

Healthcare reform information-seeking: Relationships with uncertainty, uncertainty discrepancy, and health self-efficacy

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Abstract

This exploratory study examines information-seeking about the 2010 Patient Protection and Affordable Care Act (i.e. healthcare reform) in relation to the potential barriers of uncertainty, uncertainty discrepancy, and low health self-efficacy. Adult United States participants completed an anonymous online survey about their perceptions and understanding of healthcare reform. Results confirmed recent literature, suggesting a complex relationship between information-seeking and uncertainty. Specifically, for this sample, significant positive relationships were observed between information-seeking about healthcare reform and uncertainty, uncertainty discrepancy, health self-efficacy. Further, uncertainty discrepancy was the potential barrier that accounted for the most variance in predicting information-seeking. Implications of these findings for improving public understanding of healthcare reform are discussed.

Keywords: Healthcare reform, Uncertainty, Information seeking behavior, Human information processing, Self efficacy

On 23 March 2010, the Patient Protection and Affordable Care Act was signed into law. During the months leading up to and after the passage of this legislation (hereafter called healthcare reform), the American public was asked to consume, process, and evaluate a large amount of complex health-policy information. Healthcare reform is uniquely deserving of study from a perspective grounded in health communication research for three reasons. First, it will directly and concurrently impact both those who are ill and those who are well. Second, based on one's current health status,

healthcare reform information can include aspects of prevention, intervention, and/or treatment. Finally, the legislation's partisan nature means that individual perceptions and understandings of it could be significantly affected by the often deep and divisive opinions of the political entities that oppose or support healthcare reform.

Health information can be positive or negative^{1,2} and information about healthcare reform certainly amplifies both in an effort to influence public opinion. Indeed, a 2010 Associated Press poll found that participants were often incorrect about what is and is not included in the healthcare reform bill as well as fairly uncertain about those judgments.³ The complexities of accessing and understanding information certainly could be related to the multiple potential barriers that the public was experiencing about healthcare reform. As such, the present study explores the role of three variables that are consistently related to one another in health contexts and theoretical models in the context of public information-seeking about healthcare reform: uncertainty, uncertainty discrepancy, and health self-efficacy.

Information-seeking

Information is 'stimuli from a person's environment that contribute to his or her knowledge or beliefs'⁴ (p. 259). Similar to the majority of information-seeking research, the act of information-seeking about the topic of healthcare reform is viewed here as 'the purposive gathering of information'⁵ (p. 50). From this perspective, information-seeking is intentional, directed by goals, and involves behaviors such as asking questions and formally searching databases such as the Internet.⁵ As healthcare reform is a topic that was extensively covered

by multiple media channels such as television, newspapers, and magazines, attending to this coverage when it is encountered would also be classified here as information-seeking.

Public illness discourse, which includes structural wellness barriers such as health insurance and organizational, legal, and commercial healthcare elements, is an important aspect of physician–patient communication.⁶ Information about healthcare reform is clearly a component of this public discourse about illness. Presumably, for individuals to be able to competently engage in discourse about the public components of illness with medical professionals, they will need to seek and understand information regarding how healthcare reform will impact their health. Further, identifying and understanding the variables that encourage individuals to seek information could assist in positively altering health-related behavior.⁷ Indeed, a fundamental principle of contemporary health care is that individuals possess adequate knowledge about their health and options for care.⁸ As such, potential barriers to this comprehension, such as uncertainty, uncertainty discrepancy, and reduced health self-efficacy, should be examined in relation to information-seeking in order to enhance public discourse about healthcare reform. It is to these potential barriers that we now turn.

Uncertainty

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’⁹ (p. 478). Information-seeking and uncertainty were first linked in the original formulation of Uncertainty Reduction Theory, whose third axiom posited that greater information-seeking results from higher uncertainty in initial interactions.¹⁰ Specifically, ‘interacting with information can reduce, maintain, or increase uncertainty’⁵ (p. 48).

Results of a recent study¹¹ revealed that high levels of uncertainty predicted higher rates of information-seeking when both situational uncertainty (i.e. a particular event cannot be adequately structured or categorized because it is marked by unpredictability, ambiguity, and a lack of information¹²) and intolerance of uncertainty were high. Because healthcare reform is a major alteration to an already complex and challenging healthcare system⁸ and the full impact of the legislation is not yet known,¹³ it is likely to be a circumstance where uncertainty is high. In the context of healthcare reform, then, the act of seeking information may

be positively predicted by increased uncertainty due to the ambiguity, complexity, and sheer volume of information that was disseminated regarding the legislation. Thus, our first hypothesis (H1) predicts:

H1: Information-seeking is positively related to degree of uncertainty about healthcare reform.

Uncertainty discrepancy

Historically, research has oriented uncertainty as a direct, positive predictor of information-seeking behavior,¹⁰ but when this relationship was not consistently supported by research,¹⁴ alternate possibilities were considered. One such explanation is the sufficiency model,¹⁵ which suggests that individuals assess their actual level of confidence (AC) and their desired level of confidence, called a sufficiency threshold (ST). According to this model, individuals are motivated to manage their uncertainty as a function of the gap between their AC and ST, rather than solely a measure of their uncertainty. In the same vein, Gudykunst¹⁶ proposed that individuals possess maximum and minimum uncertainty thresholds and uncertainty must be managed consciously when levels exceed individuals’ maximum thresholds or are below their minimum thresholds.¹⁷

Uncertainty discrepancy, a concept informed by these threshold perspectives, is defined as individuals’ awareness of the discrepancy between the amount of uncertainty they have about an important topic and the amount they desire.¹⁸ The Theory of Motivated Information Management (TMIM) emphasizes the role of uncertainty discrepancy, rather than uncertainty, in managing information. Although TMIM was originally proposed as an interpersonal theory, the ambiguous and inconsistent nature of healthcare reform information dissemination via multiple channels (including interpersonal means) suggests that considering the theoretical concept of uncertainty discrepancy in the context of healthcare reform could be valuable and informative.

Sexual health research using the TMIM framework found that uncertainty discrepancy was negatively related to information-seeking.¹⁹ This finding was explained by the fact that learning about a partner’s sexual health can be a psychological risk which could discourage information-seeking. Afifi and Weiner recommended pursuing additional research between uncertainty discrepancy and information-seeking to determine which conditions either positively or negatively link these two concepts.

Regarding healthcare reform, individuals are likely to be curious about the legislation and how it could impact their health. However, the complicated and often partisan nature of healthcare reform information, in which individuals are frequently unsure and incorrect about what the legislation contains,³ means that uncertainty discrepancy should both be fairly pronounced and associated with an interest in seeking information. As such, we predict in hypothesis two (H2) that uncertainty discrepancy about healthcare reform will be positively related to engaging in information-seeking:

H2: Information-seeking is positively related to uncertainty discrepancy about healthcare reform.

Health self-efficacy

Self-efficacy is the ‘belief in one’s capabilities to organize and execute the course of action required to produce given attainment’²⁰ (p. 3) and is an important predictor of information-seeking.⁵ In the cancer context, people who believe in their ability to achieve health-related goals actively seek information, whereas those who doubt their ability may not search for information, or even avoid it altogether.²¹ Lee *et al.*²¹ called these beliefs health self-efficacy, which are ‘individuals’ beliefs about their ability to manage their health’ (p. 362). This specific form of self-efficacy is of particular interest here, as it reflects healthcare reform’s major goal of putting ‘American consumers back in charge of their health coverage and care’²² (para. 1).

In an environment where messages about healthcare reform are complicated and difficult to navigate, individuals’ confidence in their ability to manage their health goals may relate to how much they seek information about healthcare reform. It is thus logical that possessing low self-efficacy about one’s health could represent a barrier to actively seeking information about healthcare reform. As the ‘human capacity to digest, interpret, and act’ on information about health care has not progressed as rapidly as the sheer volume and complexity of health information and sources⁸ (p. 265), health self-efficacy should thus be a factor in how much individuals seek information about healthcare reform.

Lee *et al.*²¹ found that health self-efficacy moderated the effects of negative emotion in relation to use of the Comprehensive Health Enhancement Support System (CHESS), which assists individuals in coping with a health issue. Health self-efficacy was also directly, positively related to CHESS

usage in the same study. Further, the model of healthcare empowerment,⁸ which is a concept similar to self-efficacy in that it involves mastery of and power over a situation, includes being informed as a necessary condition. As such, when health self-efficacy is high, individuals should be more likely to seek health-related information. It can, then, logically be inferred that individuals with low health self-efficacy may perceive the amount and quality of healthcare reform information as too complex and overwhelming and decide not to seek information. As such, our third and final hypothesis (H3) states:

H3: Individuals’ health self-efficacy is positively related to information-seeking about healthcare reform.

The relative influence of potential information-seeking barriers

Determining the extent to which uncertainty, uncertainty discrepancy, and low health self-efficacy are related to information-seeking about healthcare reform will clarify which of these potential barriers could be particularly problematic. Johnson’s⁸ healthcare empowerment model includes both information and tolerance of uncertainty as necessary components of patient empowerment. Specifically, the centrality of uncertainty discrepancy in TMIM¹⁸ assumes that it is a better predictor of information-seeking behavior than uncertainty level. Though supplementary analyses determined that replacing actual level of uncertainty with uncertainty discrepancy provided a relatively comparable fit to the TMIM model,²³ no known research has directly compared these two uncertainty concepts in predicting information-seeking. TMIM’s inclusion of self-efficacy as an additional predictor of various information management strategies also suggests that considering these potential information-seeking barriers in relation to one another is important. As such, our sole research question (RQ) asks:

RQ: In the context of healthcare reform, does uncertainty, uncertainty discrepancy, or health self-efficacy account for more variance in predicting information-seeking?

Method

Participants and procedures

The study was conducted by researchers at a small, private southwestern university via a survey posted

on SurveyMonkey.com. The questionnaire was available online from 24 September 2010 to 30 October 2010. This date range was selected for three reasons: (1) to guarantee that sufficient time had passed since March 2010, when healthcare reform was signed into law, so that participants could learn and form opinions about it; (2) to correspond with the increased media coverage about healthcare reform that accompanied the implementation of the initial set of benefits of the law that occurred on 23 September 2010, which include extending coverage to young adults up to age 26, preventing insurers from rescinding coverage, eliminating lifetime insurance coverage limits, guaranteeing coverage for minors who have pre-existing conditions, and regulating annual coverage limits; and (3) to conclude data collection before 2 November 2010 so the findings would not be impacted by national midterm election results.

Two criteria were required for participation: (1) be 18 years or older; and (2) be an American citizen ($N = 389$). Respondents ranged in age from 18 to 78 years ($M = 41$, $SD = 16.06$). Most were 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 $n = 1$). Participants' highest completed education level included: no degree ($n = 2$), high school/GED ($n = 41$), Associates degree ($n = 27$), Bachelors degree ($n = 113$), Master's degree ($n = 94$), PhD/EdD ($n = 33$), MD ($n = 8$), and other ($n = 11$). Most respondents' current employment status was full-time ($n = 177$, part-time $n = 75$, not employed $n = 72$). Their household annual incomes 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 $n = 47$). The majority of respondents ($n = 204$) voted for Barack Obama in the 2008 election (did not vote for Obama $n = 88$, did not vote for any candidate $n = 34$) and listed their political party affiliation as Democrat ($n = 168$, Republican $n = 54$, Independent $n = 77$, and other $n = 25$).

Most respondents currently had health insurance (yes $n = 352$, no $n = 37$). Those with health insurance viewed it as sufficient for their healthcare needs (yes $n = 295$, no $n = 57$) and moderately-to-highly satisfying ($M = 5.37$, $SD = 1.53$, 1 = strongly disagree, 7 = strongly agree). Via a series of non-exclusive items, we also asked whether participants were members of groups that were likely to be

particularly impacted by healthcare reform (i.e. parents with children without insurance $n = 23$, individuals whose jobs do not provide health insurance $n = 62$, who cannot get insurance because of a pre-existing condition $n = 23$, who cannot afford health insurance $n = 56$, who work in the healthcare field $n = 74$, is a senior on Medicare $n = 18$, a small business owner or self-employed $n = 46$). Further, in response to three 7-point items, participants reported that they moderately (1) believed that healthcare reform will personally impact their health ($M = 4.54$, $SD = 1.68$); (2) supported healthcare reform ($M = 4.71$, $SD = 2.09$); and (3) believed that the healthcare reform law will be an improvement over the United States's prior method of handling health care ($M = 4.47$, $SD = 2.01$).

Recruitment took place via Facebook[®] and Twitter[®] posts and emails to research team members' extended professional and social networks. These initial participants also forwarded the study link to others they knew who may be interested in participating via snowball sampling. Study information was also posted under the Community: Volunteers section on Craigslist.org in six randomly selected cities: Kansas City, MO, New York, NY, Dallas, TX, Butte, MT, and Baltimore, MD. Participation took approximately 10–15 minutes, was anonymous and voluntary, and compensation was not provided.

Measures

Information-seeking

Information-seeking was tapped using a two-item scale adapted from Kahlor.²⁴ A composite item was created and higher values (1 = strongly disagree, 7 = strongly agree; when healthcare reform comes up, I try to learn more about it) indicate more information-seeking e.g. ($M = 4.88$, $SD = 1.36$, $\alpha = 0.69$).

Uncertainty

Seven items from Mishel's²⁵ health-related uncertainty scale were adapted to assess uncertainty regarding healthcare reform (1 = strongly disagree to 7 = strongly agree; e.g. it is not clear to me what is going to happen with healthcare reform). Higher composite item values indicate higher uncertainty ($M = 4.39$, $SD = 1.27$, $\alpha = 0.85$).

Uncertainty discrepancy

Uncertainty discrepancy about healthcare reform was measured using Afifi and Weiner's¹⁹ three-item measure adapted to the healthcare reform context (1 = strongly disagree, 7 = strongly agree;

e.g. I wish I knew more about healthcare reform). A composite uncertainty discrepancy was created and higher values indicate higher levels of uncertainty discrepancy ($M = 5.01, SD = 1.57, \alpha = 0.89$).

Health self-efficacy

Health self-efficacy was assessed via Lee *et al.*'s²¹ 5-item scale (1 = strongly disagree, 7 = strongly disagree; e.g. I am confident I can have a positive effect on my health). Higher composite item values indicate greater health self-efficacy ($M = 5.70, SD = 1.03, \alpha = 0.87$).

Results

Preliminary analyses

To ensure that participants' health insurance status and satisfaction, as well as perceptions about healthcare reform, did not exert any unexpected influence on the variables of interest, preliminary analyses were conducted. Two-tailed, bivariate correlations found that each interval-level health insurance and healthcare reform variable (i.e. variables five through nine in Table 1) was significantly associated with at least one of the four variables of interest and all are thus included as control variables in our main analyses. A series of univariate analysis of variances then tested the categorical health insurance and healthcare reform variables in association with our variables of interest (i.e. each of the 10 variables in Table 2). As at least one of the following study variables significantly differed according to each of the following variables, they were included as dummy-coded control variables in the primary

analyses: (1) if participants currently have health insurance; if health insurance is (2) from an individual or employee plan; and (3) is sufficient for respondents' healthcare needs; if participants (4) can afford health insurance; (5) are seniors on Medicare; (6) are small business owners/self-employed; and/or (7) work in the healthcare field.

Primary analyses

Hierarchical regressions were employed to test our hypotheses and research question. In the initial runs of the regression models, the above 12 control variables were entered into the first block, and the appropriate variable of interest (either uncertainty, uncertainty discrepancy, or health self-efficacy) was entered in the second block as a predictor of information-seeking. The final regression models were trimmed, such that the control variables that were not significant in the initial model were removed. All statistics reported below and in Table 3 are from the trimmed models, which were used to test our hypotheses.

H1 predicted a positive relationship between information-seeking and degree of uncertainty regarding healthcare reform. The regression model for H1 was significant, $F = 28.55, P < 0.001$, adjusted $R^2 = 0.37$. Uncertainty was a significant, positive predictor of information-seeking about healthcare reform. The extent that healthcare reform will impact participant health and attention paid to healthcare reform, were significant control variables. H1 was thus consistent with the data.

H2 predicted a positive relationship between information-seeking and degree of uncertainty

Table 1: Correlations among study variables.

	1	2	3	4	5	6	7	8	9
1. Information-seeking	1	-0.00	0.09	0.19**	0.04	0.25***	0.12*	0.13*	0.58***
2. Uncertainty		1	0.67***	-0.17**	-0.16**	0.06	-0.40***	-0.42***	-0.21***
3. Uncertainty discrepancy			1	-0.04	-0.11*	0.03	-0.11*	-0.13*	-0.22***
4. Health self-efficacy				1	0.25***	-0.03	0.08	0.07	0.17**
5. Satisfaction with health insurance					1	-0.03	0.00	0.06	0.09
6. Extent HCR will personally impact health						1	0.09	0.09	0.22***
7. Extent of support for HCR							1	0.87***	0.12*
8. Extent HCR will improve overall health care								1	0.14**
9. Amount of attention paid to HCR									1

HCR, healthcare reform.

Correlation values of 0.10–0.30 are weak, 0.30–0.50 are moderate, and 0.50 and over are strong in strength.²⁶

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.

Table 2: *F* values and means for potential health insurance control variables.

	Information-seeking <i>F</i>	Uncertainty <i>F</i>	Uncertainty discrepancy <i>F</i>	Health self-efficacy <i>F</i>
Currently has health insurance	0.73	1.99	3.20	4.69*
Yes <i>M</i>	4.86	4.37	4.97	5.73
No <i>M</i>	5.07	4.71	5.50	5.30
Health insurance from job or individual plan	8.63***	1.55	1.14	5.68**
Employer <i>M</i>	5.02 ^a	4.33	4.98	5.79 ^a
Individual <i>M</i>	4.31 ^b	4.59	4.98	5.51 ^{a,b}
No insurance <i>M</i>	5.05 ^a	4.62	5.49	5.15 ^b
Current insurance sufficient for health care needs	0.14	1.31	1.12	4.14*
Yes <i>M</i>	4.88	4.35	4.97	5.76 ^a
No <i>M</i>	4.91	4.63	5.10	5.54 ^{a,b}
No insurance <i>M</i>	5.02	4.59	5.47	5.17 ^b
Parent with child who does not have coverage	1.22	0.03	1.46	2.05
Yes <i>M</i>	5.18	4.43	5.38	5.99
No <i>M</i>	4.85	4.38	4.96	5.67
Job does not offer health insurance	1.16	0.40	0.04	2.33
Yes <i>M</i>	4.72	4.49	5.04	5.49
No <i>M</i>	4.93	4.37	4.99	5.73
Cannot get health insurance due to pre-existing condition	2.62	0.01	0.95	3.07
Yes <i>M</i>	5.34	4.41	4.67	5.29
No <i>M</i>	4.86	4.38	5.02	5.71
Cannot afford health insurance	1.24	0.66	5.57*	3.90*
Yes <i>M</i>	5.08	4.53	5.50	5.25
No <i>M</i>	4.85	4.37	4.92	5.61
Senior on Medicare	3.08	1.03	4.52*	3.55
Yes <i>M</i>	5.47	4.08	4.19	6.15
No <i>M</i>	4.88	4.39	5.03	5.67
Small business owner or self-employed	1.77	4.45*	0.09	2.77
Yes <i>M</i>	5.15	4.79	4.92	5.96
No <i>M</i>	4.85	4.33	5.00	5.66
Works in the health care field	4.94*	0.04	0.08	6.38*
Yes <i>M</i>	5.20	4.43	5.05	5.98
No <i>M</i>	4.81	4.39	4.99	5.63

Note: Within columns, superscript letters that differ indicate values that significantly differ from one another.

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.

discrepancy about healthcare reform. The regression model for H2 was significant, $F = 51.74$, $P < 0.001$, adjusted $R^2 = 0.38$, and uncertainty discrepancy was a positive, significant predictor of information-seeking. The following control variables were significant: the extent that healthcare reform will impact participant health, and attention paid to healthcare reform. H2 was thus supported.

H3 predicted a positive relationship between health self-efficacy and information-seeking about healthcare reform. The regression model for H3 was significant, $F = 33.62$, $P < 0.001$, adjusted $R^2 = 0.38$. Health self-efficacy was a significant, positive predictor of information-seeking. The following variables were significant control variables: (1) extent that healthcare reform will impact participant health, (2) attention

Table 3: Beta weights and *t*-values from trimmed regression models.

	H1		H2		H3		RQ	
	β	<i>t</i>	β	<i>t</i>	β	<i>t</i>	β	<i>t</i>
Uncertainty	0.11	2.31*	—	—	—	—	-0.02	NS
Uncertainty discrepancy	—	—	0.21	4.63***	—	—	0.25	4.14***
Health self-efficacy	—	—	—	—	0.10	2.11*	0.06	NS
Extent that HCR will personally impact <i>P</i> health	0.15	3.14**	0.11	2.40*	0.17	3.69***	—	—
Attention paid to HCR	0.53	11.30***	0.60	13.10***	0.48	10.39***	0.60	3.27***
Whether or not <i>P</i> currently has health insurance	—	—	—	—	0.20	3.23**	—	—
Whether insurance plan is individual or employer (dummy-coded insurance versus employer variable)	—	—	—	—	-0.27	-4.31***	-0.11	-2.24*

Note: A dash indicates that the variable was not included in the trimmed regression model that tested that particular hypothesis or research question.

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.

paid to healthcare reform, (3) whether participant currently has health insurance, and (4) whether health insurance is provided by an employer or individual plan. H3 was therefore supported.

The sole RQ was investigated by including uncertainty, uncertainty discrepancy, and health self-efficacy as predictors of information-seeking in a hierarchical regression model. Due to the strong correlation between uncertainty and uncertainty discrepancy ($r = 0.67$), these two variables were mean centered in this regression model to minimize the effect of multicollinearity. Only the four control variables that were significant in the previous trimmed regression models – the extent that healthcare reform will be an improvement, attention paid to healthcare reform, whether participant currently has health insurance, and whether health insurance is provided by an employer or individual plan – were included in the initial regression model. The trimmed regression model was significant, $F = 41.94$, $P < 0.001$, adjusted $R^2 = 0.38$, and uncertainty discrepancy was the only significant predictor of information-seeking.

Uncertainty and health self-efficacy did not significantly predict information-seeking. Attention paid to healthcare reform, and the dummy-coded employer versus individual health insurance provider variable were significant control variables. As such, uncertainty discrepancy accounts for the most variance in healthcare reform information-seeking. See Table 3 for beta weights and *t*-values for the trimmed regression models.

Discussion

The extent to which the public supports or opposes healthcare reform can exert considerable influence on

legislators and health insurance organizations. However, this support is at least somewhat contingent on the public's interest in and understanding of information about healthcare reform. As such, the primary purpose of this exploratory study was to examine uncertainty, uncertainty discrepancy, and health self-efficacy as predictors of information-seeking in the healthcare reform context. For our sample, the majority of whom were white males who were educated, had health insurance, and voted for Barack Obama in 2008, we found that, as predicted, healthcare reform information-seeking is positively predicted by uncertainty (H1), uncertainty discrepancy (H2), and health self-efficacy (H3). Further, uncertainty discrepancy accounts for the greatest variance in predicting healthcare reform information-seeking (RQ). These findings, and their theoretical and practical implications, are discussed below.

As the first and second hypotheses predicted, levels of uncertainty and amount of uncertainty discrepancy about healthcare reform positively predicted the act of information-seeking about the legislation. In other words, an increase in the ambiguity and incompleteness individuals experience regarding healthcare reform, as well as the gap between how much individuals know about healthcare reform and how much they desire to know, predicted greater information-seeking. The ambiguous and complex nature of information disseminated by a variety of channels about health care in general and healthcare reform in particular^{3,8} likely contributes to the findings for both H1 and H2. Even though our participants have attained more education than the general United States population,²⁷ this appears to be a health-policy context where levels of uncertainty and uncertainty

discrepancy are moderate-to-high (i.e. *M*'s of 4.39 and 5.01 on seven-point scales, respectively).

We can clearly not make any causal claims from our data; instead, the results for H1 and H2 could also be interpreted such that greater information-seeking predicts higher uncertainty and uncertainty discrepancy. Consistent with the finding that cancer information-seeking is positively (but weakly) related to routine news coverage of cancer,⁷ we intentionally collected data at a time when media coverage of healthcare reform was particularly extensive (i.e. directly after the first set of rules debuted, and before the first major national elections after healthcare reform was passed took place). In fact, during the beginning of our data collection (from 23 to 26 September 2010), healthcare reform was the second-most followed news story by the American public.²⁸ However, the amount of information available does not seem to be alleviating the uncertainty and uncertainty discrepancy that were experienced. In fact, even 1 year after healthcare reform's passage, 53% of Americans describe their feelings about the law as 'confused' and 52% did not believe they had enough information to determine how healthcare reform will personally impact them.²⁹ In this way, our findings are consistent with the uncertainty management principle that the association between uncertainty and information is not straightforward.⁵ The findings for H1 and H2 thus suggest that a campaign whose goal is to assist the public in not only seeking, but also in critically evaluating and interpreting, information should specifically consider alleviating uncertainty and minimizing uncertainty discrepancy about healthcare reform.

Results for H3 found that individuals' health self-efficacy is positively associated with information-seeking about healthcare reform, though the size of this effect was relatively small. This finding adds to the consistent link between self-efficacy and information-seeking.⁵ It also mirrors previous research on health self-efficacy,^{21,30} and individuals' unwillingness to engage in health-related behaviors that they feel incapable of completing successfully.³¹ Health self-efficacy as a distinct variable and scale²¹ is relatively new, and our findings suggest that it is a valuable addition to the self-efficacy literature, as well as a useful factor in understanding healthcare reform information-seeking. As 30% of Americans in March 2011 believed that they would be worse off as a result of healthcare reform and 32% expect that the quality of health care will suffer,²⁹ health self-efficacy is clearly an important variable to consider in the context of healthcare reform.

Our research question, which inquired as to which potential barrier accounted for more variance in healthcare reform information-seeking, determined that uncertainty discrepancy was the only significant predictor, and thus accounted for the most information-seeking variance. Though TMIM emphasizes uncertainty discrepancy,¹⁸ and a model that included uncertainty provided as good a fit as the TMIM model with uncertainty discrepancy,²³ there has been no known research that has directly compared uncertainty and uncertainty discrepancy (both specifically about healthcare reform) as predictors of an aspect of information management. Our findings thus offer initial, but encouraging, support for the notion that uncertainty discrepancy may be more useful in understanding the complicated nature of information management than uncertainty alone. In addition, the utility and applicability of uncertainty discrepancy's scope has been extended here beyond the interpersonal communication context to one of health policy as well. Future research should thus explore the potential value of uncertainty discrepancy in other health contexts.

Future research and practical implications

Since the act of information-seeking can be a powerful health consumer tool for the general public, future research should continue to explore other predictors of information-seeking behavior in the healthcare reform context and beyond. For example, applying the Planned Risk Information Seeking Model, which seeks to understand health information-seeking behaviors across health contexts,²⁴ to healthcare reform information would be useful. Further, extending the TMIM model to this context may illuminate the processes by which individuals manage information about healthcare reform.

Additionally, future research should explore mechanisms that increase and promote health self-efficacy while alleviating and minimizing uncertainty and uncertainty discrepancy. For example, information quality has been suggested as an additional facet of information management that could be related to both health self-efficacy²¹ and uncertainty³² in a variety of health contexts. Further, the degree to which information is purposefully acquired (i.e. information-seeking versus information scanning³³) by 'well' individuals who are not diagnosed with a health condition is an important consideration in the healthcare reform context as well. In addition, health self-efficacy's weak relationship with information-seeking here may mean that the government is not yet accomplishing the major goal of the legislation (i.e. to put

'American consumers back in charge of their health coverage and care'²² para. 1). Future research should thus continue to examine health self-efficacy in the healthcare reform context, as healthcare reform implementations, and legal challenges as to whether or not components of it are constitutional, continue to unfold.

Our findings can have immediate practical implications, such as developing campaign messages that embed health self-efficacy promotion (similar to Obama's 2008 'Yes We Can' presidential campaign) and/or uncertainty and uncertainty discrepancy alleviation as a supplement to core messages about healthcare reform. Health information-seeking messages abound in many health campaigns; however, promoting the target population's ability to engage in this behavior is often missing. Including specific health self-efficacy, uncertainty, and uncertainty discrepancy messages in health campaigns may be the difference between action and non-action among members of a target population, especially in a context like healthcare reform, where the public views the information they are seeking as complicated, frequently incorrect, and not personally relevant to them.

Those involved in healthcare reform campaigns may also want to consider the extent to which individuals think that healthcare reform will personally impact their health and how much attention individuals are paying to healthcare reform. In our study, these two variables were significant control variables in each of the regression analyses, suggesting that how individuals attend to and process messages about healthcare reform may in some way be shaped or changed by the extent of personal impact or the amount of attention paid to healthcare reform. Overall, our study offers some helpful practical applications for a range of health communicators, from government officials to health service providers across the country. Specifically, results from this study suggest that health communicators should create and implement person-centered health messages and materials that reinforce high self-efficacy in their target audiences, and encourage information-seeking about healthcare reform (in the form of registering for an educational workshop, for example) as an effective means to reduce uncertainty and uncertainty discrepancy about healthcare reform.

Limitations and conclusion

A number of limitations exist in this study. One limitation was the use of convenience sampling,

which resulted in a sample that was comprised primarily of white, educated, male participants who currently had health insurance. However, our sample is comparable to other recent national polls³ whose participants were primarily white (e.g. 69%). Further, though the majority of participants had health insurance, they did believe that healthcare reform would personally impact their health ($M = 4.54$ on a seven-point scale), indicating that this was an issue of some import to them. As our findings can only be generalized to individuals who are demographically similar to the current sample, future research should attempt to replicate this study using a nationally representative sample.

That this study was conducted online is also a limitation, as those without regular Internet access were thus not likely or able to participate. Future studies should thus examine a broader demographic via multiple data collection formats, especially since a significant percentage of Americans – including almost half of Hispanics and African Americans – report not having enough money to pay for medical expenses, a proportion that has grown significantly over the past several years.³⁴ This creates a large incentive for minority populations to be engaged in the healthcare reform process and for researchers to focus upon their specific perceptions and understanding of healthcare reform in the future.

Information, uncertainty, and self-efficacy have long been viewed as logically related to one another,²¹ and our study found that these links can be extended to the healthcare reform context. Uncertainty, health self-efficacy, and uncertainty discrepancy should thus be taken into account by those who are designing and implementing campaigns to educate the American public about healthcare reform. In particular, as the strongest predictor of information-seeking, uncertainty discrepancy, or the difference between the amounts of uncertainty regarding healthcare reform that individuals experience versus what they desire, should be a central consideration for anyone who seeks to encourage the American public to inform themselves about healthcare reform. In conclusion, healthcare reform, which was only signed into law in March 2010 and is in the process of being gradually implemented through 2014, is still an emerging health context. However, as healthcare reform affects nearly every American citizen and is perceived through multiple, partisan lenses, continuing to identify key communication processes, and correlates are necessary to understand this unique and vital health policy and legislation.

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