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Opinions and e-Health Behaviours of Patients and Health Professionals in the U.S.A. and Europe

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Abstract

***Background**: There exists a gap in the use of Internet for health purposes between patients and health professionals and between various countries. The Internet has the potential to be a global tool for health professionals and their patients but, as seen in other fields, cultural differences may lead to divergent opinions and preferences. **Objective**: To identify the opinions, preferences and types of behaviours regarding the use of Internet for health purposes, for health professionals and patients in selected regions of the United States and Europe. **Methods**: An announcement of an online survey was posted on more than 100 web sites during May and June of 2002. Members of HONnewsletter were also invited via email. The online questionnaire consisted of 28 questions with sections designed specifically for patients or health professionals. Sub-samples of respondents were created based on their geographic location. **Results**: 2621 respondents mainly from the United States (38%, n=984) and Europe (29%, n=739) completed the survey. For the USA, the majority of respondents were patients (68.7%), while in Europe, the majority were health care professionals (63.6%). In both regions, health professionals preferred using medical search tools but patients preferred general search tools. Concerns about the accuracy of information and trustworthiness were shared by all groups. The majority of respondents reported that they preferred certified web sites. The patients from USA (69%) and Europe (47%) have discussed the results of their Internet searches with their doctors, while health professionals are receptive to the discussion and find it helpful. Other e-health behaviours are also reported by both parties. **Conclusion**: Based on the self- reported e-health behaviours noted in this study it appears that the use of the Internet for health purposes is growing in importance to the patient-physician relationship in Europe and the USA.*

Key Words
Internet; Medical Informatics; Survey, Online Questionnaire; Patient-Physician Relationship; Europe; United States; Preferences; Opinions; Satisfaction; Health Behavior

1. Introduction

Illness is a worldwide issue. With the advent of new technologies and the Internet, citizens of the world have new resources in fighting disease. Studies performed in Canada and United States (USA) have shown that a gap exists in the use of the Internet between patients and health care professionals [1]. It has been further shown that the use of the Internet for health purposes varies between countries and between patients and health professionals [2-4]. At present, little is known about the difference between countries in the use of the Internet for health purposes or the opinions of patients and practitioners toward health information on the Internet. The objective of this project was to explore the utilisation of health information on the Internet and to examine patients and practitioners attitudes toward health information on the Net in Europe and in the USA.

2. Material and Methods

For the last six years, the Health On the Net Foundation (HON) has performed annual or biannual online surveys on the use of Internet for health purposes. HON online surveys use non-probabilistic sampling methods. The most recent survey (the 8th online questionnaire) was available to complete during May and June 2002. Using this self-administered online questionnaire, available at the HON Web site in both French and English, respondents were invited to answer 21 questions focusing on general health Internet use and demographics. In addition, there were 8 questions dedicated to patients and 7 questions were designed for medical professionals. Announcement of the survey, linked to the online questionnaire, was posted on the HON web site and 100 other health-related web sites[1]. The survey was also announced by email to about 4000 HON's newsletter subscribers. Sub-samples of respondents were created based on the location and their responses to either the patients' section or the medical professionals' section. *Perl* programming was used in the computation of survey responses.

3. Results

A total of 2621 worldwide respondents completed the survey. The majority of respondents were from North America (USA 38%, Canada 4%, Mexico 1.5%) with 29% being from Europe. Summary of the results for the worldwide sample is posted online [5]. For the present study, analyses are limited to the European and USA sub-samples containing 739 and 984 respondents respectively. For the USA, the majority of respondents were patients (68.7%) while in Europe, the majority were health professionals (63.6%). The percentages of the different health professions are listed in Table 1(all tables are available online[2]).

3.1 Experience with the Internet and Information Seeking Behaviour and Preferences

The median length of time a respondent had been using the Internet was 4 to 6 years. More than 60% of patients (USA and Europe) have used the web for more than 4 years. USA professionals seem to have more experience with the Internet than patients, with 37% of this group have used the Internet for more than 7 years and 31% have used it for 4 to 6 years. This compares to only 23% of European professionals having used the Internet for more than 7 years and 38% having used the Internet for 4 to 6 years.

For health professionals in Europe and USA, the most common information sought via the Internet was medical literature, 89.4% and 90.6% respectively (online Table 2). There was also significant interest in disease descriptions (57.2% and 65.9% respectively) and clinical trials (50.2% and 39.9% respectively). Consistent with their purpose, support groups were more commonly looked at by patients (Europe 30.1%, USA 27.8%). It should be noted that patients in the USA consulted medical literature to a greater extent (81.5%) than in Europe (60%). Health professionals in both the USA and Europe preferred to use medical search tools (43% and 55%, respectively) to the general search engines (32% and 29%). Patients, however, preferred using general search tools (39% USA, 57% Europe) to medical search tools (29% USA, 23% Europe) (online Table 3). It is possible that the complexity of medical search tools could discourage patients from using these search engines.

3.2 Patients e-Health Behaviour

A summary of the results of patients' e-health behaviours is presented in Table 4. Respondents from the USA are more likely to have discussed information from the Internet with their doctors, with 69% indicating having discussed information from the Internet with their doctors. This shows a large increase over previously reported results [3] which have indicated only about 38% discussed this information with their physician. The European respondents in this sample used email with their health care provider in a similar proportion

[1] http://www.hon.ch/Survey/Spring2002/support.html

[2] http://www.hon.ch/Survey/Spring2002/Tables1-6_Professionals_Patients-USAvsEurope.html

(19.3%) as USA respondents (21.3%). Given the prevalence of online pharmacy in the USA, perhaps due to regulations and market demand for online shopping, it seems consistent that the proportion of USA-patients (17.16%) buying online medications is more than five times larger than the percentage of Europeans (3.4%) (Online Table 4). Among online buyers, the majority of those from the USA bought prescription drugs (69.6%) while the majority of Europeans bought over-the-counter drugs (57.1%). The only behaviour seen in a greater proportion among the Europeans over the USA-respondents was "seeking of a second opinion on medical diagnosis". Europeans indicated seeking a second opinion in 56.1% of respondents compared to 42.6% in the USA.

Table 4-5 Patients and Professionals e-Health Behaviour in Europe and in USA

Behaviour[1]	Patients[2]		Health Professionals[3]	
	U.S.A. (n=676) %	Europe (n=269) %	U.S.A. (n=308) %	Europe (n=470) %
Discussion of Internet searches (P2P)	69.1	46.8	81.2	63.2
Discussion on drug information found (P2P)	66.0	41.3	-	-
Use of online medical consultation services	40.8	31.2	-	-
Drug purchase at online pharmacy	17.2	3.4	15.6	3.2
Email correspondence with patient/provider	21.3	19.3	43.5	50.0
Use the web to search drug information	82.5	69.9	86.7	81.9
Use the Internet to seek second opinions on medical diagnoses.	42.6	56.1	-	-
I recommend web sites to my patients	-	-	74.7	56.2
I recommend support group to my patients	-	-	66.9	49.6
I recommend discussion lists to my patients	-	-	34.4	26.6

[1]Results presented are the proportions of patients or health professionals who answered "yes" to the statement. The rest have either say "no" or not responded. [2]See online Table 4 for patients' results. [3]See online Table 5 for professionals.

Regarding the search behaviours of patients, 75.3% of the USA respondents and 66.2% of European respondents are "seeking information from medical professional sites, or sections dedicated to medical professionals". Potential benefits or risks related to this e-health behaviour will be discussed in a later section of this paper (see Discussion). More than three out of four people giving a reason for this type of searching behaviour reported a preference for having access to more complex information (78.5%, n=669). Almost half of these respondents (45.3%) reported they access these medical professional sites because the information they access on consumer sites is usually too basic. Respondents were also asked to identify potential solutions to not understanding the information they read on Internet sites. For Europeans and USA respondents, 23.9% (n=155) and 33.2% (n=473), respectively, reported they would "ask their physician". Another solution selected by a very high proportion of patients, 87.5% (USA) and 89.0% (Europe), was to "do alternative searches to clarify the information".

3.3 Health Professionals' e-Health Behaviours

Health professionals from the USA reported having patients discuss health information they have found online with them (81.2%) in a greater proportion than professionals in Europe (63.2%) (online Table 5). However, as noted for the patients, more European professionals engage in email correspondence with their patients (50.0%) than USA (43.5%). Most physicians in Europe (81.9%) and the USA (86.7%) reported using web sites to search for information on drugs. More than half of all physicians in both geographic regions reported recommending web sites to their patients. Support groups and discussion lists were also recommended frequently to patients (Table 4-5). Of physicians whose patients had discussed healthcare information they found on the web with them, the majority (75% to 85% of those with an opinion) indicated that this discussion was helpful:

increasing communication, creating more knowledgeable patients, making patients better partners, and making consultation more constructive.

3.4 Respondents' Opinions Regarding Accreditation of Medical Web sites

Respondents reported favourable attitudes toward the certification and/or accreditation of medical web sites. This was demonstrated by their opinions on the effect of certification to reduce the most critical issues listed in the questionnaire. The three most critical issues facing the medical Internet were reported to be accuracy of information, trustworthiness, and ability to find information (10% to 36% of patient and professional respondents in both the USA and Europe). The European professionals have the largest proportion positively supporting the accreditation as a solution to resolve some issues (75.74%) compared to the other groups (up to 66.5%). Awareness of the certification, accreditation, or trust mark systems varies between the different systems: proportions of people familiar with them range from 1.9% to 64.3%. The most familiar accreditation system was the HONcode recognised by 64.3% of health professionals in Europe and 48.05% in USA as well as almost half of patients. The Good HouseKeeping certification program was also familiar to respondents from USA (53.6% of patients; 48.1% of professionals). The accreditation system known by approximately 20 % of USA respondents is the Trust-e. Trust-e is less well-known in Europe, with only about 10% indicating awareness. The NetScoring and URAC, respectively developed and implemented in Europe and USA, were the least familiar to respondents. Because a non-response to these awareness questions could mean that respondents are not familiar with any of the proposed choices, the large proportion of patients (21.3% USA; 38.26% Europe) and health professionals (16.2% USA; 29.2% Europe) who did not respond to these items is of interest. These results may suggest a greater awareness of accreditation systems among USA citizens than European. To evaluate the impact of the various systems of accreditation and certification, respondents were asked if they 'advantage' the certified web sites among those they visited (online Table 6). Almost 2 out of 3 European health professionals (61.9%) and a majority of their colleagues from USA (55.5%) 'advantage' certified web sites. This same trend was found for the majority of patients (57.8% USA, 54.3% Europe).

4. Discussion

It has been estimated that 14 million of people in France (24% of adults online) and 110 million people in the USA (53% of adults online) have at least looked once for health information on the Internet, while 19% and 26% of them respectively do it often [2]. Respondents in this study reported a high level of experience with the use of the Internet which may not be representative of the global population using the Internet for health purposes. However, this group is of interest because of their significant exposure to various health web sites. In particular, these respondents are valuable since the ways their behaviours have been shaped by the health Internet can be assessed. Additionally, their opinions about the credibility of health Internet content are also valuable, due to their extensive experience with this information source.

Three main observations can be extracted from this descriptive study. First, to a greater extent in the USA but also in Europe, the use of the Internet for health purposes is an important and growing part of the patient-physician relationship. Patients are asking their doctors about information gathered from the health Internet. These physicians are generally receptive in discussing the information found online with their patients. Based on this finding, it may be concluded that the use of the Internet intervenes in shaping the patient-physician relationship. Whether these changes are positive and impact patient health, outcomes needs to be assessed. The evidence from this study seems to support the premise that the patient-physician relationship is being modified in a constructive manner by the health Internet. These trends are mostly observed in USA but also significant in Europe. Considering differences between health care systems, patients in each location may have developed different habits and involvement levels with respect to their health care. For example, regulations in the USA allowing direct-to-consumer advertising (DTCA) of prescription drugs may have encouraged patients to be involved in the choice of medication

through a request to their doctor. This behaviour is much less frequent in countries of Europe where DTCA is not as prominent, and in some cases prohibited. Therefore, one may expect to see differences in the impact of using the Internet for health information on the patient-physician relationship in these two geographic areas. According to the Harris Interactive, USA-citizens are more likely to have discussed with their doctors the information found on the Internet (38%) compared to German, French and Japanese [3]. The present study demonstrated a greater proportion of USA patients who have discussed healthcare information from the Internet with their doctor (69%).

The percentage of health professionals (63%-81%) reporting that patients discuss health care information found online is lower than the ratio previously reported in a cancer centre in Canada where 90% or more of physicians and nurses reported that patients had brought them information from the Internet [1]. The difference may be explained by the difference in medical speciality and the importance of the diagnoses, or potentially by the location of respondents. Of physicians whose patients had discussed healthcare information they found on the web with them, the majority indicated that this discussion was helpful: increasing communication, creating more knowledgeable patients, making patients better partners, and making consultation more constructive. The later being consistent with the results from a survey of web-using physicians, performed in United Kingdom (UK), indicate that UK-doctors reported more often benefits than harms from the use of Internet by their patients, but for doctor themselves it creates more problems than benefits [6]. Considering the results of the European group, it seems that the Internet is used as a medium of communication with their doctors but are barely performing e-commerce purchases at online pharmacies. The reasons for more than 50% of Europeans to seek a second opinion on medical diagnosis compared to a lower proportion of USA respondents are unclear. However, this e-health behaviour expresses a desire for greater involvement of European patients in their health care decisions making.

Second, health professionals and patients have concerns regarding the accuracy of the information found online and its trustworthiness. Concerns about the reliability of health information online have been reported; only 20% of UK-physician believes that the information is usually reliable while 48% and 39% respectively answered that it was sometimes reliable and sometimes unreliable [6]. Respondents believe that accreditation and certification systems may contribute to reduce the issues. The majority of health professionals from USA and their patients as well as those from Europe and up to 61.9% of European health professionals reported that they advantage certified sites within the one visited. Third, it seems that patients are seeking more complex information and search for medical scientific literature and sections dedicated to health professionals, but are using mostly general search tools. A paternalistic belief by health professionals would raise concerns for misinterpretation by patients. If patients are confused, do not trust or can't find needed information,the health Internet may not be providing the beneficial effects discussed above. However, based on this study it appears that consumers seem to take actions to increase search activity and question health professionals when they do not understand the information they found.

4.1 Limitations of the study

Even though more than 100 web sites were employed in this study, voluntary participation could have still provided selection bias. Further, some web sites recruited more respondents than others and this might also have influenced the results. Also, differences observed between the groups of professionals from the USA and from Europe may be explained by other confounding characteristics not included in this study.

4.2 Future Research

Future research should examine where (web site types, geographical locations, web sites) Europeans look when they are searching for a 2nd opinion. This research could also identify the types of behaviours, their frequency and impact on medical practices and patients worldwide. More research is also needed to increase our understanding of which information consumers will use and how it will influence their behaviour. The impact of this information on the patient physician relationship should also be examined for its

potential to influence health behaviours and outcomes. Finally, economic analyses should be undertaken to evaluate the cost effectiveness of the Internet as an information source.

5. Conclusion

Because of its global status, the Internet is being used for health-purposes by citizens around the world. Special attention must be given during non-random sampling online questionnaires when seeking opinion or behaviours of individuals since they may come from any countries and can be health professionals or not; both characteristics may influence the results. Health and Internet researchers should consistently report geographic locations of respondents and the source of recruitment when citing research. This will allow for more direct comparison of results and provide for more meaningful analyses and comparisons of results. As we partner in building knowledge on the global phenomenon of the use of Internet for health purposes, tremendous benefits may arise for the global community.

Based on the results presented here, contrary to medical professionals, the general public (patients, not medical professionals) has been using general search engines but like to reach more complex medical scientific literature. Therefore, we can suggest that there is a need for either consumer education about existing medical search tools or development of new types of search tools offering the ease of use of general search engines, but also the possibility to reach scientific medical literature. In addition, more advanced and automated intelligent technical support should be developed in order to guide consumers in the comprehension of more complex content retrieved.

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