Name: Seema K. Schappelle

Defense date: April 28, 2011

Title: Fishing for Information: Evaluating Characteristics of Web Sites used to Convey Environmental Risk Information Through Fish Advisories

Committee:
Dr. Julianne Mahler, Chair
Dr. Susan Crate, Member
Dr. Katherine Rowan, Member
Dr. Michael Slimak, Member

ABSTRACT

The American public is increasingly turning to the Internet to gather, analyze, and evaluate information about environmental risks. The goal of most risk communication campaigns is to help citizens understand and take control of risks, make wise choices, and develop stable and beneficial changes in their risk-related behaviors. All 50 states have issued fish consumption advisories for certain species of fish that may contain chemicals, such as mercury, PCBs, and dioxins, which can pose risks to human health. These advisories are often made available online with the intent of recommending that people limit or avoid eating certain species of fish caught in specific water bodies. This method of environmental risk communication is the focus of this study with a special emphasis on an especially vulnerable population—women of childbearing age and parents responsible for the fish consumption of their young children. This study surveys a purposive sample of this target population in the state of Maryland to determine the respondents' perceptions about characteristics of Web sites used to convey information on safe fish consumption habits, focusing on the usability and credibility of the information presented. This study also provides insights from discussions with state government officials responsible for issuing such guidelines and publishing sites addressing safe fish consumption habits.

Using linear multiple regression and logistic regression, analysis of survey responses was conducted to determine the influence of a site's usability and credibility (as well as other factors) on a respondent's knowledge of the risks of fish consumption and their intended behavior changes. While the results of the analysis do not show that usability and credibility significantly influence one's intended behavior change or their knowledge on this issue, other factors are influential. In this study, a Web site presented in a narrative format (as opposed to a graphical presentation) is a significant predictor of an intended change in behavior. Additionally, younger parents (between the ages of 20 and 39) are more likely to report an intended change in their behavior as a result of viewing certain online fish advisories. Another influential factor in intended behavior change includes the respondent's trust in private sources of information. As a respondent's trust in the information generated by a private firm decreases, their intentions to change their behavior increase. A respondent's fishing habits when mediated by the Web site's presentation format is also a significant predictor. When active anglers view a graphically-presented fish advisory Web site, they tend to report less of an intention to change their behavior in terms of fish consumption, indicating that a narrative site may resonate more with active anglers.

This study shows one's ecological beliefs and gender are significant predictors of a perfect score of one's knowledge of the risks of fish consumption. The results of this study show the probability that a respondent will score a perfect knowledge score of the safety of fish consumption increases as their ecological beliefs score increases. The findings of this study also show male respondents have a higher probability of scoring a perfect knowledge score, in comparison to female respondents.

An additional finding of the study shows both state fish consumption advisory Web sites, California and Maryland, rank low in their usability and credibility. By incorporating a mixed-methodology approach of quantitative and qualitative

research, this study highlights potential options for improvement on these Web sites for consideration by state risk communicators.

On a broad scale, this study highlights the importance of the public sector's need to continually evaluate the effectiveness of publically-administered Web sites. Making sites easier to use while conveying clear, concise messages; and taking steps to appear more credible and trustworthy all help to ensure that online environmental information is communicated, received and acted upon appropriately by the intended audience.