

# A study on the prevalence of cyberchondriasis among patients with metabolic syndrome and its impact on their psychological health

## Abstract

**Introduction:** Since there are plenty of health related websites, it has become common to search internet before going for a medical consultation.

**Objective:** The main objective of this study is to determine the impact of cyberchondriasis among patients with metabolic syndrome. The instrument used is a survey questionnaire containing both closed-and-open ended questions. Kessler's 10 Psychological Stress Instrument (K10) was used to measure the levels of stress.

**Results:** The study was conducted among 529 (M: F 275:254) participants, with mean age of 36yrs (min15, max70).

- i. Higher percentage (65.2%) of people preferred information from internet in the first place.
- ii. Mostly internet was searched for details regarding their treatment, side effects of prescribed medicines, availability of alternative treatment, dietary guidelines and other people's experience on the similar problem. As observed in the study, the main reason for searching internet was instantaneous availability of all the required information at less cost.
- iii. About 350 participants made self-diagnosis, out of which a large majority of them (84.5%) was ruled out by the doctors. However they sought second opinion when their doctor differed from internet-based diagnosis.
- iv. Around 164(31%) people had adjusted their medications according to online suggestion. About 94.5% had followed unreliable alternative therapies. It is noticed that everyone tried different dietary suggestions available on internet.
- v. About 74% recorded that after searching for health information they were anxious and 21% said that the details only confused them further, which had a significant impact on their psychological health ( $p$  value=0.000).

**Conclusion:** Though searching online gives more information on health care, it also increases the anxiety of individuals and deviates them from proper management.

**Keywords:** cyberchondriasis, metabolic, syndrome, anxiety, kessler's 10 psychological stress instrument, self-diagnosis, symptomatology, psychological, health, HDL

Volume 4 Issue 3 - 2017

Shaji Sreedhar,<sup>1</sup> Sripriya Shaji<sup>2</sup>

<sup>1</sup>Department of Biochemistry, Government Medical College, India

<sup>2</sup>Sripriya's Counselling Centre, India

**Correspondence:** Shaji Sreedhar, Department of Biochemistry, Government Medical College, Kozhikode, Kerala, India, Tel +91 94 96 22 1446, Email drshajisreedhar@gmail.com

**Received:** November 17, 2016 | **Published:** April 24, 2017

## Introduction

In the present days internet based medical information plays a significant role in patient education. There are plenty of health related websites that are easily accessible. It has become common to search internet before going for a medical consultation. Even though it is good for the patient to have a beforehand knowledge, varied information on their illness mostly increases their anxiety. Metabolic syndrome or insulin resistance syndrome consists of metabolic disorders like central obesity, hypertriglyceridemia, low HDL cholesterol, hyperglycemia and hypertension.<sup>1</sup> They cause increased risk of diabetes mellitus and atherosclerosis. Cyberchondriasis is unfounded escalation of concerns about common symptomatology based on review of search results and literature online.<sup>2,3</sup> This study is focused on the following objectives:

- A. To study the prevalence of cyberchondriasis in rural area of north Kerala.

- B. To determine the impact of cyberchondriasis among patients with metabolic syndrome.

## Method

The study was conducted among random participants, who volunteered to take part, from a general practitioner's clinic in a rural area of North Kerala. Informed consent was taken from all the participants. A self-administered survey questionnaire was used to collect the required data. Both closed-and-open ended questions were asked to collect details regarding the health information gathered from internet. Kessler's 10 psychological stress instrument is a 10 item questionnaire intended to yield a global measure of distress based on questions about anxiety and depression, that a person experience in the recent period of 4weeks. All the data except the response to open ended questions were entered in a spreadsheet and reviewed for accuracy before analysis. Responses to open-ended questions were

organized by consensus of investigators into categories representing common themes. Chi-square test was used and  $p<0.05$  was taken as statistically significant.

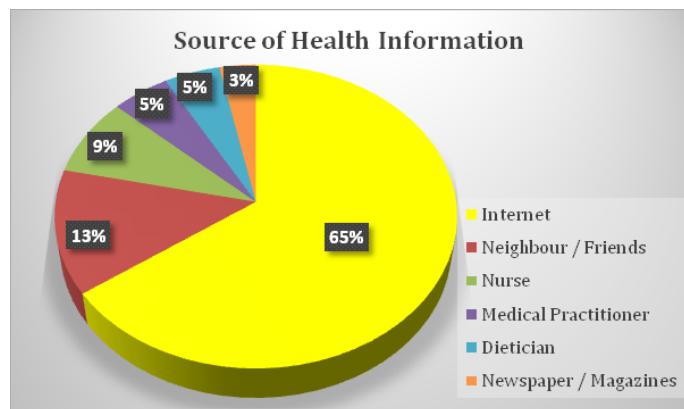
## Results

A total of 529 individuals participated in the study, out of which 275 (52%) were male and 254(48%) were female. The mean age of the study group is 36.58(min15, max70). Table 1 shows the demographic details of the participants. About 36.7% had completed high school, 24.6% had completed graduation, 20.2% had completed post-graduation/doctoral degrees, and 18.5% had completed diploma. The occupation of participants were 28.8% of professionals, 23.6% were in business, 11.9% were in teaching or office jobs, 10.4% were skilled workers, 10.4% were homemakers, 6.4% were students, 6.2% were unskilled workers and 2.3% were retired.

**Table 1** Demographic Details

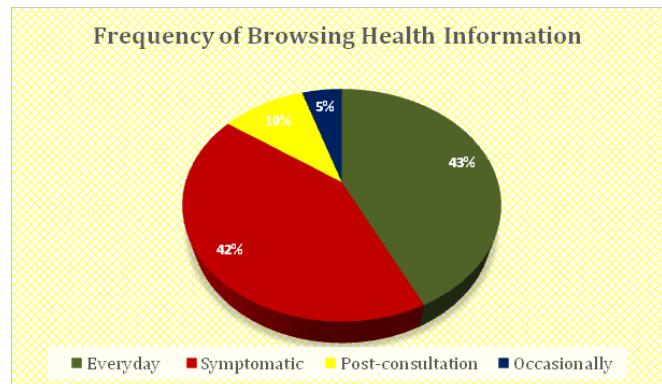
Demographic details	Number n=529	Percentage %
<b>Age</b>	Mean $36.58 \pm 13.75$ min 15, max 70	
<b>Gender</b>		
Male	275	52
Female	254	48
<b>Education</b>		
SSLC	74	14
HSLC	120	22.7
Diploma	98	18.5
Degree	130	24.6
PG & PhD	107	20.2
<b>Occupation</b>		
Unskilled	33	6.2
Skilled	55	10.4
Technical	85	16.1
Professional	67	12.7
Business	125	23.6
Office/Teaching	63	11.9
Student	34	6.4
Home-maker	55	10.4
Retired	12	2.3

About 86.6% were interested to learn about their health and 13.4% were not. Figure 1 shows the source of health information. Higher percentage (65.2%) of people preferred internet in the first place, 13.2% discussed with friends and neighbours, 8.3% sought advice from nursing staffs, 5.1% from their doctor, 4.9% from dietician, and the remaining 3.2% from newspapers and magazines. When asked about the advantages of gathering information from internet, around 43.3% utilized it because of easy accessibility. An equal percentage of participants used because of its less cost. Remaining 13.4% used because they can get information at their convenience. Almost everyone recorded that they did not feel comfortable to clarify their doubts with the doctor during their consultation hours.



**Figure 1** The various sources of health information.

Figure 2 shows the frequency of browsing health information. 42.9% checked health information from internet on daily basis, 42% checked whenever they experienced any significant symptoms, 10.9% checked after visiting their doctor and 4.9% checked occasionally. Mostly internet was searched for details regarding the treatment they were undergoing, side effects of prescribed medicines, availability of alternative treatment, dietary guidelines and other people's experience on similar problem. According to K10 assessment, participants were segregated as group 1-good psychological health (12%), group 2-mildly stressed (5.5%), group 3-moderately stressed (71.6%) and group 4-severely stressed (10%).



**Figure 2** The frequency of browsing health care information.

Table 2 shows the impact of internet based health information on the attitude of participants. Around 91.7% from group 2, 87.5% from group 1, 60.8% from group 3 and 54.4% from group 4 have made self-diagnosis ( $\chi^2=35.059$ ,  $p\text{-value}<0.05$ ). Of these 350 people who made self-diagnosis, 84.5% were ruled out by the doctors and hence all of them went for second or third opinion. Even though half of the participants did not adjust their medications as per online suggestion, about 34.7% from group 3, 22.2% from group 4, 25% from group 2 and 12.5% from group 1 had adjusted medications based on information gathered from internet. ( $\chi^2=13.525$ ,  $p\text{-value}<0.05$ ). Out of this total of 164 participants, who self-adjusted medication, 50 of them experienced side effects. Higher percentage of people, 97.9% from group 2, 93.8% from group 1, 88.6% from group 3 and 71.9% from group 4 had ordered investigations based upon information from internet ( $\chi^2=20.924$ ,  $p\text{-value}<0.05$ ). Also 100% from group 4, 98.1% from group 3, 89% from group 2

and 73.4% from group 1 had tried unreliable alternative therapies ( $\chi^2=69.145$ ,  $p$ -value<0.05). It was also noticed that everyone (100%) tried different dietary suggestions available on internet, irrespective of its reliability.

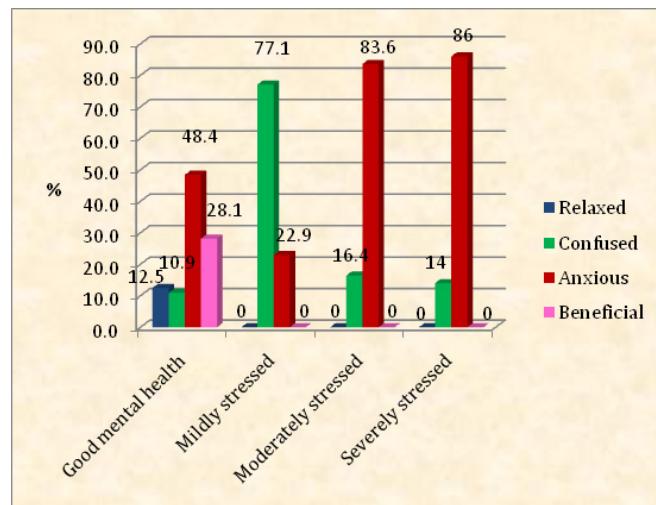
Figure 3 shows the response after reading health information online. In group 1, 48.4% became anxious, 28.1% found it beneficial,

12.5% felt relaxed, and 10.9% reported that they were further confused. In group 2, 77.1% were further confused and 22.9% became anxious. In group 3, 83.6% became anxious and 16.4% were further confused. In group 4, 86% became anxious, and 14% reported that they were further confused ( $\chi^2=297.047$ ,  $p$  value=0.000). It has to be noted that only from good psychological health group people found internet based health information as beneficial or relaxing.

**Table 2** Impact of Internet Based Health Information on the Attitude of Participants

S. No.	Items	G1(%) n=64	G2(%) n=48	G3(%) n=360	G4(%) n= 57	Total(%) n=529	Chi-square	p-value
1	Self-Diagnosis	87.5	91.7	60.8	54.4	66.2	35.05	0
2	Self- Adjustment of Medications	12.5	25	34.7	33.3	31	13.525	0.004
3	Self Ordering of Investigations	93.8	97.9	88.6	71.9	88.3	20.924	0
4	Self trial of Alternative Treatment	73.4	89.6	98.1	100	94.5	69.145	0

G1, good psychological health; G2, mildly stressed; G3, moderately stressed; G4, severely stressed



**Figure 3** The comparison of response to health information with Kessler's 10 psychological stress instruments, which is statistically significant with  $p<0.05$ .

## Discussion

Our study revealed that most of the people (65%) who had metabolic syndrome, preferred internet in the first place for getting health information even though they lived in a rural area. This was comparable to previous reports of 60-80% internet consumers seeking health information online.<sup>4</sup> The availability of more than 100,000 health related websites<sup>5</sup> that contain all the required information, easy accessibility, affordable cost and convenient timings to browse were cited as the main reasons. Earlier studies showed, even though there is an increase in awareness, it also causes preoccupation with certain related symptoms, thereby increasing health related fears and anxiety.<sup>6,7</sup> In this study too it was noted that because of anxiety there were many erroneous self-diagnosis, self-alteration of medications leading to side effects, ordering for unnecessary investigations, attempting unsafe alternative therapies and unreliable dietary suggestions. Another study showed that individuals with high level of health anxiety had made accurate self-diagnosis.<sup>7</sup> However in our study, such self-diagnosis were ruled out wrong by the doctors when

they went for consultation.

Results from our study are in line with other studies that seeking online health information may have detrimental impact on psychological health of the people.<sup>8</sup> It is shown in Figure 3 where comparison of response after reading health information with Kessler's 10 psychological stress instruments had a significant  $p$ -value. The current study is limited by its reliance on retrospective self-report measures. The study covered only the people and not the websites they visited. Hence there could be a bias that anxiety could be due to gathering of information from unreliable websites. The sharing and discussion of such information with others could also have increased their anxiety. The study can be further expanded by analyzing the impact of sharing health information through social media.

## Conclusion

Though searching online gives more information on health care, it also causes anxiety in individuals. Since some of the health related information contained in the websites is not scientifically proven, the reliability is questionable. Hence the patients deviate from proper management by depending on such information. The discontinuation or alteration of medications by patients themselves and following unreliable alternative therapy causes further deterioration of health care. When metabolic syndrome is already on the raise because of poor life-style, such deviations not only increases the stress of individuals, but also the disease burden of the society. This can only be prevented by giving more importance to patient education by health care professionals.

## Acknowledgements

We are thankful to Dr KC Sreevalsan for his statistical support. Sincere thanks to all the respondents for their time and support.

## Conflict of interest

We hereby declare that the study titled "A study on prevalence of cyberchondriasis among patients with metabolic syndrome and its impact on their psychological health" is an original study undertaken and analyzed by the researchers.

## References

1. National Cholesterol education program and adult treatment panel. ATPIII<sup>a</sup> 2001 and harmonizing definition criteria for the metabolic syndrome. 2001.
2. Ryen White, Eric Horvitz. Cyberchondria: Studies of the escalation of medical concerns in Web search. *ACM Transactions on Information Systems*. 2009;27(4):1.
3. White RW, Horvitz E. Experiences with web search on medical concerns and self diagnosis. *AMIA Annu Symp Proc*. 2009;2009:696–700.
4. Fox S. Health topics. 2011.
5. Eysenbach G, Sa ER, Diepgen TL. Shopping around the internet today and tomorrow: towards the millenium of cybermedicine. *British medical Journal*. 1999;319(7220):1294.
6. Abramowitz JS, Moore EL. An experimental analysis of hypochondriasis. *Behav Res Ther*. 2007;45(3):413–424.
7. Asmundson GJ, G Abramowitz JS, Ritchter AA, et al. Health anxiety: Current perspectives and future directions. *Curr Psychiatry Rep*. 2010;12(4):306–312.
8. Furer P, Walker JR, Freeston MH. Integrated approach to cognitive-behavioural therapy for intense illness worries. In: GJG Asmundson, editor. *Health anxiety: clinical and research perspectives on hypochondriasis and related conditions*. Chichester, England; 2001. p. 161–192.