Older Adults Searching for Health Information in MedlinePlus – An Exploratory Study of Faceted Online Search Interfaces

Bill Kules
School of Library and Information Science
The Catholic University of America
Washington, DC 20064
kules@cua.edu

Bo Xie
College of Information Studies
University of Maryland
College Park, MD 20740
boxie@umd.edu

ABSTRACT
Relatively little is known about how older adults search for health information online, particularly via faceted search interfaces that are increasingly prevalent on the web. To begin to address this gap in the literature, we conducted an exploratory study of older adults’ use of a faceted search interface, MedlinePlus, to search for health information. The study uses selected measures of click behavior along with eye tracking techniques to examine how searchers with limited online search experience interact with a faceted web search interface. It investigates important aspects of faceted search interfaces, including: searcher gaze behavior (what components of the interface searchers look at, how frequently, and for how long); how gaze behavior differs for different health conditions; and how searchers describe their actions. Five older adults aged between 56 and 87 (mean age = 73.5) participated in this study, conducted in a public library, between October and December 2010. Overall, participant use of facets was similar to previous findings, approximately 20-30% of fixation counts and total fixation duration. Searchers appeared to use the facets more for more severe health conditions. These findings may be useful for researchers (e.g., to inform models of health information seeking behavior) as well as practitioners (e.g., for improving search interface designs).

Keywords
Faceted interfaces, e-health literacy, health information seeking behavior, older adults.

INTRODUCTION
With government agencies, non-profit and for-profit organizations increasingly putting health information online, the Internet has become a key source of health information for millions. A recent survey study shows the vast majority (80%) of Internet users have sought health information online (Fox, 2011). However, relatively little is known about how older adults (who often have limited Internet experience) search for health information online, particularly via more sophisticated search interfaces like faceted search interfaces that are increasingly prevalent on the web (Tunkelang, 2009). This study aimed to better understand how these interfaces affect searcher actions and tactics. The study applies eye tracking techniques to examine how searchers interact with a faceted web search interface. It investigates important aspects of faceted search interfaces, including: searcher gaze behavior (what components of the interface searchers look at and in what order); how gaze behavior differs for health conditions with varying degrees of severity; how gaze behavior changes as searchers become familiar with the interface; and how searchers describe their thoughts and actions.

LITERATURE REVIEW
Recent changes toward the increasing use of computers and the Internet in health information seeking and decision-making (Fox, 2011; Oh, Rizo, Enkin, & Jadad, 2005) present both new opportunities and challenges for older adults. Older adults generally have not only the lowest level of proficient health literacy among all adult groups (Kutner, Greenberg, Jin, & Paulsen, 2006) but also limited Internet literacy (Xie, 2008; Zickhur, 2010). Age-related changes in cognition, motor skills, and sensory abilities (Birren & Warner, 1990), coupled with website designs not taking into full account older adults’ special needs, preferences and skills (Chin & Fu, 2010; Jaeger & Xie, 2009; Tullis, 2007; Xie & Pearson, 2010; Xie, Watkins, & Huang, 2010; 2011), further impede older adults’ learning and use of the technology (e.g., Czaja, et al., 2006). The severity of a health condition is negatively correlated with patient preferences for health information and decision-making (e.g., Deber, Kraetschmer, & Irvine, 1996; Degner & Sloan, 1992; Ende, Kazis, Ash, & Moskowitz, 1989; 1990; Hill & Laugharne, 2006). We are not aware of studies that examine differences in searcher behavior by severity of the health condition, which is one aspect this study examines.
Faceted search interfaces have the potential to facilitate older adults’ searches because they provide several forms of cognitive support. The visible facet values show relevant terms, supporting recognition over recall. Facet values are clickable, so searchers can narrow and broaden their results without typing, reducing query reformulation. They help searchers explore their results (Wilson & Schraefel, 2008; Kules & Shneiderman, 2008; Yee, et al. 2003). Searchers have reported feeling more organized about their searches, and using the facets to help assess their results (Kules & Shneiderman, 2008). Faceted interfaces can help searchers be more successful at finding information (Yee, et al. 2003). Faceted interfaces are not always preferred, however. For straightforward tasks (e.g. known item retrieval) simpler interfaces may be preferred even when they are similarly effective (Capra et al., 2007).

Although user studies and log analysis provide insight into facet use, they do not directly show what searchers look at. Eye tracking allows researchers to track what a searcher looks at (or fixates on) on the web page. A fixation is a period where the eye is stationary and the user is focused on a particular area of the screen, presumably reading or otherwise acquiring information from that part of the screen. The frequency and duration of fixations can provide indications of the relative importance or complexity of parts of the screen, as well as the user’s cognitive activity (Jacob & Karn, 2003).

Eye tracking studies have been used to examine how users interact with general search results (Granka, Joachims & Gay, 2004; Lorigo et al., 2006; Pan et al., 2007); to evaluate specific web search design elements (Cutrell & Guan, 2007; Goldberg, Stimson, Lewenstein, Scott & Wichansky, 2002); and more recently in faceted search interfaces (Kules et al., 2009; Kules & Capra, submitted; Zhang & Salaba, 2007). Our previous studies have shown training and task-related differences in how searchers attend to the facets and results. With known item tasks, searchers rarely looked at the facets, but with exploratory tasks, they spent about 25% of their time looking at the facets (Kules et al., 2009). These searchers viewed a brief (90 sec) training video initially. Without the training video, facet use declined to about 13% (Kules & Capra, submitted), suggesting the value of providing short-format, point-of-need training.

RESEARCH QUESTIONS
This study helps answer the following questions:

1. What gaze and click behavior do older adults demonstrate in searching for health information on faceted website interfaces?
2. How might differences in the severity of health topics affect the older adult searcher’s use of specific elements of the faceted search interface? And
3. How do older adult searchers describe their health information seeking actions using faceted website interfaces?

METHOD
Research Site
The research site for the present study was the Hyattsville Branch Library of the Prince George’s County Memorial Library System. The Library System is a publicly-funded large urban library system serving the over 830,000 residents in Prince George’s County, Maryland. The Library System serves a large population of ethnic minorities. According to the U.S. Census Bureau, 66% of Prince George’s County residents are African American/Black, much higher than the 30% overall rate of African American/Black residents in Maryland or the 12% rate nationwide (http://www.census.gov). All branch libraries of the Library System provide free, high-speed Internet access for public use. The Hyattsville Branch Library provided computers with high-speed Internet access, space, and staff support to facilitate the implementation of this study. The geographic location of the Hyattsville Branch Library is convenient to potential research participants and the researchers. It is within 10 miles to the university and easily accessible by car or public transportation (metro and bus).

Participants
Participants for the present study were recruited from former participants of the Electronic Health Information for Life-Long Learners (eHILLL) research project that develops and examines various interventions to understand and improve older adults’ health literacy in the electronic context (for more information about the eHILLL research project, see Xie, 2011; in press; Xie & Bugg, 2009). Participant inclusion criteria included:

1) Must be at least 60 years old; and
2) Do not wear bifocals or trifocals (regular contacts and glasses, including reading glasses, are okay). This is because the eye tracker cannot accurately track the pupil with these glasses.

Seven older adults participated in this study initially. Due to limitations in the eye tracker, we were unable to consistently collect gaze data for two participants, so only data from five of these participants were included in the analyses. Due to the small sample size of this exploratory study, we did not perform further statistical analyses to summarize these participants’ characteristics. Rather, we outline below participants’ profiles to illustrate their basic demographics and computer/Internet experience (Table 1).

Materials
MedlinePlus.gov is a website maintained by the National Institutes of Health (NIH). It provides consumer access to health information, medical dictionaries and other publications. Its search interface provides two facets on the left side of the page that allow searchers to easily narrow and refine their search without entering a new query. Figure
1 shows a typical search result page in MedlinePlus, for the query “high blood pressure.” Two types of facets are available in this interface, Type and Keyword, with a brief topic summary above the list of search results. For this study we are primarily interested in the facets and the list of search results, but there are several other salient interface elements, including the page header, the tabs (e.g. Health Topics) and the topic summary. In Figure 1, the dotted lines and italicized red labels show how we segmented the page into areas of interest (AOIs) for each of the elements to analyze searcher gaze behavior. One other AOI, the footer is not shown.

**Introductory Questionnaire**

The introductory questionnaire measures basic demographics and computer/Internet experience. It also included the 8-item e-health literacy scale (Norman & Skinner, 2006). Building on Bandura’s self-efficacy concept (Bandura, 1986), the e-health literacy scale measures perceived skills at and comfort with using the Internet for health information and decision making. Sample item: “I know how to find helpful health resources on the Internet”. This scale has been used in multicultural samples and has shown excellent internal consistency reliability (scale alpha=.89-.97) with good test-retest reliability (Norman, 2009). The e-health literacy scale includes two supplemental items that measure 1) perceived usefulness of the Internet in helping make health decision and 2) perceived importance of being able to access health resources on the Internet. These items were also included in the introductory questionnaire. All 10 items are on a 1-5 Likert scale; higher score indicates higher perceived skills/comfort, usefulness or importance.

**Introductory Video**

This two minute-long introductory video was recorded using Camtasia Studio 7.0 with one of the research team members serving as the narrator. Below is the video script:

This is the URL for the Medline Plus web site [showing http://medlineplus.gov/ on the screen]. For this study, you will be asked to imagine yourself dealing with three health conditions. You will then search for diagnosis and treatment information on the health condition, using the search page. We will provide you the initial starting point and you will search from there. Let's say you are looking for information on diagnosis and treatment information about back pain. You enter the words "back pain" into the search box and click the "GO" button to

<table>
<thead>
<tr>
<th>participant</th>
<th>participant</th>
<th>participant</th>
<th>participant</th>
<th>participant</th>
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</thead>
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<td>87</td>
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<tr>
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<td>Some college</td>
<td>Bachelor’s</td>
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<td>Good</td>
<td>Fair</td>
<td>Very good</td>
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<td>African American/Black</td>
<td>African American/Black</td>
<td>Asian American</td>
</tr>
<tr>
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<td>$40,000 – $49,999</td>
<td>Do not know for certain</td>
<td>$100,000 or more</td>
</tr>
<tr>
<td><strong>English as primary language</strong></td>
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<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Computer use duration</strong></td>
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<td>&lt;1 year</td>
<td>&lt;1 year</td>
<td>&gt;10 years</td>
</tr>
<tr>
<td><strong>Internet use duration</strong></td>
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<td>Never</td>
<td>&lt;1 year</td>
<td>&gt;10 years</td>
</tr>
<tr>
<td><strong>Computer use Frequency</strong></td>
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<td>Less than once a month</td>
<td>Less than once a month</td>
<td>Everyday</td>
</tr>
<tr>
<td><strong>Internet use Frequency</strong></td>
<td>Once a week</td>
<td>Less than once a month</td>
<td>Less than once a month</td>
<td>Everyday</td>
</tr>
</tbody>
</table>

Table 1. Participant profiles
search Medline Plus. Your initial search for "back pain" returns more than 4000 results. The interface includes clickable categories to help you narrow your results. In addition to the search box, MedlinePlus provides categories and topics that you can click on to help you narrow your results. [Move the cursor around over the facets.] For example, you can click on News to narrow these results to just that category [Click on facet for a moment]. Only 33 results appear under the News category. Please let us know if you have any questions before moving onto the next activity.

PROCEDURE
Data collection took place in a quiet meeting room at the Hyattsville Branch Library. Prior to any data collection, the participant first completed the informed consent form, approved by the Institutional Review Board of both authors' universities. Second, the participant completed the Introductory Questionnaire. Third, the introductory video was shown to the participant to illustrate the tasks the participant would be asked to perform. Fourth, the researchers calibrated the eye tracker (a Tobii T120) to the participant’s eyes. Next, the participant was given printed instructions (task strips) to work on one of the three tasks, presented in a counterbalanced order to minimize order effects. These tasks involved three health condition scenarios, including:

1) Suppose you developed a sore throat, stuffy nose, and cough that lasted for three days. You are about to call your doctor on the telephone. (Query: sore throat, stuffy nose, and cough)

2) Suppose you went to your doctor for a routine physical examination and he or she found that everything was all right except that your blood pressure was high (170/100). (Query: high blood pressure)

3) Suppose you had just been diagnosed with lung cancer yesterday and your doctor told you that it was Stage 2. (Query: lung cancer)

Participants were provided an initial search results page using the indicated query. The participant was instructed to use the MedlinePlus.gov website's search page to look for diagnosis and treatment information about each health condition, and to search until he or she was satisfied with the information found, or until the end of the 10-minute allotted time period when researchers asked him or her to stop. After the completion of all three tasks, the participant was asked to further share their thought processes with the researchers in a 10 minute-long Retrospective Think-Aloud (RTA) interview. We adapted the stimulated recall technique used by Eger, et al. (2007) for usability testing of search engines. They compared several variations of concurrent and retrospective reports, concluding that the retrospective reports cued by video with gaze data overlaid.
were most successful, particularly in complex search environments. During our RTA, the researchers showed a video of what the participant was looking at and clicking on during his or her last search. The video was played at half speed so that the participant would have time to watch and comment on it. The participant was informed that the red dots showed what s/he was looking at, and that the red dots got bigger the longer s/he looked at a particular spot. The participant was asked to tell the researchers what s/he was thinking about while doing the searches. Each testing session involved one participant and lasted for approximately 1.5-2 hours.

DATA ANALYSIS
The Tobii Studio analysis software was used to identify fixations (when the searcher is looking at or near a single point on the screen) and to segment the page into AOIs. Fixations were computed using the Tobii Fixation Filter with a 35 pixel radius (based on Olsson, 2007). Fixations of less than 100 milliseconds were removed from the data (Cutrell & Guan 2007; Inhoff & Radach, 1998).

We allowed participants to view any pages on the MedlinePlus site, but the focus of this study is on the search interface, so our analysis is limited to the search results pages. We examined click behavior and gaze behavior. Researchers have used a variety of metrics to study gaze behavior (Jacob & Karn, 2003). This study adopts two metrics that have been used in previous studies of search interfaces (Kules et al., 2009; Cutrell & Guan, 2007; Lorigo, et al., 2006; Goldberg, et al., 2002):

- **Fixation count** – This measure addresses the question, “How many times do searchers look at each of the AOIs?” It is the number of times the subject’s eye is stable, focused within a small radius (35 pixels in this study). For a given participant + search task + AOI, we counted all the fixations to get a total fixation count. We then computed the ratio of fixations within a given AOI to the grand total all of fixations on search pages over the course of that task, and expressed it as a percentage.

- **Total fixation duration** – This measure addresses the question, “How much time over the course of a search task do searchers look at each AOI?” For a given participant + task + AOI, we summed all the fixation durations to determine total fixation duration. We then computed the percentage of fixation duration for each AOI in the same manner as for fixation counts.

These two measures may reflect the importance of each AOI (Jacob & Karn, 2003). In addition to the gaze metrics, we analyzed the screen video to count three other behavioral measures:

- **Item clicks** – The searcher selected (clicked on) a search result item to view the web page for an individual search result.
- **Facet clicks** – The search clicked on a facet value to narrow the current search results to the category selected.
- **Other clicks** – The searcher clicked on another link on the page, e.g., next page or previous page.

We conducted an informal analysis of the interview data (excluding non-search pages) to identify issues and themes related to searcher awareness, and use of facets.

RESULTS

e-Health Literacy
In terms of e-health literacy efficacy, on average, participants scored 3.03 (SD = .78) on a 1-5 point Likert scale where 3 indicates “undecided”. This suggests that these participants did not have high level of efficacy on e-health literacy. Participants reported a higher level of perceived usefulness of the Internet in helping make health decision (M = 3.80; SD = 1.30) and even higher level of perceived importance of being able to access health resources on the Internet (M = 4.00; SD = 1.23). These findings suggest participants felt the Internet was important and useful in helping them access information and make decisions, yet they did not feel comfortable with their own abilities in being able to use the Internet to access the information they need to make decisions.

Perceived Severity of Health Conditions
We intended the three health conditions to reflect increasing levels of severity, with sore throat being the mildest and lung cancer the most severe. We asked participants to rate their perceived severity of each condition using a 1-5 point Likert scale where 1 indicates “not at all” and 5 means “extremely” severe. The conditions were rated as follows: Sore throat was rated, on average, 3.6 (SD = 1.1), high blood pressure 4.2 (SD = 0.8), and lung cancer 4.2 (SD = 0.8). This suggests that participants found the high blood pressure and lung cancer conditions to be similar, but more severe than the sore throat.

Overall Gaze and Click Behavior
In addition to the six defined AOIs, an “Other” AOI was identified when searchers were looking at the screen outside of a defined AOI (e.g., if they looked at the Español button). Summed across all participants and tasks, the “Other” category accounts for 10.1% of all fixations and 10.4% of total fixation duration.

Fixation Counts
There were a total of 4781 fixations across all participants and tasks. Fixations in the Result AOI accounted for 57% (2743) of all fixations. Facet fixations accounted for 21% (991).
Figure 2. Total fixation counts, across all participants and tasks.

Figure 3. Total fixation duration, across all participants and tasks.

Fixation Duration
The total fixation duration was 1848 seconds (30.8 minutes). Result fixations accounted for 53% (981 seconds) of total fixation time. Facet fixations accounted for 27% (501 seconds) of total fixation time (Figure 3).

Differences by Health Condition
To examine potential effects of health conditions with varying levels of severity, we examined the relative number of fixation counts and the amount of time spent in the AOIs (i.e., fixation duration), and the number of clicks, by task (Figures 4-6, respectively). Both the fixation counts as percentage of total fixations in task and the fixation duration as percentage of total fixation duration in task suggest that the relative proportion of facet use is successively larger as the severity of the health condition increases. Similarly the relative proportion of results use drops. We see a similar pattern in what the participants clicked on. They clicked on facet links relatively more (and results relatively less) with the more severe conditions.

Figure 4. Fixation counts as percentage of total fixations in task, by health condition and AOI.
Figure 5. Fixation duration as percentage of task total fixation duration, by health condition and AOI.

Figure 6. Links clicked on, by health condition

Retrospective Interview
The retrospective interviews generated a total of 1.5 hours of audio and screen video. Our objectives were to understand participants’ understanding of the faceted search interface, how it worked, and how participants used it in their search process. One researcher reviewed the interviews, focusing on the portions of the interview that specifically addressed the search results page, rather than other content pages.

Participant 1 had some prior knowledge of the health condition (lung cancer) and discussed it with the interviewer at length. She discussed her search using a variety of concepts, in addition to terms in the description of the health condition. Her description of how she used the search results demonstrates an understanding of what the facets do and how to use them, as this quote suggests (note that “news” and “MedlinePlus magazine” are both facet values):

“I looked over here [points to the Refine by Type facet section of the webpage] and I said, ‘What am I looking for?’ I’m looking for news about lung cancer. So, yes, that was, uh, a refinement of the large number of, um, results. I never looked down here [points to the Refine by Keyword facet section].

Participant 2 was very quiet, and mostly provided brief answers to interview prompts. In his answers, he mostly used terms that were visible on the screen, suggesting that he was looking for specific terms that he recognized rather than conceptually similar terms. He did not appear to use the facets in an intentional way.

Participant 3 had trouble with basic skills like navigating the page and using the scrollbar. She did not indicate an understanding of facets. In her comments, she discussed concepts related to the health condition (lung cancer), but when discussing how she used the interface she often used terms that were on the screen, suggesting that she may have been scanning for specific recognized terms rather than conceptually similar terms.

Participant 4 exhibited the most advanced search skills in the study. He discussed his searches using a variety of terms related to the health condition (sore throat), like participant 1. He said that results are the more important part but would use facets if didn’t find something in results. If he didn’t find something interesting “on the right-hand side I’d go to the left hand side. And also I always like to
look [garbled] to go down to the bottom before I decide which subject [meaning search result] I’m going to.”

He indicated that he had prior experience with the “left hand side” and that it sometimes took him away from where he wanted to be. “In my limited experience with the computer, sometimes if you go to this kind of thing over here, [indicates facets] it take [sic] you away from the subject that you are searching.” He described an experience with a Marriot hotel web site for Greenbelt, MD, where clicking on a left navigation link unexpectedly took him to an international page, and then continued, “So I try to avoid that side. That’s my personal experience. Other people, it might be different.” When asked how his Marriot experience compared with this site, he replied, “In this case, like, when I tried, and then I was happy that it did not take me away from the subject I was interested in…. Yeah, yeah, so, so then I know that I could use this side [the facets] also.”

Later, he reflected on the difference between the facets and results. He noticed that the facet values are more general than the individual search result items, although he did not specifically articulate a category relationship. “Now I know the topic over here [indicates facets] is like, eh, [garbled] the title, and this, the topic over here [indicates results] is smaller than the title. Ah, this was, title over here [facets] would be broader view… than the title over here [results]. That’s my impression.”

Participant 5, like participant 2, appeared to look for recognized terms in the search results and gravitate to them. He often used terms visible on the screen. He did not appear to use the facets in an intentional manner until the third task, during which he used them nine times. Additional review of the video revealed that in the first two tasks, the participant clicked near, but not on, several facet links. It appeared that he may have been trying to click on the glyph to the left of the text, which is not part of the hyperlink and thus not clickable. During the second task, the research assistant explained the mistake and during the third task, the participant only had one unsuccessful click. The misleading glyph and the small font size created a usability problem, and the participant’s lack of experience (he used the computer and Internet less than a month and had used the computer and Internet less than a year), may have made him more susceptible to this problem.

DISCUSSION
Our first research question focused on older adults’ gaze and click behavior in searching for health information on faceted website interfaces. Our findings suggest that, overall, facets played a substantial role in participants’ use of the search result pages.

We observed similar proportions of fixation counts and fixation durations on the results and facet elements as previous studies of faceted library catalogs found. In Kules and Capra (2009), where a similar short training video was shown to participants (college students), searchers in a faceted library catalog spent about 64% of fixation time on results and 27% on facets. A subsequent study (Kules and Capra, submitted), found similar results when participants were shown the video. (Without the video, participants used the results about 77% of the total fixation duration and the facets about 13%.) Observing similar findings in these independent samples with different characteristics (e.g., age) lends support to the generalizability of the finding that facets may play a substantial role in online searches.

The search tasks for these two prior studies (Kules & Capra, 2009; Kules & Capra, submitted) and the present study shared some common aspects. In the present study, searchers were asked to search for diagnosis and treatment information on a health condition. In the two prior studies (Kules & Capra, 2009; submitted), searchers used the library catalog to find possible topics for an academic research paper. Although these are different tasks, they both entail finding information for which there are multiple valid outcomes. The health task is more structured because the academic task asks for possible paper topics, whereas the health task asks for a specific type of information (treatment) which has right or wrong outcomes.

Our second research question asked how differences in the severity of health topics might affect the older adult searcher’s use of specific elements of the faceted search interface. The results suggest that searchers may look at and use the facets more when the health condition is perceived as more severe (e.g., high blood pressure or lung cancer). This finding is consistent with prior findings extensively reported in the medical literature that suggest the severity of a health condition is negatively correlated with patient preferences for health information and decision-making (e.g., Deber, Kraetschmer, & Irvine, 1996; Degner & Sloan, 1992; Ende, Kazis, Ash, & Moskowitz, 1989; 1990; Hill & Laugharne, 2006). A possible reason is that as the health condition gets more severe, the knowledge complexity required also increases, making patients less likely to want to be involved in the process (Ende, et al., 1989). The faceted interface may help reduce the cognitive load and thus facilitate searches for information about more severe health conditions. This is similar to the hypothesis proposed by Kules and Capra (submitted), which suggests that in the more cognitively demanding stages of a search, searchers rely on the facets more.

An alternative interpretation for these differences is that time differences between facets and results were influenced by the complexity of the results returned by each query. The results appeared to have similar levels of complexity, but this cannot be ruled out as a factor. Future studies should control or measure this possible factor.

Our third research question asked about older adult searchers’ experience with health information seeking using faceted search interfaces. Our participants appeared to have demonstrated three different types of experiences on a
spectrum ranging from having an understanding of the facets to having little, if any, understanding of the facets. One participant articulated an understanding of the facets as a way to advance his search. Another participant appeared to understand this at some level, although she didn’t articulate it as such. The other three participants did not appear to have an understanding of facets.

The sophistication of the searchers’ responses in the interview appeared to correlate with their reported frequency of Internet and computer use. However, neither frequency nor sophistication appeared to correlate with their usage of the facets. For example, participant 4’s overall use of the facets fell between the others in terms of fixations and fixation duration, even though he appeared to be the most sophisticated in his description of how he used them. He was also an experienced and frequent user of the Internet. This suggests that these are not the only factors affecting facet use.

Limitations
This study had several limitations. The sample of this study was very small and non-representative. Four of the five participants of this study were African American/Black and the other participant was an Asian American. This has been a major strength in terms of the eHILLL interventions reaching these ethnic minorities (Xie, 2011; in press; Xie & Bugg, 2009). But it also means the study findings may not be generalizable to other ethnic minority groups. Participants were asked to search for specific health conditions, and they may not have received diagnoses of these conditions. Their (lack of) personal experience with these conditions could be a factor in their behavior. Participants were provided with an initial set of search results based on a typical query. They did not choose the query, and their behavior might differ if they had to choose the query.

CONCLUSION
Findings of this exploratory study suggest that, overall use of facets was similar to previous findings, approximately 20-30% of fixation counts and fixation duration. Similarly, facets accounted for approximately 30% of clicks on the search page. Searchers appeared to use the facets more for more severe health conditions, which suggests a hypothesis that the severity of the health condition affects use of facets (or other elements of the search interface). A larger study could test this hypothesis and might provide insight into any underlying cause. These findings may be useful for researchers (e.g., to inform models of health information seeking behavior) as well as practitioners (e.g., for improving search interface designs).

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REFERENCES


