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Young Tech-Savvy Users' Perceptions of Consumer Health Portals

Jim Warren
Department of Computer Science / School of Population Health
The University of Auckland
Private Bag 92019, Auckland 1142, New Zealand
jim@cs.auckland.ac.nz

Abstract

Final year undergraduate students taking an elective course in human-computer interaction were invited to undertake a one-hour independently-worked exercise wherein they sought information on a self-selected health issue. Each student was offered one major Australasian website (HealthInsite or everybody.co.nz) and one major non-Australasian website (MedlinePlus, the Health On Net [HON] foundation, or the Mayo Clinic) to try. Students provided specific feedback on the two websites they tried as well as general feedback on desirable features of health websites.

44 of 143 students (31%) submitted questionnaires and agreed to their use in research. Students were significantly more likely to respond that they were able to find relevant information using HON and MedlinePlus as compared to the other sites (odds ratio [OR] 5.74, 95% confidence interval [CI] 1.21-25.16) and more likely to respond that they found enough information with HON or MedlinePlus (OR 6.26, 95% CI 2.10-18.70). Among features students valued in a health website the site search engine was given the highest importance rating (82% 'very important').

The findings highlight the scale of challenge in putting up a comprehensive health Internet portal and indicate that users are coming to expect a result directly from 'search' rather than as the result of navigation in a site.

1. Objectives

To inform the design of future consumer health Internet portals, the present study aims to understand what features are valued in a consumer health website by the young, technology-savvy population.

2. Background

The level and impact of consumer Internet use for health information has been the subject of significant interest [1-2]. From early in the rise of usage levels, there has emerged concern about the quality of Internet health information [3]. Interventions that take direct aim at the issue of information quality include the creation of major consumer portals such as Australian Health*Insite* where all external links are professionally verified and have the approval of the Australian Medical Association - thus aiming to provide a reliable experience for consumers when they start from the portal.

The present study is part of an effort to identify the ideal functional capabilities of future health Internet portals. In this study we get feedback on current, major, high-quality health portals from technology-savvy users to gain the perspective of users that, from a technical perspective, know what they are seeing and are not afraid to demand exceptional functionality.

3. Methods

Final year undergraduate students taking an elective course in human-computer interaction were invited to undertake a one-hour independently-worked exercise wherein they sought information on a self-selected health issue using each of two websites. Students completed anonymous paper-based questionnaires wherein they identified their past experience with search for health information, rated satisfaction with performance and features of each site, and provided feedback on the features they valued in a health website generally. Each survey pack, on a randomized and order-balanced scheme, directed the student to one major Australasian health portal (Health*Insite* or everybody.co.nz) and one major non-Australasian portal (US MedlinePlus, the Health On Net [HON] foundation, or the Mayo Clinic). Students had the option to opt out of the use of the data in research. Aggregate results were the subject of an in-class discussion.

4. Results

44 of 46 students submitting questionnaires agreed to their use in research (out of 143 students who sat the final exam, yielding a 31% response rate). They were 80% male, 66% aged 22 years or under (and only two over age 30); 75% indicated English as their primary language (Asian languages constituting all but two of the remainder). 91% indicated they had searched for health information on the Internet previously; 34% had previously searched for health information for a family member.

Feedback on specific websites revealed that students found the performance of HON and MedlinePlus to overtake that of the others. HON and MedlinePlus scored highest (71% and 65%, respectively) on whether students would use the website again, but not at a statistically significant level (see figure 1 – note absolute numbers assessing each website vary due to combination of randomisation and response rate).

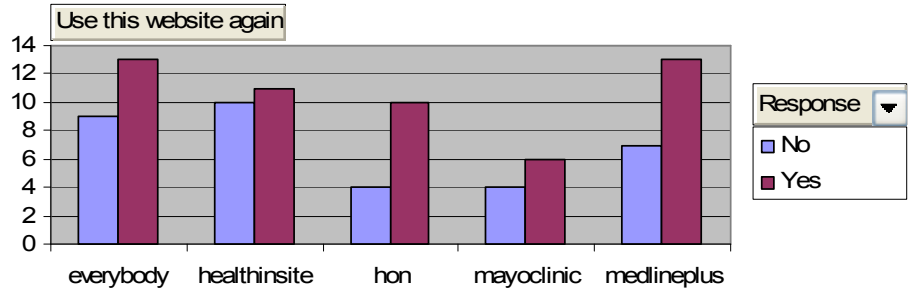

Figure 1 - Responses to "Would you use this website again to search for other health information?"

Student were significantly more likely to respond that they were able to find information on their selected topic on HON and MedlinePlus as compared to the other sites (odds ratio [OR] 5.74, 95% confidence interval [CI] 1.21-25.16; see figure 2). Students also were more likely to respond that they found enough information with HON or MedlinePlus (OR 6.26, 95% CI 2.10-18.70; see figure 3).

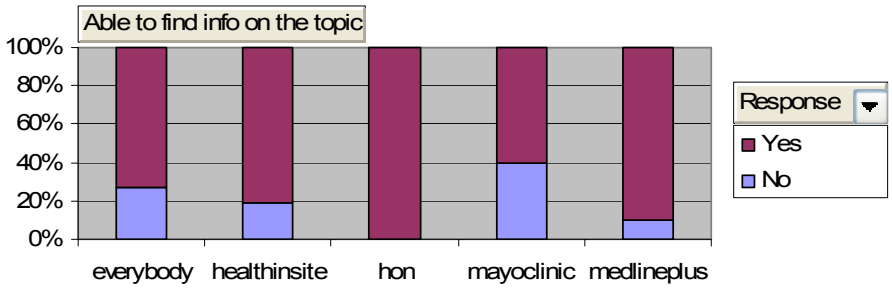

Figure 2 - Responses to "Were you able to find information on the topic you wanted information on?"

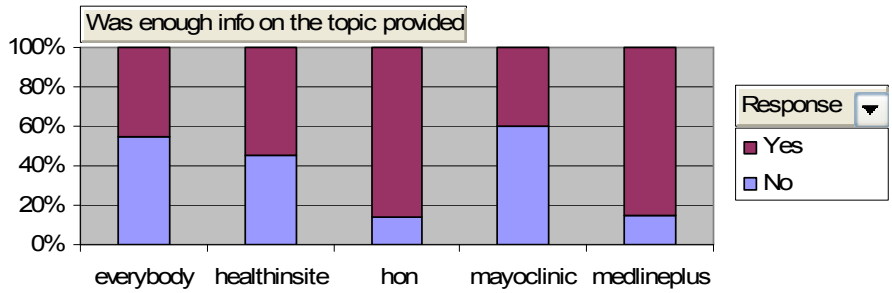

Figure 3 - Responses to "Was enough information on the topic provided?"

Among features students valued in a health website generally (see Appendix) the site search engine was given the highest importance rating (82% 'very important', 14% 'important' and the remainder 'moderately important'). Other highly valued features included spell check, list of terms to refine search, and choice of information type (e.g., personal stories v. scientific information). The feature rated least important was having information sent at times other than when actively browsing (such as a newsletter). Thematic analysis of the free-responses for improving the usability of health

websites revealed 17 responses emphasising the importance of search features, with the other major themes being 5 responses mentioning the importance of navigation and 4 citing the desirability of online communication with health professionals (out of 36 responses provided – see bottom area of instrument in Appendix)

Subsequent in-class discussion confirmed the students' affinity for searching over browsing through links, with students indicating a unanimous preference for Google search over a portal as a starting point.

5. Discussion

The findings reveal the scale of the challenge of putting up a comprehensive health Internet portal, with HON and MedlinePlus providing significantly greater satisfaction with information availability and depth over the Austalasian sites and Mayo Clinic, thus identifying these latter sites as (at least relatively speaking) deficient in content. Organisations smaller than the US National Library of Medicine should think twice prior to undertaking a new Internet health information project, at least one that is general in scope.

The findings also reveal that the young, tech-savvy user group has come to expect a result to come directly from a 'search' rather than as the result of navigation in a site. This comes through both in their comments on how to improve website usability as well as in their ratings of the importance of website features. The result comes close to undermining the paradigm of the web browser as a means of viewing hypertext. On the other hand, the result aligns positively with respect to the HON partnership with Google to label health sites in Google search results – partnering the top bastion of online health information quality to the dominant Internet search engine seems the right way to go.

Bundorf et al [4] found that those with chronic conditions were more likely to search for health information on the Internet than those without such conditions. However, it is interesting to note the high prevalence of web search experience in the young students and that one-third had already searched on behalf of a family member. This latter aspect indicates particular advantages considering the usability preferences of young, tech-savvy users – older and less well family members are likely to recognise and employ the web search talents of their more able kin.

The research has a number of limitations, notably including the limited sample size and response rate. In particular, the low response rate undermines certainty about the high prevalence of previous health information search experience (as this may well have been correlated with predisposition to participate). Related to response rate, it was clear that most of the young students were not at a life stage where they were very interested in health information. Further research is needed to understand the website features that will best link health consumers to the information they need for users that have serious information needs, for themselves or on behalf of others. The current group was sufficiently young that it can be estimated that few would have parents over 65. An interesting complement to the present study would be to look at the health Internet habits and preferences of technology-savvy 30-somethings, who would be likely to have much greater health information needs placed on them by parents, as well as rising needs for themselves, spouses and children.

6. Acknowledgments

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7. References

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Appendix

Part C. Health Web Site Features

The following are all possible features that may help you search for health information

Please indicate how important each of the following features are.	**Very Important**	**Important**	**Moderately Important**	**Of Little Importance**	**Unimportant**
Features that involve information being sent to you at times other than when you are actively browsing – such as newsletters, postings to forums, or feedback from a professional	❑5	❑4	❑3	❑2	❑1
Personalisation – for example asking your preference for information, your age, gender or any other information about your search that relates to you	❑5	❑4	❑3	❑2	❑1
Choice of information type – for example being able to choose medical /scientific information or information in simple language or personal stories	❑5	❑4	❑3	❑2	❑1
Spell check, "Sounds like" index or offering a list of options if a word is spelt incorrectly	❑5	❑4	❑3	❑2	❑1
A list of terms to help you refine your search	❑5	❑4	❑3	❑2	❑1
Site search engine	❑5	❑4	❑3	❑2	❑1

Thinking about your experience searching for health information using these two Web sites what do you think would make using a health Web site better?

*Full survey instrument available from author – jim@cs.auckland.ac.nz