	20	05	74
After reading symptoms of illnesses	01	08	65	74

on internet you think that something bad is going to happen to you				
After reading symptoms of illnesses on internet you feel symptoms of diseases	00	54	20	74
After reading symptoms of illnesses on internet you want to carry out diagnostic tests for diseases particularly deadly	06	54	14	74
After reading symptoms of illnesses on internet you perceive that you are suffering from a fatal illness such as heart diseases and cancers	01	48	25	74
After reading symptoms of illnesses on internet you want to see a doctor immediately	04	41	29	74
After reading symptoms of illnesses on internet you worry that heart attack or shortness of breath or any other illness will happen to you soon	01	47	26	74

Discussion

The tabular information indicates that patients identified by doctors suffering from health anxiety had access to internet and were spending time on internet. A significant majority of the respondents were reading about health related contents specifically symptoms of different illnesses on internet and social media. As a result, significant majority of the patients/respondents had symptoms of anxiety including fear, palpitations, headaches, seeing a doctor immediately, having irrational worry about suffering from a fatal illness soon and carrying out diagnostic tests for illnesses etc.

Table 06: Pearson Correlations of the Internet usage with hypochondria/cyberchondria among the Study Samples

Scale	Education level		Access to and time spent online surfing		Social Media usage and reading contents regarding health	
	R	P	R	P	R	P
Total mean score of the indicators	1.54	0.001	1.13	0.001	1.33	0.000
Total mean score from Scale of anxiety (Hypochondria/cyberchondria)	3.16	0.000	3.19	0.001	3.76	0.000

Correlation analysis was conducted for judging association between education level, internet and social media usage and health anxiety

specifically termed as hypochondria and cyberchondria. In this context, educational among respondents have been found significantly associated with health anxiety ($r= 1.54, p=0.001$; and $r=3.16, p=0.000$). Access to and time spent online surfing have been found significantly associated with health anxiety ($r= 1.13, p=0.001$; and $r=3.19, p=0.001$). Social Media usage and reading contents regarding health have been found significantly associated with health anxiety ($r= 1.33, p=0.000$; and $r=3.76, p=0.000$).

Thematic Analysis

Vulnerable Population to Health Anxiety (Cyberchondria)

Field information indicates that literate and educated people are more vulnerable to search online regarding different illnesses, their symptoms and treatments. Literate and educated people are able to read contents available on internet regarding health particularly about various illnesses. Another key reason includes more use of internet as literate and educated people utilizes more internet and online contents. A doctor stated that:

“...mostly educated people talk to us regarding illnesses and symptoms about which they worry after reading online contents about it...”

A respondent who was doing Master of Philosophy in Zoology told that:

“...I came through many health sites because I was doing my research and was continuously in touch with the internet. Obviously, being an educated person I have much better understanding of online contents and was misguided by it...”

Social Media Usage and Cyberchondria

People who frequently use social media are also vulnerable to search online health contents. Social media in itself is responsible for it whereas people frequently in touch with social media also remain online for many hours daily. A bulk of health information is present on

social media sites and applications. These information often come in form of advertisement and ads. Exposure to such contents often makes people curious about listening, reading and watching about diseases, their symptoms, treatment etc. A respondent replied that:

“...it was Facebook when I came to know that a burning sensation in the stomach area can also be a symptom of hearth problem or an attack. I had stomach related problems for many years and I got more worried by reading the ad...”

Another respondent revealed that:

“...I suffered from headache since childhood. I treated it a lot but it returned soon after each time after the treatment. I am using Facebook for last four years and once I saw an advertisement about migraine. Since then I started to search for contents like headache and came to know a lot of causes of headache including minor issues as well as life threatening causes like brain cancer. I started to read about health related issues on other sites such as YouTube etc....”

Access to Internet and Cyberchondria

Access to internet particularly all day and using internet without any reason also increases vulnerability to reading about health related information. People who are unemployed or have surplus time to surf online is a key factor in googling the symptoms and causes of various diseases. A respondent enumerated that:

“...I stay at home all the day and go to play cricket by evening time. The only source of entertainment for rest of the day is internet, TV, and DVD. Therefore, I became a sort of addicted to read and watch videos on You Tube and internet regarding illnesses and other health related issues....”

Reasons for Searching Symptoms of Diseases on Google

There are two main reasons due to which people surf online about illnesses and health. First, getting an instant information about a symptom, illness or health related issues (see Leila, 2013 in this regard as well). A respondent stated that:

“...whenever I had pain somewhere in my body I just google it and instantly I read about numerous causes of the pain in a particular area or an organ. There is no need to go to doctor...”

Second, availing health facilities are often expensive and particularly for middle class and poor people it difficult to go to a doctor due to inability to bear the expenses. The health care system of developing and under-developed countries is also responsible for it. The health care facilities are often limited, out of easy access along with certain other problems such as lack of doctors, overcrowding in hospitals, waiting for hours to see doctors etc. A respondent stated that:

“...once I had pain in my leg. I went to a doctor and the complete treatment cost me 4700 PKR which is quite an amount for me to pay. Later on I had pain in the other leg. I searched about it in You Tube and received some information about pain killers on you Tube. I bought it from medicine shop and it relieved the pain and cost me only 270 PKR. That’s how I got habit of searching medical information online...”

Consequences of Googling the Symptoms

Self-diagnosis is one the key problems related to medical set up. There are many contributing factors to the habit of self-diagnosis regarding illnesses including primarily including low income and poverty, anxiety, having some sort of medical information, access to internet etc.(see Molarius, Berglund and Ydreborg, 2009 and Leila, 2013 as well). Similarly, googling and searching internet about medical information leads to self-diagnosis which can rarely be correct and often leads to health complications.

Field information shows that searching for medical information online and particularly symptoms results in self-diagnosis. This is evident

from the interviews of sampled individuals online searching for medical information as well as the sample doctors. For validation, an extract from a doctor's interview is:

“...On daily basis I hear from patients that they are taking tablets for the symptom (s) of some sort of illness. When ask them majority of them google their symptoms, diagnose themselves and take pills for it...”

A sampled respondent revealed that:

“...I regularly take medicines by diagnosing myself through internet. I know about medicines for many medical conditions such as burning stomach, diarrhea, fever, sore throat, lung infections. In fact I know about wide range of anti-biotic. The doctor told me so many times that your diagnosis can be wrong but I cannot control myself and search on internet when I am ill...”

Stress, Anxiety, Hypochondria/Cyberchondria

Information obtained through interviews show that vulnerable population suffers from stress, general anxiety (GAD) and particularly type of health anxiety termed as Hypochondria/Cyberchondria. All of the respondents interviewed stated that they are suffering from this mental disorder because of using internet, social media and health sites to know about their symptoms. This also leads to further obsession for searching other symptoms and associating with illnesses. An argument from a doctor's interview is:

“...by reading medical contents on internet the patients become obsessed with them. They search further and further associate there symptoms with many illnesses at a time. For example, a patient's searches for heaviness in chest, and by reading it online they perceives that they are suffering from heart diseases, stomach cancer, pulmonary embolism etc.”

Another doctor told that:

“...one important thing I noted with such patients is association of symptoms with only fatal illnesses such as associating headache with brain cancer or stroke. They do not think about minor health conditions....”

1.6. Conclusion

This study concludes that health anxiety in form of hypochondria/cyberchondria prevails in the study area. Individuals affected by hypochondria/cyberchondria uses internet and social media to read about different symptoms of illnesses and develop the mentioned mental condition. Descriptive and inferential statistics indicates that there is significant association between education (being able to read), access and use of internet and reading health contents on social media and health anxiety in shape of hypochondria/cyberchondria. The qualitative discussion also affirms that such people are obsessed with behaviors of searching online for symptoms of diseases and perceive that they are present in them. Patients associated the symptoms with fatal and deadly illnesses and self-diagnose themselves.

References:

Akhtar, M and Fatima, T. (2020). Exploring cyberchondria and worry about health among individuals with no diagnosed medical condition. *Journal Of Pakistan Medical Association*. Vol 70 Issue (1).

Amba, Confucius. (2015). Health Care System in Developed and Developing Countries. Online: https://www.researchgate.net/publication/321242954_Health_Care_System_in_Developed_and_Developing_Countries/citations

Ferguson, Leila (2013-12-04). "Web research could give you a bad dose of cyberchondria". *The Conversation*. Retrieved 2017-07-20.

Guettou, Intissar. (2018). Developed vs developing countries: What's the impact on healthcare coverage? Online: <https://www.prnewswire.com/news-releases/developed-vs-developing-countries-whats-the-impact-on-healthcare-coverage-300626432.html>

Prasad, R. P. (2018). Revolutionizing Modern Healthcare with Internet of Things. <https://www.cabotsolutions.com/revolutionizing-modern-healthcare-with-internet-of-things>

Ryen White; Eric Horvitz (2009). "Cyberchondria: Studies of the escalation of medical concerns in Web search". *ACM Transactions on Information Systems*. 27 (4): 1–37. *doi:10.1145/1629096.1629101*

Ryen White; Eric Horvitz (2009). "Cyberchondria: Studies of the escalation of medical concerns in Web search". *ACM Transactions on Information Systems*. 27 (4): 1–37. *doi:10.1145/1629096.1629101*

Singh, K., Fox, J. R., & Brown, R. J. (2016). Health anxiety and Internet use: A thematic analysis. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 10(2), Article 4. <https://doi.org/10.5817/CP2016-2-4>

Starcevic V, Berle D. Cyberchondria: Towards a better understanding of excessive health-related internet use. *Expert Rev Neurother*. 2013;13:205-13.