



Evaluation of Awareness of Pediatric Urology and Parents' Internet Use

Pediyatrik Üroloji Farkındalığının ve Ebeveynlerin İnternet Kullanımının Değerlendirilmesi

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Abstract

Introduction: The internet is increasingly becoming important in daily life and healthcare services do not resist this change and keep evolving accordingly. In this study it was aimed to evaluate the awareness of pediatric urology, use of the internet for medical purposes by the parents of pediatric urology patients.

Materials and Methods: A well-prepared 12-question anonymous questionnaire was administered to randomly selected 139 parents. Parents were questioned on whether they sought on the web information about the urologic problem of their child before presenting to the outpatient clinic, if so from which websites, whether the search results were useful, how it affected their relationship with the physician, whether they had knowledge about the pediatric urology subspecialty before presenting to outpatient clinic.

Results: Percentages of internet access increased parallel to the increased level of education. In the educational status analysis of the parents who performed an internet search, the ratio of the graduates of the university and above (90.9%) were statistically higher than primary school graduates (62.5%). The average age of children whose parents performed internet search was significantly lower than those parents did not (6.3±3.9 vs 8.4±5.1 years respectively). The sources used for the internet search were statistically different across different levels of education.

Conclusion: Significant use of the internet among those attending pediatric urology outpatient clinic is demonstrated and that there was less awareness of the pediatric urology.

Keywords: Awareness; child; internet; parents; physician; urology.

Özet

Giriş: İnternet günlük hayatta giderek daha önemli hale gelmekte ve sağlık hizmetleri de bu değişime direnmemekle birlikte buna bağlı olarak gelişmeye devam etmektedir. Bu çalışmada, pediyatrik üroloji farkındalığının ve çocuk üroloji hastalarının ebeveynlerinin tıbbi amaçlı internet kullanımının değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: Randomize olarak seçilen 139 ebeveyne iyi hazırlanmış 12 soruluk anonim anket uygulandı. Ebeveynlere polikliniğe başvurmadan önce çocuklarının ürolojik sorunu ile ilgili internette bilgi alıp almadıkları, aldılar ise; hangi web sitelerinden araştırma yaptıkları, bu araştırmanın faydalı olup olmadığı, araştırmanın doktor ile ilişkilerine nasıl etki ettiği ve başvuru öncesinde çocuk üroloji branşı hakkında bilgi sahibi olup olmadıkları sorgulandı.

Bulgular: Çalışmaya dahil edilen 139 ebeveynin %83,5'inde internet erişimi mevcuttu. Artan eğitim düzeyine paralel olarak internet erişiminin anlamlı olarak arttığı dikkat çekmiştir. Tıbbi içerikli internet araştırması yapan ebeveynlerin eğitim düzeyleri incelendiğinde, üniversite ve üzeri mezunlarının oranı (%90,9) ilkökul mezunlarından (%62,5) anlamlı olarak fazla bulunmuştur. Ebeveynleri internet araştırması yapan çocukların yaş ortalamasının, yapmayanlardan anlamlı olarak daha düşük olduğu tespit edilmiştir (sırasıyla 6,3±3,9 vs 8,4±5,1 yaş). İnternet araması için kullanılan kaynakların, farklı eğitim seviyelerinde istatistiksel olarak anlamlı farklılık gösterdiği de karşımıza çıkmaktadır. Ayrıca sadece %36,7 ebeveynin poliklinik ziyareti öncesinde çocuk üroloji branşı hakkında bilgisi olduğu bulunmuştur.

Sonuç: Çocuk ürolojisi polikliniğine başvuran ebeveynler arasında internet kullanımının önemli düzeyde olduğu ve çocuk ürolojisi konusunda farkındalığın az olduğu gösterilmiştir.

Anahtar Kelimeler: Çocuk; doktor; ebeveynler; farkındalık; internet; üroloji.

Introduction

Since the first web browser was developed in 1990, fast and easily accessible internet has become the world's major and widespread source of information. Based on the data provided by the Turkish Statistical Institute in 2016, about 8 of 10 households have access to the internet and the prevalence of the use of the internet in Turkey is 61.2%. While the internet is widely used in all

areas of life, internet use for medical purposes is also increasingly becoming popular (1). In a study conducted in seven different European countries, the frequency of internet use was found to be 61% and the rate of search on the internet for medical information was found to be 71% (2). It was demonstrated in another study that 4.5% of all searches on the internet were related to health (3).

Such increased concerns are not new but have been shown to be a cause for the extra need for time to be spent in order to correct misunderstandings in the outpatient clinic setting affecting the physician-patient relationship (4). The reason for the increasing use of the internet for medical information is multifaceted. Some people turn to the internet to better understand the information they were provided by physicians. For many people, the internet has become a source of support, alternative answers, and reassurance (5). In parallel to all these developments; the traditional patient-physician relationship placing the patient in a passive position has evolved into a condition, where the patient takes a central position (6). Being a subspecialty of urology and pediatric surgery for the last 30-40 years, the history of pediatric urology is not that short. However, the awareness of pediatric urology by some physicians and the public is not adequate despite all efforts and intensive studies. In this study, it was aimed to investigate the use of the internet for medical purposes by the parents of pediatric urology patients, awareness of pediatric urology, and potential effects of internet usage on the physician-parent relationship in this study.

Materials and Methods

Study Design and Participants: Patients and their parents; who presented to the pediatric urology outpatient clinic in the period between 1 November 2020 and 31 January 2021 were included in this study. The study protocol was approved by the local ethics committee (Approval number: GOKA/2020/15/1). A well-prepared 12-question (6 yes/no questions, 4 multiple choice question and 2 were about the age of patient and parent) anonymous questionnaire was administered to new patients parents presenting in a weekly urology clinic for the first time and randomly selected 152 individuals. The study included 139 parents, who were volunteered to answer the questionnaires. 13 parents were not volunteered to join the study. Only one parent for each patient was eligible for the questionnaire. Parents completed questionnaire questioning the age, gender, educational status and internet access status of the patients and themselves. In addition, the survey included questions such as whether they had searched the internet to find information about the clinical condition of their children before presenting to the outpatient clinic, and if so, from which websites they had done the research, whether it had been useful, whether they had believed that the information provided by

such websites was correct, how the information obtained from the research had affected their relations with the physician, whether they had had any opinions about the pediatric urology subspecialty and finally, how they had applied to the pediatric urology outpatient clinic. Parents; who were illiterate, had mental retardation, who did not present to the pediatric urology outpatient clinic for the first time and severe psychiatric disorders were excluded from the study.

Statistical Analysis: Statistical Package for the Social Sciences version 22.0 software (SPSS Inc., Chicago, IL, USA) was used for data analysis. In the statistical analysis of the study data, continuous variables were expressed as mean \pm standard deviation and categorical variables were expressed as number and percentage (%). The Shapiro-Wilk test was used to evaluate the conformity of the continuous variables to a normal distribution. The Mann-Whitney U test was used for comparisons of two groups for continuous variables that did not conform to a normal distribution. Chi-square test were performed to determine relationships between categorical variables. The statistically significance level was considered as $p < 0.05$ for all statistical tests.

Results

The study included 139 parents, who was volunteered to participate. The mean age of parents was 34.3 ± 8.0 years (min:18 - max:54). Of parents, 61 (43.9%) were men and 78 (56.1%) were women. The mean age of men was 35.6 ± 7.7 years and the mean age of women was 33.3 ± 8.2 years. Of parents, 83.5% had internet access at home, at work, or from a mobile phone. Percentages of internet access increased parallel to the increased level of education. Internet access of high school graduates (87.3%) was found to be statistically significantly higher than primary school graduates of the parents (60%) ($p=0.040$). Graduates of the university and above (100%) had statistically significantly higher internet access than primary school graduates ($p=0.002$ and $p=0.000$, respectively). Furthermore, it was found that graduates of the university and above had significantly more internet access than high school graduates ($p=0.016$). Women and men parents had internet access at rates of 76.9% and 91.8%, respectively, with a statistically significant difference ($p=0.019$). There were 108 (77.7%) parents, who stated that they performed an internet search about the disease or the surgery of their child before presenting to the outpatient

Table 1: Parents' characteristics according to online search status about their child's disease or surgery

Parameters	Online search		p value	
	Performed (n=108), n (%)	Not performed (n=31), n (%)		
Age (year), mean \pm SD	34.4 \pm 7.6	34.1 \pm 9.3	0.780	
Age group	18-35 age	61 (56.5)	17 (54.8)	1.000
	>35 age	47 (43.5)	14 (45.2)	
Gender	Male	50 (46.3)	11 (35.5)	0.380
	Female	58 (53.7)	20 (64.5)	
Age of child, year mean \pm SD	6.3 \pm 3.9	8.4 \pm 5.1	0.040	
Educational status	Primary school	25 (23.1)	15 (48.4)	0.008
	High school	43 (39.8)	12 (38.7)	
	University and above	40 (37.1)	4 (12.9)	
Internet access	Present	97 (89.8)	19 (61.3)	0.000
	Absent	11 (10.2)	12 (38.7)	
Knowledge about pediatric urology	Present	44 (40.7)	7 (22.6)	0.110
	Absent	64 (59.3)	24 (77.4)	
Application to outpatient clinic through	Referral by a physician	34 (31.5)	15 (48.4)	0.130
	Advice of a friend	25 (23.1)	9 (29.0)	
	Hearing from the media	21 (19.4)	2 (6.5)	
	Self-referral	28 (25.9)	5 (16.1)	

SD: Standard deviation

clinic. Compared to non-performing group (61.3%); the rate of internet access was significantly higher in parents, who performed an internet search before presenting to the outpatient clinic or before surgery (89.8%). The average age of children whose parents performed medical internet search was significantly lower than those parents didn't perform (6.3 ± 3.9 vs 8.4 ± 5.1 years respectively). The characteristics of the parents according to whether they performed medical internet search are shown in Table 1. In the educational status analysis of the parents who performed an internet search about their child's disease or surgery, it was noted that the ratio of the graduates of the university and above (90.9%) were statistically higher than primary school graduates (62.5%) ($p=0.002$). On the other hand; 90.9% of university and above graduates and 78.2% of high school graduates performed an

internet search and the difference between these two groups was not significant. Of 58 (53.7%) parents among 108 parents, who performed a search on the internet, reported that the search was useful to understand their child's disease or surgery better. No significant differences were found by gender or educational status in terms of finding an internet search useful in understanding the illness or surgery of the child better (Table 2). Statistically significantly more individuals; who performed the internet search on medical sites (70.6%), reported that it was useful in understanding the disease and surgery than individuals performed an internet search on the printed or visual media (38.5%) ($p=0.008$). Of the individuals; who thought that the search was useful, the number of individuals thinking that the search contributed to the patient-physician relationship (72%) was found to be statistically

Table 2: Some characteristics of the parents according to their usefulness from internet research about their child's disease or surgery

Parameters	Online search usefulness		p value
	Useful (n= 58), n (%)	Not useful (n= 50), n (%)	
Age (year), mean \pm SD	35.21 \pm 7.02	33.48 \pm 8.33	0.245
Gender	Male	31 (53.4)	0.108
	Female	27 (46.6)	
Age of child, year mean \pm SD	6.78 \pm 4.23	5.94 \pm 3.67	0.352
Educational status	Primary school	9 (15.5)	0.074
	High school	23 (39.7)	
	University and above	26 (44.8)	

SD: Standard deviation

significantly higher than individuals, who thought that it had no effects (44.8%) or impaired (31%) such a relationship ($p=0.011$). Internet search was performed on forums, medical sites, and printed or visual media by 32.4%, 31.5%, and 36.1% of the parents, respectively. It was found that internet search was most commonly performed on medical sites by university and above graduates (71.8%), on forums by high school graduates (55.8%), and on the printed or visual media by primary school graduates. The sources used for the internet search were statistically different across different levels of education ($p=0.000$). However, there were no differences in age and gender. Considering the effect of internet search on communication with their physician, 46.3% of the participants stated that it contributed favourably, 26.9% of them stated that it impaired their communication. No statistical differences were found in gender, age, educational level, and the internet search sources between people who reported that the search had an effect on their communication with their physician and who reported no effects. The percentage of individuals, who believed the information they obtained through the internet was correct, was 59.8%. There were no differences in gender, age, and educational levels between those, who believed in the accuracy of the information on the internet and those who did not. There was not a statistically significant difference between the search source and the belief in the accuracy of information. Before applying to the outpatient clinic, 36.7% of the parents had knowledge about the pediatric urology and 63.3% had no

information at all. It was reported that 35.3% of the parents presented to the pediatric urology outpatient clinic upon referral by a physician, 24.5% of the parents presented upon friend advice, 16.5% of the parents presented after hearing from the media, and 23.7% of the parents presented to the pediatric urology outpatient clinic as self-referral.

Discussion

The internet is increasingly becoming important in daily life and healthcare services do not resist this change and keep evolving accordingly. The fast, easy, and practical characteristics of internet search have made it a very useful tool in searching and obtaining health information about various medical problems. To the best of our knowledge, this is the first study to investigate the awareness of pediatric urology, the use of the internet by parents of pediatric urology patients for medical purposes and effects of such usage on the physician-parent relationship together. Access to the internet is becoming increasingly available day by day, especially in developing countries. In studies, internet access was found as 92.6% among patients admitted to the emergency department in the United States, 66% among parents of patients admitted to pediatric urology outpatient clinics in Brazil, 93% among parents of pediatric surgery patients, and 77.6% in residences of parents in Ireland (7-10). In this study, internet access was found as 83.5% among parents. Similar to such studies in the literature, internet access was found to become higher along with higher educational levels and male gender in this study (11, 12).

Although a direct relationship cannot be established between the socioeconomic status and internet use, with the educational opportunities the possibility of purchasing a personal computer and internet access may suggest an indirect positive relationship between these two important parameters. On the other hand, the 60% rate of internet access among primary school graduates with the lowest internet access rate shows the widespread internet use in the general population. It is known that internet offers an extraordinary potential to obtain health-related information (13). In a study on urology patients, the rate of patients performed an internet search before a medical examination was recorded as 73.3% (11). In another study, the rate of referring to the internet before a visit to a clinic was found to be 56.7% (10). In a study on parents of pediatric urology patients in private and public hospitals, 33.3% of the parents reported that they conducted an internet search about their children's disease and no significant differences were found between the two groups (8). In a study about pediatric surgery, the frequency of medical internet search was found to be significantly more among university and above graduates similar to this study (9). However, it is noticeable that the frequency of parents performing a medical internet search was 38.3% but this rate was found as 77.7% in this study (9). It is thought that the differences between the results of these studies may be due to both the divisional, economic, temporal and development level differences between countries. In this study, the mean age of children of parents that performed online search was found to be significantly lower than children of parents that did not perform such a search. And also, the rate of having internet access was found to be significantly higher among parents, who performed an internet search than parents, who did not perform such a search. These results can be considered as reflections of internet use among new generation parents demonstrating the place and importance of technology and the internet in their lives. The material found after an internet search can be biased and misleading. In a meta-analysis, 69.6% of the studies have shown that quality is a problem on the internet (14). In health-related issues, internet-based misleading information may aggravate patients' or parents' anxiety or obtained information may be misunderstood. Therefore; the source, content, and wording of internet-based information are of major importance. In a study; where the source content was not specified, 36.4% and 15.9% of the participants had access to information about

pediatric urology from websites with general content and from websites with special content, respectively (8). In this study, ratios of internet sources searched by parents are close to each other; however, the statistical difference in types of such sources by the educational status of parents is noted. As expected, university and above graduates searched mostly medical sites that used the medical language, but primary school graduates searched printed or visual media that used simple language and was easy to understand; indicating a reflection of the educational situation. The difficulty in assessing the quality and usefulness of online information is obvious. Another important result of this study is that although 53.7% of the parents that performed an online search reported that the study was useful in understanding their children's disease or surgery and 59.8% believed that the information obtained from the internet was correct; there were no significant differences in age, gender, educational status, and search sources. In the study previously discussed above; although websites with general content were used mostly, 47.1% of the parents that presented to public hospitals and 66.7% of the parents that presented to private hospitals reported that the information accessed from the internet was reliable and a significant difference was not found between these two groups (8). Şahin et al. reported that 77.2% of the participants stated the data obtained from the internet as useful and 53.1% of them stated as reliable (11). Smith et al. reported that medical information obtained from the internet was found as reliable, adequate, and by some others as useless by 21%, 77%, and 2% of the participants, respectively (15). Similarly; in another study, 33.3% and 26.7% of the participants reported that they considered the obtained information correct and reliable, respectively (10). The importance of the relationship between the physician and the patient in both diagnosis and treatment is indisputable. In this study, it is noted that the ratio of parents who thought that information obtained from internet search contributed to the physician-parent relationship is 46.3%. In the study conducted by Portocarrero et al. (8), this ratio was found to be 63.3%. Thus, it is thought that access to information from the internet affects the physician-patient relationship favorably; the internet can serve as an additional source of information, and the information obtained from the internet can contribute to the physician-patient relationship; adding to the patient's knowledge about the disease and improving the results by facilitating treatment adherence. An

online search by parents should be utilized as an opportunity for a favorable physician-patient interaction and for facilitating clarifications in the decision-making process. Despite the increasing number of pediatric urologists working with devotion all over the world, the awareness of the public and even physicians of the pediatric urology subspecialty does not appear adequate. This fact has been supported by the results of our study showing that 63.3% of the patients, who presented to the outpatient clinic, were not aware of the pediatric urology subspecialty and that the rate of self-referral to the outpatient clinic was only 23.7%. In our study; the use of the internet for medical information was found to be 77.7% suggesting that websites/social media could be one of the most striking methods that can be chosen to increase the awareness of pediatric urology. In a study investigating the online presence of pediatric surgery departments in Germany, it was concluded that less than one-third of pediatric surgery departments provided information about the conditions they treated and that social media lacked features of ranking, accessibility, and use (16). Therefore, it is thought that conducting awareness campaigns by both healthcare providers and physicians and ensuring the accessibility to correct information will increase the awareness of pediatric urology resulting in well-informed parents and potential benefits for the patient-physician relationship. This study has some limitations such as its conduct at a single centre and being valid for a limited geographical region. The administration of a not validated questionnaire and the lack of knowledge of the economic status of the patients are other limitations. The lack of a detailed evaluation of the searched websites used and their perceived reliability by individual participants are other potential limitations of the study. In addition, the internet is a dynamic phenomenon and it should not be forgotten that the quality of the available information changes as websites are updated and improved every day.

Conclusion

In this study, it was shown that individuals presenting to the pediatric urology outpatient clinic used the internet significantly; search sources were different according to the educational level; the information accessed from the internet contributed to the physician-parent relationship approximately at a rate of 45%, and most of the participants were not aware of pediatric urology before presenting to the outpatient clinic. Therefore, the need for the

effective use of all kinds of media in order to increase the awareness of the pediatric urology subspecialty is notable.

Ethical Consent: This study was approved by the University of Health Sciences Samsun Training and Research Hospital Non-Interventional Clinical Research Ethics Committee (Approval number: GOKA/2020/15/1).

Conflict of Interest: The authors have no conflict of interest regarding this study

Financial Support: The authors have no financial relationships relevant to this article to disclose

Author Contributions: MBD; Conception, Design, Supervision, Analysis and/or Interpretation, Literature Review, Writer. VN; Design, Resource, Materials, Data Collection and/or Processing, Critical Review

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