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Dissertations into Practice

Abstract

This article discusses an empirical research study exploring Health Information Seeking Behaviours (HISB) of the general public, conducted by Abir Mukherjee for his MSc dissertation in the Library and Information Sciences programme at City University London.

The project was carried out in summer 2011 with the general aim of addressing three core research questions to better understand the information seeking and access process this context:

- 1: What are the reasons that people seek health information?
- 2: What are the means or resources that people use to find health information?
- 3: What are the strategies and difficulties for the information seeker?

Other concepts examined include the correlation with variables such as age and gender and public perceptions of the terminology used; the internet and impact of social media; proportions of popular reasons behind health searches; the top-ranking search tools employed; and the influence of the information society.

Further information, and copies of the full dissertation, may be obtained from Abir Mukherjee or David Bawden.

Keywords: Information science, Information Seeking Behaviour, Health Information Seeking Behaviour, Information Retrieval, General Public Information Sharing, Information Society.

Health Information Seeking in the Information Society

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Dissertation Context

Health Information Seeking Behaviour (HISB) can be regarded as a knowledge-gathering process, resulting from a health query or need. Information seeking is usually regarded as a conscious effort to acquire information in response to some need or gap in knowledge, and it is usually considered that the type of information needed, and the context of the need, guides the way in which the acquisition of information is carried out (see, for example, Case's well known survey [1]).

This project incorporated a mixed methodology. An initial literature review of work already carried out in this field, including the different conceptual models of seeking, was supplemented with empirical research in the form of questionnaires and one-to-one interviews.

Although literature exists for specific user groups such as health professionals [2, 3], and also for those who are ill [4], there are not many empirical studies examining HISB among the general public. This makes it a key area for study. The topic is also pertinent to the evolving nature of the modern NHS towards more patient-led care, and to the current harsh economic climate driving public sector cuts, as well as increasing recognition of the commercial power of this group of users.

A variety of models, specifically designed for studying HISB or applied to it, have been published. Lambert and Loiselle [5] identified six such models: the 'stress precipitant, information appraisal and coping theory' by Lazarus and Folkman; Miller's framework of 'information monitors' and 'information blunters'; Lenz's Information-seeking model; Freimuth's non-linear health information acquisition model with feedback loops; Johnson's comprehensive model of health information seeking; and the expanded model of HISB developed by Longo. The model of Lazarus and Folkman was found useful for this study, together with other general models, such as those of Belkin and of Dervin, mentioned later.

Reasons for the general public's health information seeking are varied. Lambert and Loiselle [5] suggest that the three main areas behind health information seeking are: coping with illness; involvement in medicinal decisions; and preventative health. Frequently, people research topics for others such as partners, relatives and friends. Houston and Allison [6] linked users' health status with reasons for HIS, and with choice of search tools and social media.

This study was situated within the general context of the development of the 'information society'. This idea may be understood in several different ways; see, for example, the overview by Webster [7]. The most relevant for this context is that it is a society defined by the widespread availability of a wide (and sometimes bewildering) variety of choices of sources and media through which information may be obtained. Having such a conceptual framework in mind helps in the planning of research, and in the understanding of the detailed results obtained.

Dissertation Methods

The research study used a mixed methodology building on mainly qualitative analysis to answer the research questions. These included:

- a literature review, covering conceptual models of HISB; information seeking models; reasons for HISB for the general public; and the relevance of the concept of the information society
- an empirical questionnaire survey that was sent out as a hard copy as well as being 'pushed' as Word documents via email and propagated through an online form version (hosted on Google Docs) via email and 'Facebook, to reach as large a group of respondents as feasible
- one-to-one semi-structured interviews, to focus in more detail on issues identified in the survey

A convenience sampling method was used for the questionnaire survey. Initially after the pilot questionnaire was sent out, the questionnaire in word format and the online survey link were emailed or 'pushed' via social media (Facebook) to approximately 300 participants, who were social or professional contacts. Users were encouraged to email the questionnaire or link to any contacts that might also be willing to take part, a 'snowball' effect that allowed emerging trends to be considered as the data was being collected. A total of 68 responses were analysed of which the split was 38 online responses and 30 printed questionnaire responses. This 23% response rate could have been improved given further time and resources, but was sufficient to provide consistent information on interesting issues.

The interview sampling was more direct where 10 interested participants from the questionnaires were chosen having expressed further interest. All of these responded. The multi-method approach adopted increased the scope and depth of the project and triangulation of data was possible by analyzing qualitative and quantitative results.

Discussion of Results

The age of the questionnaire respondents ranged from the 18-25 year old group, to the over-60s; the largest number (40%) was in the 30-40 year old group. 60% were male. The interview participants reflected this, with 6/10 male, and an age range from 26 to 72 years, with a mean age of 40 years. Nothing was known of their health status, beyond the answers provided volunteered to specific questions.

The results of the survey found that there were a range of resources that the general public used when searching for health information of which the most popular choice from the

sample questionnaire data was the internet (85%). This was followed by books (17%) and asking friends or family (16%). Libraries were only listed as a resource for health information by 6% of the survey participants. Other resources reported from the questionnaire and interview data included GPs; NHS Walk-in centres; NHS Helplines and patient information leaflets.

Reasons for seeking health information were multi-factorial. However the most popular stimulus was to answer a health concern (53%) followed by trying to follow a healthy lifestyle (31%) or to help others (19%).

Background personal factors such as age / gender and education / employment were seen to influence the factors investigated. When age was correlated with resources it was found that the Internet is the most popular health resource across all age groups in this sample. Books are still referred to as health information reference resources and it appears that friends and family also play a lesser role across all age groups. There was very little reported use of the library as a resource across age groups, although it appeared relevant in the age group 40-50, amongst whom books were reported more than in other age groups.

When integrating gender as a variable, it was seen that females in the interview sample seek health information at least once every 3-6 months whilst the frequency rate from the male participants was more evenly distributed, with peaks for those who reported 'never' or 'hardly ever.' There was a general preference in males and females to seek information for general health concerns and advice. Both female and male participants mentioned side effects of medicines as a search reason whilst both also mentioned searching for others. Somewhat surprisingly, more men mentioned healthy lifestyle; perhaps because women see information retrieval as a tool in emergencies or to deal with a problem when it arises, whereas men may be unsure of general healthy living issues like diet and exercise.

Questionnaire responses indicated that Wikipedia was the most popular web 2.0 tool used. In the interviews, participants were asked in more detail as to what they understood Web 2.0 to be: they identified it as the next generation or version of the web, featuring interactive software and e-commerce, social networking, blogs, and applications such as Facebook and Yahoo Answers. Users felt Web 2.0 resources were 'more open' and 'more up-to-date' compared to 'static old style of web pages' but 20% of participants felt that they were 'not comfortable' with Web 2.0 as reliable sources and that there was 'no way to see if something is correct or the author is qualified.'

Common difficulties encountered in online health information seeking were information overload; no indication of the reliability the contents (web-pages / data) of health websites; the lack of monitoring of health sites online and hurdles to access health information by the general public because of subscription or membership issues to more academic peer-reviewed journal literature.

Suggestions for improving the search process included:

- better official NHS sites, with clinical governance applied to the websites in the same way clinical evidence is appraised
- more regulated official forum sites for users to share knowledge or experience

- online medical information literacy and critical appraisal workshops / websites to in order to develop the general public's ability to retrieve and analyse online health data accurately and proficiently.

Online health seeking strategies employed by the general public included typing key words into Google or similar web search engine, and then narrowing or refining the search results, by assessing the reliability and relevance of the retrieved search results against their prior knowledge, and choosing additional search terms .

The most common reason for health searches from the interviews was 'general health or well-being.' 80% of the interview sample used the internet predominantly for their health searches. Search strategy preference was for using Google, via keywords and cross-referencing. Benefits of new technology reported were 'ease of use' and 'accessibility' while drawbacks were 'information overload' and reliability of online information.

The responses from the interviews suggested that information seeking is a retrieval process, involving keywords; refinement of the search terms and a 'common sense' approach to assessing reliability in addition to reflection on the reputation of individual websites and cross-referencing to form a 'consensus view' where possible.

In an information society, an issue for everyone, including the general public, is the choice of sources and media from the many possibilities available. Brophy and Bawden's interpretation [8] of Zipf's Principle of Least Effort [9, 10] where easy to use and familiar sources will be preferred over those known to be superior in some respect, but with less convenience of use, is useful for explaining the popularity of the internet as a health resource as a consequence of its much reported ease of use and accessibility from the questionnaires and interview data. The popularity of the Internet as a health resource may be supported by Zipf's Principle because of its convenience, displacing previously conventional resources such as library facilities or reference books. Specifically, from the questionnaires, an overwhelming 85% quoted the Internet as an important health resource. Kuhlthau's behavioural model [11] can be superimposed on the Internet retrieval process described by the interview participants and extended to include the reliability / critical appraisal aspect of the health information search.

However, no single model is appropriate for capturing all of the behaviours observed. Lazarus and Folkman's model [12] of a stress precipitant, followed by appraisal of information and coping or dealing with the new situation, can be used to interpret the results in terms both of why people search for health information and of the process itself. Belkin's Anomalous State-of-Knowledge model [13], and the comparable Sense Making methodology of Brenda Dervin [14], can also be used to consider health information retrieval where the general public user has a gap or 'anomalous state' of knowledge, and there are difficulties identifying what is necessary to resolve this situation, as in the open and disorganized environment of the internet.

Implications for Practice

This research indicates that there may be a dynamic interplay of conceptual models that precipitate HISB and that affect the search process itself. Health information searches may

be multi-factorial in their inception stages and gradually evolve as the information need adapts. For example, a health concern may be the original precipitant to searching but may incorporate other factors as it evolves such as healthy lifestyle. This suggests that it may be helpful to explicitly link, for example, information relating to health problems or treatments with information on prevention and lifestyle, to a greater extent than at present.

The data suggests members of the general public are capable and eager to look into their health concerns themselves and find out more for themselves, following the 'common sense' evaluation approach mentioned above. This may be before they seek medical advice or in some cases, may replace the need to physically go to see a healthcare professional if the issue is small or resolvable. This may be inferring too much from the small sample and more data would be required to substantiate such trends. The emphasis found in all age groups on the Internet as the main resource, and its link with ease and convenience as the over-riding factors determining choice, suggests that particular effort needs to be placed on ensuring its best use. The results also suggest that stereotypical views of the effect of age and gender on HSIB should be treated with caution; though again one should remember that the sample is small.

Just as linking documents and making them accessible via search engines has advanced text retrieval, the future of information retrieval may involve the combination of linking scientific or academic documents and basic datasets, as in the 'Linked Data' concept. A further development would be to incorporate social media to support academic articles with up-to-date blogs or forums to supplement the 'formal' information with informal and personalized advice, and to provide contact links to specialist professionals, offering one-to-one advice rather than generalized information.

Conclusion

This research investigated the health information seeking behaviours of members of the general public as well as views the public hold regarding what can be thought of as the 'process of health information retrieval.'

A number of prominent and cited conceptual models of information seeking have been presented in the journal literature and this work aimed to link these models to practice, as well as highlight contemporary views of the general public regarding Web 2.0, reliability of online health resources and difficulties and possible improvements to the online health information retrieval process. Issues of ease of use, convenience of access, and a common sense approach to evaluation are shown are particularly important, largely over-riding factors such as age and gender.

Given the multi-directional nature of information retrieval, and the benefits of feedback loops in searches, this research highlights the general public's strategies employed to refine their searches and difficulties they face to resolve their 'knowledge need or gap' precipitating searches. It also illustrates the variety of models which may be helpful in understanding it. It is clear that information provision for the general public does have the power to promote good health, and studies of this kind can show how this benefit can be maximised.

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