An appointment with Dr. Google:  
Online searching for health information in times of stress

LEFT BLANK for proposal  
First Author Name  
Affiliation  
Address  
e-mail address

LEFT BLANK for proposal  
Second Author Name  
Affiliation  
Address  
e-mail address

ABSTRACT  
Information avoidance is a little studied phenomenon of interest to researchers and practitioners in both the health and information science fields. Early research considered information avoidance to be a personality trait: people were either monitors or blusters. However, questions remain as to why, how and under what conditions people avoid information. This poster describes an experimental user study currently in progress that aims to identify ways in which people in situations of stress and anxiety interact with online health information material. The study examines the effects of coping style and need for cognition, individual differences that may be linked to information seeking and avoidance. This study focuses on the responses of participants exposed to hypothetical scenarios regarding stressful health difficulties, when they are faced with different types of information related to the condition.

Keywords  
Health information; information avoidance; experimental user study

INTRODUCTION  
Access to quality information in health has long been associated with health benefits: better communication with doctors, the making of better health decisions and the taking of fewer health risks (see Johnson, 1997; Lu, Andrews & Hou, 2009 for examples). Advocates of the consumer health movement agree; health information serves a crucial purpose in ‘empowering’ patients and enabling them to take an active role in their health (as noted by Wyatt, Harris & Wathen, 2010). However, some research shows an association between health information and anxiety (Miller, 1980; Sweeney & Miller, 2012). Studies indicate that in some cases, people with health problems will choose to remain ignorant rather than acquire anxiety-causing information (Miller, 1980; Lambert, Loiselle & Macdonald, 2009; Sweeney & Miller, 2012). This phenomenon, referred to as “information avoidance” (Sweeney, Miller, Melnyk & Shepperd, 2010, p. 23) is little understood, in particular with relation to the Internet, a key health information source (Case & Johnson, 2012). The proposed poster describes an experimental user study currently in progress and designed to ascertain people’s reactions, in conditions of stress, to online health information.

LITERATURE REVIEW  
Research exists regarding information avoidance, linking the phenomenon to stress and anxiety and often to health problems where such affective reactions can occur. However, questions still remain as to patterns of avoidance behaviour as well as reasons for information avoidance. In particular, most information avoidance strategies identified have involved in-person interactions, controlling conversations, for example, or not requesting information from others. Miller’s (1980) seminal study looked at patients preparing for a medical procedure, dividing them into two categories: monitors are people who under stress are comforted by information and will welcome and seek it out, while blusters are people who under stress are made more anxious by information and will thus avoid it (see also Williams-Piehota et al., 2009). Miller’s (1980) study draws a clear link between avoidance and stress. However, her definition of avoidance is somewhat simplistic and relies on in-person settings; patients avoid by refusing to ask questions of doctors.

Other research offers a more inclusive list of patterns of avoidance behaviour, here too, online avoidance was not mentioned (Lambert, Loiselle & Macdonald, 2009; Barber et al., 2012). Lambert, Loiselle and Macdonald (2009) subdivide blusters into two other categories, information disinterest (minimal information seeking) and avoidance (guarded information seeking). However, their description does not include online avoidance behaviours. Barbour et al. (2012), in a qualitative study attempting to clarify what they see as the typical oversimplification of research on information avoidance, identified several avoidance patterns and proposed a more complex model of online information avoidance.
strategies, removing or ignoring stimuli, such as medical visits, and controlling conversations.

Why people avoid information is another question. Here explanations have ranged from suggestions that avoidance is a personality trait or a function of personality traits (Miller, 1980; Folkman & Lazarus, 1984; see also Williams-Piehota, Latimer, Katulak, Cox, Silvera, Mowad & Salovey, 2009) to links between information avoidance and a person’s affective state (Sweeny & Miller, 2012; Melnyk & Shepperd, 2012). A third, less explored factor is found in the characteristics of information sources, which can be said to influence people’s information seeking and may alter as well their decisions to use or ignore information (Nahl, 2005; Mentis, 2007).

Of these, the notion of information avoidance as a personality trait is the most established. Miller’s (1980) research, and the scale she later developed (Miller, 1987), point to a tendency of some people to avoid information that persists across a range of situations, from a dangerous plane ride to a potential job loss (see also Folkman & Lazarus, 1984; Lambert & Loiselle, 2007). A more situational approach to information avoidance considers it to be a function of the negative affect people in situations of crisis experience (Dawson, Savitsky & Dunning, 2006; Sweeny & Miller, 2012). Research shows that health difficulties that are extremely serious and more likely to produce negative affect will also result in more information avoidance (Melnyk & Shepperd, 2012; Lambert, Loiselle & Macdonald, 2009; Case & Johnson, 2012; Dawson, Savitsky & Dunning, 2006). A third factor is found in the characteristics of the information sources. Studies show that the common information science principle that people prefer interpersonal information sources may be reordered in health, where people look for credibility over convenience (Case & Johnson, 2012; Lambert, Loiselle & Macdonald, 2009). Other research suggests that personal experience may be selected in preference to medical knowledge (Crutzen, Cyr, Larios, Ruiter & de Vries, 2013).

METHODS
We describe an experimental user study in which participants are tested for individual differences, presented with scenarios, and then asked to choose between a variety of health information sources. This study focuses on source selection, as one aspect of information avoidance and considers the following factors: personality, affective state, and information source characteristics. The study is part of a two-fold project, the second stage of which will consist of in-person interviews of patients with a specific condition.

Participation and Recruitment
Convenience sampling, defined by Kelly (2009) as relying on available elements to which the researcher has access is being used to recruit 20-25 participants from the public community. Participants may or may not be healthy at the time of the study. Members of the public have been chosen as they are presumed to have some experience with health difficulties (see Weinstein, 1982; Dawson, Savitsky & Dunning, 2006), and thus they will be able to understand disease based scenarios. Although patients have been chosen as the study population in the second part of this project, they have not been selected here, as difficulties are anticipated in questioning people about information avoidance, about which little is known and which currently has as its central feature a negation of activity. The study detailed in this poster will serve to identify some online avoidance behaviours, such as the choice of some website formats over others, which will inform later interview questions.

Hypothetical scenarios are common in research on information avoidance and similar topics (see Miller, 1980; Dawson, Savitsky & Dunning, 2006; Melnyk & Shepperd, 2012 for examples). Their use has been criticized as not being representative or real behaviour (see Lambert & Loiselle, 2007); however, Melnyk & Shepperd (2012) point out that hypothetical scenarios, in the form of “you may have” are common in medical situations, and that these scenarios are generally considered to be cases in which information seeking is expected to take place (see also Wyatt, Harris & Wathen, 2010).

Two types of health-based hypothetical scenarios have been designed for this study, one type designed to elicit a neutral affective response, and the second designed to elicit a strong negative affective response. Example scenarios are presented in Table 1. Each participant will be asked to respond to two scenarios, one at each level of affect, and for two different health conditions. Scenarios will be created for 5 conditions.

The scenarios are created with reference to those used by Dawson, Savitsky & Dunning (2006), in a study which asked participants to imagine that they are at risk for a certain type of disease, for example alopecia areata (hair loss). Hypothetical scenarios, in the form of “you may have” are common in medical situations, and that these scenarios are generally considered to be cases in which information seeking is expected to take place (Melnyk & Shepperd, 2012; see also Wyatt, Harris & Wathen, 2010).

<table>
<thead>
<tr>
<th>Acoustic neuroma: negative affect</th>
<th>Your doctor tells you that you may have an acoustic neuroma, a noncancerous tumour located in your ear and close to your brain. It has a number of side effects, the most common being hearing loss in the tumour ear; others include facial paralysis, loss of brain function, and even death. The tumour grows at a rate of 1.5mm/yr. Treatment options are observation, surgical removal or radiation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic</td>
<td>Your doctor tells you that you may have an acoustic neuroma, a noncancerous tumour located in your ear and close to your brain. It has a number of side effects, the most common being hearing loss in the tumour ear; others include facial paralysis, loss of brain function, and even death. The tumour grows at a rate of 1.5mm/yr. Treatment options are observation, surgical removal or radiation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acoustic neuroma: negative affect</th>
<th>Your doctor tells you that you may have an acoustic neuroma, a noncancerous tumour located in your ear and close to your brain. It has a number of side effects, the most common being hearing loss in the tumour ear; others include facial paralysis, loss of brain function, and even death. The tumour grows at a rate of 1.5mm/yr. Treatment options are observation, surgical removal or radiation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic</td>
<td>Your doctor tells you that you may have an acoustic neuroma, a noncancerous tumour located in your ear and close to your brain. It has a number of side effects, the most common being hearing loss in the tumour ear; others include facial paralysis, loss of brain function, and even death. The tumour grows at a rate of 1.5mm/yr. Treatment options are observation, surgical removal or radiation.</td>
</tr>
</tbody>
</table>
neurona: neutral affect

An acoustic neurona, a rare noncancerous tumour located on the hearing nerve connecting your ear to your brain. It has a number of side effects, but these are mild in most cases, the most common being loss of hearing in the affected ear. The tumour grows slowly and if small, can be managed by watchful observation. If you do need treatment, radiation and surgery are options.

Table 1. Examples of Neutral and Negative Scenarios

The following approach was used to develop scenarios. Relatively rare conditions were selected; conditions such as cancer or Lou Gehrig's disease were eliminated due to the fact that participants would likely already be aware of these conditions and have preconceived ideas as to their severity. For both scenarios, the modifier “may” was used as this was more likely to generate information searching. Conditions were described in manners designed to generate negative and neutral affect in participants. These scenarios were written with some reference to studies by Melnyk & Shepperd (2012) and Dawson, Savitsky & Dunning (2006).

Instruments

Two scales will be used to pre-test participants for individual differences related to information avoidance. The Threatening Medical Situations Inventory (TMSI), created by van Zuuren and colleagues (van Zuuren, de Groot, Mulder & Peter, 1996), is commonly used to measure a person’s dominant coping style in health situations. It consists of several hypothetical health-related scenarios (i.e. “Imagine you suffer from headaches...your doctor refers you to a specialist for a rather trying medical examination.”) followed by several statements related to people’s information seeking (i.e. “I plan to ask the specialist as many questions as possible.”), which participants mark on a Likert scale, with 1 indicating “not at all applicable to me” while 5 equals strongly applicable to me.

The Need for Cognition Scale (NCS), originally developed in 1982 by Cacioppo & Petty consists of 18 statements that relate to people’s comfort with cognitive uncertainty. Participants rate the statements on a Likert scale, -4 to +4, with -4 being “very strong disagreement,” and +4 being “very strong agreement.” This last scale is commonly used to measure people’s motivations for information seeking and decision making (Wilson, 1999).

Procedure

Participants begin by completing a brief demographics questionnaire and the TMSI and NCS scales. Next, participants read the first of two health-related scenarios that generate either negative or neutral affect. The scenarios are rotated in a Latin square design to eliminate order effects and to ensure that each participant received one neutral and one negative affect generating scenario (see Kelly, 2009). Participants are then asked to identify their current viewpoint regarding the health issue and then to browse and make selections from an organized set of online information resources, including a range of genres and perspectives. Following the scenario, participants are asked to recall and explain their information source choices and give feedback on their level of satisfaction with the information obtained and their emotional responses to the scenarios. They then complete this same procedure with the second scenario. After the two scenarios are complete, an individual, face-to-face semi-structured interview is conducted, in which participants are asked to respond to in-depth questions regarding their choices.

Data analysis

Data analysis will begin with a comparison of the results of the TMSI and NCS scales, as well as a recording of responses to the demographic questionnaire. Participants will be grouped by coping style (high and low information avoiders) based on the pre-test scores. Statistical tests will be conducted to determine if significant differences exist on measures of satisfaction, number of items read, time spent reading, and genres of items read between group scores for high and low information avoiders and negative and neutral scenarios. Content analysis will be used to group responses and identify themes in the qualitative data. SPSS will be employed for the quantitative analysis and ATLAS.ti for the qualitative analysis.

Limitations

The small scale of this research places some limitations on the ability to generalize from these results to the population at large. At the same time, a smaller amount of participants will also allow this research to be more in-depth, an important advantage as more research on information avoidance is concerned with surface questions of whether people engage in information avoidance, not deeper questions of why or how they avoid information (see Lambert, Loiselle & Macdonald, 2009; Sweeney & Miller, 2012). Additionally, these studies place some emphasis on reports of past behaviour, which introduces the challenging element of memory (Kelly, 2009). However, a focus on past events may also enable participants to speak on their avoidance of information without the stigma of being a “bad” patient.

Contributions

This study will be conducted in the summer of 2014 and preliminary results will be available at the time of the ASIS&T conference. This study will provide a much-needed insight into how health information sources, particularly online sources, are chosen and information behaviour is performed in times of negative affect and health crises. Findings will bring gain to the health care and health education fields by expanding knowledge of the ways people avoid information and on the need for greater
understanding and acceptance of the information avoidance process. Information science researchers and practitioners will also benefit by better comprehension of the process of health information avoidance, which Case (2012) states is a little understood, little researched topic. Both areas will benefit both at the institutional level to inform policy decisions, and at the individual level to develop services appropriate to patients and their families.

REFERENCES


