

Determination of attitudes of healthcare professionals regarding health information on the internet

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ÖZET

Sağlık çalışanlarının internetteki sağlık bilgilerine ilişkin algı ve tutumlarının belirlenmesi

Günümüzde insanlar internet sayesinde sağlık durumları, hastalıkları ya da tedavileri hakkında pek çok bilgiye kolayca ulaşabilmektedir. Bu çalışmanın amacı sağlık çalışanlarının internetteki sağlık bilgilerine yönelik davranışlarını belirlemektir. Tanımlayıcı tipteki bu çalışma Ocak-Mart 2013 tarihleri arasında 103 sağlık çalışanı ile yapılmıştır. Katılımcıların demografik özellikleri, internet kullanımı, internetteki sağlık bilgilerine ilişkin görüş ve deneyimlerine ilişkin veriler SPSS 15.0 ile analiz edilmiştir. "İnternetteki sağlık bilgileri bireyleri olumlu etkilemektedir" ifadesine katılımcıların %36.3'ü katılırken, "İnternetteki sağlık bilgileri genellikle doğrudur" ifadesine katılmayanlar %41.2'dir. Hastaların katılımcılara internetteki sağlık bilgileri hakkında soru sorma nedenleri arasında öne çıkanlar "İnternetten edinilen sağlık bilgisi hakkında görüş sorma" (%53.4), "İlgili konuda deneyimli bir hekim sorma" (%34.0), "İnternette gördüğü testi yaptırmayı isteme" (%34.0) olmuştur. Katılımcıların yarısından fazlası internetteki sağlık bilgileri doğrultusunda hastalar tarafından talep edilenleri yapmayı reddettiklerini ifade etmiştir. Hastaların doğru, anlaşılır ve güvenilir sağlık bilgileri ile desteklenmesi maksadıyla sağlık kuruluşların güncel ve kanıt dayalı sağlık bilgilerini kendi resmi internet sitelerinde vermelerinin uygun olacağı değerlendirilmektedir.

Anahtar Kelimeler: Sağlık Bilgisi, Sağlık Çalışanları, İnternet.

SUMMARY

Today individuals can easily access to wide range of information about their health status, disease or treatments by internet. The aim of the study is determination of perceptions and attitudes of healthcare professionals regarding health information on the internet. This descriptive study was conducted in January-March 2013 with 103 healthcare professionals. Data about participants' demographic features, internet use, opinions and experiences of health information on the internet were analyzed with SPSS 15.0. "Health information on internet positively influences individuals" statement was agreed by 36.3%, "Health information on internet is generally accurate" statement was disagreed by 41.2% of participants. Leading intents of patients ask questions to participants about health information on internet were stated to be "Looking for an opinion about the information" (53.4%), "Looking for a more equipped physician" (34.0%), "Demanding tests to be done" (34.0%). More than half of the participants stated that they refused to do what patients demanded in the light of health information on internet. It is recommended that healthcare providers should give up-to-date and evidence based health information on their official websites in order to feed patients with accurate, understandable and reliable health information.

Key Words: Health Information, Healthcare Professional, Internet.

Introduction

Worldwide, estimated internet users were approximately 2.5 billion in 2012 where about 4.5% of all internet searches were based on health queries (1, 2). A revolution in information access for patients emerged and health information has multiplied via the internet. Patients are increasingly able to access plenty of biomedical and non-biomedical knowledge about health, illness and the body (3, 4). In making medical decisions, well-informed and educated patients are better participants and one of the tools for patient education is the internet (5). The internet provided patients control over their treatment process and as an information source, engendering a new aspect in doctor-patient communications, with its multimedia, hyper-text, and interactive nature fulfills patients' needs (6-8). Given the focus on patient-centered care, individual empowerment and the demands for immediate and actual health information, people are relying on the Internet for new health information or for clarification about what they heard through other media sources (9).

Thanks to the global nature of the internet, individuals can easily access online health websites without leaving their habitat and seek information from the internet on many topics such as general health information, specific diseases, treatment options and drugs. Due to its nature of being a rapid information provider, request to obtain information about health and health care has increased in last decades and has become very common (10). At least once in 80% of the internet users have made search the internet in order to access for health information (11). More than being a source of information, internet is an important tool that facilitates communication with other people. Internet offers great potential to patients not only seeking online information about health issues but also who are looking for support with a specific diagnosis or disease to participate in virtual communities such as online support groups or self-help groups (4, 6,12, 13).

Health care providers can get access to numerous published articles in academic journals, experiences of other countries in specific patient populations and patients with certain diseases and patients may have an idea about both their own health and the health of people in the vicinity using the information obtained health related websites. However, due to the lack of enough regular and reliable internet websites, whether or not the accuracy of the information provided cannot be understood by the users (14-16). This study is designed to investigate healthcare professionals' perceptions and attitudes regarding health information on the internet.

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Material and Methods

This cross-sectional survey was conducted with convenience sampling method between January and March 2013 in Ankara, Turkey. The participants were healthcare professionals comprised of physicians, nurses and medical technicians who work in a tertiary training and research university hospital. Volunteering healthcare professionals (n=103) were the sample of this study. Sample size was not determined for this study.

The questionnaire contained 39 questions to determine the healthcare professionals' purpose of using the internet, their opinions on health information on the internet, and effect of questions originating from internet on the relationship between patients and health care professionals. The questionnaire form was prepared by researchers based on literature review.

There were five parts in the questionnaire; the first part was for identifying socio-demographic characteristics of participants, the second part was for internet availability and conditions of use, the third part was for the general opinions on health information on the internet, the fourth part was for their experiences with their patients on the health information on the internet, the fifth part was for their opinions on the effect of health information on the internet on patient and patient-health professional relationship. In our questionnaire, there were multi choice questions with exception of two questions on date of birth and recommended websites. Five point Likert scale (1= definitely disagree, 2=disagree, 3=don't have an idea, 4=agree, 5=definitely agree) was only used in the third part of the questionnaire, which interrogates general opinions of participants on health information on the internet.

Questionnaire was asked for opinions of three different faculty members interested on the subject for consultation and the finalized form was achieved after recommended revisions.

Participants were given an oral introduction to the purpose of the study by the primary investigator and were given approximately 20 minutes to complete the questionnaire. Face to face interview technique was used in the study.

Data were evaluated with best fit statistical analysis using Statistical Package for the Social Sciences for Windows 15.0 software (SPSS Inc., Chicago, IL, USA.). As descriptive statistics, mean \pm standard deviation and frequency distribution were used.

Ethical approval for the study protocol which agreed with the principles in the Declaration of Helsinki (20) was obtained from the Gulhane Military Medical Academy Ethical Committee prior to data collection. Participants were informed of the study before they became involved and could decline to participate in the study at any time. The questionnaire was completed anonymously and no personal identifiers were used.

Results

In our study, 52.4% (n=54) of participants were women, nearly half of the participants (46.6%) were nurses, 37.9% (n=39) were physicians and 15.5% (n=16) were technicians with the mean age 33.50 \pm 6.87 years (min: 23 years, max: 54 years). The mean years of being in service was 10.91 \pm 7.48 (min: 1 years, max: 30 years) and health care providers were facing with 40.46 \pm 58.90 patients per day. Descriptive statistics of healthcare professionals were shown in Table 1.

	Mean \pm S.D.	Min.- Max.	
Age	33.50 \pm 6.87 years	23-54 years	
Gender	n	%	
	Female	54	52.4
	Male	49	47.6
Occupation	Physician	39	37.9
	Nurse	48	46.6
	Medical Technician	16	15.5
Clinic	Surgical	47	45.6
	Medical	56	54.4
Service Year	< 5 years	28	27.2
	6-10 years	26	25.2
	11-15 years	27	26.2
	> 16 years	22	21.4
Daily patient	< 10 patients	30	29.1
	11-20 patients	22	21.4
	21-40 patients	26	25.2
	> 41 patients	25	24.3

The majority of the participants (86.4%, n=89) had access to the internet in daily life and 74.8% of participants (n=77) stated daily internet usage time of 2 hours and less, 25.2% (n=26) more than two hours. The three leading purposes of internet usage were personal interests such as reading a newspaper or magazine, on-line shopping (91.3%, n=94), communication via email (81.6%, n=84), and search for medical information (71.8%, n=74). The participants' main purposes in access to medical information on the internet were gathering information on a specific disease/etiology/diagnosis/therapy (72.8%, n=75), updating information on diseases/diagnosis/treatment/care (64.1%, n=66), gathering information on forms, administration and dosage of a particular drug (56.3%, n = 58), following recent researches on a specific topic (50.5%, n=52) (Table 2).

As we look at the general opinions of participants on health information on the internet, "In general, health information on the internet has a positive effect on people" expression was definitely agreed and agreed by 48.5% of participants (n=50), "Health information on the internet causes an increase in health expenditures" expression was definitely agreed and agreed by 42.7% of participants (n=44), "Health information on the internet will result in an increase in anxiety and fear on the health status of patients" was definitely agreed or agreed by 80.6% of participants (n=83), "Health information on the internet result in patients to take more time of health care professionals" expression was definitely agreed or agreed by 58.2% of participants (n=60), "Health information on the internet will result in unnecessary patient visits to healthcare providers" expression was definitely agreed or agreed by 62.1% of participants (n=64), "Causes deterioration of the relationship between patients and health care professionals" expression was definitely disagreed or disagreed by 43,7% of participants (n=45). "Health information on the internet is generally accurate" expression was definitely agreed or agreed by only 29.1% of participants (n=30) (Table 3).

Table 2. The Internet Availability and Conditions of Use of Health Professionals (n=103)

Internet Access in Daily Life	n	%
Yes	89	86.4
No	14	13.6
Daily Internet Usage		
≤2Hour	77	74.8
> 2 Hours	26	25.2
General Purpose of Internet Usage*		
Personal Usage (On-line newspapers, shopping, banking etc.)	94	91.3
E-mail Communication	84	81.6
Search for medical information	74	71.8
Literature review	61	59.2
Social media, Chat, Gaming, Music	42	40.8
Accessing on-line journals	36	35.0
Conference and course calls	35	34.0
Updates and current activities of professional organizations	30	29.1
Information for a specific patient	27	26.2
Continuing Education activities	20	19.4
Accessing own website	17	16.5
Consulting with colleagues	15	14.6
Participating in medical forums	15	14.6
Purpose of Internet Usage Related to Medical Information*		
Information search for a specific disease (etiology/ diagnosis/treatment)	75	72.8
Updating information related to disease/diagnosis/ treatment/care	66	64.1
Information search for a specific drug (dosage/ administration)	58	56.3
Recent researches on a specific topic	52	50.5
Information search for preserving/promoting health.	48	46.6
Information search for new medical products	44	42.7

Three-fourths of participants (75.7%, n=78) have met patients asking questions about health information on internet in last six months and 51.5% (n=55) assessed the health information on internet accessed by patients to be “not entirely accurate”. The leading purposes of patients while asking questions about health information on the internet were stated to be “just wanted to get my view on the subject” (53.4%, n=55), “wanted me to suggest a more experienced physician in the field” (%34.0, n=35) and “wanted to have some medical tests” (%34.0, n=35) and “wanted to drug treatment” (%7.8, n=8) (Figure 1). More than half of the participants (57.8%, n=60) stated that they refused to fulfill the demands of patients, 46.6% (n=) did not allocate the patient enough time to discuss the topic and only 6.8% of participants were recommending patients a web page to get health information on internet.

Discussion

Despite the studies on health information conducted online or via facsimiles, our study was designed as face to face interviews (15, 17, 21, 22). The rationale in choosing this study design was to embrace the healthcare providers who do not have daily internet access, the expected low internet use and low response rates of non-face-to-face studies (22). Though the healthcare providers in our sample were using daily internet almost at the same rate compared to US physicians (21), the

Table 3. General Opinions of Health Professionals on Health Information on the Internet (n=103)

Opinions	Definitely Disagree	Disagree	No idea	Agree	Definitely Agree
Health information on the internet;	% (n)	% (n)	% (n)	% (n)	% (n)
Has a positive impact on people.	9.7 (10)	35.9 (37)	5.8 (6)	39.8 (41)	8.7 (9)
Provides people with a better understanding with their health status and treatment.	3.9 (4)	29.1 (30)	8.7 (9)	56.3 (58)	1.9 (2)
Improves patients' compliance with the recommendations of health care professionals.	6.8 (7)	37.9 (39)	12.6 (13)	42.7 (44)	-
Obtained through the internet will facilitate patients' compliance with treatment implemented by healthcare providers.	5.8 (6)	33.0 (34)	16.5 (17)	42.7 (44)	1.9 (2)
Causes an increase in health expenditure.	2.9 (3)	22.3 (23)	32.0 (33)	26.2 (27)	16.5 (17)
Result in an increase in anxiety and fear about the health status of patients.	1.9 (2)	8.7 (9)	8.7 (9)	46.6 (48)	34.0 (35)
Encourages patients who did not receive adequate treatment for health problems to take further treatment.	3.9 (4)	23.3 (24)	21.4 (22)	44.7 (46)	6.8 (7)
Causes patients to take more time of health care professionals.	3.9 (4)	20.4 (21)	17.5 (18)	38.8 (40)	19.4 (20)
Results in patients to go to health care provider unnecessarily.	3.9 (4)	19.4 (20)	14.6 (15)	38.8 (40)	23.3 (24)
Causes deterioration of the relationship between patients and health care professionals.	12.6 (13)	31.1 (32)	23.3 (24)	26.2 (27)	6.8 (7)
Is generally accurate.	11.7 (12)	40.8 (42)	18.4 (19)	27.2 (28)	1.9 (2)
Patients can find the answers to their health problems on the Internet.	10.7 (11)	30.1 (31)	12.6 (13)	43.7 (45)	2.9 (3)
Patients change their behaviors as a result of the information gained through the internet.	5.8 (6)	9.7 (10)	14.6 (15)	56.3 (58)	13.6 (14)

minority not having daily internet access and the ones using internet less than two hours to be three fourth of the healthcare providers, justified our expectation.

The Internet is becoming a very important means to gain medical information for health professionals (23). In our sample, medical information search as the purpose of internet use was the third in order and information search for a specific disease was the most common purpose of internet use related to medical information just like the US physicians' the strongest motivation on search for information to be a particular patient problem (21).

As the opinions of our participants on health information on the internet are interrogated in detail, both positive and negative responses are met. Nearly half of the participants were considering the internet to have positive impact on patients, enhance the compliance with recommendations and treatment, and flourish the understanding of health status. The results of a patient oriented study, that online information to change the way the patients think about their health and contribute to increased compliance, support our participants' positive responses (24). Meanwhile more than four fifth of our healthcare providers spotted the internet to increase the anxiety and fear about health issues. In a study on patients with breast cancer, fibromyalgia and rheumatoid arthritis it is reported that patients who used the internet felt less informed, accepted their illness to a lesser degree, felt more helpless, and perceived less control of their illness (25).

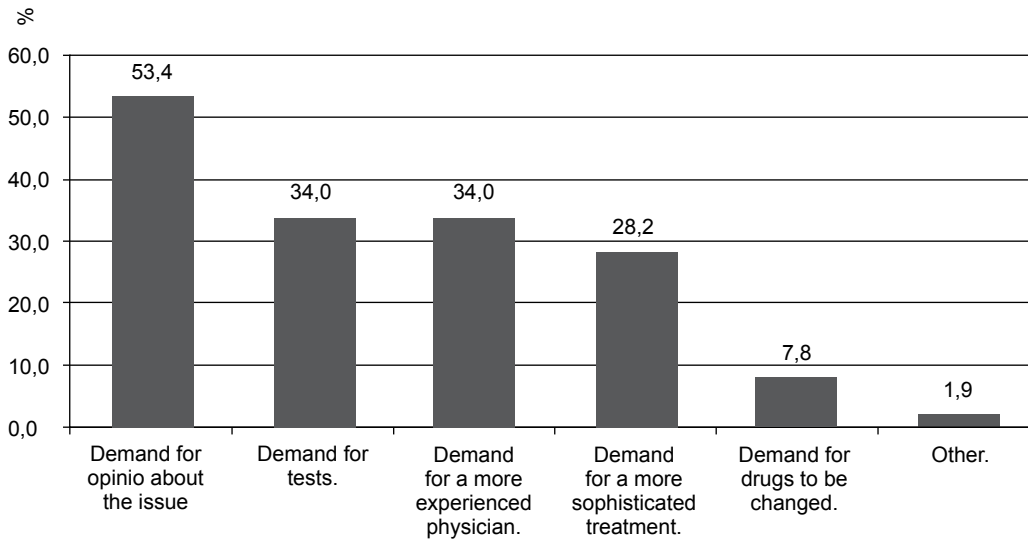


Figure 1. The intention of patients while asking questions about health information on the internet.

The same hesitation is seen on the accuracy of the health information on the internet, that more than half of our sample found health information on the internet inaccurate. Despite the fact that dubiousness on the quality of information and advice on the internet is shared by many authors, first impression with visual appeal, a likeable character, easy, quick and 24-hour access to information comes before the credible content (6, 21, 26-30). However, the information retrieved through search engines should be evaluated or validated before use (22).

The leading hesitations of the participants on the health information on the internet were unnecessary healthcare utilization, more time consumption and increase in health expenditure. In parallel to these negative opinions, discouraging experiences with patients were reported. The majority of the participants in our sample reported that they have met patients asking view on health information retrieved on the internet, requesting tests or a more sophisticated treatment. Unfortunately, more than half of the participants reported that they did not fulfill the demands of patients and nearly half of them did not have enough time to discuss the issue. Prior to physician visit, patients often get online to assess the need for consultation, to decide who to see, and to prepare for consultation (31) but with the perception of physicians as authoritative health experts, internet use boosts questions and brings out unpleasant requests for inappropriate or unavailable testing or treatment and consequently increases the work burden of physicians (24). This may be a consequence of traditional patient-doctor relationship seen in Taiwan, which is also valid in Turkey, despite the cultural diversity between Taiwan and Turkey (23) and the effect of internet as a facilitator to minimize the information asymmetry between healthcare providers and patients (32).

Conclusion

The negative views of healthcare providers in our sample on online health information such as increased anxiety, unnecessary healthcare utilization, and increased health expenditures may be a consequence of an improper preconception that online health information is not credible and patients are not able to judge the accuracy of it. In order to overcome this barrier,

as a first step it is recommended that healthcare providers, as an institution, give up-to-date and evidence based health information on their official websites to feed patients with accurate, understandable and reliable online health information. As the second step, healthcare providers in our institution should take educational programs on the benefits of online health information for both patients' and their own interest.

Limitations

Several limitations should be acknowledged when interpreting the results. First, our sample size is not enough to be generalized neither to healthcare providers in Turkey nor to colleagues in university hospitals. A multicenter, large-scale study should be conducted in order to clarify the attitudes regarding the health information on the internet. Given the predominant role of physicians in healthcare system, stratifying the sample and increasing the portion of physicians in the sample may widen the scope of further studies.

References

1. Internet World Stats, Usage and population statics. (cited 2013 Dec 11) Available from: <http://www.internetworldstats.com>
2. Ayers JW, Althouse BM, Allem JP, Childers MA, Zafar W, Latkin C, Ribisl KM, Brownstein JS. Novel surveillance of psychological distress during the great recession. *Journal of Affective Disorders* 2012; 142:323-330
3. Morahan-Martin JM. How internet users find, evaluate, and use online health information: A cross-cultural review. *Cyber Psychology & Behavior* 2004; 7:497-510.
4. Broom A, Tovey P. The role of the Internet in cancer patients' engagement with complementary and alternative treatments. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 2008; 12:139-155.
5. Peterson MW, Fretz PC. Patient use of the Internet for information in a lung cancer clinic. *Chest* 2003; 123:452-457.
6. Broom A. Virtually healthy: the impact of internet use on

- disease experience and the doctor-patient relationship. *Qualitative Health Research* 2005; 15:325-345.
7. Chiu YC. Probing, impelling, but not offending doctors: the role of the internet as an information source for patients' interactions with doctors. *Qualitative Health Research* 2011; 21:1658-1666.
 8. Newhagen JE, Rafaeli S. Why researchers should study Internet: A dialogue. *Journal of Communication* 1996; 46:4-13.
 9. Tanner A, Friedman DB. Health on the Web: An examination of health content and mobilising information on local television websites. *Informatics for Health & Social Care* 2011; 36:50-61.
 10. Iverson SA, Howard KB, Penney BK. Impact of internet use on health-related behaviors and the patient-physician relationship: a survey-based study and review. *JAOA* 2008; 108:699-711.
 11. Sillencea E, Briggs P, Harrisb P, Fishwick L. A framework for understanding trust factors in web-based health advice. *International Journal of Human-Computer Studies*. 2006; 64:697-713.
 12. Demirel, M., Tekin, A., Özbek, S., Kaya E. (2008). E-Sağlık kapsamında internet kullanıcılarının sağlık web sitelerini kullanma durumu üzerine bir araştırma. Mehmet Akif Ersoy Üniversitesi Bilimsel Araştırma Projeleri Komisyonu Projesi (Proje No: 0016-NAP-07)
 13. Weingart SN, Rind D, Tofias Z, Sands D Z, Who Uses the Patient Internet Portal? The PatientSite Experience, *Journal of the American Medical Informatics Association* 2006; 13:91-95.
 14. Yirmibeşoğlu E, Öztürk AS, Erkal HŞ, Egehan İ. Kanser Hastalarının Bilgi Arayışında İnternet Kullanımı. İnönü Üniversitesi Tıp Fakültesi Dergisi 2005; 12:125-128.
 15. Kim J, Kim S. Physicians' perception of the effects of Internet health information on the doctor-patient relationship. *Informatics for Health & Social Care* 2009; 34:136-148.
 16. Özer Ö, Şantaş F, Budak F. Sağlık web sitelerinin kullanım düzeylerinin incelenmesi: Örnek bir uygulama. *E-gifder*, 2012; 1:128-140.
 17. Murray E, Lo B, Pollack L, Donelan K, Catania J, Lee K, Zapert K, Turner R. 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* 2003; 5:e17, doi:10.2196/jmir.5.3.e17.
 18. Younger P. Internet-based information-seeking behavior amongst doctors and nurses: a short review of the literature. *Health Information and Libraries Journal* 2010; 27:2-10.
 19. Usher W. Developing policies for e-health: use of online health information by Australian health professionals and their patients'. *Health Information Management* 2011; 40:15-22.
 20. Williams JR. The Declaration of Helsinki and public health. *Bull World Health Organ* 2008; 86:650-652.
 21. Casebeer L, Bennett N, Kristofco R, Carillo A, Centor R. Physician internet medical information seeking and on-line continuing education use patterns, *The Journal of Continuing Education in the Health Professions* 2002; 22:33-42.
 22. Davies K, UK doctors' awareness and use of specified electronic evidence-based medicine resources. *Informatics for Health & Social Care* 2011; 36:1-19.
 23. Chiu Y-W, Weng Y-H, Lo H-L, TING H-W, Hsu C-C, Shih Y-H, Kuo KN. Physicians' characteristics in the usage of online database: A representative nationwide survey of regional hospitals in Taiwan. *Informatics for Health & Social Care* 2009; 34: 127-135.
 24. Iverson SA, Howard KB, Penney BK. Impact of Internet Use on Health-Related Behaviors and the Patient-Physician Relationship: A Survey-Based Study and Review. *JAOA* 2008; 108:699-711.
 25. Van Uden-Kraan CF, Drossaert CHC, Taal E, Smit WM, Moens HJB, Siesling S, Seydel ER, Van De Laar MAF J. Health-related Internet use by patients with somatic diseases: Frequency of use and characteristics of users. *Informatics for Health & Social Care* 2009; 34:18-29.
 26. Briggs P. Designing Effective Health Web Sites, *Per Ada Magazine*. 2008. (10.2417/2200809.1287) Available: <http://www.peradamagazine.eu/pdf/1287/1287.pdf> Accessed 11 December 2013.
 27. Cline R, Haynes K. Consumer health information seeking on the Internet: The state of the art. *Health Education Research* 2001; 16:671-692.
 28. Ernst E, Schmidt K. 'Alternative' cancer cures via the Internet? *British Journal of Cancer*. 2002; 87:479-80.
 29. Fox S. Health information online. *Pew Internet & American Life Project*. 2005. Available:http://www.pewinternet.org/~media/Files/Reports/2005/PIP_Healthtopics_May05.pdf.pdf. Accessed 11 December 2013.
 30. Schmidt K, Ernst E. Assessing websites on complementary and alternative medicine for cancer. *Annals of Oncology* 2004; 15:733-42.
 31. Caiata-Zufferey M, Abraham A, Sommerhalder K, Schulz PJ. Online health information seeking in the context of the medical consultation in Switzerland. *Qualitative Health Research* 2010; 20: 1050-1061.
 32. Develioğlu K, Ekinci TB, The relationship between transaction costs and b2b e-commerce orientations of managers: An application in automotive sector. *Akdeniz İ.İ.B.F. Dergisi* 2013; 26:1-20.