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### Information Sources in Relation to Information Quality, Information-seeking, and Uncertainty in the Context of Healthcare Reform

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# *Healthcare Reform Information Sources in Relation to Information Quality, Information- Seeking, and Uncertainty*

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FRANCIES AND NICOLE SANTORA

## Introduction

Passed in March 2010, the Patient Protection and Affordable Care Act of 2010 (PPACA) has engendered significant, sometimes heated, debate among citizens and policymakers and will set into motion numerous, sweeping changes for the U.S. healthcare system. PPACA (hereafter referred to as healthcare reform) has the capacity to affect almost every single American by changing legislation, regulating insurance laws and employee benefits, and covering an additional 32 million individuals (The Commonwealth Fund 2010). Though there is much debate about healthcare reform and the impact it will have on the healthcare industry and the economy in the U.S. (Doherty 2010), there is little systematic knowledge regarding how the public is acquiring information about healthcare reform and the public's perceptions and understanding of healthcare reform itself.

Healthcare reform is an emerging health policy context that is relevant to health communication researchers for three reasons. First, healthcare reform can have a direct, simultaneous impact both on well individuals and those with chronic and acute health conditions. Second, information about healthcare reform includes elements of prevention, intervention, and/or treatment, based on individuals' current health status. Finally, due to healthcare reform's partisan nature, public perceptions and understandings of it could be considerably impacted by the one-sided, divisive perspectives of the political entities and organizations that have a considerable stake in the success or failure of the legislation. Thus, determining how and where the public is acquiring healthcare reform information is important in order to begin to recognize public perceptions and understandings of the legislation. This chapter thus explores the various interpersonal and media sources used by the public to gather healthcare reform information in relation to individuals' amount of information-seeking, beliefs about the provision of reliable, quality information, and level of uncertainty about healthcare reform.

## Media and Interpersonal Information Sources

Information, which is “stimuli from a person’s environment that contribute to his or her knowledge or beliefs” (Brashers et al. 2002: 259), can be obtained via a number of communication channels (Dutta-Bergman 2004). One reason health communication scholars and researchers have become interested in health information-seeking behavior in particular is because it is such a prevalent use of media and interpersonal sources (Burkell et al. 2006). Initially, individuals seeking health information are likely to consult interpersonal sources such as family or friends (Buller et al. 1995), though media sources such as television, newspapers, and the Internet, are subsequent, important sources for health information (Brashers et al.). Media are certainly integral health information sources, as they define illness and health, feature services and products that can help consumers manage their health, and provide a representation of others who have specific health conditions to a large number of individuals (Cotten and Gupta 2004). For example, Fox (2006) suggests 80 percent of adults surveyed have searched for health information online, and 53 percent indicated they used the information they found to make health decisions.

Dutta-Bergman (2004) examined interpersonal and media health information sources that included TV, radio, newspapers or magazines, hotlines, the Internet, and family or friends. He found that individuals who utilized active sources such as newspapers, magazines, and the Internet, which encourage the gathering of information and require participants to communicate with others while obtaining information, were more likely to have strong health beliefs and to be health conscious than those employing passive sources such as TV and radio. Dutta-Bergman’s study examined a random sample of Americans, which presumably included both individuals who were healthy and those with health conditions; this is a population similar to those who we believe will be impacted by healthcare reform and thus will seek information about it. As such, we also utilize these information sources in this chapter to understand how the public acquires and evaluates information about healthcare reform.

In related research on health information sources, Pecchioni and Sparks (2007) found that patients’ family members reported being significantly more satisfied with the Internet as a health information source, whereas patients themselves reported more satisfaction with doctors and nurses as health information sources. Madden and Fox (2006) also found that 58 percent of caretakers reported the Internet was an important tool for making health decisions. Time constraints, competing demands for attention, and a lack of training in effective communication impair physician’s communication with patients (Sparks et al. 2007), which most certainly influences patient health information-seeking behaviors (Sparks and Villagran 2010), and can greatly impact medical adherence and decision-making for patients (Tinley et al. 2004).

In addition to being related to multiple aspects of individuals’ health beliefs, use of various information sources are also of interest because they can be linked to specific health behaviors. For example, Buller et al. (1995) found that the more individuals sought skin cancer information from print media (that is, newspapers, magazines, newsletters, or pamphlets), the more they engaged in skin-protection behaviors. Further, use of healthcare providers and magazines or newspapers as information sources, as opposed to the Internet and toll-free phone numbers, was positively related to requesting a specific prescription medication (Lee 2009). Lee also determined that using the Internet as an

information source facilitated consumers to discuss specific prescription medication with their health providers, an effect that grew substantially between 1999 and 2002. As such, using various media and interpersonal sources for obtaining health information has a number of potentially important implications, particularly when considering that behaviors related to healthcare reform can involve any combination of prevention, intervention, and/or treatment. We thus examine these sources in relation to information-seeking, information quality, and uncertainty.

## INFORMATION-SEEKING

Information-seeking is defined as “the purposive gathering of information” that is intentional and goal-directed (Hogan and Brashers 2008: 50). Passively attending to healthcare reform coverage when it is encountered, especially in a media environment where health information is readily available and difficult to avoid (Brashers et al. 2002), would also constitute information-seeking in this chapter. This perspective also aligns with Hogan and Brasher’s principle of uncertainty management which states that there are multiple information sources and forms.

In terms of health information-seeking, individuals employ a variety of sources. In a study of breast cancer patients, high monitors (that is, active information seekers) were more likely to use newspapers and magazines as cancer information sources than low monitors (Cowan and Hoskins 2007). Further, individuals with diabetes reported frequently turning to their friends and family for information, as well as passively acquiring information from sources such as newspapers and television (Longo et al. 2010). The Internet was a popular source for prescription medication information (DeLorme et al. 2011).

According to Buller et al. (1995), individuals who are faced with risky, uncertain health situations where multiple courses of action are possible will actively search for information. Though healthcare reform was followed very closely by 51 percent of the American public in 2010 (Pew Research Center for the People and the Press 2010), many individuals could not accurately or confidently describe the specifics of the legislation (Knowledge Networks 2010). Thus, it is likely that many citizens sought information about healthcare reform and employed a variety of mediated and interpersonal sources to do so. We next consider how they evaluate the information that they seek.

## INFORMATION QUALITY

The quality of health information involves individuals evaluating the information they seek by way of the following components: how current or recent the information is; how relevant it is to what the individual is searching for; how reliable and accurate the information is believed to be; how comprehensive and inclusive the information is; and, how useful the individual finds it to be in meeting his or her needs (Eysenbach and Kohler 2002, Sheppard et al. 1999). Burkell et al.’s (2006) sample of spinal cord injury participants indicated that, though online information was seen as more accessible, it was also perceived to be less accurate, current, and specific. Participants also expressed some concerns about magazines or newsletters, with information from this mediated periodical source viewed as more current, but less accessible and specific. Nevertheless, periodicals were a source of spinal cord injury information that was employed by a large

proportion of participants. In another context, HIV/AIDS patients rated their healthcare professionals as being most likely to provide quality, reliable information (Hogan and Palmer 2005). Though other interpersonal information sources were ranked next, Hogan and Palmer noted that this source was not very strong in terms of quality and reliability.

Similar to interpersonal sources, prior research has shown that the Internet produces an overload of information that is not regulated for quality and, thus, could potentially be unreliable and harmful (Christensen and Griffiths 2008, Cowan and Hoskins 2007). Despite this limitation, perceived usefulness of the Internet as an information source positively predicted individuals seeking prescription drug information online (DeLorme et al. 2011). Information quality thus seems to be of particular concern when the Internet is a primary information source. Overall, there is conflicting research evidence about the extent to which online health information is perceived to be of high quality, and little empirical indication about whether the quality of health information varies by other media and interpersonal health information sources. As a broad health topic that affects both well and ill consumers and provides information for health prevention, maintenance, and treatment, healthcare reform is thus an ideal context for examining information quality differences by information source.

## UNCERTAINTY

According to Brashers (2001), uncertainty occurs “when details of the situation are ambiguous, complex, unpredictable, or probabilistic; when information is unavailable or inconsistent; and when people feel insecure in their own state of knowledge or the state of knowledge in general” (478). In the health context, uncertainty is so integral to information-seeking that Cotten and Gupta (2004) define health information-seeking as searching for and receiving messages that assist in uncertainty reduction about one’s health status. Uncertainty can also be linked to information quality. For example, information about a subject that is found to be unreliable or inaccurate, dated, irrelevant, and/or incomplete will likely mean that the individual is uncertain about the topic. Indeed, in the long-distance caregiving context, uncertainty shared a significant small-to-moderate, positive relationship with information quality (Bevan et al. 2011). Though uncertainty and information processes are inextricably linked (for example, Hogan and Brashers 2008), no known research has examined whether levels of uncertainty differ by health information source. However, Gill and Babrow (2007) found that themes of uncertainty and ambivalence were dominant in magazine articles about breast cancer, suggesting that uncertain messages are present in (and may differ by) health information sources.

As healthcare reform significantly alters a health care system that is already challenging and complex (Johnson 2011) and how the legislation will actually unfold and be implemented is unknown (Doherty 2010), it should be a highly uncertain situation for consumers and thus an ideal context for comparing uncertainty levels in relation to different information sources. Further, healthcare reform is a health topic that is of interest both to those who are well and ill and involves prevention, intervention, and treatment messages. Thus, healthcare reform differs from many specific health conditions or illnesses in an integral way: individuals cannot rely on health professionals as a reliable information source. For example, research regarding information sources for health topics such as skin (Buller et al. 1995) and breast (Cowan and Hoskins 2007) cancer, diabetes

(Longo et al. 2010), HIV/AIDS (Hogan and Palmer 2005), and spinal cord injury (Burkell et al. 2006) identified health professionals as frequent, reliable sources of information for participants about their conditions. However, physicians themselves are uncertain about healthcare reform (Doherty 2010) and if that influential information source is not available, individuals are likely to experience uncertainty about the legislation. Further, this uncertainty could differ by both the sources that are employed and viewed as most important.

## Research Questions

Healthcare reform is a health issue that has been extensively covered by media sources such as the Internet, television, magazines, and newspapers. Indeed, it was one of 2010's top news stories (Crary 2010, Pew Research Center for the People and the Press 2010, Tharoor 2010). Despite the extensive news coverage, individuals were frequently wrong about what was and was not contained in the healthcare reform bill, and were also fairly uncertain about their judgments (Knowledge Networks 2010). As such, investigating which sources were used and preferred by the American public for healthcare reform information in relation to information-seeking, information quality, and uncertainty is valuable for understanding which sources are perceived as useful and which are not about this important, far-reaching topic.

Healthcare reform is clearly a new and unique form of health policy and is a broad health topic. As such, it is unlike much health information-seeking research topics that focus on a specific illness or condition. We thus ask the following three exploratory research questions in the context of healthcare reform:

RQ1: Does level of information-seeking vary by (a) whether or not a particular information source was used and (b) what the most important source of information was?

RQ2: Does level of information quality vary by (a) whether or not a particular information source was used and (b) what the most important source of information was?

RQ3: Does level of uncertainty vary by (a) whether or not a particular information source was used and (b) what the most important source of information was?

## Method

### PARTICIPANTS AND PROCEDURES

Researchers at Chapman University collected these data, as part of a larger study on public perceptions of healthcare reform. An online questionnaire on SurveyMonkey.com was employed. All individuals had to meet two criteria to participate: (1) be 18 years or older; and (2) be an American citizen. Participants ( $N = 389$ ) were recruited in three ways. First, Facebook and Twitter posts and emails to the researchers' extended

social and professional contacts were employed. Initial participants recruited via this method were also asked to forward the study link to others who they thought may want to participate. Second, study information was posted under Craigslist.org's Community: Volunteers section in six randomly selected cities: Kansas City, MO; New York, NY; Dallas, TX; Butte, MT; and Baltimore, MD. Third, information about the study was announced in Chapman University undergraduate communication studies classes, and the survey link was given to interested students. Upon consenting to participate, individuals were told that the study investigated individuals' perceptions and understanding of healthcare reform, defined as "the Patient Protection and Affordable Care Act (PPACA) that was signed into law in March 2010." Participation took approximately 10–15 minutes, was voluntary, anonymous, and without compensation.

The survey was open from September 24, 2010 to October 30, 2010, a date range that was chosen for three reasons:

1. to ensure that enough time had passed since March 2010, when healthcare reform became law, so that participants could seek information and form opinions about it;
2. to correspond with heightened healthcare reform media coverage accompanying the implementation of the initial set of benefits of the law that took place on September 23, 2010; and
3. to finish collecting data before the November 2, 2010 national midterm elections so participant responses would not be impacted by the election results.

Participants averaged 41 years of age (*range* = 18–78, *SD* = 16.06), were primarily male (*n* = 239, female *n* = 98), and classified themselves as White/Caucasian (*n* = 280, Asian *n* = 25, Hispanic/Latino *n* = 24, other *n* = 22, Black/African American *n* = 3, American Indian or Alaska native *n* = 2, Hawaiian or Pacific Islander *n* = 1). Respondents' highest completed education level included no degree (*n* = 2), high school/GED (*n* = 41), Associates degree (*n* = 27), Bachelor's degree (*n* = 113), Master's degree (*n* = 94), Ph.D./Ed.D. (*n* = 33), MD (*n* = 8), and other (*n* = 11). Participants were currently employed in full-time (*n* = 177) or part-time (*n* = 75) positions, or were unemployed (*n* = 72). Annual household income ranged from under \$10,000 (*n* = 11), \$11,000–20,000 (*n* = 13), \$21,000–\$30,000 (*n* = 11), \$31,000–\$50,000 (*n* = 31), \$51,000–\$75,000 (*n* = 45), \$76,000–\$100,000 (*n* = 51), \$101,000–\$150,000 (*n* = 67), to over \$150,000 (*n* = 53, prefer not to answer *n* = 47). Most participants (*n* = 204) voted for Barack Obama for president in the 2008 election (did not vote for Obama *n* = 88, did not vote *n* = 34) and were Democrats (*n* = 168, Republican *n* = 54, Independent *n* = 77, other *n* = 25).

The majority of participants currently had health insurance (yes *n* = 352, no *n* = 37), and those who were insured indicated it was sufficient for their healthcare needs (yes *n* = 295, no *n* = 57) and was moderately-to-highly satisfying (*M* = 5.37, *SD* = 1.53, 1 = strongly disagree, 7 = strongly agree). Via a series of non-exclusive items, a minority of participants reported being members of groups that were particularly likely to be impacted by healthcare reform (that is, parents with children without insurance *n* = 23, those with jobs that do not provide health insurance *n* = 62, who cannot get insurance due to a pre-existing condition *n* = 23, who cannot afford health insurance *n* = 56, who are employed in the healthcare field *n* = 74, are small business owners/self-employed *n* = 46, or are seniors on Medicare *n* = 18). Via three 7-point items, participants moderately:



1. supported healthcare reform ( $M = 4.71$ ,  $SD = 2.09$ ); believed that
2. healthcare reform will personally impact their health ( $M = 4.54$ ,  $SD = 1.68$ ); and
3. that healthcare reform will be an improvement over the U.S.'s prior method of handling healthcare ( $M = 4.47$ ,  $SD = 2.01$ ).

In addition, a 7-point item found that participants were paying a moderate-to-high amount of attention to healthcare reform ( $M = 5.03$ ,  $SD = 1.59$ ).

## MEASURES

*Information sources* Information source about healthcare reform was measured using items adapted from Dutta-Bergman (2004). Seven dichotomous yes/no items asked whether participants had used each source for healthcare reform information and then were asked via a single item to choose which source was most important (see Table 2.1). The following information sources were included: TV, radio, newspaper, magazines, Internet, family or friends, and other.

*Information-seeking* Healthcare reform information-seeking was adapted from Kahlor et al.'s (2006) 2-item scale. Higher values indicate more information seeking (1 = Strongly disagree, 7 = Strongly agree; When healthcare reform comes up, I try to learn more about it;  $M = 4.88$ ,  $SD = 1.36$ ,  $\alpha = .69$ ).

*Information quality* The healthcare reform information quality scale was adapted using eight Likert-type items from the 2003 Health Information National Trends Survey (HINTS) that measured cancer information quality (1 = Strongly disagree, 7 = Strongly agree). As this adapted scale has not been used in a health policy context such as healthcare reform, we conducted an exploratory principal component analysis with varimax rotation. Criteria for factor selection were a .65 primary loading with all other loadings under .35, an eigenvalue of at least 1, and at least two items per factor. Two factors meeting these criteria emerged: (1) a 4-item *satisfaction with information quality* factor (for example, You were satisfied with the information you learned about healthcare reform; eigenvalue =

**Table 2.1 Media and Interpersonal Information Source Frequency and Importance**

Information source	Use: Yes/No	Most important
TV	285/79	42
Radio	208/136	46
Newspaper	258/92	62
Magazines	151/172	10
Internet	304/54	149
Family or Friends	236/98	35
Other	51/169	26

Note:  $N = 389$ .



1.19, 11.93 percent of the variance explained;  $M = 4.34$ ,  $SD = 1.33$ ,  $\alpha = .77$ ); and (2) a 6-item *difficulty obtaining information* factor (for example, It took a lot of effort to get the information you needed about healthcare reform; eigenvalue = 4.55, 45.52 percent of the variance explained;  $M = 3.80$ ,  $SD = 1.33$ ,  $\alpha = .81$ ). Higher items indicate greater information quality satisfaction and difficulty.

*Uncertainty* Uncertainty regarding healthcare reform was assessed by way of seven items from Mishel's (1981) health-related uncertainty measure (1 = Strongly disagree, 7 = Strongly agree; It is not clear to me what is going to happen with healthcare reform). Higher values indicate greater uncertainty ( $M = 4.39$ ,  $SD = 1.27$ ,  $\alpha = .85$ ).

## Results

The three research questions were tested via a series of univariate ANOVAs. For RQs 1a, 2a, and 3a, univariate ANOVAs examined levels of the information and uncertainty variables according to whether or not each information source was used. For RQ1a, those who employed each of the healthcare reform information sources except for family/friends engaged in greater information-seeking than those who did not use these sources. For RQ2a, those who read magazines were more satisfied and had less difficulty with healthcare reform information quality than those who did not. In addition, those consulting family/friends were less satisfied and had more difficulty with healthcare reform information quality than those who did not. For RQ3a, individuals who used magazines as an information source for healthcare reform were more certain than those who did not. In contrast, those who acquired healthcare reform information from family/friends experienced more uncertainty than individuals who did not employ this source of information. No other information source differences were observed for information-seeking, information quality, and uncertainty (see Table 2.2 for means and  $F$  values).

For RQs 1b, 2b, and 3b, the four information and uncertainty variables were examined in relation to the fixed factor of most important healthcare reform source. Tukey HSD *posthoc* tests were employed. Only information-seeking (RQ1b) significantly differed according to most important information sources: when newspaper or other sources were rated as most important, there was more information-seeking than when family/friends was the most important source with no other sources differing from one another. No other most important information source differences were observed for information quality (RQ2b) or uncertainty (RQ3b; see 2.3 for means and  $F$  values).

## Discussion

Our exploratory study detected a number of interesting trends regarding participant sources of information about the topic of healthcare reform in relation to differing levels of information quality, information-seeking, and uncertainty. Participants who used each information source, except for friends/family, reported seeking more information about healthcare reform (RQ1a). If magazines were used or family/friends were not used as information sources, the quality of information was satisfying to participants, and this information was also viewed as less difficult to obtain (RQ2a). If participants did

not use magazines or did use family/friends as an information source, they were more uncertain about healthcare reform (RQ3a). Results showed those who indicated that newspaper or other channels were their most important information source engaged in more information-seeking than those who identified family/friends as most important, with no differences observed by most important information source for uncertainty or information quality (RQ1b, 2b, and 3b). What these findings mean for understanding the utility of various information sources for acquiring healthcare reform information is discussed below.

Participants' use or non-use of a particular information source was found to be significantly related to each of the information and uncertainty variables. In particular, when magazines were employed as a source of healthcare reform information, participants

**Table 2.2 F Values and Means for Media and Interpersonal Information Sources by Information-seeking, Information Quality, and Uncertainty**

	<b>Satisfaction with information quality</b>	<b>Difficulty obtaining quality information</b>	<b>Information-seeking</b>	<b>Uncertainty</b>
<b>Information Source</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>
TV	.69	.27	4.78*	.90
Yes <i>M</i>	4.29	3.85	4.94 <sup>a</sup>	4.45
No <i>M</i>	4.43	3.76	4.56 <sup>b</sup>	4.30
Radio	.48	1.27	8.45**	1.00
Yes <i>M</i>	4.31	3.74	5.07 <sup>a</sup>	4.35
No <i>M</i>	4.41	3.91	4.63 <sup>b</sup>	4.50
Newspaper	.05	2.25	18.84***	.02
Yes <i>M</i>	4.33	3.74	5.08 <sup>a</sup>	4.41
No <i>M</i>	4.37	3.99	4.38 <sup>b</sup>	4.43
Magazines	8.08**	9.92**	16.98***	9.27**
Yes <i>M</i>	4.57 <sup>a</sup>	3.54 <sup>a</sup>	5.22 <sup>a</sup>	4.18 <sup>b</sup>
No <i>M</i>	4.15 <sup>b</sup>	3.01 <sup>b</sup>	4.60 <sup>b</sup>	4.62 <sup>a</sup>
Internet	.01	.81	13.03***	1.33
Yes <i>M</i>	4.34	3.77	5.01 <sup>a</sup>	4.37
No <i>M</i>	4.33	3.95	4.27 <sup>b</sup>	4.59
Family or Friends	5.65*	10.48**	1.49	14.27***
Yes <i>M</i>	4.22 <sup>b</sup>	3.97 <sup>a</sup>	4.78	4.59 <sup>a</sup>
No <i>M</i>	4.60 <sup>a</sup>	3.46 <sup>b</sup>	4.98	4.00 <sup>b</sup>
Other	.10	1.59	15.68***	.23
Yes <i>M</i>	3.56	3.56	5.55 <sup>a</sup>	4.17
No <i>M</i>	3.51	3.83	4.73 <sup>b</sup>	4.28

Note: For each column, values with different subscript letters significantly differ at  $p < .05$ .

\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ .

**Table 2.3 F Values and Means for Most Important Media and Interpersonal Information Sources by Information-seeking, Information Quality, and Uncertainty**

Information Source	Satisfaction with information quality	Difficulty obtaining quality information	Information-seeking	Uncertainty
<i>F</i>	1.10	1.53	5.17*	1.05
TV	4.01	3.94	4.33 <sup>a, b</sup>	4.55
Radio	4.39	3.60	5.02 <sup>a, b</sup>	4.18
Newspaper	4.42	3.73	5.23 <sup>a</sup>	4.36
Magazines	4.32	4.12	4.25 <sup>a, b</sup>	4.15
Internet	4.44	3.76	5.04 <sup>a, b</sup>	4.38
Family or Friends	4.01	4.33	4.07 <sup>b</sup>	4.81
Other	4.56	3.51	5.25 <sup>a</sup>	4.23

Note: For each column, values with different subscript letters significantly differ at  $p < .05$ .

\*  $p < .01$ .

engaged in information-seeking, felt that this information was less difficult to obtain and satisfy, and felt more certain about healthcare reform. Further, when newspapers were rated the most important healthcare reform information source, participants sought more information. These findings are generally consistent with Dutta-Bergman's (2004) research, which found that those who obtained health information from newspapers or magazines were more health-oriented than individuals who did not.

Both newspapers and magazines can provide active, cognitively involved, in-depth coverage of a health issue and can also be archived for future information-seeking (Dutta-Bergman 2004). These qualities may make magazines, and to a lesser extent, newspapers, particularly appealing as an information source for individuals who are learning about healthcare reform and may thus explain this pattern of findings. Further, compared to television and newspapers, magazines may be viewed as a less partisan or biased form of media for health information, which may explain why participants viewed information from this particular media source as being of relatively higher quality and providing more certainty about healthcare reform. Magazines may have also been viewed as providing information that is easier to obtain because they can be available in multiple forms (for example, both in paper form and online through the magazine's website). Further, magazines provide a great deal of information, which to our participants may have translated into less difficulty obtaining information because they did not have to consult additional information sources. In addition, the growth of magazines as a health information source (Gill and Babrow 2007) means that this media channel has the potential to be an invaluable resource for individuals seeking healthcare reform information.

In contrast, when healthcare reform information was obtained from interpersonal sources such as family/friends, participants felt that this knowledge was less satisfying, more difficult to obtain, and felt more uncertain about healthcare reform than those who did not. Further, when family or friends was selected as the most important healthcare

reform information source, less information-seeking occurred. Our results are potentially problematic when considering that university students recently indicated they used family and friends most frequently as a source of health information (Percheski and Hargittai 2011). This pattern of findings also differs from Dutta-Bergman's (2004) results, which viewed family/friends as a useful source of information. However, our findings suggest our participants may be aware that family or friends can be an inaccurate and detrimental source of health information, as cautioned by Buller et al. (1995).

In addition, the topic itself may explain the inconsistency between our findings and Dutta-Bergman's (2004) regarding the family/friends information source, such that the ubiquity of healthcare reform may have meant our participants found themselves as passive, even unwilling, participants in interpersonal interactions about the issue. This pattern of non-use also would clarify why use of the family/friends information source was the only one for which information-seeking levels did not significantly differ. Further, the controversy of the topic may also assist in understanding these findings – the politically charged, partisan atmosphere surrounding healthcare reform may have meant that discussing the topic with family or friends was not perceived by participants as helpful. In fact, if discussed with those who have differing, extreme opinions and if the conversation is primarily one-sided in nature, healthcare reform could be a polarizing, frustrating, and conflict-inducing topic. Overall, our pattern of findings suggests that magazines, and to a lesser extent, newspapers, seem to be a useful form of healthcare reform information, whereas learning about healthcare reform from family and friends can potentially be problematic.

Though not a specific focus of our investigation, we also found that the Internet was both the most-used healthcare reform information source and the most important channel for our participants. Though this finding may to some extent be an artifact of our online data collection method, it is consistent with previous research (for example, DeLorme et al. 2011, Eysenbach et al. 2002, Fox 2006). Our results may partially be explained by Pecchioni and Sparks' (2007) research, which found that family caregivers were more satisfied with the Internet as a source of health information.

As the Internet is an active information source that is used by individuals who are health conscious, have strong health orientations, and take part in healthy activities (Dutta-Bergman 2004), that this source is preferred by our participants for acquiring healthcare reform information makes sense. However, the general lack of quality control regarding online health information (for example, Cline and Haynes 2001, Eysenbach and Kohler 2002) means that information obtained about healthcare reform via the Internet could be inaccurate, misleading, or biased. These limitations of the Internet seem to be of particular concern for our participants, who did not discern that information quality differed according to whether or not the Internet was used or was their most important source of healthcare reform information.

## Implications for Academics

Academic research can extend and be informed by our findings in two ways. First, our information quality variable emerged as a multidimensional concept. The satisfaction with the quality of information dimension involved confidently being able to find information about healthcare reform and viewing information as useful, satisfying, and

trustworthy. Conversely, the difficulty in obtaining quality information variable included frustration, trouble, and effort in locating and comprehending information about healthcare reform. Using the same 2003 cancer information HINTS items, these same information quality dimensions were also observed in long-distance caregiving research (Bevan et al. 2011). Information quality has been measured unidimensionally, but our findings suggest that information quality is multidimensional. Future research may want to consider these nuances and how quality of information is assessed in multiple ways.

Second, a variety of future research ideas for scholars interested in healthcare reform emerge from our findings. Longitudinal studies that trace public information-seeking and understanding of healthcare reform until and beyond its full implementation in 2014 would provide an ongoing examination of how the public seeks and consumes knowledge about this important topic. Another healthcare reform research topic is to compare information management and usage behaviors of individuals who are healthy to those with acute and chronic health conditions. Relatedly, the extent to which healthcare reform information-seeking and usage behaviors may differ when attempting to prevent or treat specific health conditions or simply to remain well would also be informative.

## Implications for Health Practitioners

The PPACA is a new and evolving national health policy that will affect millions of Americans. Which sources for healthcare reform information are used and viewed as most important can assist health practitioners in designing messages that alleviate uncertainty and difficulty in obtaining information, while promoting information-seeking practices and satisfaction with the quality of information obtained. We thus offer a number of implications of our findings for health practitioners.

First, healthcare reform campaign messages may want to recommend active, in-depth information media sources such as magazines to individuals who are interested in acquiring quality healthcare reform information. However, individuals who are not health-oriented may be less likely to employ active media sources such as magazines and newspapers, and doing so exclusively in campaigns may create a knowledge gap, especially if a unique population is of particular interest (Dutta-Bergman 2004). Tailoring different healthcare reform messages for passive media sources, such as TV and radio, may also target individuals with a low health orientation (Dutta-Bergman).

Conversely, designers of health campaign messages may want to caution individuals about acquiring information from their family or friends about healthcare reform. Though this source of health information has been considered valuable in previous research (for example, Buller et al. 1995, Dutta-Bergman 2004), the partisan and controversial nature of healthcare reform means these interpersonal sources are likely to be less useful in this context. Finally, the Internet is generally thought of as a valuable and frequently employed health resource (for example, Rains 2007). In this context, however, health communicators should understand that the Internet, though the most frequently used and preferred healthcare reform information source for our sample, was also perceived by our participants as no more or less a useful or certain information source than TV, radio, or newspapers. As such, determining ways to assure consumers that they can be certain about online healthcare reform information from specific sources such as [www.healthcare.gov](http://www.healthcare.gov), the official government website, and that it is of high quality, would allow

health campaign designers to make the best use of this media source for disseminating healthcare reform information.

## Conclusion

A number of limitations exist in this study. Our convenience sample does not truly represent the perspectives of the entire U.S. population about healthcare reform. That this study was conducted online also likely inflated the number of individuals who used and preferred the Internet as a healthcare reform information source. However, from September 23–26, 2010, during the start of our data collection, healthcare was the second most followed news story by the American public (Pew Research Center for the People and the Press 2010), suggesting that many of our participants were likely seeking healthcare reform information via a variety of sources at that time. Nonetheless, future research should attempt to include a larger sample size with individuals from a broader range of backgrounds (for example, SES, race/ethnicity, age, gender, and so on) using multiple data collection methods.

In conclusion, all aspects of healthcare reform are new – the actual guidelines of the legislation, the interpretation and enactment of the laws, media coverage, and even the response and feedback of individuals who are most affected by it. As the provisions of healthcare reform continue to take effect and are challenged in federal and state courts, individuals are going to desire more certainty about the legislation as well as more quality information. Our exploratory findings suggest that magazines are the preferred source for such quality healthcare reform information and decreased uncertainty. However, the Internet, as the most frequently used and important source of healthcare reform information by our sample, should also be considered by those who are invested in the continuation and success of the healthcare reform legislation. Overall, government officials and health communication scholars can use our findings to devise the most concise and effective way of communicating healthcare reform information and policies to the public.

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