

Original Research Article

Health information seeking on the internet (Dr Google) and its effect on doctor-patient relationship: a cross-sectional study from Central Karnataka

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ABSTRACT

Background: The Internet has proven to be a powerful vehicle for the dissemination of information and the use of Internet by the patients as a source of information on health and disease is increasing rapidly. It has reformed the doctor-patient relationship by empowering patients with information. The objective was to study the trends of patient's health information seeking behaviour on the internet and its effects on the doctor-patient relationship.

Methods: A cross-sectional study was conducted amongst the 73 doctors and 110 patients attending the tertiary health care centre, Davanagere. A pre-tested and pre-validated questionnaire was used to collect data. Percentages and Proportions were used to summarize the study variables.

Results: The most common search engine used was Google i.e. 92% and majority of them looked up symptoms/disease condition 80%. 57% respondents verified doctor's advice. 73% respondents stated that they used online health information for self-diagnosis but less than 10% of respondents took medications mentioned online. The doctors (60%) stated that the patient's Internet use proves that the patient or his/her family are involved and take responsibility. However, 49.3% of doctors stated that they get uncomfortable when presented with online health information by the patients.

Conclusions: Doctors are starting to recognize the use of the internet by patients as a source of health information. Patients consider the internet as a supplementary resource for better understanding of symptoms and diagnosis. The need of the hour is better communication between doctor and patients; and availability of reliable web-based health resources to patients for better compliance.

Keywords: Doctor-patient relationship, Health information, Internet

INTRODUCTION

The Internet has proven to be a powerful vehicle for distributing information to millions of individuals across a vast spectrum of topics.¹ The Internet, presently, is a rather permanent fixture in most of our lives. Health information has become increasingly available and accessible to both doctors and patients, who now possess a plethora of technological resources, thanks to the Internet.²

Patients generally search for information regarding diseases, symptoms and treatment for themselves or relatives.² This information makes patients feel empowered and the doctor-patient relationship has become more participatory. It supports self-efficient management, allows self-assessment and improves treatment results and compliance.³

However, doctors have displayed both positive and negative emotions towards patients' health information seeking behaviour. Several past studies have indicated

that doctors felt intimidated and felt that their professional status has been reduced and disregarded. This defensive stance may result in barriers such as decreased trust and communication between the patient and the doctor.⁴

Doctors' attitude and views about the wide prevalence of Internet Health Information has been investigated in a number of studies. According to these studies, doctors expressed concerns regarding the abundance of poor quality and inaccurate information present but also noted benefits to patients from the acquisition of relevant information.⁵⁻⁹

With the steady evolution of health information on the internet and fast growing awareness, it is essential to adopt shared decision making as the benchmark for a successful doctor-patient relationship and fruitful health-care experience.⁵ This study aims to elaborate on patient's and doctors' perception of Health Information seeking behaviour on the internet and its effect on doctor-patient relationship. The objectives were to study the trends of patient's health information seeking behaviour on the Internet and its effects on the doctor-patient relationship.

METHODS

This cross-sectional study was conducted amongst the doctors and patients attending the tertiary health care centre in Davanagere district of Karnataka in South India from August 2019 to September 2019.

Sample size estimation

For patients, the sample size was calculated using the formula $n = 4pq/d^2$; where n = sample size, p = expected proportion of the population with adequate knowledge ($p = 50.3\%$ among patients), $q = 100 - p$, and d = admissible error (20% of p) considering 10% non-response rate; and the calculated sample size was $n = 110$. For doctors, all the doctors working at the above-mentioned tertiary health care centre who were willing to participate in the study and were present during the data collection were included in the study, i.e. $n=73$. A total of 110 patients and 73 doctors were interviewed for the purposes of this study.

Inclusion Criteria

Patients enrolled in the study were those who attended the tertiary health centre, Davanagere during the study duration, aged ≥ 18 yrs of both genders and were willing to participate in the study. Systematic random sampling was used to select doctors from each department in the hospital who were present on the day of data gathering.

Data collection

The objectives of the study were explained to the study subjects briefly in their vernacular language and written

informed consent was taken. Data was collected by interview method from willing participants - both patients and doctors. For patients, a structured, pre-tested and pre-validated questionnaire was developed to collect data which included demographic details, the frequency of Internet use, and the frequency of searching online health information.⁹ Amongst doctors, a questionnaire developed with reference to similar studies; which was pre validated and pre tested, was used to assess the doctor's attitude towards patients using the Internet.⁵

Data analysis

Data was entered in Microsoft Excel and analyzed using SPSS software version 16.0. Percentages and Proportions were used to summarize the study variables. Categorical data is expressed in frequency and percentages were as continuous data in terms of mean and standard deviations (SD). For inferential statistics to compare proportions, Chi-square test is used with significance set to $p < 0.05$.

RESULTS

Doctors' responses

Altogether 73 doctors practising in various specialisations including general medicine, surgery, orthopaedics, paediatrics, obstetrics and gynaecology, anaesthesia and others responded. The mean age of the doctors was 38 ± 10.94 years; amongst which 34 (46.5%) were women and 39 (53.5%) were male doctors. The practice/ work profile of the doctors is represented in Table 1.

Table 1: Practice profile of the doctors (n=73).

Variable	Mean±SD
Mean years of practice	11.31±10.82
Mean number of professional work hours/week	59.62±12.94
Mean number of patient contact hours/week	39.03±13.68
Mean number of patients /weeks	182.49±117.06
Mean number of hours of research and studying/week	10.43±7.16

Total 51 (69.85%) doctors stated that they were satisfied with their own use of the Internet for study/ research purposes. 49 (67.0%) of the Doctors were satisfied with their relationships with their patients; however, 36 (49.3%) respondents felt uneasy on being presented data from the Internet. We found no statistically significant correlation to the age and period of practice of doctors and the doctor's attitude towards patients getting health information on Internet. Table 2 provides the distribution of the doctors' attitude towards patients' health information seeking on Internet.

Patient's responses

A total of 110 patients' responses were recorded. The mean age of respondents was 30.27 ± 8.95 years of which

49 (44.5%) of the participants were female and 61 (55.5%) of the participants were male. Majority of them were educated up to 12th grade or above 67 (63.8%). The mean duration of their mobile phone usage was 5.6±2.91 years and the mean duration of Internet usage was 5.07±3.01 yrs.

Most of the respondents 75 (68%) sought health information from the Internet when someone they knew or they themselves were ill. 25 (22%) of them regularly accessed the Internet for health information, while 24 (22%) respondents found themselves browsing during times of outbreaks of diseases (multiple responses).

Out of the 110 participants' responses on the source of health information, a majority of 101 (91.8%) stated that they accessed Google for their health information needs; whereas 48 (43.6%) relied on news websites for their information. 16 (14.5%) of the respondents got their health information from various social networking websites such as Facebook, Instagram, WhatsApp etc. and 16 (14.5%) preferred to watch videos about their medical conditions and modalities of treatment on YouTube. A few patients 26 (23.6%) also used online apps for doctor consultations and websites such as Apollohospitals.com, Medscape, DocsApp and Momcom India etc. (multiple responses from each respondent have been considered).

Table 2: Doctors' attitude towards patients' seeking on Internet health information (n=73).

Variable	N (%) agree/strongly agree
I am satisfied with the extra data I receive this way from the patient or his/her family	22 (30.13)
It proves that the patient or his/her family are involved and take responsibility	44 (60.26)
This preoccupation with the Internet seems irrelevant and unreliable to me	36 (49.31)
When I am presented with data from the Internet, I feel uneasy	36 (49.31)
I usually promise to verify the data and get back to the patient with an answer	42 (57.53)
I check the medical literature or access the Internet to verify the data	64 (87.69)
I think that the patient and the family need to rely only on the doctor and not look for other sources of information	36 (49.31)

Table 3 shows the health information looked up by patients, the most commonly searched one being symptoms and diseases which included cough, cold, loose

motions, increased blood sugar, increase/decrease in blood pressure etc.

Table 3: Health information commonly looked up by patients (n= 110).

Variable	N (%)
Nutrition/diet	40 (36.3)
Medical procedures	32 (29.0)
Confirmation of advice	23 (20.9)
Medications	53 (48.1)
Symptoms and disease	86 (78.1)
Specific conditions/complaints	69 (62.7)

Some patients also looked up specific information regarding investigatory tests like CT, MRI, renal function tests etc. as well as about conditions such as pain/difficulty during micturition, dementia, dysmenorrhoea, PCOS, thyroid disorders etc. (Multiple responses)

Though 53 (48.1%) of the respondents sought information on medication and treatment advice; only 9 (8.1%) of the respondents bought over the counter drugs that had been prescribed to them earlier after referring the Internet; including different preparations of paracetamol, cetirizine, antacids, antifungal ointments/powders, ORS etc.

Only 30 (27.2%) of them discussed the information they have obtained from internet with the doctor. When asked how they judged the reliability of the information, 35 (31.8%) out of 110 respondents judged the information by discussing it with family/friends, 30 (27.2%) discussed the information with doctor, 21 (19.0%) trusted the website/ source on the Internet and 24 (21.8%) didn't rely on it at all.

Table 4 represents the frequency of reasons for availing Internet health information.

Table 4: Reasons for looking up health information (n=110).

Variable	N (%)
Free	21 (19.9)
Time saving	45 (40.9)
Easy availability of information	90 (81.8)
When you have uncomplicated symptoms like fever, cough, cold etc.	27 (24.5)
To be prepared for doctor's visit	36 (32.7)
Knowledge	3 (2.7)

* Note - multiple responses.

DISCUSSION

The doctor and patient relationship has gained attention for various aspects including philosophical and sociological. The strong foundation of this relationship aids proper diagnosis and care of the patients; which in

turn improves the patient's compliance towards treatment.¹⁰ With the steady evolution of Internet Health Information and fast-growing awareness, it is directly and indirectly affecting the doctor-patient relationship.⁵ This study was conducted in the small but upcoming city of Davanagere with a tertiary health care centre having many experienced doctors and a huge influx of patients from surrounding villages.

In this study, 73 doctors participated the mean age of the doctors was 38 ± 10.94 years among them 34 (46.5%) were women and 39 (53.5%) were male doctors. In the study conducted by Oliveira JF et al.¹⁰ including 232 physicians, the average age was 43.6 (SD \pm 11.3) years and a majority of them (75.9%) were male. A similar study conducted among 118 doctors had 33.1% female and 66.9% male doctors as participants.⁵ The mean years of practice amongst the doctors in this study is 11.31 ± 10.82 yrs. A similar study reported the mean years of practice as 18.6 ± 10.6 years.¹⁰

In this study, the mean hours of professional work was 59.62 ± 12.94 hours/ week and the mean number of patients contacted was 39.03 ± 13.68 hours/week. A similar study reported 44.5 (SD 14.3) hours/week of professional work and the mean number of patients contacted was 37.4 (SD 13.5) hours/week.⁵ In this study, majority of the doctors i.e. 67% were satisfied with their relationships with their patients and nearly half of the respondents (49.3%) felt uneasy on being presented data from the Internet. In a similar study conducted by Giveon et al, 23% of the respondents stated that they felt uneasy on being presented Internet data.⁵ The doctor's uneasiness may be attributed to the feeling that the patient finds them unreliable or is challenging their authority; which brings about dissatisfaction. This may increase their workload, reduce communication with the patients; adding stress to the doctor-patient relationship.

However, 22 (30%) of the doctors stated that they are satisfied with the extra information they received from the patient or his/her family. 44(60.2%) of the doctors agreed that patient or his/her family presenting them with the data indicated that they were involved and shows them taking responsibility for their health. A similar study conducted reported that when patients came to the clinic with a large amount of Internet-obtained information regarding their illnesses, doctors had different emotional reactions. Out of the total, 50% felt motivated or happy, 25% felt indifferent, 14% had confused feelings, and 11% felt uncomfortable.¹⁰ Another study stated that seeking health information from Internet before visiting the doctor may lead to a better mutual understanding of symptoms and diagnosis.²

It is essential to know that the usage of Internet has brought about only a subtle change in doctor-patient dynamics. Doctors have begun to accept the Internet as a source of information and are less resistant to it. Some doctors also expressed surprise and satisfaction, since it

meant that the patient is well-informed, more perceptive to the doctor's advice and instructions and better at self-care leading to a better outcome.¹¹ A study conducted by Potts HWW et al stated that doctors reported that benefits of Internet usage in patients were often much greater than harm, but there were more problems than benefits for the doctors themselves.¹²

Patients' responses

In this study, the mean age of respondents was 30.27 ± 8.95 years of which 49 (44.5%) of the participants were female and 61 (55.5%) of the participants were male. A similar study reported the mean age of participants with 47 years (SD 12 years); with 56% of the participants being female.¹¹ 67 (63%) respondents in this study were educated up to 12th grade or above. Singh et al reported longer schooling lead to more Internet literacy; consequently, increasing Internet health information seeking behaviours.⁹

Majority of the respondents 75 (68%), usually sought health information from the Internet when someone they knew or they themselves were ill; The most commonly searched information was regarding symptoms and disease 86(78%) which included cough, cold, loose motions, increased blood sugar, increase/decrease in blood pressure etc. A similar study reported that the most commonly searched information included nutrition (68%); followed by complication and side effects (41%).¹¹

Though 53 (48.1%) of the respondents sought information on medications and treatment advice; less than 10% of the respondents bought medications after referring the Internet. A similar study stated that 39.5% of the participants resorted for self-medication with the information obtained from net.¹⁰

The main source of Internet health information stated was Google – 101 (91.8%); which was found similar to the findings reported by Singh et al (76.1%).⁹ 30 (27.2 %) of the respondents shared their Internet findings with medical service providers; similar to 41% in the study by Diaz et al.¹¹ One of the major concerns with Internet health information is the poor quality and inaccuracy of data available. Oftentimes, the patient may misinterpret the information which the doctor will then have to explain and correct. This may lead to unnecessary hysteria and anxiety on the patient's behalf and increase instances of hypochondria and patient visits.

There is also a severe deficiency in the availability of good quality, reliable health information on the Internet. To tackle this, the doctors themselves may suggest reliable Web-based resources to interested patients. More patient friendly websites to educate the layman may also be designed. Also, there is the need for "Kitemarking" which is the process of reviewing by an organization and providing trustable sites with the seal of approval.¹³

McMullan et al states that it is imperative that the health care staff acknowledges the patients' search for knowledge and encourages discussion of the information offered by patients and guide them to reliable sources. It is recommended that courses, such as 'patient informatics' are integrated in health professionals' education.¹⁴ The patients can be made to feel more empowered by increasing communication between the doctor and patients by the means of educative emails, suggestion of information resources or even delegation and counselling services to increase patient awareness and health education.

A few limitations of this study are that it is limited to a tertiary health care centre, a wider geographical distribution in urban and rural areas could explore into better understanding and social desirability bias is possible as in this study some respondents may have over reported Internet use.

CONCLUSION

Doctors are starting to recognize the use of the internet by patients as a source of health information. Patients consider the internet as a supplementary resource for better understanding of symptoms and diagnosis and view the information as fundamentally different from a consultation with a health professional. The need of the hour is better communication between doctor and patients; and availability of reliable web-based health resources for better patient compliance. The efficient use of the internet is desirable to usher in the new era of collaborative doctor-patient relationships.

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