

The use of Web Pages as a Health Communication Tool in Private and Public Hospitals

Leyla Köksal, Gonca Mumcu, Nur Şişman, Ramazan Özgür Çatar, Haydar Sur

Marmara University, Faculty of Health Sciences, Department of Health Informatics and Technologies, İstanbul - Turkey

Yazışma Adresi / Address reprint requests to: Ramazan Özgür Çatar
Marmara University, Faculty of Health Sciences, Cevizli/Kartal, İstanbul - Turkey
Elektronik posta adresi / E-mail address: ozgurcatur@gmail.com
Kabul tarihi / Date of acceptance: 12 Mart 2012, March 12, 2012

ÖZET

Özel ve kamu hastanelerinde web sayfalarının sağlık iletişimi aracı olarak kullanımı

Amaç: Bu kesitsel çalışmanın amacı, özel ve kamu hastanelerinin web site içeriklerinin sağlık iletişimi çerçevesinde değerlendirmektir.

Yöntem: Çalışmada İstanbul ilinde bulunan 98 özel ve 67 kamu hastanesi yer almıştır. Web sayfaları için sağlık iletişimi ve sağlık hizmetleriyle ilgili maddeler, literatür bilgisi, kitaplar ve hastanelere ait kitapçıklardan seçilmiştir. 13'ü sağlık iletişimi ile ilgili 6'sı ise sağlık hizmetleri ile ilgili olan bu maddeler, hastane bünyesinde var ya da yok olarak kodlanmıştır.

Bulgular: Sağlık iletişimi bölümünde e-mail adresi (%89.8 özel hastaneler, %71.7 kamu hastaneleri), çağrı merkezi numarası (%55.1, %30), bilgi isteme formu (%46.9, %30), sohbet bölümü (%9.4, %5), İngilizce versiyon (%28.6, %3.3) ve mesaj kutusu varlığı (%62.2, %33.3) özel hastanelerde kamu hastanelerine oranla istatistiksel olarak anlamlı derecede yüksek bulunmuştur ($p<0.05$). Sağlık hizmetleri bölümünde ise klinik birimlerle ilgili bilgi (%81.6, %68.3) ve tedavi seçenekleri varlığı (%52, %21.7) yine özel hastanelerde kamu hastanelerine oranla istatistiksel olarak anlamlı derecede yüksek bulunmuştur ($p<0.044$, $p=0.000$).

Sonuç: Web sayfaları sağlık iletişimi üstünde güçlü bir etkiye sahip olabilmektedir çünkü mesaj ya da bilgi dünyanın her bir köşesine dakikalar içinde yayılabilmektedir. Bu çalışmanın sonuçlarına göre web sayfaları sağlık iletişim aracı olarak özel hastaneler tarafından daha etkili olarak kullanılmaktadır.

Anahtar sözcükler: Web sayfaları, hastaneler, sağlık iletişimi ve hastaneler

ABSTRACT

The use of web pages as a health communication tool in private and public hospitals

Objective: The aim of the cross-sectional study was to evaluate the content of web pages within the framework of health communication according to public and private hospitals.

Methods: In the cross-sectional study, 98 private hospitals and 67 public hospitals were included in İstanbul. Health communication and health services related items for web pages were searched from the literature, textbooks and hospital booklets. Among selected items were 13 items in health communication section and 6 items in health services. These items were coded as present or absent according to hospital profile.

Results: The presence of e-mail address (89.8% in private hospitals vs 71.7% in public hospitals), call center number (55.1% vs 30%), information request form (46.9% vs 30%), chat area (19.4% vs 5%), English version (28.6% vs 3.3%) and message box (62.2% vs 33.3%) in health communication section were significantly higher in the web pages of private hospitals than in those of the public hospitals ($p<0.05$). In health services section, the percentages of information about clinical units (81.6% vs 68.3%) and treatment options (52% vs 21.7%) were higher in private hospitals compared to those in public ones ($p=0.044$, $p=0.000$, respectively).

Conclusion: Web pages can have a powerful effect on health communication, since a message or information can circulate from its point of origin to all corners of the globe in minutes. According to our results, web pages as health communication tool were used by private hospitals effectively.

Key words: Web pages, hospitals, health communication and hospitals

INTRODUCTION

Web pages are defined as communication and information technologies and have critical roles in public relations. They create communication bridge between public and organizations as marketing tools (1). Web pages are mass media for consumers seeking health information and health services (2,3). The critical point is how to best

use this technology in furthering marketplace goals of health care (3).

Advances in telecommunication technology have led to the development of computer networks that allow access to vast amount of information and services about hospitals (4). The web pages of hospitals are increasingly being accessed by the general public on a wide range of topics, including medical ones. The goal of web pages is

making the of medical information in hospitals accessible (5). A web page also reflects the vision and competitiveness of an organization to media and public (6). In addition to its educational and medical information resource value, a web page is a largely unrestricted broadcast medium capable of supplying health communication activities (6,7).

Internet is a crucial means of carrying out a reliable information exchange between patients and providers in health care. In relation to this issue, hospitals use communication technologies for their competing goals and publicity activities. Among them, web pages allow the public to get information regarding basic hospital facilities such as clinical units and treatment protocols. Since current and potential patients, physicians, employees and community members are target groups for hospitals, the messages of hospitals to these groups could be variable. Web pages are easily changeable media which allow hospitals to use them as a cost-effective health communication activity (8). Since a web page is a graphical presentation of the internet using a point-and-click style rather than text-entry commands, they can allow the storage and retrieval of large amounts of information, are easily modified and allow interaction between people across large distances (7,9,10,11,12).

Executive biographies, speech reprints, and product information; historical information about the organization, frequently asked questions, product ingredients, product side effects, services delivered, annual reports, earnings statements, product guides, catalogs and useful links are the main domains of web sites (13).

Therefore, the aim of the cross-sectional study was to evaluate the content of web pages within the framework of health communication according to different hospital profiles.

METHODS

Public and Private Hospitals

In the cross-sectional study, 98 private hospitals and 67 public hospitals were included. Since the majority of hospitals are located in Istanbul, the study group was selected in this city. The population of Istanbul, a province of Turkey, (10 072 447), is 16.02% of Turkey's population (62 865 574). Almost 13% of the bed capacity of public

hospitals and 70% of private hospitals are located in Istanbul (14). The main inclusion criteria were being able to access the web address of hospitals and the web pages' containing active menus during the study. The hospitals of which the web pages did not have these properties were excluded from the study. Response rates were 62.8% for private hospitals (n=156) and 100% for public hospitals (n=67).

Questionnaire Design

Health communication and health service related items for web pages were detailed after gathering information from the literature, textbooks (15) and hospital booklets (8,16). Selection criteria for items were content, multimedia components, asynchronous and synchronous communication tools of web pages. Of the selected items 13 items were in health communication section and 6 items were in health services.

The 'health communication section' of the structured questionnaire consisted of items regarding postal address, phone number, e-mail address, forum, call center number, information request form, chat area, message box, English version, corporate newspaper, news about the hospital and necessary information for the press and site search engine.

The 'health services section' of the questionnaire consisted of items including clinical units, information about doctors, treatment options, examination of standby time, examination application form and health related information documents.

In addition to all, history of the institution, organization structure and technical items regarding last update date, graphics and pictures, site map presence, easy switching between pages were also evaluated in web pages of hospitals. Selected items were coded as absent or present in web pages of both hospitals and pilot study was carried out in a small hospital group (n=20).

Evaluation of Web Pages

The web pages of hospitals were visited and the contents of them were printed. The printed copies of the web pages were subsequently evaluated by the authors (L. Köksal and G. Mumcu) according to the structured questionnaire. No significant differences were seen in

Table 1: The Communication Related Items of the Public and Private Hospitals

Communication	Private Hospitals		Public Hospitals		p*
	n	%	n	%	
1.Postal address					
Absent	10	10.2	9	15	0.451
Present	88	89.8	51	85	
2.Phone					
Absent	4	4.1	4	6.7	0.480
Present	94	95.9	56	93.3	
3.E-mail address					
Absent	10	10.2	17	28.3	0.004**
Present	88	89.8	43	71.7	
4.Forum					
Absent	75	76.5	49	81.7	0.289
Present	23	23.5	11	18.3	
5.Call center number					
Absent	44	44.9	42	70.0	0.002**
Present	54	55.1	18	30.0	
6.Information request form					
Absent	52	53.1	42	70.0	0.026**
Present	46	46.9	18	30.0	
7.Chat area					
Absent	79	80.6	57	95.0	0.008**
Present	19	19.4	3	5.0	
8.Message box					
Absent	37	37.8	40	66.7	0.000**
Present	61	62.2	20	33.3	
9.Site search engine					
Absent	49	50	45	75	0.001**
Present	49	50	15	25	
10.English version					
Absent	70	71.4	58	96.7	0.000**
Present	28	28.6	2	3.3	
11.Corporate newspaper					
Absent	79	80.6	51	85.0	0.317
Present	19	19.4	9	15.0	
12.News about the hospital					
Absent	49	50.0	36	60.0	0.145
Present	49	50.0	24	40.0	
13.Necessary information for the press					
Absent	62	63.3	41	68.3	0.318
Present	36	36.7	19	31.7	

*Chi-square test was used in the analysis. **p<0.05 statistically significant

coding of items between authors. The information was easily obtained from the web pages according to the criteria of the questionnaire in almost 10 minutes per page.

Statistical Analysis

The SPSS 11.5 (SPSS Inc, Chicago, USA) statistical analysis package program was used in the analysis. The relationships between hospital profiles and web page

variables were evaluated by Chi-square test. A P value less than 0.05 was considered statistically significant.

RESULTS

In the cross-sectional study, 98 private hospitals and 67 public hospitals were included. Among them, seven public hospitals that had no hospital web page were not included for analysis.

Table 2: The Service Related Items of the Public and Private Hospitals

Health Services	Private Hospitals		Public Hospitals		p*
	n	%	n	%	
1.Clinical units					
Absent	18	18.4	19	31.7	0.044**
Present	80	81.6	41	68.3	
2.Information about doctors					
Absent	54	55.1	40	66.7	0.102
Present	44	44.9	20	33.3	
3.Treatment options					
Absent	47	48	47	78.3	0.000**
Present	51	52	13	21.7	
4.Examination application form					
Absent	66	67.3	39	65.0	0.447
Present	32	32.7	21	35.0	
5.Examination of standby time					
Absent	90	91.8	59	98.3	0.082
Present	8	8.2	1	1.7	
6.Health-related information document					
Absent	61	62.2	43	71.7	0.149
Present	37	37.8	17	28.3	

*Chi-square test was used in the analysis. **p<0.05 statistically significant

Health Communication

When private and public hospitals are compared, the presence of e-mail address (89.8% in private hospitals vs 71.7% in public hospitals), call center number (55.1% vs 30%), information request form (46.9% vs 30%), chat area (19.4% vs 5%), message box (62.2% vs 33.3%), site search engine (50% vs 25%) and English version (28.6% vs 3.3%) were significantly higher in the web pages of private hospitals than in those of the public hospitals ($p<0.05$) (Table 1).

Responses to the other items regarding postal address, phone, forum, corporate newspaper, news about the hospital and necessary information for the press were almost similar in both types of hospitals (Table 1).

Health Services

The ratios in the presentation of clinical units (81.6%) and treatment options (52%) in private hospitals were significantly higher compared to public ones (68.3% and 21.7%, respectively) ($p=0.044$, $p<0.001$, respectively) (Table 2).

The distribution of other items such as information about doctors, examination application form, examination of standby time, health related information document were similar in both public and private hospitals ($p>0.05$) (Table 2).

In addition to all, presence of organization structure and history of the institution were not significant between private (54.1% and 74.5%, respectively) and public hospitals (53.3% and 61.7%, respectively) ($p=0.529$, $p=0.065$, respectively). The ratio of all items in technical properties including last update time, included graphics and pictures, site map presence and easy switching between pages were similar in private hospitals (32.7%, 57.1%, 45.9% and 66.3%, respectively) and in public ones (21.7%, 45%, 33.3% and 53.3%, respectively) ($p>0.05$).

DISCUSSION

This cross sectional study was designed to understand the health communication activities of public and private hospitals by using the web pages, fundamentally. Internet has been proposed as a means of providing access to information. Online access to structured hospital web pages serves numerous advantages in medical information and information about the hospital by showing text, images, photographs and sound for patients and the public (4,11,17). Therefore, a web page is defined as a relevant tool if it contained enough information about the hospital (18). In earlier discussions in these series, we explored the differences between "content-focused" web pages and "form-focused"

web pages (19). In the present study, the contents of web pages were evaluated in the frame of health communication activity according to different hospital profiles.

Seven public hospitals in the study did not have web pages. This figure might be explained by the fact that there is no competition among public hospitals supported by government funds, when compared to private ones. It was an important point to better understand the needs of public hospitals to improve their health communication with public effectively. This figure may reflect the fact that web pages design was not a priority of the public hospitals. Lack of interest and the presentation of hospital properties, revealed a lack of profitability to the hospital.

In Health Communication, patients were the primary target audience for the hospital web sites. Therefore, private hospitals considered that the presence of e-mail address, call centre number, information request, chat area, message box and site search engine, that were crucial components of their web pages for health communication. Patients could have access to doctors and find answers by using the chat areas and message boxes of the private hospitals' web pages according to our results. The presence of a site search engine for health communication was higher in private hospital than in public hospitals. This property has the potential role to save time and to find information more easily. The internet as a medium of health communication is useful in medicine; and has become an important means of how physicians' deliver care (12). Although these comments were obtained, criticisms and suggestions could be received (9). Therefore, this approach improves patient-physician communication and the health care of patients (20). Moreover, English version of web pages could be a critical item in health communication due to foreign population living in the country and competition in international area. Although the ratio of English version of private hospitals was higher compared to public ones, almost one fourth of private hospitals had English version of hospital web pages. This issue is needed to be improved in both hospital groups.

In Health Services, the presentation of hospital facilities by web pages is important to understand the activities of hospital services. Sharing information online about clinical units and treatment options were found to represent the strategic direction of private hospitals according to our results. Web pages are unique media that can communicate directly to mass audiences. They provide information,

advertising, marketing, communication and feedback (21). Therefore, the content of web pages of hospitals as public faces is critical for hospitals. Patients obtain critical information regarding medical practice, organization structure, physicians and the history of the institution by using them. Current news about the hospitals provide advantages for their communication activities. In addition to the potential role of web pages for patients, they also have a critical role in human resource management for doctors. Finally, web pages support health communication between patients, physicians and hospitals (8).

The health related information document as a health education activity was found in almost one third of the private and public hospitals in the frame of health services. The use of the Internet to find medical information has become a widespread phenomenon among individuals seeking medical care (22). As medical information on the internet grows, there will be a continuing need for authoritative medical information for patients (5). If health information is inaccurate and poor quality, it can lead to severe health problems. Therefore, hospitals give accurate, evidence-based and high quality documents prepared by their health professionals in their web pages for the use of current and potential patients (23). In addition, the content of web pages also supports the continuing medical education of allied health professionals (8).

Another important property of the web pages in the study was the technical capacity of the web pages regarding last update time, easy switching between pages and the inclusion of graphics and pictures. Although creating web pages will become an important health communication tool for hospitals, lack of knowledge about the internet and computers are major limitations in using web pages (7). Therefore, simple and effective designs are important factors for patients. In web pages, complaints could be focused on pages that loaded slowly (9).

CONCLUSION

Private hospitals are rapidly accepting the web pages as a communication tool. Limited information was available in the web pages of the public hospitals according to frame of the study. As the web pages to have a major impact on health communication, the results of the present study targeted the public relation professionals, chief medical

and information officers in hospitals and medical groups. It is a critical point that a message or information can circulate from its point of origin to all around the globe in minutes by web pages. However, it is not an easy task to create an effective web page for hospitals and to maintain and

update it periodically to improve health communication. Public relation departments need to take action in the preparation and the activation of hospitals' web pages since they have active roles in publicity of their hospitals in the national and international arena.

REFERENCES

1. Bilbil EK. Kurumsal İletişim Aracı Olarak WEB Sayfalarının Kamu ve Özel Sektör Kuruluşlarında Karşılaştırmalı Analizi. İstanbul Üniversitesi İletişim Fakültesi Dergisi. 2008;32:67-79.
2. Eysenbach G. Consumer health informatics. *BMJ*. 2000;320:1713-1716.
3. Sanchez PM, Maier-Donati P. Hospital web-site marketing: analysis, issues, and trends. *J Hosp Mark*. 1999;13:87-103.
4. Ajuwon GA. Computer and internet use by first year clinical and nursing students in a Nigerian teaching hospital. *BMC Med Inform Decis Mak*. 2003;3:10.
5. D'Alessandro DM, Kreiter CD. Improving usage of pediatric information on the Internet: the Virtual Children's Hospital. *Pediatrics*. 1999;104:55.
6. Hill LN, White C. Public relations practitioners' perception of the world wide web as a communications tool. *Public Relations Review*. 2000;26(1):31-51.
7. Yamamoto LG. Creating a home page on the world wide web: An inexpensive means to promote medical education and physician recruitment. *The American Journal of Emergency Medicine*. 1997;15:393-399.
8. Gruca TS, Wakefield DS. Hospital web sites: Promise and progress. *Journal of Business Research*. 2004;57:1021-1025.
9. McLay R, Klingsberg R, Florez L, Bhattacharjee M, Garcia C, Sutton C, et al. A web page to teach neurology and neuropathology to medical students. *Neuropathol Appl Neurobiol*. 2001;27:142-144.
10. Kootsey JM, Siriphongs D, McAuley G. Building interactive simulations in a Web page design program. *Conf Proc IEEE Eng Med Biol Soc*. 2004;7:5166-5168.
11. Crichlow R, Winbush N, Davies S. Accessibility and accuracy of web page references in 5 major medical journals. *JAMA*. 2004;292:2723-2724.
12. Ajuwon GA. Use of the Internet for health information by physicians for patient care in a teaching hospital in Ibadan, Nigeria. *Biomed Digit Libr*. 2006;3:12.
13. Ryan M. Public relations and the web: organizational problems, gender, and institution type. *Public Relations Review*. 2003;29:335-49.
14. T.M.H. Turkish Ministry of Health, Statistical yearbook of health care institutions in 2006 Ankara2006 [16.12.2009]; Available from: www.saglik.gov.tr.
15. Okay A. Sağlık iletişimi: temel kavramlar ve prensipler. *MediaCat Kitapları*. 2. basım. İstanbul; 2009. s.145-168
16. Bomba D, editor. Evaluating the quality of health web sites: developing a validation method and rating instrument2005: IEEE.
17. Lazarus IR. Developing Internet strategies is a top priority for hospital systems. *Health Care Strateg Manage*. 2001;19:12-13.
18. Abbott VP. Web page quality: can we measure it and what do we find? A report of exploratory findings. *J Public Health Med*. 2000;22:191-197.
19. Doyle DJ. Web page evaluation in medical education. *Can J Anaesth*. 2002;49(9):997.
20. Weingart SN, Hamrick HE, Tutkus S, Carbo A, Sands DZ, Tess A, et al. Medication safety messages for patients via the web portal: the MedCheck intervention. *Int J Med Inform*. 2008;77(3):161-168.
21. White C, Raman N. The World Wide Web as a public relations medium: the use of research, planning, and evaluation in web site development. *Public Relations Review*. 1999;25:405-419.
22. Helft PR, Eckles RE, Johnson-Calley CS, Daugherty CK. Use of the internet to obtain cancer information among cancer patients at an urban county hospital. *J Clin Oncol*. 2005;23:4954-4962.
23. Khoo K, Bolt P, Babl FE, Jury S, Goldman RD. Health information seeking by parents in the Internet age. *Journal of Paediatrics & Child Health*. 2008;44:419-423.