

Doctor in My Home: Impact of Internet on Patient-Physician Relationship among Patients of Delhi National Capital Region

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ABSTRACT

Introduction: Readily available health-related information over the internet has led to increased patient awareness, and this might be a possible factor straining the patient-physician relationship.

Aim: The aim was to assess the impact of the internet on the patient-physician relationship amongst patient visiting three dental colleges in Delhi National Capital Region.

Materials and Methods: Of the 798 pre-tested questionnaires distributed, a total of 605 adequately filled questionnaires were analyzed for the impact of the internet on the patient-physician relationship. Responses were subsequently tabulated and analyzed using SPSS version 21.0. Statistical significance was kept as $P \leq 0.05$.

Results: A statistically significant difference ($P = 0.04$) was seen among males and females regarding their internet usage with a higher proportion of health information being sought by males. Most internet users (66.6%) followed their physician's advice before they began using the internet with behavioral changes seen mostly in the 18-30 years age group (75.64%), yet only 14.38% of them informing their physician about such changes.

Conclusion: It is important that people be advised about the potential risks of believing in sources from the internet with physicians also being advised to spend more quality time with their patients to alleviate them of their fears and doubts.

Keywords: Internet, Information, Online health, Patient-physician relationship

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INTRODUCTION

Wise men from the past once aptly quoted that "If wealth is lost, nothing is lost, but if health is lost, everything is lost." The generation of today is heavily dependent on the internet for information needs that have propelled India to third spot in terms of internet users after China and the United States with an active population of nearly 74 million. Furthermore, statistics reveals that nearly three-fourth of India's online population is under 35 years of age.¹

Before the advent of internet, patients relied heavily on their physicians for health based information and treatment modalities. However now, with easy access to information available on the web, patients are getting more knowledgeable regarding their health and at times, question the attending doctors about procedures and alternate options. In India, there were an estimated 72% of people who acknowledged the fact that they surfed the internet looking for health - related information out of which, a whopping 95% of the population found the information available on the internet serving their purpose.²

Searching for health - related information on the internet by patients has quite a few advantages for them. It helps them increase their knowledge, competence, and engagement in health maintenance and decision-making, whilst also providing an opportunity to investigate difficult or embarrassing questions with comfort and privacy.³⁻⁵ Patients also appreciate the freedom afforded by ready access to online health related sites, articles or resources, which reduces the time and commitment for office-based physician consultations. Furthermore, the Internet provides space (anonymous, if required) to majority of patients who finding themselves in similar medical situations/conditions, and hence, helps in generating a strong, highly accessible base of care, as well as to understand and to provide support to individuals with similar issues related to their health.⁵

Hence, this study tries to assess the impact of the internet on health related behaviors of patients and its impact on the physician-patient relationship among patients in Delhi and its Adjoining National Capital Region (NCR).

MATERIALS AND METHODS

Data were collected from the questionnaire by Iverson *et al.*⁶ After adapting the questionnaire according to the Indian population, the questionnaire was pre-tested it on 10 people for its content and criterion validity. After making minor adjustments, the questionnaire was distributed to 798 patients visiting three Dental Colleges in Delhi NCR, who gave a written consent to be a part of the study. An ethical clearance was taken from all the three institutions in which the study was being conducted. Inclusion criteria included patients who had basic access to the internet with basic computer knowledge, were aged 18 and above, surfed the internet for at least 4 h/week and could speak English fluently. Unwilling patients were excluded from the study.

Data were analyzed using SPSS version 21.0 (IBM Corporation, Armonk, New York).⁷ Descriptive statistics was applied, and the Chi-square test was done to find out associations among different age groups.

RESULTS

A total of 605 adequately filled questionnaires were identified from the 798 questionnaires distributed, leading to a response rate of 75.82%. The responses were subsequently tabulated and analyzed.

The study population was divided into various age groups for easy age - wise comparison as well to find out the reasons amongst people of different age groups for visiting the dental college (Table 1). The study comprised of 55.9% males and 44.1% females respectively divided

Table 1: Characteristics of study population

Subject characteristics Characteristic	Age group				Total, %
	18-30	31-45	46-60	≥61	
Sex					
Men	194	117	23	04	338, 55.9
Women	103	121	36	07	267, 44.1
Reason for college visit					
For myself	215	224	49	10	498, 82.31
Accompanying someone	82	14	10	1	107, 17.69

amongst different age groups. A statistically significant difference ($P = 0.04$) was seen among males and females regarding their internet usage with males making up a slightly higher proportion of the population seeking health information from the internet. The majority of the population (82.31%) visited the dental college themselves as compared to just 17.69% of the people who accompanied someone for their treatment.

Table 2 depicts responses of the various age groups to the questions asked in the survey. Out of 347 internet users, majority (193) of them belonged to 18-30 years age group while a small number (3) comprised of the age group of ≥61 years of age. Of the 258 non internet users, most of them belonged to the age group of 31-45 years (110).

When enquired whether the internet users were able to find answers to their health related questions online, a total of 147 (67.4%) and 166 (47.84%) of the users replied "yes" and "somewhat" respectively, whereas 34 people were unable to find answers to their health related questions. A statistically significant difference was seen among all age groups who answered "yes" to a particular question ($P = 0.01$).

The third question, which selected information on whether respondents experienced changes in thinking about health as a result of online information, the age group of 31-45 years replied in the affirmative which was significant when compared to other age groups ($P = 0.03$).

Behavioral changes due to online information was seen most in the 18-30 years age group (75.64%), but only 14.38% of them informed their physician about such changes. The same trend was seen among the age group of 45-60 years where 91% of the respondents did not inform their physicians about such behavioral changes. No statistical significance was observed among the age groups, respectively.

When it came to discussing online health information, only the respondents between age groups of 46-60 years (91.3%) believed that their physician was willing to discuss online information with them. The difference in opinion among other age groups did not show any statistical significance.

Table 2: Responses of the various age groups to the questions asked in the survey

Survey item	Age group (years)				Total, N (%) ^a
	18-30 (n=297)	31-45 (n=238)	46-60 (n=59)	≥61 (n=11)	
Internet users, N (%)	193 (64.9)	128 (53.7)	23 (39.0)	3 (27.3)	347 (57.35)
I am able to find answers to my health questions online					
Yes	62 (32.12)	71 (55.47)	12 (52.18)	2 (66.67)	147 (42.3)
Some what	111 (57.51)	48 (37.5)	7 (30.43)	0 (0)	166 (47.8)
No	20 (10.17)	9 (7.03)	4 (17.4)	1 (33.33)	34 (9.9)
I have experienced changes in my thinking about health as a result of online information					
Yes	127 (65.80)	94 (73.44)	14 (60.87)	2 (66.67)	237 (68.3)
No	66 (34.20)	34 (26.56)	9 (39.13)	1 (33.33)	110 (31.7)
I made behavioural changes as a result of online information					
Yes	146 (75.64)	61 (47.67)	11 (47.83)	2 (66.67)	220 (63.40)
No	47 (24.35)	67 (52.34)	12 (52.17)	1 (33.33)	127 (36.6)
I informed my physician about these behavioral changes					
Yes	21 (14.38)	27 (44.26)	1 (9.0)	1 (50.0)	50 (22.73)
No	125 (85.62)	34 (55.74)	10 (91.0)	1 (50.0)	170 (77.23)
I believe my physician is willing to discuss online information with me					
Yes	58 (30.3)	27 (21.1)	21 (91.3)	1 (33.33)	107 (30.84)
No	135 (69.7)	101 (78.9)	2 (8.7)	2 (66.67)	240 (69.16)
I followed physician's advice before I began using the Internet					
Always	110 (56.7)	99 (77.3)	19 (82.6)	3 (100)	231 (66.6)
Most of the time	78 (40.4)	20 (15.6)	2 (0.8)	0 (0)	100 (28.9)
If advice made sense	3 (0.1)	5 (4.0)	1 (0.4)	0 (0)	9 (2.6)
Made up own mind	0 (0)	3 (2.3)	1 (0.4)	0 (0)	4 (1.1)
Seldom	2 (0.1)	1 (0.7)	0 (0)	0 (0)	3 (0.8)
Non-internet users, N (%)	104 (40.3)	110 (42.7)	36 (13.9)	8 (3.1)	258 (42.65)
Reasons given for not using the Internet to locate information about health online					
Already adequately informed	32 (30.8)	87 (79.0)	21 (58.3)	5 (62.5)	145 (56.2)
Use other resources	41 (39.4)	10 (9.8)	4 (11.1)	0 (0)	55 (21.3)
No Internet access	24 (23.1)	7 (6.4)	6 (16.7)	3 (37.5)	40 (15.5)
Uncomfortable with internet	1 (0.9)	1 (1.9)	2 (5.5)	0 (0)	4 (1.5)
Do not trust internet information	6 (5.7)	5 (4.5)	3 (8.3)	0 (0)	14 (5.4)

Most internet users (66.6%) followed their physician's advice before they began using the internet. While only 28.9% followed their physician's advice "most of the time." No statistical significance was seen among the different age groups.

Amongst the non-internet users ($n = 258$), we were interested in knowing the reasons given for not using the internet to locate information about health online. A whopping 56.2% gave the reasons as they were "Already adequately informed" and did not need to explore the internet any further. 14 people (5.4%) of the non - internet users did not trust the internet for information. No statistical significance was seen among the age groups for not using the internet for health related information.

DISCUSSION

In an effort to assess the impact of internet on the patient - physician relationship, it was found that a

total of 57.35% of the study population belonged to the "internet users" group who surfed the internet for most of their basic needs and out of these "internet users," a total of 67.4% of the population were able to find answers to their health questions online.

Males made up slightly higher proportion compared with females seeking health information from the internet. This was in contradiction to various studies where a higher response rate was seen amongst women who seeked more health related information when compared to males.^{6,8-10}

This study found that internet usage decreased as age increases, and this was found to be in agreement to various studies.^{6,8-12} It was also noted that although a higher percentage of internet users were amongst the age group of 18-30 years, the possibility of their main use of the internet could be limited to socializing and entertainment, whereas older age groups specifically focus their internet

usage on seeking health related information which was in agreement with this study.¹³

This study also revealed that only 30% of the respondents were willing to discuss online information with their physicians. This is in line with studies conducted by Ahmad FL *et al.* and Chestnutt *et al.* who also reported low willingness of patients to discuss information with their physicians.^{14,15} Contrary to such results, Givon *et al.* and Nili *et al.* reported a positive attitude of respondents in discussing such information with their physicians.^{16,17} It might be speculated that factors which can influence patient - physician communication are the fear and anxiety levels of the patient, excessive work burden of the physician, the inherent fear of litigation by the patient, a possible fear of physical or verbal abuse coupled with unrealistic expectations lead the patient to seek help from easily available online health related information privately and securely.¹⁸

Majority of the non - internet users (56.2%) did not search the internet for health related information as thought that they were already adequately informed. This study also did not aim investigate their source of information which could range from reading medical magazines to believing in the hear-say of their peers and/or getting knowledge from people/family members getting treatment for similar conditions. 1.5% of the population were "uncomfortable" with the internet, which could be due to inability to keep pace with evolving technology and which could be solved in due course of time depending upon the individual's interest to learn. A minute percentage (5.4%) of the respondents did not trust the information on the internet.

Certain authors have stated that the availability of health information on the internet is generally beneficial for the patients.^{19,20} This is in contradiction to certain authors who rationalize that the interpretation of medical based information requires an acquired skill which patients often lack. The widespread availability of such information through the worldwide web, may fulfill the patients' search for knowledge, but they may fail to recognize that certain important information might be missing or they might fail to acknowledge the biased content of the information they obtain.²¹ Failure to recognize non-evidence-based material by patients with a potential for misinterpretation of some of the medical information might lead to serious health concerns.²²

Limitations

This study is prone to certain limitations that are:

1. The self-reported nature of data leads might have led to social desirability bias, recall bias or respondent bias

2. It is possible that patients using the internet filled out the surveys more than those not using the internet
3. Like this study, majority of the studies assessing the impact of the internet on patient-physician relationship collected information at once (cross sectional in nature). But mostly, physician-patient relationships are mostly long-term that involve multiple visits, and this may limit the generalizability the results.²³

CONCLUSION

With the ever changing patterns of internet usage, it is important that patients be advised pertaining to the misleading nature of information present on the internet. It is equally important that physicians work toward the elimination of barriers that might hamper an effective communication with their patients. With today's younger generation being short on time and having instant internet access on the go, it is important that they, in particular, be made aware of the potential harm any misleading information can create on their health and unnecessarily add to the global burden of disease.

REFERENCES

1. The Hindu. New Delhi, August 24, 2013. India is now world's third largest Internet user after U.S., China. Available from: <http://www.thehindu.com/scitech/technology/internet/india-is-now-worldsthird-largest-internet-user-after-uschina/article5053115.ece>. [Last accessed on 2014 Jun 13].
2. Akerkar SM, Kanitkar M, Bichile LS. Use of the Internet as a resource of health information by patients: A clinic-based study in the Indian population. *J Postgrad Med* 2005;51:116-8.
3. Epstein RM, Alper BS, Quill TE. Communicating evidence for participatory decision making. *JAMA* 2004;291:2359-66.
4. Cancer patients use Internet extensively, May 7, 2004. CancerConsultants.com Oncology Resource Center Web site. Available from: <http://www.patient.cancerconsultants.com/CancerNews.aspx?DocumentId=23590>
5. Hardey M. Doctor in the house: The Internet as a source of lay health knowledge and the challenge to expertise. *Sociol Health Illn* 1999;2:820-35.
6. Iverson SA, Howard KB, Penney BK. Impact of internet use on health-related behaviors and the patient-physician relationship: A survey-based study and review. *J Am Osteopath Assoc* 2008;108:699-711.
7. IBM Corp. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp; Released 2012.
8. Fox S. Health Information Online. Washington, DC: Pew Internet & American Life Project; 2005.
9. Smith-Barbaro PA, Licciardone JC, Clarke HF, Coleridge ST. Factors associated with intended use of a Web site among family practice patients. *J Med Internet Res* 2001;3:E17.
10. Houston TK, Allison JJ. Users of Internet health information: Differences by health status. *J Med Internet Res* 2002;4:E7.
11. Campbell RJ, Harris KD, Wabby J. The internet and locus of control in older adults. *Proc AMIA Symp* 2002;96-100.
12. Cutler SJ, Hendricks J, Guyer A. Age differences in home computer availability and use. *J Gerontol B Psychol Sci Soc Sci* 2003;58:S271-80.

13. Jones S, Fox S. Generations online in 2009. Pew Internet & American Life Project, January 28 2009. Available from: <http://www.pewinternet.org/Reports/2009/GenerationsOnline-in-2009.aspx>.
14. Ahmad F, Hudak PL, Bercovitz K, Hollenberg E, Levinson W. Are physicians ready for patients with Internet-based health information? *J Med Internet Res* 2006;8:e22.
15. Chestnutt IG, Reynolds K. Perceptions of how the Internet has impacted on dentistry. *Br Dent J* 2006;200:161-5.
16. Giveon S, Yaphe J, Hekselman I, Mahamid S, Hermoni D. The e-patient: A survey of israeli primary care physicians' responses to patients' use of online information during the consultation. *Isr Med Assoc J* 2009;11:537-41.
17. Nili T, Moti M, Avner C. Dentists' attitudes toward discussing Internet health information with their patients – Does professional self-efficacy matter? *J Public Health Dent* 2011;71:102-5.
18. Fentiman IS. Communication with older breast cancer patients. *Breast J* 2007;13:406-9.
19. Hart A, Henwood F, Wyatt S. The role of the Internet in patient-practitioner relationships: Findings from a qualitative research study. *J Med Internet Res* 2004;6:e36.
20. Potts HW, Wyatt JC. Survey of doctors' experience of patients using the Internet. *J Med Internet Res* 2002;4:e5.
21. Sacchetti P, Zvara P, Plante MK. The Internet and patient education – Resources and their reliability: Focus on a select urologic topic. *Urology* 1999;53:1117-20.
22. Ayonrinde O. Patients in cyberspace: Information or confusion? *Postgrad Med J* 1998;74:449-50.
23. Ha JF, Longnecker N. Doctor-patient communication: A review. *Ochsner J* 2010;10:38-43.

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