

Qualitative Methods for Studying Health Information Behaviors

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ABSTRACT

Qualitative methods can be used to understand and interpret human behaviors in a variety of contexts, including people's health information behaviors. This panel will discuss current applications of qualitative methods in this context, with emphasis on three examples: visual elicitation techniques, qualitative analysis of content, and grounded theory approaches. The audience will be encouraged to discuss additional qualitative approaches and mixed methods, and how they might be applied to studies of health information behaviors.

Keywords

Qualitative research methods, health information behaviors, interviews, content analyses, social media, visual elicitation techniques, grounded theory approach

INTRODUCTION

Qualitative methods can be used to understand and interpret human behaviors in a variety of contexts (Bryman, 1992; Ritchie, Lewis, Nicholls, & Ormston, 2013). The particular qualitative approach used in a study could vary according to the main purposes of the research. For example, an ethnographic approach can be used to focus on social perceptions, behaviors and interactions among individuals in a group, a community, or a society (Reeves, Kuper, & Hodges, 2008). A phenomenological approach can be used to investigate individuals' lived experiences of a situation, including a description of their thoughts and emotions (Giorgi, 1997). The grounded theory approach emphasizes systematic data collection and analysis throughout an iterative process of theoretical sampling and comparative

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analysis of data (Glaser & Strauss, 1967; Charmaz, 2014).

Within each general approach, a variety of qualitative methods of data collection and analysis might be used. While interviews are frequently used to collect data, other methods include observational approaches, diaries and journal writing, collection of pre-existing texts and artifacts, and visual data collection methods. Such data are typically analyzed through some type of inductive coding approach, but the specific coding processes vary based on the study's goals. The nature of the data analytic method might also be paired with the data collection method.

It is the goals of this panel to stimulate discussion of these various methods as they might be applied in studies of health information behaviors. Qualitative methods have been widely used to investigate the health information behaviors of consumers, patients, care-givers, and healthcare providers. Qualitative methods are appropriate to describe complex and dynamic health information behaviors, as well as experiences situated in personal or social settings. Multiple qualitative methods have been used together, and qualitative methods have also been mixed with quantitative methods, to obtain a complete picture of health information behaviors.

BACKGROUND: QUALITATIVE METHODS USED TO STUDY HEALTH INFORMATION BEHAVIORS

As noted above, a variety of qualitative methods are available to health information behavior researchers. Some of the more typical applications of these methods are reviewed here.

Interviews have been used to reveal the details of consumers' and patients' information needs related to diseases, treatments, medication, supplements, nutrition, exercises, and health insurance, as well as their use and evaluation of health information resources (Choi, 2015). In-person or focus group interviews allow older adults or subjects with disabilities to participate in a study comfortably (Choi, 2015; Karras & Rintamaki, 2012). Task-based interviews, which are accompanied by a series of tasks to be completed by study participants, have been

used to obtain in-depth feedback on the interface of a health-related information system for the elderly (Given et al., 2007). In-depth interviews have been employed with caregivers to identify how they use health information to manage care for patients and what kinds of environmental settings and interpersonal relationships influence their use of health information (Kazmer, Glueckauf, Ma, & Burnett, 2013).

Participant observation enables thorough investigation of the environment in which patients use health information or the situations in which the health information needs occur. Participant observation is often carried out in combination with in-depth interviews to obtain a more complete understanding of conditions in particular situations. In one study, patients who have home care, care managers, trainers, and health practitioners were interviewed, in addition to observation of their social interactions with healthcare providers (Cooper, Lewis, & Urquhart, 2004). Participant observation has also been used to study the work settings of healthcare providers. For example, nurses' information seeking behaviors using different kinds of resources in health and patient data were observed in a care unit of a community hospital, followed by in-depth interviews (McKnight, 2006).

Diaries and journal writing have been used for studies investigating health information behaviors over a long-term period. Sillence, Briggs, Harris, and Fishwick (2007) investigated consumers' evaluation and trust on websites offering health information and advice by asking them to keep diaries about the health websites they visited and how they found information on the websites. Together with the diaries, transaction log data from the websites they visited and interview data were collected and used to identify design and content factors influencing the selection and evaluation of health websites.

Text messages and postings from social media have been used to identify issues and concerns pertaining to health. For example, Twitter or Facebook messages were analyzed to identify the kinds of health information exchanged among consumers as they discussed chronic diseases (De la Torre-Díez, Díaz-Pernas, & Antón-Rodríguez, 2012), antibiotics (Scanfeld, Scanfeld, & Larson, 2010), and public health concerns from the H1N1 outbreak (Chew & Eysenbach, 2010). Tweets by healthcare providers have also been analyzed to identify the general types of health information content shared with the public (Lee, DeCamp, Dredze, Chisolm, & Berger, 2014).

Visual elicitation techniques include both methods that use visual objects to elicit responses from study participants, and methods that ask study participants to create visual artifacts, usually photos or drawings (Hartel & Thomson, 2011). In the context of a semi-structured interview, Thygesen et al. (2011) asked female cancer patients to graph their own emotional changes as they were diagnosed and underwent various forms of treatment. Oliffe and

Bortoff (2007) asked prostate cancer survivors to develop a photographic exhibition about living with prostate cancer, and then discussed the selected photos with the men. As with these examples, most uses of visual elicitation combine the creation of images with interviews discussing those images.

Most qualitative data (with the exception of visual artifacts) are analyzed as bodies of text. Some form of qualitative content analysis is used for this purpose. Qualitative content analysis is defined as "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh, & Shannon, 2005, p.1278). Coding categories developed from a thorough review of the text can be representations of either manifest or latent content. Qualitative content analysis has been used to analyze popular concepts in health information seeking behavior research presented in published articles and books (Lambert & Loisel, 2007). Consumers' criteria on the credibility of health websites have been examined by analysis of their comments on health websites (Fogg et al., 2003). There have also been many studies in which messages posted in an online health community were analyzed to identify types of social support that participants received, such as information, network, and emotional support (e.g., Mo & Coulson, 2008).

While qualitative methods are frequently being used in studies of health information behaviors, their use by information science researchers is not as common. Through this panel discussion, we hope to encourage IS researchers to reflect upon different approaches and adopt the qualitative methods that will be most useful to them.

SESSION AGENDA

The purpose of this panel is (1) to examine some specific examples of using qualitative methods in research on health information behaviors, including the strengths, weaknesses, and challenges of using such methods, and (2) to consider additional qualitative methods that could be used to study health information behaviors. The panel presentation and audience discussion will proceed as follows.

1. A brief introduction to the range of qualitative methods that have been used to study health information behaviors, presented by the panel moderator, Barbara Wildemuth (10 minutes).
2. Three examples of applications of qualitative methods in recent studies of health information behaviors, focusing on what can be learned by applying the exemplary methods in data collection and analysis, presented by Annie Chen, Sanghee Oh, and Kaitlin Costello (30 minutes).
3. Brief closing remarks and additional critique of the methods presented, by Barbara Wildemuth (5 minutes).

4. General discussion of the ways that qualitative methods can be applied in health information behavior studies, with audience participation (45 minutes).

If the audience is hesitant about raising questions, the following questions (among others) will be used to stimulate discussion:

1. What kinds of qualitative methods, other than the methods presented in the three examples by the panel, can be effectively used to investigate health information behaviors in the studies? What kinds of methods have audience members applied, successfully or unsuccessfully?
2. How can the challenges in applying qualitative methods in research on health information behaviors be addressed?
3. What are some ways in which qualitative and quantitative methods can be applied together, to research questions on health information behaviors?
4. Are there additional qualitative methods that can be developed for use in studies of health information behaviors?

THREE EXAMPLE STUDIES

The three panelists (Chen, Oh, and Costello) will each describe some of the methods they used in a particular study of health information behaviors. These example studies were selected because they employ innovative approaches to qualitative data collection and/or analysis in a health-related context.

Visual Elicitation Techniques (Chen)

The manner through which data is collected can have a profound effect on the nature of the analyses conducted and the inferences that can be made. Visual elicitation techniques are one set of techniques that can be used during the data collection process. Annie Chen will present an example of how visual elicitation techniques might be employed in qualitative research by discussing her use of two such techniques in her study of fibromyalgia patients' illness journeys (Chen, 2015). In this study, two techniques were used to facilitate recollection and reflection upon patient experience: a timeline drawing activity and the viewing of an interface for visualizing social media histories. The Online Scrapbook, an interface that was designed for the study, provided a visualization of participants' social media participation by media type, time period, and frequency of participation.

In their respective ways, both techniques were effective for encouraging participants to tell their stories, assisting them to engage in a dialogic exploration of their memories, and taking a fresh look at their own experiences. Each technique afforded both the researcher and the participant access to different parts of participants' experiences, and was also associated with different challenges in

implementation. Aside from sharing the methods that she used, Chen will discuss variations for execution of these methods and the potential affordances/drawbacks of these variations.

Qualitative Content Analysis (Oh)

Sanghee Oh will discuss techniques for performing content analysis on questions and answers in social Q&A. She collected health-related questions and answers posted by health information consumers, patients, care givers, and healthcare providers and used them for understanding health information needs and resources that are sought and shared in social Q&A. An analysis of health-related questions and answers obtained from social Q&A is, however, a challenge in that they are often rich but complex due to the wide range of topics discussed, elaborated descriptions of personal conditions, and varied expressions as well as conversations that are not related to health such as jokes, sarcasm, and spam.

In this panel presentation, Sanghee Oh will present her experiences of using content analysis to identify meaningful content and contexts pertaining to health information behaviors from questions and answers with such a complex nature. She will first introduce the two approaches of content analysis that she has used: (1) an inductive approach of developing a new framework of health information seeking and sharing from a thorough examination of questions and answers (Oh, Zhang, & Park, 2012), and (2) a deductive application of an existing framework of consumer health information searching to interpret the content of questions and answers (Oh, Zhang, & Park, under review). The basic procedures of coding category development and application from the review of question and answer data will be explained. Next, the strengths and limitations of the two approaches in analyzing health questions and answers will be compared. The presentation will conclude with challenges and future directions for using the methods in the analysis of questions and answers, as well as other content posted in social media.

Grounded Theory Approaches (Costello)

Costello has employed grounded theory methods in several studies. This discussion will focus on the techniques she used to carry out the constant comparative method in a two-year constructivist grounded theory study (Costello, 2015). In this study, Costello conducted in-depth interviews with 12 participants in online support groups, all diagnosed with chronic kidney disease, in order to understand their information needs, seeking, and use activities as they developed over time in relation to their illness trajectories. She also harvested most of the posts her participants made about their health in multiple online support groups.

In this discussion, she will cover her strategies for analyzing data using constant comparison, a central component of grounded theory and of many other

qualitative approaches. She will introduce her strategies for uncovering the causes, interactions, and consequences for the themes identified in data. Her technique focuses on a tacit and interactive approach to analyzing data in order to build theoretical understandings of information behavior in context. Using specific examples from her data, she will demonstrate how this technique builds codes, categories, and constructs from the data as it is collected throughout the course of the study. She will also illuminate some of the challenges inherent in conducting theoretical sampling, a cornerstone of grounded theory that drives the collection of new data based on the analysis of collected data.

PANELISTS

Sanghee Oh

Dr. Sanghee Oh is an Assistant Professor in the School of Information at Florida State University. She obtained her PhD in Information & Library Science from the University of North Carolina at Chapel Hill, and her Master of Library and Information Science from the University of California at Los Angeles. Her areas of research interest are health information behaviors, health informatics, social informatics, social media use, human-computer interaction, user-centered interface design and development, and digital libraries. She has studied the information behaviors of various populations, such as lay people, undergraduate students, librarians, and nurses, investigating their motivations and usages of social media in seeking and sharing information about health as well as other topics. At FSU, she teaches both undergraduate and graduate level courses in health informatics. She also teaches graduate level courses on digital libraries.

Kaitlin L. Costello

Dr. Kaitlin L. Costello is an Assistant Professor at the School of Communication and Information at Rutgers, the State University of New Jersey. She studies health information behavior, with a focus on social assessments of relevance and credibility in the context of online health information seeking. She has conducted multiple qualitative studies in this domain, often interacting directly with individuals diagnosed with chronic health conditions. Her recent work includes a grounded theory examination of the link between information seeking and personal health information disclosure in online support groups; a mixed-methods content analysis of discussions about drug use on Reddit; and a study of racial disparities in conversations about cancer on Twitter. At Rutgers, she teaches undergraduate and graduate courses in health informatics, human information behavior, and social informatics.

Annie T. Chen

Dr. Annie T. Chen is an Assistant Professor in the Department of Biomedical Informatics and Medical Education, at the University of Washington School of Medicine. Her research interests include information behaviors in the context of chronic illness, health-related

social media use, and research methods. Some of the topics that she is particularly interested in are long-term health knowledge acquisition and formation, how patients' processes of evaluation of health information may change over time, and the ways in which interface and visualization design can shape people's interpretations of health-related information. At the University of Washington School of Medicine, she currently teaches graduate-level courses in consumer health informatics and biomedical informatics, and human-centered design; and mentors students in research on health information behavior, health information quality, and social media text mining and visualization.

Barbara M. Wildemuth, Moderator

Dr. Barbara M. Wildemuth is a Professor in the School of Information and Library Science at the University of North Carolina at Chapel Hill. Her research focuses on people's use of information and information technologies, with particular emphasis on people's online searching behaviors. Her most recent work includes a methodological study of the search tasks assigned in interactive information retrieval experiments. Her book, "Applications of Social Research Methods to Questions in Information and Library Science," has been adopted as a text in a number of ILS schools in the United States and abroad; a second edition is expected in fall 2016. Her teaching responsibilities include courses in various aspects of research methods, human information interactions, and information ethics.

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