Internet as a means of Developing Health Status: A Research on Internet Usage of Users and Their Expectations

Mustafa Demirel
Mehmet Akif Ersoy University, School of Health, Burdur -Turkey
mdemirel@mehmetakif.edu.tr

Ayşe Tekin
Mehmet Akif Ersoy University, School of Health, Burdur -Turkey
aysetekin@mehmetakif.edu.tr

Sercan Özbek
Mehmet Akif Ersoy University, School of Health, Burdur -Turkey
sozbek@mehmetakif.edu.tr

Esin Kaya
Mehmet Akif Ersoy University, School of Health, Burdur -Turkey
ekaya@mehmetakif.edu.tr

Abstract: Internet is a communication network and source of knowledge used extensively in many areas. Its use in healthcare field is increasing day by day. Internet users search for a lot of subjects such as medical knowledge, diseases, treatment options, drugs, etc.

Increasing number of health sites, whose numbers increase in parallel with those of internet users in healthcare field, is an important means of sustaining individual health and increasing healthcare quality of the individual. On the other hand, the quality, reliability of them and their possible potentials to harm ones health are being discussed.

The aim of the research is to determine for why internet users use internet and what their expectations from these sites are.
The research was conducted with 586 internet users over the age of 18 who applied to polyclinics of Burdur Public Hospital and Burdur Maternity and Pediatric Hospital between 10.03.2008 and 01.07.2008.

Of 586 internet users participated in the research, 556 (94,9%) had searched for healthcare at least for a time. Internet users mostly searched for diseases (66,2%),food, nutrition and dieting (45,7%). 30,4% of internet users say that the information they get via internet is very influential on their decisions, 62,4% say them it is less influential, while 7,2% say it not influential at all. The most important expectations of internet users (73,6%); however, is that web sites be designed and arranged by doctors or specialist of the related fields.

Keywords: E-Health, Health Related Web Sites, Internet Users

1. Introduction

Internet is an interactive means of information and communication. Its basic feature is its accessibility and interactivity. Internet renders information to be universal via a computer with internet connection. At the same time, it enables to create a connection between people regardless of time and place and an interaction by which simultaneous communication and direct feedback are shaped. (Korp 2006)
One of the main reasons for its use is its being an encyclopedic source of information. Incessantly carried out researches show that 60-80% of web users commonly search for healthcare sources of information via internet all over the world. Internet has the potential of healthcare services, self-aid groups and empowerment and education of its users by providing information on healthcare issues (Powell et al. 2003).
The interest in internet, which is a means of information and interaction for healthcare issues, has greatly increased in recent years. As well as the number of the sites which provide medical information, the

number of those that focus on healthy life style matters has also been increasing. General healthcare sites such as these which take peoples' attention provide a large sum of information for various health issues (Korp 2006).

Internet users prefers internet for many various reasons related to health. We can list the most important of these as follows (Craan & Oleske 2002):

- To get information on some certain diseases and their treatments,
- To gain information which will be helpful in the choice of doctors and hospitals,
- To search for new or alternative ways of treatment,
- To understand the reasons and phases of a diagnosed disease,
- To get information about the drugs they use,
- To search for support groups and interact with them,

There are health sites on internet which any users of any age group or education level can understand easily in terms of language and content. People have the opportunity to easily reach any internet sites which are prepared with a clear and precise language as well as with the expert one. In developed countries where there are educated users, especially in USA and Europe, health web sites are the key targets for those who want to get information about diseases, treatment ways and drugs(Erdal et al.2004). The rise in the use of internet and other communication tools and carrying healthcare knowledge to home bring about changes in health systems (Erdal et al.2004).

Internet is also an important source of information for health professionals. Clinists and researchers can provide benefits from the increase of proof, technique, guidance, experience and vocational developments. The continuous increase in health database and its getting easier provide an important support for researchers (Powell et al. 2003).

Health information obtained via internet is also seen as an empowerment source for the patients (Jacobson 2007). Empowerment is defined as providing a group of people to be more effective by providing their attendance to decision making, giving them autonomy and with similar techniques (www.tkgm.gov.tr). In health field, empowerment is argued as a new notion which gives new roles to the patient in terms of sharing the responsibilities between health personnel and the patients. As Roberts stated in his work, "Patient Empowerment" is a term that refers to the patient's interactions with health professionals and taking their own health responsibility, and it also refers to the role of the patient in a power-share varying between doctor and patient (Jacobson 2007).

In traditional model, patients get information initially from the doctors about the progress of the disease, and its treatment. These patients are usually those who take the doctors' advice as it is and don't ask question about their determined treatment ways. In this hierarchic model, patients are in the pacific receiver position of the information that is filtered and given by healthcare providers. For the last decade, there has been a passage from paternalist model towards a mutual relationship model which shares decision-making process and in which there are "educated patients" who actively take part in their self-healthcare. The smoothening and prevailing facts for reaching information enables to search for clinical state of the patients, allow them to obtain materials that are necessary to evaluate medical data, and increasing patients' autonomy contributes to the participation of the patients for decision making process about themselves (Woolf et al. 2005). As a result of this, we come across a new decision making model in which doctors participate as partner and a model in which necessities are accepted through "making choice by being informed" (Eysenbach & Jadad, 2001).

Health information that is obtained via internet makes the patient more active in patient-doctor relations; since they know much about the disease and its procedure, the patients can discuss with doctors. This, usually, can be seen as a problem by doctors who are used to being in a position where they cannot be questioned in their superiority of knowledge (Pemberton & Goldblatt, 1998). Murray and his friends, in a scientific research to which 150 doctors participated, stated that while 75% of doctors think positively about the increase of health information via internet; only 38% of them stated that patients' internet usage would create a positive effect for clinic interviews (Murray et al. 2003a).

Health information on internet is explained to be able to make the patients more knowledgeable, make healthcare results better, and provide a more suitable use of health services, improve doctor-patient relationship in a better way. However, health information on internet, though, due to misdirection or misinterpretation, can result in health attitudes that will end up with danger or demanding unsuitable offers from doctors in clinical interviews (Murray et al. 2003b).

Health professionals have anxiety such as the flexible and unreliable nature of medical information, loss of human touch, and at the same time, ant the problematic perceptions of educated patients (Akerkar 2004). Especially, the possibility of the risk that patients may obtain information from inaccurate and unreliable sources and being remote to medical terms, and since they are hard to understand or liable to misinterpretation increase the anxiety. Doctors say that health information on internet creates confusion with some patients or cause them t have problems or lead them self-diagnose which is harmful or an inclination for self treatment. Doctors attribute this to patients to self-evaluation of too much health information on internet sites, and limited abilities to be able to spare them for private use and to interpret. Doctors think that it is necessary to explain the information which

the patients bring to their interviews. Doctors, thanks to their experiences, usually believe that they are on the best position to explain the patients the information they bring to the interview, do synthesis and link the information. They think they have important missions for educating them with an uncritical approach toward the patients who obtained information via internet. Although doctors feel that these effects load them with new roles in their clinic responsibilities, they usually dislike this newly added responsibilities since they see them as a load on them in terms of time, consumer and consequently on their routine clinical responsibilities(Ahmad et al. 2006).

The anxiety on the insufficiency of online health information and its harmful effects on healthcare are increasing day by day. Internet can be an important source of information for users, at the same time it includes much information of various qualities. Anyone can send information via internet without specifying his/her private information, identity and aim. Web sites can be prepared by inexpert people of the field many times. As a result, people approach to the information with skepticism. In a work for the accuracy of the information, it was found out that, of 18 most popular web sites about healthcare; they have with a proportion of %63 precise and accurate information on chest diseases, 36% on infant asthma, 44% on depression and 37% on obesity (Berland 2001). In another work conducted over 60 sites published by traditional medical sources, only 12 sites (20%) have been found to show parallelism with current Pediatric American Academy's suggestion about infant period diarrhea(McClung et al., 1998:2). The differences of the reliability of conducted researches in various sites justify the anxiety.

The determination of guidance providing strategies in their choosing accurate and reliable web sites and creating mechanism to provide inspections by those who prepare these sites will help reducing the insufficient and inaccurate information.

2. Methodology

The aim of this research is to determine why internet users use health-related sites and what their expectations are from.

This work, which was planned to be descriptive, was conducted with 586 internet users over the age of 18 who applied to polyclinics of Burdur Public Hospital and Burdur Maternity and Pediatric Hospital between 10.03.2008 and 01.07.2008. In the research, sampling technique wasn't employed, the research was carried out with 586 people aged of 18 and over who use internet and accepted to participate in the research. 546 (93,2%) people who applied to Burdur Public Hospital and 40 (6,8%) people who applied to Burdur Maternity and Pediatric Hospital have been interviewed.

Questionnaire form which was developed by researchers as a means of Data obtaining method was employed in the research. Collected raw data was evaluated on computer environment with SPSS (Statistical Package for Social Sciences, version 15.0) program which was developed by social scientists.

3. Results and Discussion

3.1.Demographic Features of Participator Users

n=586	Number	Percentage (%)	Cluster Differentiation (%)
Age			
18-24	272	46,4	46,4
25-29	98	16,7	63,1
30-34	71	12,1	75,3
35-39	60	10,2	85,5
40-44	35	6,0	91,5
45-49	29	4,9	96,4
50-54	15	2,6	99,0
Age of 55and Over	6	1,0	100,0
Gender			
Female	284	48,5	
Male	302	51,5	
Literacy			
Elementary School	24	4,1	4,1
Middle School and Equal Level	34	5,8	9,9

High School and Equal Level	185	31,6	41,5
Associate Degree *	108	18,4	59,9
Bachelor Degree *	204	34,8	94,7
Master Degree *	30	5,1	99,8
Doctorate	1	,2	100,0

Table 1. Demographic Features of Participator Users (* Graduated or still having education.)

3.2. Healthcare Information Searching Status via Internet of Users Who Participated in the Research

N=586	Number	Percentage (%)
Searched for healthcare information at least for once via internet	556	94,9
Never searched health information Before	30	5,1
Total	586	100,0

Table 2. Healthcare Information Searching Status via Internet of Users Who Participated in the Research

Among the participators, the proportion of those who "**searched for healthcare information at least for once via internet**" is 94,9%, while 5,1% **"never searched"** at all(Table 2). Our research's being conducted by interviewing with those who applied to hospitals can be related to the fact that the rate of getting information about healthcare is high. In America, the rate of internet users for healthcare issues is 80% (Fox, Online Health Research 2006), in Europe, this rate was found out to be 66%. (Sillence et al., 2007)

3.3. The Aims of Internet Users in Using Internet for Healthcare Purposes

N=556	Number	Percentage (%)
Diseases	368	66,2
Foods-nutrition and dieting	254	45,7
Treatment techniques and options	252	45,3
Individual healthcare	207	37,2
Get some foreknowledge about existing diseases.	202	36,3
Get information about the choice of doctors and hospitals	172	30,9
Sports and keep healthy	171	30,8
Alternative science (such as acupuncture, spa and herbal treatments)	132	23,7
Child-care	96	17,3
Reading published material and literature	58	10,4
Pregnancy	54	9,7
Get information about drugs with or without prescription.	53	9,5
Get online advice about the disease and patient's health state	41	7,4
Communicate with the other patients	24	4,3
Buy drugs with or without prescription	20	3,6
Other*	23	4,1

Table 3. The Distribution of Internet Users' Aims for Healthcare Purposes
*Such as taking appointment from hospital, getting information about medical products.

66,2% of those who search for healthcare issues search information about diseases; 45,7% of them search for food-nutrition, dieting; 45,3% of them search for cure techniques and options; 37,2% of them search for individual healthcare. Of the participators, 36,3% use internet to get some foreknowledge about existing disease; 30,8% use it to do sports and keep healthy(Table 3).

In another work, the proportion of getting information about a specific disease and problem is 64%; that of getting information about medical treatment or its procedure is 51%; for dieting-nutrition, vitamin, and dieting support, this proportion is 49%; sport and exercise is 44% and that of getting information about drugs with or without prescription is found 3.7%(Fox, Online Health Search 2006).

3.4. Factors which are Effective for the Choice of Internet Users on Healthcare Web-Site Preferences.

N=556	Number	Percentage (%)
Medical personnel advice	73	13,1
Close-friends/relatives advice	125	22,5
Visual-written media	205	36,9
Internet search engine	395	71,0
Forums, internet support groups	75	13,5
Advertisement on other web sites	49	8,8

Table 4. Factors which are Effective for the Choice of Internet Users on Healthcare Web-Site Preferences.

71% of internet users reach internet sites by using internet search engines (Table 4). In the research conducted by Schwartz and the others (Schwartz 2006), the proportion of those who find information by using search engines such as Google or Yahoo is found 82,5%. In another similar work, internet search engines are turned out to be the most preferred way (66%) in searching information (Fox, Online Health Research, 2006;5). This proportions' being high can be attributed to the fact that only "key words" are written in the search engine and the search are done in this way in a very short time. Furthermore, the lower proportion (13,1%) of users whom the medical personnel direct to use web sites shows that the users cannot obtain necessary support from medical workers and they make web sites preferences mostly thanks to the references of visual and written media.

3.5. The Reliance Status of Internet Users to the Information They Obtained from Healthcare Web Sites That They Visited

N=556	Number	Percentage (%)
I trust them all	93	16,7
I trust some of them	457	82,2
I trust none of them	6	1,1
Total	556	100,0

Table 5. Whether Internet Users Rely on the Information They Obtained from Healthcare Web Sites That They Visited

In our work, internet users' proportion being high (82,2%) for the proposition that "**I trust some of them**" gives us an idea that at least they do not trust to all internet sites related to healthcare (Table 5). Murray stated in his wok that 72% of the patients have doubts about the information that they obtained via internet (Murray et al. 2003b). In USA, the finding of a survey examining web sites, shows us there are web sites hard to comprehend, misdirecting, including missing information and this fact cause this doubts to be right.

3.6. The Reasons Which Set the Ground for the Doubts about Health Web Sites

N=556	Number	Percentage (%)
Internet site's being imprecise	143	25,7
Unspecified information in the site about where the information was obtained from.	273	49,1

Commercial interest of the site rather than providing accurate information	172	30,9
Site's not being owned by a reliable organization (such as the Ministry of Health, WHO)	138	24,8
The information obtained from those sites is not compatible with those obtained from the doctor.	70	12,6
Site's including information known to be wrong.	67	12,1
Other*	1	0,2

Table 6. The Reasons Which Set the Ground for the Doubts about Health Web Sites
* Directing to another site

When we look at the reasons why the health internet sites create doubts, most of the participators (49,1%), state that the unspecified information in the site about where the information was obtained from create doubts. The second reason for the doubts is (30.9%) commercial interest of the site rather than providing accurate information (Table 6).

In our research, the most important reason creating doubts is shown as the unspecified information in the site about where the information was obtained from (Table 6). Again, the reliability and quality of the information in the foreground is questionable. Two dimensions for the quality of the information on web have attracted notice: first, health materials are not prepared by health personnel; second, there is a border between approaches to health and other approaches.

3.7. The State of the Information Obtained Via Internet in Effecting Healthcare Decision Making

N=556	Number	Percentage (%)
Very effective	169	30,4
Little effective	347	62,4
Not effective	40	7,2
Total	556	100,0

Table 7. Whether the Status of the Information Obtained Via Internet Affects Healthcare Decision Making or Not

In our work, 30,4% of internet users stated that the information they obtained via internet is "very effective", 62,4% said "little effective". The proportion of those who say that the information they obtained via internet is "not effective" is 7,2% (Table 7).

According to another work, 68% of the internet users says that this has a little effect on their decisions in terms of health. (Fox and Rainie 2002).

3.8. Practicing Status of Internet Users In Accordance With the Information They Obtain From Health-Intended Internet Sites

N=556	Number	Percentage (%)
Yes	278	50,0
No	278	50,0
Total	556	100,0

Table 8. Practicing Status of Internet Users In Accordance With the Information They Obtain From Health-Intended Internet Sites

In our work, it is seen that half of the health-intended internet users pactice the information they obtain (Table 8). During the interviews, especially such practices as dieting, exercise, massage, skin care, balanced

nutrition, quitting smoking, healthy herbal use have been specified to be done frequently. Such programs related to health problems as quitting smoking, weight control, diabetes, insomnia, depression and anxiousty have been shown in various works. (Strecher 2007).

3.9. The Expectations of Health-Intended Internet Site Users from Health-Care Web Sites

N=556	Number	Percentage (%)
Preparation of web-sites by doctors or field experts	409	73,6
Arrangement by reliable foundations	382	68,7
Availability of web-sites through which she/he can Communicate with her/his own doctor.	210	37,8
More comprehensible information on web sites	212	38,1
Web-sites' design should be more attracting and easier to use	128	23,0
Assurance for private information's security on web sites	182	32,7
Regular updates of information on the sites	219	39,4
Other *	10	1,8

Table 9. The Expectations of Health-Intended Internet Site Users from Health-Care Web Sites
* Requirement for membership, swift reply, specifying sources.

When we examine internet users' expectation from health-care web sites, we see that, "preparation of web-sites by doctors or field experts" (73,6%) or "arrangement by reliable foundations"(68,7%) has importance for most of the participators. Among other expectations of users are "regular updates of information on the sites" (39,4%); "more comprehensible information on web sites" (38,1%); "assurance for private information's security on web sites" (32,7%); "web-sites' design should be more attracting and easier to use" (23%). (Table 9)

The most important expectation of internet users about health is to set up a reliable ground. Site's organizational identity, accuracy of the information on the site, updated information and specifying sources, security of private information and its use, privacy should all be provided at first hand for the users. Moreover, the internet sites which appeal at more educated and sophisticated users in comparison with the former ones should be at a satisfying level (Erdal et al.2004).

Acknowledgements :

References

Ahmad, F. et al., "Are Physicians Ready for Patients With Internet-Based Health Information?", *J Med Internet Res*. 2006; 8(3), <http://www.jmir.org/2006/3/e22>, Date of Access: 23.03.2008.

Akerkar, S.M.; Bichile, L.S., (2004). Doctor Patient Relationship: Changing Dinamics in the İnformation Age, *J Postgrad Med*, 50, (2) 120-122.

Berland, G.K. et al. (2001) Health information on the Internet: Accessibility, quality, and readability in English and Spanish", *JAMA*, 285, (20) , 2612–2621.

Craan, F. and Oleske D.M.(2002) Medical Information and The Internet: Do You Know What You are Getting? *Journal of Medical Systems*, 26 (6), 511-518.

Erdal, S., Erdal M. ve Araman A. (2004) *E-Sağlık; Bilişim Teknolojileri Perspektifinden İlaç ve Pazarlama Teknikleri, Dünya ve Avrupa Birliği Kapsamında Yasal Düzenlemeler*, Filiz Kitapevi, İstanbul,

Eysenbach, G., and Jadad A.R., Evidence-Based Patient Choice and Consumer Health Informatics in the Internet Age., *Journal of Medical Internet Research* 3.2, 2001, http://www.jmir.org/ 2001/2/e19/html, Date of Access: 23.03.2008.

Fox, S. and Rainie, L., "Vital Decisions", The Pew Internet And American Life Project, 2002, <http://www.Pewinternet.Org/Reports/Pdfs/PIPVitalDecisionsMay2002.Pdf>, Date of Access: 23.02.2008.

Fox, S. "Online Health Search 2006." The Pew Internet and American Life Project. 29 Oct. 2006.20Nov.2006, http://www.pewinternet.org/pdfs/pip_online_health_2006.pdf>, Date of Access: 23.02.2008.

Jacobson P. "Empowering The Physician-Patient Relationship: The Effect Of The Internet", Partnership: The Canadian Journal Of Library And Information Practice And Research, Vol.2, No.1, 2007, <http://journal.lib.uoguelph.ca/index.php/perj/article/view/244/345>, Date of Access: 10.02.2008.

Korp P.(2006). Health On The Internet: İmplications For Health Promotion, *Health Educatıon Research, Theory & Practice*, 21(1), 78–86.

Mcclung, H.J., Murray R.D. & Heitlinger L A.(1998). The internet as a source for current patient information, *Pediatrics*, 101 (6),1-6.

Murray, E., et al.(2003a) The Impact of Health Information on the Internet on the Physician-Patient Relationship: Patient Perceptions, *Archives of Internal Medicine***,** 163 (14), 1727-1734.

Murray, E. et al.(2003b). The impact of health information on the internet on health care and the physician-patient relationship: national U.S. survey among 1,050 U.S. physicians", *J Med Internet Res***,** 5:e17

Pemberton, P. J.; Goldblatt, J. (1998) The Internet and the changing roles of doctors, patients and families, *The Medical Journal of Australia*, 169, 594-59.

Powell J.A. et al.(2003). The Doctor, The Patient and The World-Wide Web: How The Internet is Changing Healthcare, *Journal of The Royal Society of Medicine*, 96, 74-76.

Schwartz, K. L.(2006) Family Medicine Patients' Use of the Internet for Health Information: A MetroNet Study*, JABFM***,** 19 (1), 39-45.

Sillence E., Briggs P., Haris iP.R., Fishwick L.(2007). How do patients evaluate and make use of online health information*? Social Science & Medicine*, (64), 1853-1862.

Strecher, V.(2007). Internet Methods for Delivering Behavioral and Healtssassszszh-Related Interventions (eHealth), Annual Review of Clinical Psychology, 3.53-76.

Woolf, S.H. et al.(2005). Promoting Informed Choice: Transforming Health Care to Dispense Knowledge for Decision Making, *Annals of Internal Medicine***,** 143 (4), 293-300.