



Evidence Summary

Risk Profile May Affect Search Process but Not Results

A review of:

McKibbin, K. Ann, Douglas B. Fridsma, and Rebecca S. Crowley. "How Primary Care Physicians' Attitudes Toward Risk and Uncertainty Affect Their Use of Electronic Information Resources." *Journal of the Medical Library Association* 95.2 (2007): 138-46, e49-50. 10 Nov. 2007
<<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1852627>>.

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Abstract

Objective – To compare the use, in terms of process and outcomes, of electronic information resources by primary care physicians with different risk profiles and comfort with uncertainty.

Design – Survey, and observation using "think-aloud" method.

Setting – Physicians' offices.

Subjects – Canadian and U.S. primary care physicians who report seeing patients in clinic settings.

Methods – Volunteers were recruited from personal contacts and the list of physicians who rate current studies for the McMaster Online Rating of Evidence (MORE) project. Physicians completed the Pearson scale to measure attitude toward risk and the Gerrity scale to measure comfort with uncertainty, and those who scored at the extremes of each of these two scales were included in the study (n=25), resulting in four groups (risk-seeking, risk-avoiding, uncertainty-stressed, uncertainty-unstressed). One researcher observed each of these physicians in their offices for an hour during which they completed questionnaires about their computer skills and familiarity with resources, answered

multiple-choice clinical questions, and indicated level of certainty with regard to those answers (scale of 0 to 100%). Physicians also chose two of the clinical questions to answer using their own resources. The think-aloud method was employed, and transcripts were coded and analyzed.

Main results – The study analysis included two comparisons: risk-seeking (11 subjects) versus risk-avoiding (11 subjects) physicians, and uncertainty-stressed (11 subjects) versus uncertainty-unstressed (10 subjects) physicians. Most physicians were included in both sets of analyses. The researchers found no association of risk attitude and uncertainty stress with computer skills nor with familiarity and use of specific information resources (Internet, *MEDLINE*, *PIER*, *Clinical Evidence*, and *UpToDate*). No differences were found for the following outcomes: time spent searching, answers correct before searching, answers correct after searching, and certainty of answer if answer is right, certainty of answer if answer is wrong. There was a statistically significant association of participants' indicating certainty for answers that were correct versus those that were not correct ($p < 0.03$). Across all groups, the percentage of correct answers after searching was low, with the uncertainty-stressed group achieving the highest at 55.5%. There were differences observed in search process, including a trend toward a statistically significant difference in the number and proportion of search methods used across groups between the risk-seeking versus the risk-avoiding groups. Risk-seekers and those not stressed by uncertainty used more search heuristics (rules of thumb or guides that work in most circumstances) than their counterparts when searching. Those stressed by uncertainty tended to use *MEDLINE* less than those not stressed by uncertainty.

Conclusion – Based on a small sample, it appears that primary care physicians who are risk-seeking and/or less stressed by uncertainty have the same (poor) search results as their more risk-averse and stressed-by-uncertainty colleagues although their search processes may differ.

Commentary

McKibbin, Fridsma, and Crowley present a thoughtfully designed study based on previous research identifying risk profile characteristics of physicians. They employ validated scales to categorize risk-seeking/risk-avoiding and uncertainty-stressed/uncertainty-unstressed physicians, and select only those who fall into the extremes to include in the study. Appendices in print and online provide additional information about the study and its tools. It is interesting that their work reinforces previous findings, cited by the authors, that processes but not outcomes may differ between those who can be categorized as risk-averse and those who are risk-seeking. The authors identify the study's limitations including small sample size, its lack of statistical power to detect a difference, and the use of volunteers. This reviewer would add concerns about the lack of blinding – was the observer aware of the categorization of the physician whose office she visited and whom she observed searching? Also, it would have strengthened the study to use an independent observer, rather than someone who was probably known to many of the subjects. In two places, the text indicates that risk avoiders tended toward less use of systems that provided answers and summaries of evidence, but the data indicate otherwise (Table 4, 143).

On the one hand, this research prompts questions for further investigation into the relationship between risk profile (or other personality traits, like patience or self-

confidence) and information retrieval to inform systems design and training. On the other hand, one wonders about the applicability of this research for those of us who are not in a position to assess the risk profiles of those we teach and who would predictably be faced with a heterogeneous audience in any case. The most troubling result of this study is the overall lack of success – even by physicians involved in rating evidence and assumed to be more information savvy – in finding correct answers to clinical questions, independent of risk profile. This failure to easily and correctly answer clinical questions from the

literature has been a recurrent finding, and a reason why evidence summary tools were developed in the first place. It is reassuring that those systems are being used, though distressing that their use doesn't guarantee correct answers to clinical questions. McKibbin and her colleagues are on to something: we need to build better systems for retrieval as well as train physicians to be more effective searchers for clinical information, although the strategy for doing this may need to be less refined than identifying individuals' risk profiles.