

Evaluating the Information Seeking Behavior of Parents with Sick Children about Health and Medical Issues

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Abstract

Background

For parents with sick children, the health care team is not the only source of receiving information, they try to use different sources. We aimed to evaluate the information seeking behavior of parents regarding health and medical issues.

Materials and Methods: This cross-sectional study was performed on parents of children referred to Dr. Sheikh Hospital and Hazrat Rasoul Center, Mashhad, Iran, from 2016 to 2018. 550 people filled an indigenous reliable questionnaire (a tool to evaluate information seeking behavior of parents of sick children) with Cronbach's alpha coefficient of 0.934. The exclusion criterion was parental dissatisfaction with participating in the study. The questionnaire is organized in 40 questions and 6 sections including demographic information, needs and motivations about data search, Internet usage, questions about data resources, obstacles to data search, and impact of data.

Results: Parents searched various resources to obtain information about child health especially regarding the diagnosis of the child's disease, diet, and child growth and more than half of parents spent less than 2 hours per week for getting information. 31.8% of parents searched the Internet 2 to 5 times a week for health information. The most important reasons for parents to search the Internet were to get more information than what the doctor tells those (53.08%), and to look for alternative and traditional treatments (36.9%). According to parents, the most important limitation of the information obtained from the Internet can be its unreliability (63.09%).

Conclusion

The results showed that medical staff and the Internet had priority over other sources in obtaining information about the child's illness, however, health care team was trusted more by the respondents.

Key Words: Children, Health Information Sources, Internet, Parents.

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1- INTRODUCTION

In situations where the child is ill, in addition to the weakness and disability created due to the disease, high psychological pressure is placed on the child's family. In other words, the occurrence of the disease in the child causes double pressure on the child's parents. In this situation, parents' awareness of the child's condition and needs will help them to manage the situation and facilitate the treatment process (1). One way to increase and convey information to parents is to connect them with health care staff. Although for most people with health concerns, doctors, nurses, and other health professionals are the first choice for health information, online resources are an important source of information for individuals, according to research in the United States (2).

In general, statistics show that people in developed countries use Internet-based electronic communication tools more than ever to communicate with each other. Tools such as email, social media (Facebook, Twitter, Google Plus and YouTube) are the most popular communication tools worldwide. The use of communication tools and media on the Internet has significantly contributed to the health care system in the United States (3).

The number of people using smartphones to check medical information increased by 11 percent between 2011 and 2012, according to the US Center for Internet and Life Research (4). The Internet has become a popular source of information for the general public to obtain information on medical issues (5). The Internet is an evolving source of information that can provide information in various aspects of science, including health (6). Numerous studies in the United States show that between 40 and 70% of Internet users have used it to obtain health information (7). Given the significant growth in the use of the Internet to access health information,

studies comparing the acquisition of information by more traditional methods vs use of the Internet have shown that the validity and reliability of the second method is higher (8). According to Dolce (9), one of the main reasons care providers used the Internet to search for health resources and information was the disenchantment with traditional sources of information. Although the Internet has become a source of information for many people, the quality of the information contained in it is very diverse and extensive. The information on the sites may be incomplete or incorrect. In addition, the Internet may attract people who do not feel healthy, have serious health problems, or experience barriers to traditional care (6).

The Internet has made it much easier for many people to access their own health information and make them more involved with their health care (10). People with disabilities, people living in remote areas and people living in very poor health conditions can use this powerful tool to get the health and medical information they need (11). Although there are several benefits including the availability of a wide range of information, support for interpersonal interaction, social support and appropriate information in using the Internet to access health and medical information, but the barriers, disadvantages, and risks of using that should not be neglected (10).

In a study conducted in Mazandaran province, Iran, the most common sources used to obtain health information were physicians, television, nurses, health professionals, Internet, radio, friends and acquaintances, magazines, brochures, newspapers and books, respectively (12). In a study among US adults, the factors associated with health information gathered from the internet, traditional media, and health care teams were evaluated. According to the findings, Web was an

easily available source of health information but it was also introduced as a reference which could create inequalities in health information accessibility. So, it, should not be considered as a substitute for other health information sources (13). According to the study conducted by Basch et al., students of a personal health class at a public university were asked about Health Information Seeking Behavior and they expressed that health information gathering by internet (n=74%) has priority over other sources (14).

According to a study about health information seeking behavior related to high-risk behaviors among adolescent students at public schools in Isfahan, Iran, "difficulty in determining the quality of information found", "absence of appropriate information", and "concerns about the disclosure of their problems or illness to others" were the most important barriers to seeking health information (15).

Maitz et al., assessed children and adolescents in an Austrian secondary school by asking them to perform an internet-based search on a health-related issue. They gathered, clustered, and analyzed participants browser histories and screenshots of all internet searches. The results indicated that the students believed that they had a high rate of internet-based health literacy while this literacy was considered by them to be much higher than the actual value, and they had rated themselves at a level more than the real situation not visited websites of high quality (16).

A systematic literature review regarding parent-child online health information seeking revealed that parents worldwide strongly use internet to obtain children health-related information across highly diverse circumstances (17). Given that various sources are used by people to receive information about diseases, including doctors, nurses, the Internet, social networks, mass media, magazines,

newspapers, friends and relatives, the purpose of this study was to evaluate the sources of information that influence the parents of a sick child to make clinical decisions about their child.

2- MATERIALS AND METHODS

2-1. Study design and population

In this cross-sectional study, the required information was collected from the parents of 550 children who had been referred to the pediatric clinic in two centers of Dr. Sheikh Hospital and Hazrat Rasool Clinic, Mashhad, Iran, for two years from June 2016 to June 2018.

2-2. Methods

In this study, a questionnaire was used to collect the required information. This questionnaire was completed by a trained medical student by asking questions from the children's parents. With respect to similar studies, a sufficient sample size could be more than 500 people. Questionnaires were distributed equally between the two centers under study.

2-3. Measuring tool

The study tool was used after localization of the questionnaire used in the study of Petros Kostagiolas and translate-retranslate. The questionnaire was made based on the theory developed by Wilson's macro model of information behavior that focused on the human aspects of information use. For Internal consistency of survey items a five-point Likert scale was used. The internal consistency reliability of the scales was excellent with overall alpha Cronbach of 0.934. Subscales including information needs utilization, reasons for using the Internet, information resources utilization, information resources influence on decision making, importance of the barriers involved in seeking information, impact of information on decision-making patterns and patient-doctor interactions

were also evaluated and the reliability results were acceptable (18). In order to confirm the validity of the localized version of the questionnaire, the opinions of 6 experts of the Social Medicine Department of Mashhad University of Medical Sciences were used. Also, in terms of reliability, the questionnaire has a Cronbach's alpha coefficient of 0.96. In general, this questionnaire is organized in 40 questions and 6 sections. The first section deals with the demographic information of parents and their children, including age, gender, occupation, and level of education. In the second part, information about the needs and motivations of searching information by parents are evaluated. In the third part, the information related to the use of the Internet and in the fourth part, the questions related to the sources used for searching information are requested from the respondent. In the fifth part, the barriers to information search are evaluated from the parents' point of view, and in the final part, the effectiveness of the obtained information is questioned.

2-5. Ethical consideration

All information obtained from the participants was only available to researchers and was coded. After reviewing and analyzing the results, all information was confidentially stored in the data archive. In this research, the names and all the information of the participants in all stages of the study were confidential. This research was approved by the Organizational Ethics Committee of the Faculty of Medicine of Mashhad University of Medical Sciences with ID-code Ir.mums.fm.rce.1396.215.

2-6. Inclusion and exclusion criteria

The criterion for entering the study was participants' involvement in diseases diagnosed by the physician and parental consent to participate in the study, while the criterion for leaving was the

dissatisfaction of the parents to participate in the study. Parents were also allowed to leave the stage at any stage.

2-7. Data Analyses

After completing and organizing the information, the results were depicted by descriptive statistics indicators such as distribution and mean indices. Data were analyzed SPSS software version 16.0. Excel 2016 software was used to draw charts.

3- RESULTS

3-1. Demographic characteristics

The study included 550 participants, including 495 women (90%), and 55 (10%) men. Regarding the age of the parents, 120 people aged less than 25 years (21%), 220 people aged 25-35 years (40%), 171 people aged 35-45 years (31%), and 44 people aged over 45 years (8%). In terms of employment and living conditions of the parents participating in the study, 197 (35.81%) were employees, 4 (0.72%) were manual workers, 60 (10.9%) were self-employed and 289 (52.54%) were unemployed, housewives or retirees. In terms of education, the highest number (302 people) had a bachelor's and master's degree (54.9%); while 7.81% did not have a diploma and 29.8% had a diploma or associate degree, and 7.45% had a doctorate degree or were specialists. Regarding the demographic characteristics of children, 327 girls (59.4%), and 223 boys (40.6) were present in this study. Of these, 169 children were 13 years of age and older (30.7%), while 63 children were less than 2 years old (11.4%). In general, the mean age of children in this study was 8.27 ± 4.93 years.

3-2. The need and motivation to search for information

In this section, parents were asked to determine the amount of time they spend

searching and retrieving information from different sources about different children's health and nutrition issues. **Table.1** shows factors and time allotted to them to search different sources and obtain information by the parents participating in the study.

According to the findings, most of the time spent searching was related to diagnosing the cause of the child's illness, followed by diet and its association with the child's development.

Table-1: Factors and time allotted to each to search and obtain information about health and nutrition issues of children.

Variables	Less than 2 hours per week		Between 2-5 hours per week		More than 5 hours per week	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Parenting	340	61.8	168	30.54	42	7.6
Child growth and development	332	60.36	175	31.81	43	7.8
Diet	298	54.18	163	29.63	89	16.18
Find a doctor	408	74.18	102	18.54	40	7.27
Diagnosis of child disease	280	50.9	179	32.5	91	16.54

3-3. Use of Internet

98.3% of the participating parents (541 people) had access to the Internet, while 395 of them (71.81%) used mobile phones to communicate with the Internet and use it. Then, the question "Usually, how many times in a week or month do you search for health information on the Internet?" was asked and the frequency of answering evaluated. The results are shown in **Figure.1**. Parents were then asked to

identify the reasons for using the Internet based on the items designed. **Table.2** shows the findings from the parents' response. According to the findings of this question, insufficient time for patient's visit and consequently the low amount of information obtained by parents about the patient status were the most important reasons for using the Internet to search for related information.

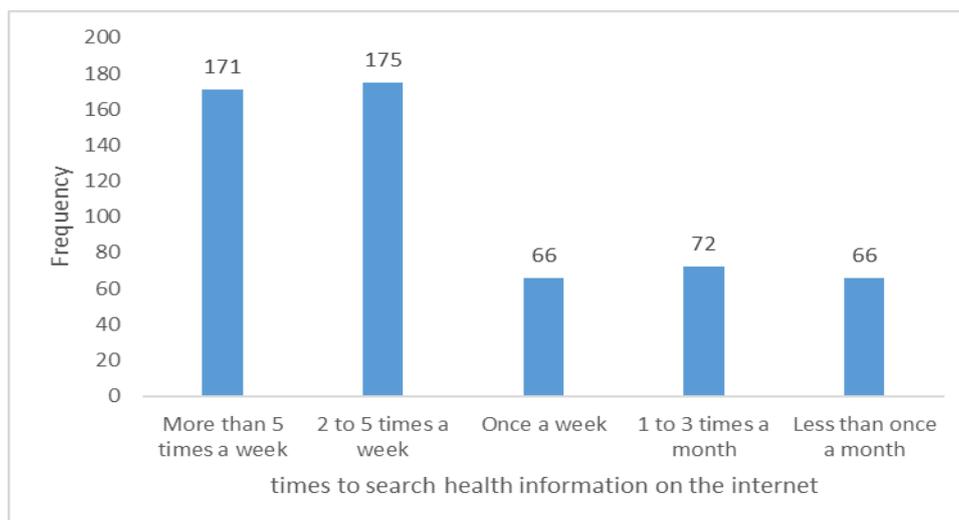


Fig.1: Time spent to search for health information on the internet.

Table-2: Reasons for Searching Health Information on the Internet by Parents Participating in the Study.

Reason	Never		Little		Medium		Much	
	Number	%	Number	%	Number	%	Number	%
Insufficient doctor's time for the patient's visit	177	32.18	179	32.54	120	21.8	74	13.45
Embarrassed to ask the doctor a question	352	64	114	20.72	52	9.4	32	5.8
My questions are not answered by the doctor	182	33.09	188	34.18	121	22	59	10.72
I don't understand the doctor's explanation	395	71.8	123	22.36	54	9.8	14	2.5
To reduce the anxiety caused by hearing a doctor's response	280	50.9	127	23.09	87	15.8	56	10.18
There is more information on the Internet than what the doctor tells me	106	19.27	152	27.63	148	26.9	144	26.18
To look for alternative and traditional treatments	153	27.8	194	35.27	146	26.54	57	10.36

3-4. Information sources

In this part of the study, parents questions to health team and obtaining information from various sources was evaluated at three levels of little, occasionally and much. Little means less than 2 times, occasionally 2-5 times and much means more than 5 times in each time. The findings of this study showed that 269 (49%), 147 and 134 of parents respectively received information occasionally, rarely and highly from medical staff, including doctors, nurses and other members of the treatment team as source of information. Regarding the use of the Internet and Internet search tools as a source of information in the field of health, the rate of use was high in 280 (50.9%) people, occasionally in 220 people and rarely in 50 people. Regarding the use of social messengers (including Telegram, Instagram, etc.) for getting information by parents, it was observed that 246 (44.7%) people rarely, 213 people occasionally and 91 people highly used it. Regarding the use of journals by parents to obtain the desired information, 56 people described the rare use of journals to obtain information in the field of health, while 279 (50.7%), and 215 people used this source of information

occasionally and highly, respectively. Parents' questions from relatives and friends for health information were also examined, which showed that 279 (50.7%) of them occasionally obtained information from this source, while 215 people rarely used it and 56 people used it a lot. The use of mass media (radio and television) to obtain information was reported rarely, occasionally and frequently by 253 (46%), 248, and 49 of parents, respectively. Examining the belief and trust of the participating parents in the sources and tools of information showed that the highest level of trust and belief belonged to the information obtained from medical staff including physicians, nurses and other staff in medical team, while the lowest level of trust in the source of information was related to social messengers.

3-5. Barriers to search information

In this section, four factors were mentioned as the most important obstacles in the path of information retrieval (**Figure.2**). The response rate of the parents participating in this study showed that the unreliability of the information available on the Internet and the very large volume of information had the highest and lowest frequency, respectively.

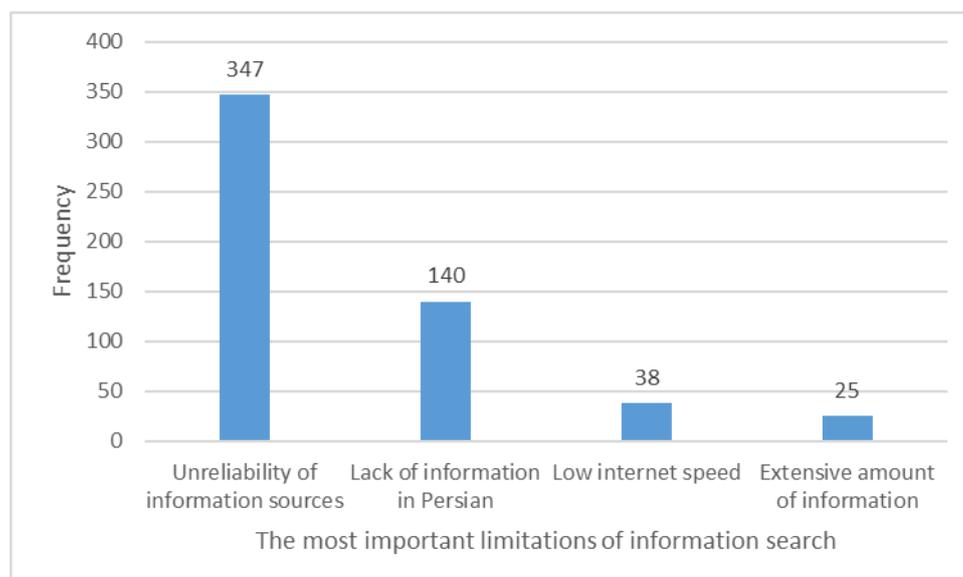


Fig.2: The frequency of response of parents participating in the study to the barriers to information retrieval on the Internet.

3-6. The effects of the obtained information

According to the findings of the present study, 276 (50.18%) parents who participated in this study had used the Internet to obtain information about their child's illness before going to the doctor, however, 274 of these people had little desire to share these findings with the doctor that treated their child. The present study also showed that 356 (64.72%) of the parents participating in this study believed that the use of the Internet slightly decreases the need to visit the doctor, while 18 people (3.27%) believed that using the Internet greatly decreases the need to see a doctor. More than 93.4% (514 people) of the parents who participated in the study believed that the findings and information obtained through the Internet were not sufficient to make decisions about the status of children.

4- DISCUSSION

The purpose of this study was to evaluate the sources of information that

parents refer to, in order to better understand the disease condition of their child and make clinical decisions about it, and thus increase their knowledge. In this research, at first, demographic information of parents and then children was classified. Then, the rate of referring to different sources was examined and the reasons for using these sources were evaluated. In the next step, the types of sources were examined separately and the level of parental belief in each source was assessed. In the following, the causes of the problems related to the information obtained on the Internet were asked and parents were asked about the quality of the information obtained and whether or not they discussed this information with the doctor. Finally, the level of belief of the parents participating in this study to the reliability of information was evaluated. According to the present study, most parents consider the Internet as a suitable space from which the information obtained can increase their knowledge about their child's illness and also increase their understanding of the treatment strategy implemented by the physician. In a study of 10 pediatric outpatient clinics in the UK, 22% of respondents said they used a

computer and the Internet to learn more about their child's illness. Findings from the study in the UK also found that 84% of participants were satisfied with the information obtained from the Internet and showed a greater willingness to discuss their child's illness and the doctor's diagnosis (19). Another study showed that the use of the Internet by parents of sick children had positive effects, and they were significantly satisfied with the amount and status of information available on the Internet about their children's illness. Moreover, 52% of participants used the Internet as a source of medical information. 93% also strongly stated that the medical information available on the Internet was useful to them (20).

Although studies show that the use of the Internet and social networks is growing rapidly among members of the community; the extent to which users believe this information varies dramatically. In a study by Bykowski et al. (21), access to and trust in laser treatment for skin surgery on Internet sites was assessed by various search engines. The results did not show a significant relationship between access to sites with scientific rankings and high quality information with their content.

Based on this, it can be said that the advertising power of Internet sites has a higher power to attract the audience compared to its content. Other studies show that the Internet can be misleading and provide incomplete or incorrect information (22-24). In our study, 50.18% of the participants used the Internet to increase their knowledge and information on a regular basis and before visiting the doctor, while 49.8% of the participants had a slight desire to share the information with the doctor. In a study by Tuffrey et al., only 34% of participants wanted to share information obtained from the Internet with their doctor (20). Based on the data obtained in this study, parents

referring to medical centers have turned to Internet resources to evaluate other treatment methods and also to obtain more information about their child's condition for various reasons including limited visit time and dissatisfaction with the information received from the physician. In an electronic survey among Egyptian adults aged 18 years and older, who used a popular Arabic-language health information website, 57.1% of participants were females, 63.4% had a university level qualification, and 37.1% had a chronic health problem.

The most the most commonly mentioned reason for online health information seeking was nutrition-related. 90% of the participants in the present study were women and only 7.8% of respondents did not have a university degree. In the present study, the allocation of time per week to obtain information about diet was more than other reasons (25). In a survey on Swiss-German parents which was conducted through online questionnaire, various information sources, as well as different information issues including general health and development or illness were assessed. Results indicated that 91% of parents used digital media to obtain information about health and development of their child. However, 91% of parents were skeptical about the correctness of online info (26).

A study performed in Austria, explored internet users regarding prevailing online health information-seeking behavior and the respective impact on doctor-patient interactions. Most respondents (79%) referred to the Internet as predominant source for health information, even more prevalent than the doctor. The attitude of participants toward electronic exchange of health data between health care professionals and patients, as well as toward reliability of online health information was rather skeptical. The results of these studies are in agreement

with the present study in terms of users' lack of complete trust in the information obtained from the Internet (27).

4-1. Limitations of the study

Generalization of the results of this study to other regions and countries should be done with caution and it cannot directly reflect the situation in other areas because this study was conducted in a specific socio-economic setting.

5- CONCLUSION

According to the results of this study, the use of various sources other than obtaining information from the medical staff influences parents' clinical decisions. However, parents' trust and confidence in the information obtained from the medical staff was higher than other sources of information.

6- CONFLICT OF INTEREST: None.

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