

# Cyber Behaviors in Seeking Health Information



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## INTRODUCTION

Warner and Procaccino (2004) defined health information seeking (HIS) as “the process of seeking information needed for personal decision-making related to health and medical issues.” HIS constitutes an important part of people’s information seeking behavior. In analyzing a Pew Research Center survey, Kennedy and Funk (2015) reported that about 66% online adults show interests on health and medicine topics, while 37% of online adults claim that “health and medicine” is one of the topics they deem as most interesting. Kennedy and Funk (2015) also noted that research on measuring public understanding about science and technology usually relates science and technology to the health and medical domain.

Consider the following scenario in your ordinary daily life (Yuan & White, 2012). Shown in Figure 1.

In this scenario, people need to 1. Deal with a need of seeking information on headache and brain tumor, which could be a complex task for people with limited medical knowledge. 2. Overcome potential stress caused by knowing about others’ stressful events (e.g. deaths). 3. Share information with others who have similar concerns. Each of these three items is explained in further detail below.

1. In completing complex tasks, people need guidance to go through the required steps towards completing the tasks, instead of a simple ranked list (Joachims et al., 1997). The information foraging theory developed by Pirolli and Card (1999) provided a theoretical foundation for this situation. This theory indicated that information seekers rely on cues left by previous visitors to identify *patches* of information, and then use them to

Figure 1.

**Scenario:** You have been bothered by a headache for a while. Your primary doctor suggested that you take a series of tests, but the results revealed nothing serious. One of your friends died of a brain tumor several years ago. You are worried about your own situation and would like to explore the issue in more detail. Specifically, you want to learn more about the types of headache, the corresponding symptoms, the causes, and the remedies for each type. You want to find websites with useful information and share your findings with others by posting as many Web links as you feel are necessary to adequately cover the topic on a social networking site such as Facebook.

**Task:** Please find as many Web links as you feel are necessary to adequately cover the topic and you believe can be useful to people in a similar situation. Copy and paste the Web links to the answer sheet. In the answer sheet, please answer each question. Also, create a sequence of Web links, comprising all links you selected or some sub-set, arranged so as to be useful to others.

solve their information problems. Building on the previous findings and the information foraging theory, in a HIS context, Yuan and White (2012) studied the impact of domain knowledge on information seeking behavior and found that expert-generated sequences of web pages are more useful than those of novice users.

2. According to Folkman (1984), stress is “a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and as endangering his or her well-being.” Studying information behavior models, Wilson (1997) reported that “stress arises in many situations that are considerably less than life-threatening but may endanger one’s “well-being” or, perhaps, self-image, in other ways.” Wilson also argued that stress arose in HIS because “the emotional impact of life-threatening diseases or operations is very obvious.” Current research indicates that people’s awareness and stress level are increased when they are provided information about stressful events associated with other people’s lives (Hampton et al., 2015; Smith and Rose, 2011).
3. How to design a system that can help users learn, understand and use during the information seeking process has been challenging. Twidale et al. (1997) suggested that “a truly user-centred system must acknowledge and support collaborative interactions between all users.” They proved that collaboration can actually help improve users’ learning and understanding of the systems. A well designed system should be able to help people get needed information and share it with those who have the same information need. People who are seeking the same or related information may probably also benefit from collaboration by division of labor.

Yuan & Dumas (2012) reviewed the recent literature in the field of information science and

human computer interaction, and proposed Collaborative Information Seeking (CIS) as one of the promising directions. CIS was defined as “a research area about studying how people work in collaborative groups for information seeking, gathering and sharing, and also about how to build systems for supporting such activities.” (Yuan & Dumas, 2012). Collaboration may be an advantageous process for individuals faced with a task, as Grey (1989) identifies it: “a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible”. Karunakaran et al. (2013) proposed that collaborative information behavior involved three phases, including problem formulation, collaborative information seeking, and information use.

The field of CIS has been covered in main international conferences such as the ACM International Conference on Information and Knowledge Management (CIKM), the annual European Conference on Information Retrieval (ECIR), the ACM Special Interest Group on Information Retrieval (SIGIR), the ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), the ACM SIGCHI conference on Human Factors in Computing Systems (SIGCHI), the ACM SIGIR Conference on Human Information Interaction and Retrieval (CHIIR), and the Annual Meeting of the Association for Information Science and Technology (ASIST). Relevant journals are Journal of Information Processing and Management (IP&M) and the Journal of the Association for Information Science and Technology (JASIST). A special issue of IEEE Computer in 2014 was also dedicated to CIS. Finally, a related book has been released (Hansen et al., 2015).

This paper discusses HIS behavior in general, and then followed with collaborative HIS behavior in terms of the current status, the representative researchers and their work, challenges and future directions. All aspects of collaborative HIS constitute a wide field and thus, this paper focuses

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