



ADULTS' HEALTH-SEEKING BEHAVIOUR AND ATTITUDE TOWARD SELF-DIAGNOSIS IN INDIA

Community Medicine

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ABSTRACT

Background and objectives: The availability of extensive online information pertaining to healthcare has caused significant change in health-seeking patterns of Indian adult patients. It has also led to new developments in doctor-patient relationship. This study aims to analyse the knowledge of Indian adults, in metropolitan cities, of over the counter drugs and self-diagnosis, and if and how it varies in times of a pandemic (COVID-19).

Methods: The participants, of 18 years of age and above, were asked to fill a Google form. The survey contained questions regarding demographic details; it also tested the familiarity of the participants with the various aspects of health seeking, that is, from the internet and over-the-counter from a pharmacist.

Results: 40% of the participants (N = 530) diagnosed common ailments (cold, stomach ache etc.) at home. Popular websites such as WebMD and Mayo Clinic were most visited, and searches regarding fitness, diet and nutrition were most frequent. While over 75% of participants agreed to buy drugs "over the counter", almost 14% didn't know the meaning of the term. Over 60% of the participants reported that when they presented the self-diagnosed information to doctors, the latter explained the information found articulately. Despite the on-going pandemic 57.4% didn't feel the need to recurrently check their health via online self-assessment. A chi-square test of independence showed that there was no significant association between gender and belief in self-diagnosis ($p=0.9965$), however a strong association between users' perception and pharmacist recommendation has been seen ($p=0.004046$).

Interpretation & Conclusion: People advocated self-diagnosis and self-medication but with caution. Researchers found that the participants of this study were willing to tell the doctor they had read information off the internet regarding their condition, were considerably more when compared to similar studies.

KEYWORDS

Health Seeking behaviour, Online search, Over the counter, Self-Diagnosis

1. INTRODUCTION

With over 687 million users and a penetration rate of 50%, India is the second largest online market in the world [1]. This also has implications in the field of medicine. Extensive databases are available that provide information to masses, completely free [2]. Previous studies done indicate that this information can increase the knowledge of individuals [3]. It also has the potential to improve the patient-physician relationship as the patients use the internet to read more about the advice given to them by their doctor, helping them understand it much better [4]. This aspect of patient-physician relation is explored further in this study. The internet also helps the patients interact with others and also gives them the opportunity to learn about their health care providers [5]. This increase in the availability and use of information on the internet has not been met with a corresponding increase in the quality of the information available [6]. As online health information content can range from being peer reviewed or professionally reviewed to personal blogs, opinions, or anecdotes of other patients, information quality can vary [7]. Various websites assess the condition of the users by asking questions regarding their symptoms and thereby giving a provisional diagnosis. We have attempted to find the most commonly used symptom checkers, in our study. These tools are still the first-generation tools and can be advanced further to ensure better diagnoses [8]. Keeping all these facts in mind this study was designed to analyse the extent and prevalence of use of the internet to access information on health care by adults in India. In this study, adults' health-seeking behaviour, and attitudes toward self-diagnosis in many forms was examined.

2. METHODOLOGY

This population based cross sectional study was conducted after the consent of the participant; with the allowable error of 5% and at level of significance of 5%, sample size has been determined in between 330 and 375. The participants were asked to fill a Google form in the first week of June, the responses were collected using snowball sampling. The inclusion criteria were, people who gave consent to be a part of the study and people above the age group of 18. The exclusion criteria were people who do not consent to be a part of the study, people under the age of 18 and the people who do not fill the complete survey form.

The data has been collected through Google form and then imported it into SPSS 20 (SPSS Inc., Chicago, IL, 2001) for analysis. Descriptive and inferential statistics for demographics of participants, Internet use, likelihood of Internet use for hunt for health information, belief in self-diagnosis has been found. The level of significance (α) for all chi-square tests was checked at 0.05.

Based on a previous survey [10], this consisted of 19 behavioural, attitudinal, and demographic questions. For demographic information, respondents provided details on their ages, sex, and highest levels of education. Researchers tried to assess participants' faith in self-diagnosis and the measures they took to alleviate common ailments. Participants were quizzed about their knowledge of OTC drugs. Further, to assess preferred topics, sites explored and subsequent actions taken by the respondents, relevant questions were asked. To assess the views of doctors on this emerging practice, participants were asked if they were comfortable discussing information read online with their doctors, and how the latter party reacted. The effects of the COVID-19 pandemic on the frequency of self-diagnosis in participants, through a suitable question, were evaluated.

3. RESULTS:

530 participants who completed the survey had a distribution of 224 males 304 females and 2 transgender. All these participants were in a large span of age groups of 33 ± 16 years.

The tabulated demographics cover the different age groups, education levels of participants. Almost 52.08% of participants believe in self-diagnosis of their disease and 39.68% participants practise self-diagnosis with the help of internet use. (Table 1)

Table 1: Demographic characteristics of participants

Demographic characteristics	Count (percentage)	Mean	SD
Age (years)		33.59	16.52
15-20	42.08		

21-25	11.51		
26-30	2.27		
31-35	1.13		
36-40	2.64		
41-45	6.79		
46-50	13.96		
50+ Level of education	19.62		
Up to 10th	002 (00.38)		
12th pass	232(44.00)		
Graduate	167 (31.51)		
Post graduate	129 (24.11)		
Belief in self-diagnosis			
Yes	276 (52.08)		
No	254 (47.92)		

Use of internet to obtain health information was impartially frequent. The health websites mentioned most frequently by the participants were WebMD and Mayo clinic, 17.73 % used the both sites WebMD and Mayo clinic. However, 42.45% used other websites not mentioned in the questionnaire.

In the study 75.47% used internet to find information on fitness and 72.45 said they used it for information on diet.

It was learnt that 76.60% participants agreed to purchase over the counter drug without the prescription of qualified doctor. Surprisingly, 13.96% participants didn't know the meaning of the term 'over the counter drugs.' (Table 2)

Table 2: Understanding of the participants on various topics

Other aspects of participants	Count (percentage)
Purchased drugs over the counter without the prescription	406 (76.6)
Drugs cannot be purchased over the counter without prescription	42 (7.92)
Do not know	74 (13.96)
Neither of the above	08 (1.51)
Drug can be brought over the counter	
Clindamycin (Clindac)	83 (15.66)
Liquid Paraffin and Epsom salt	54 (10.19)
Codeine	41 (7.74)
Diazepam (Valium)	50 (9.43)
Antacid	224 (42.26)
Aspirin	60 (11.32)
Centchroman (Oral contraceptives)	70 (13.21)
Paracetamol (Crocina)	462 (87.17)
Oxymetazoline hydrochloride (Otrivin)	237 (44.72)
Sildenafil Citrate (Viagra)	147 (27.74)
For Common ailments	
Home remedy	306 (57.74)
Use of previous prescription	108 (20.38)
Visit medical practitioner	54 (10.19)
Ask pharmacist	47 (8.87)
Search with internet	15 (2.83)

The participants had varied knowledge when it came to drugs that could be bought OTC (over the counter). 44.72% (Table 2) of participants knew that Oxymetazoline hydrochloride (under the trade name Otrivin) could be bought OTC; likewise, 87.17% of participants knew that paracetamol (under the trade name Crocin) and 42.26% of participants knew that antacids could be bought OTC also. However, 13.21% of participants felt incorrectly that oral contraceptives like Centchroman could be bought OTC. 27.74% of participants also thought incorrectly that sildenafil citrate (Viagra) was not a prescription drug. By contrast, only 10.19% of participants felt that Epsom salts and liquid paraffin could be bought OTC. For common ailments (Table 2), 57.74% participants used home remedies, while only 10.19% visited a medical practitioner.

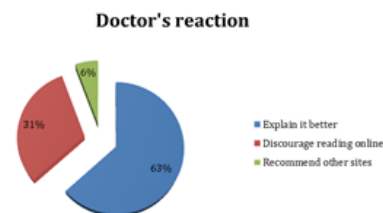


Figure 1: Doctor's reaction as reported by the participants when they present with information on the internet

63% of the respondents reported that when they visited the doctor and presented some information that they read on the internet; their doctors explained that information to the participants in a better way. 31% of the respondents said that their doctors discouraged them to read online and rely only on their "expert opinion". Only 6% said that they were recommended other sites to read more about their condition. (Figure 1)

Though 52.08 % participants believe in self-diagnosis using Internet, only 39.62% self-diagnosed common ailments. While most participants believed there are harmful effects of self-diagnosis (38.3%- "Often", 58.5%- "Sometimes"), a majority (82.8%) of the participants had never experienced these effects. People also tended to recommend medication to a person experiencing symptoms similar to the ones they were treated for, mindfully.

3.1 Inferential Statistics:

Though significantly more female students (57.36%) than male students obtained health information online, A chi-square test of independence showed that there was no significant association between gender and belief in self-diagnosis, $\chi^2 (2, N = 530) = 0.0069, p = .9965 > 0.05$

In addition, no significant association found between the count of self-assessment test in COVID (never, once a week, more than a week, once in 2 weeks, once in month) and belief in self-diagnosis of participants. The chi-square statistic is 4.5437. The p -value is .337395 hence the result is *not* significant at $p < .05$. On the same line, researcher has applied chi-square test to check the association between belief of harmful effects of self-diagnosis and experience of harmful effects, the chi-square statistic is 3.3357 and the p -value is 0.503289. Hence no association was found at $p < .05$.

While checking the relation between recommendation of pharmacist for OTC on common ailments, chi-square test is showing that there is a strong association between this perception and pharmacist recommendation as test has given chi-square statistic as 15.3397 and the p -value is 0.004046 ($p < .05$).

1. Discussion

The researchers assessed the people's understanding on OTC because in previous studies in India self-medication has shown a prevalence of 11.9% [9] and 73.8% of respondents in other studies reported that they would continue to recommend self-medication to others [10].

52.26% agreed to have asked their local pharmacist for an OTC drug for some of their common ailments. In a study conducted in rural South India to pattern the health seeking behaviour of adults, only 20.55% people asked the pharmacist for an OTC [9]. We suspect this reluctance is because our participants belonged to a sub-urban community.

The most common reason for people to rely on self-medication was prior knowledge about that condition, the condition seemed too trivial to approach a doctor and ask for his opinion. Indeed, for common ailments, only 10.2% participants went to a medical practitioner immediately, but double the percentage (20.4%) of participants took a medicine previously prescribed to them for similar symptoms. 57.7% took home-remedies, possibly to get quick relief and avoid uncomfortable situations, as cited as a reason in other studies. [11].

90.6% patients reconfirmed their symptoms with a medical practitioner after seeking information on the internet, before consuming medication.

In our study we found that 55.1% people would recommend

medications to people with caution and 2.08% of them would recommend the medication without caution. A major concern that would rise due to this self-medication would be the risk of any adverse effect that a non-medical person would normally not be aware of.

Along with all these another reason because of which the practice of self-medication is increasing is the advent of internet. 39.62% of the respondents said that they have used internet to self-diagnose their condition. Another study also corroborates this finding where 39.7% said the same [12]. 59.63% of the respondents said that they used websites like WebMD or Mayo Clinic to read about their condition. This was in line with a survey that stated that WebMD is one of the most commonly used apps [13]. The most common aspects that they searched were related to fitness and diet [14].

48.1% participants felt comfortable in sharing their findings on the internet with their medical practitioner. This was in stark contrast to a study conducted where only 15% participants shared their findings with the doctor [15]. Based on previous studies [16]-[18], there are three ways in which a doctor would probably respond to a patient bringing information from the internet. We based our questions in a similar format.

Only 6% were overtly encouraged and given other better sites to refer to, for their condition.

The majority of the physicians (75% N= 1050) said that reading online did not affect the patient's health outcome. The reason for doctors to believe that it would lead to a worsened outcome was attributed to the information being inaccurate and the doctor's authority being challenged [20]

The onset of the COVID-19 pandemic didn't cause a significant rise in self-diagnosis, with 57.4% participants never checking their symptoms online. This is a finding that concerns the researchers as the times of COVID-19 pandemic the people should stay on their toes and take every safety measure possible.

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