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Interaction of Comparative Cancer Risk and Cancer Efficacy Perceptions on Cancer-Related Information Seeking and Scanning Behaviors

Norman C. H. Wong

This study examined the interaction between perceived cancer risk and self-efficacy related to cancer screening on cancer-related information seeking and scanning behaviors (SSB) among the general population. Individuals completed a cross-sectional survey, were classified into 1 of 4 clusters based on their relative risk and self-efficacy belief scores (i.e., high relative risk and high self-efficacy, high relative risk and low self-efficacy, low relative risk and high self-efficacy, and low relative risk and low self-efficacy), and asked about their information SSB related to the colonoscopy, prostate-specific antigen test, or mammogram. A national probability sample of 2,489 adults aged 40 to 70 took part in this study. Individuals who perceived themselves to be at high relative risk for cancer and had high self-efficacy beliefs in performing cancer-screening behaviors generally reported the highest amounts of SSB for cancer-screening information, compared to the others.

Keywords: Information Scanning; Information Seeking; Risk Perception

In the United States, it is estimated that approximately 1.6 million new cancer cases will be diagnosed this year, contributing to an estimated 571, 950 deaths (American

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Cancer Society, 2011). Given that there are steps people can take to prevent cancer and that this information is accessible by the public, it is important to know what factors promote individuals in the general population to actively seek or scan for this information as part of their daily activities. One factor likely to affect people's motivations to seek or scan for cancer-related information is *perceived cancer risk*. This article first briefly discusses the relationship among risk perception, information seeking, and information scanning, followed by an overview of the Risk Perception Attitude (RPA) framework, and then the methods, results, and a discussion of the findings are presented.

Risk Perception, Information Seeking, and Information Scanning

Weinstein and Klein (1995) defined *perceived risk* as one's belief about the likelihood of personal harm. A number of studies have found perceived risk to be related with information seeking and scanning (e.g., Bernhardt, McClain, & Parrott, 2004; Friedman et al., 2006; Schwartz, Lerman, Miller, Daly, & Masny, 1995). *Information seeking* is defined as an active and deliberate search for information (Niederdeppe et al., 2007), whereas *information scanning* is defined as "information acquisition that occurs within routine patterns of exposure to mediated and interpersonal sources that can be recalled with a minimal prompt" (p. 154). Although there is some support to show that risk perception facilitates information seeking and scanning, not all individuals at high risk may be motivated to seek or scan for cancer-related information (e.g., see Niederdeppe et al., 2007; Ramanadhan & Viswanath, 2005; Shiloh, Petel, Papa, & Goldman, 1998). Rimal and Real (2003) argued that efficacy beliefs moderate the relationship between risk perception and information seeking. The purpose of this study was to examine the extent to which cancer risk and efficacy perceptions account for individuals' information seeking and scanning behaviors (SSB) related to cancer-screening information. The RPA framework serves as a useful model to make predictions about cancer-related information seeking and scanning as a function of perceived risk and efficacy beliefs.

The RPA Framework and Information Acquisition

The RPA framework (Rimal & Real, 2003) has mainly been used to predict the interaction of perceived risk and efficacy on information-seeking behaviors. The RPA framework posits that when risk perceptions are low, efficacy beliefs are expected to have little impact on information seeking because individuals are not motivated to look for risk or efficacy information in those situations (Rimal & Real, 2003; Turner, Rimal, Morrison, & Kim, 2006). Conversely, when risk perceptions are high, efficacy beliefs play a more prominent role in affecting information-seeking behaviors. Specifically, those who feel efficacious are likely to view potential risks as challenges to overcome, and are more motivated to seek or scan for cancer-related information to cope with the risks (Rimal & Real, 2003) than those who hold low efficacy beliefs.

Individuals' risk perceptions and efficacy beliefs can be used to classify people into one of four categories. Those with both high risk perceptions and high efficacy beliefs are said to hold a *responsive attitude* toward coping with risk. Due to their heightened awareness of risk and high levels of confidence to cope with this risk, these individuals are most likely to actively seek and scan for cancer-related information relevant to reducing their risk.

Conversely, those whose risk perceptions are high, but efficacy beliefs are low are said to hold an *avoidant attitude* toward coping with risk. Due to their lower levels of confidence in averting the danger, avoidant individuals may be less likely to actively seek or scan for any cancer-related information, particularly if it reminds them of their risk status.

When individuals have low risk perceptions, but high efficacy beliefs, they are classified as having a *proactive attitude* toward coping with risk. Similar to responsive individuals, these individuals are also likely to actively seek and scan for cancer-related information, particularly about *cancer-prevention behaviors* (i.e., cancer-screening information) that may help them monitor their health status and remain disease free. The motivation to seek and scan for cancer-screening information is linked to the idea that early detection of cancer will lead to better survival rates.

Finally, individuals who have both low cancer risk perceptions and efficacy beliefs are said to hold an *indifferent* attitude toward coping with risk. These individuals are least motivated to seek and scan for cancer-related information. Based on previous RPA studies (Rimal & Real, 2003; Turner et al., 2006), it is hypothesized that the amount of SSB related to cancer-screening information will vary as a function of the participant's attitude toward coping with cancer risk such that Responsive> Proactive>Avoidant>Indifferent.

Method

Participants and Procedures

A total of 2,489 adults, aged 40 to 70, were recruited to take part in this study by Knowledge Networks, a survey research company that has developed a national probability sample of adults in the United States. Data are gathered online, respondents are recruited through random digit dialing procedures, and they are provided Internet access, if necessary. The overall recruitment response rate was 22%. The sample consisted of 1,216 men (48.9%) and 1,273 women (51.1%). Approximately 77% of the participants were White, 11% were African American, 7% were Hispanic, 3% were "mixed," and 3% were "other." The average age of participants was 52.85 years ($SD = 8.40$). Thirty-two percent of the respondents had a bachelor's degree or higher, 28% had some college education, 31% had completed high school, and 10% had some high school education or less.

Measures

The variables of interest were participants' (a) relative risk perceptions for colon, prostate, and breast cancer, compared to individuals similar in age to the respondent,

(b) efficacy beliefs regarding cancer-screening tests (colonoscopy, prostate-specific antigen [PSA] test, and mammogram) and lifestyle behaviors (exercise, fruit and vegetable consumption, and dieting) in reducing their cancer risks, and (c) cancer-related SSB about cancer-screening and lifestyle behaviors.

Relative cancer risk. Two items assessed the extent to which individuals felt they were at risk for cancer, compared to others their age. Specifically, participants were asked, "Compared to most others your age, what do you think your chances are of getting each of the following: . . . ." All participants were asked about their relative risk perception for colon cancer. Men were also asked about their relative risk perception for prostate cancer, whereas women were asked about their relative risk perception for breast cancer. The response options ranged from 1 (*a lot lower*) to 4 (*a lot higher*).

Efficacy perceptions. Several items assessed the extent to which individuals felt confident that they could perform various cancer-screening behaviors (i.e., self-efficacy). Specifically, respondents were asked about their confidence in performing three cancer-screening behaviors (e.g., "If you wanted to, how sure are you that you can get a colonoscopy in the next year/when it is next recommended?"). Similar items were asked for getting a PSA test (men only) and getting a mammogram (women only). The response options ranged from 1 (*very unsure*) to 5 (*very sure*).

Formulation of the RPA Clusters

To create the four different RPA clusters (responsive, proactive, avoidant, and indifferent), median splits were done for the relative cancer risk and perceived efficacy measures. Crossing relative cancer risk and perceived efficacy resulted in the formation of four groups: high relative risk, high perceived efficacy (responsive); low relative risk, high perceived efficacy (proactive); high relative risk, low perceived efficacy (avoidant); and low relative risk, low perceived efficacy (indifferent). Separate RPA four-group clusters were formed to reflect respondents' RPA toward colon, breast, and prostate cancer, as well as overall cancer (i.e., colon plus breast cancer for women and colon plus prostate cancer for men). A summary of the four RPA clusters is provided in Table 1. For all three cancer types, individuals generally reported having a proactive attitude toward risks for colon, prostate, and breast cancers.

Cancer-related information seeking. Respondents were asked the extent to which they sought information on three cancer-screening behaviors: colonoscopy, PSA test (men only), and mammography (women only). All the items were taken from measures validated by Kelly et al. (2010) and Kelly, Niederdeppe, and Hornik (2009). Sought exposure was assessed first, using two questions per topic (e.g., "Thinking about the past 12 months, did you actively look for information about [colonoscopy] from doctors, from other people, or from the media?"). Response options included "yes," "no," or "don't recall." Respondents who answered "yes" received this follow-up question: "Were you actively looking for information about [colonoscopy] in the past 12 months from any of the following sources (check all that apply): (a) doctors or other medical professionals; (b) family, friends or co-workers; (c)

Table 1 Breakdown of Risk Perception Attitudes by Cancer Type

Risk Perception Attitude	*n*	%
Colon cancer responsive	450	21.1
Colon cancer avoidant	122	5.7
Colon cancer proactive	1180	55.5
Colon cancer indifferent	376	17.7
Prostate cancer responsive	204	23.5
Prostate cancer avoidant	29	3.3
Prostate cancer proactive	554	63.8
Prostate cancer indifferent	82	9.4
Breast cancer responsive	365	29.1
Breast cancer avoidant	39	3.1
Breast cancer proactive	756	60.3
Breast cancer indifferent	93	7.4

television or radio; (d) newspapers, magazines or newsletters; (e) the internet; (f) other sources?'' The two questions were combined to form dichotomous measures of whether a respondent sought information from each source. The source-specific measures were then summed across the six sources to form an index (range = 0–6) of sought exposure specific to each of the three screening behaviors.

Cancer-related information scanning. Questions about scanned exposure were asked immediately after the questions about sought exposure for each behavior. All the items were taken from measures validated by Kelly et al. (2010) and Kelly et al. (2009). Specifically, participants were asked the following question: ''Thinking about the past 12 months, did you hear or come across information about [colonoscopy] from doctors, from other people, or from the media even when you were not actively looking for it?'' Those who answered ''yes'' received this follow-up question: ''How many times did you hear or come across information about [colonoscopy] from each of the following sources when you were not actively looking for it: (a) doctors or other medical professionals; (b) family, friends or co-workers; (c) television or radio; (d) newspapers, magazines or newsletters; (e) the internet, (f) other sources?'' Response options included ''not at all,'' ''one or two times,'' ''three times or more,'' and ''I don't recall.'' The two questions were combined to form dichotomous measures of whether a respondent scanned information once or more from each source. The source-specific measures were then summed across the six sources to form a scanned information exposure index (range = 0–6) for each cancer screening.

Results

Descriptive Statistics

The means and standard deviations for the key study variables are presented in Table 2. Most individuals perceived their risk for cancer to be ''somewhat lower''

Table 2 Means and Standard Deviations for Other Key Study Variables

Variable	*M*	*SD*
Colon cancer relative risk perception (those aged 50 and over)	2.10	0.74
Prostate cancer relative risk perception (men aged 50 and over)	2.13	0.74
Breast cancer relative risk perception (women aged 40 and over)	2.14	0.81
Colonoscopy self-efficacy belief	4.11	1.26
Prostate-specific antigen test self-efficacy belief	18.33	6.24
Mammography self-efficacy belief	19.25	6.42
Colonoscopy information seeking	0.58	1.27
Prostate-specific antigen test information seeking	0.40	1.06
Mammography information seeking	0.77	1.44
Colonoscopy information scanning	1.71	1.81
Prostate-specific antigen test information scanning	1.13	1.64
Mammography information scanning	2.46	1.93

compared to others (i.e., range of relative risk = 2.10–2.17 out of 4). This finding is consistent with previous studies on risk perception (e.g., Clark, Lovegrove, Williams, & Macpherson, 2000), and this sample showed signs of an optimistic bias in their estimates of colon, prostate, and breast cancer risks, compared to others their age. Similar biases have been reported in studies that measured people's perceptions of cancer worry, which is a closely related construct to perceived cancer risks. In a review of the cancer worry literature, Hay, Buckley, and Ostroff (2005) reported that for colon, prostate, and breast cancer, worry levels are low, with most studies finding a majority of people reporting little or no worry about colon cancer (about 85%), prostate cancer (about 71%), or breast cancer (about 65%). As for self-efficacy beliefs regarding cancer-screening behaviors, most respondents perceived themselves to have high self-efficacy (i.e., they have high confidence that they can do the screening tests; range = 4.11–4.57 out of 5).

Consistent with the low levels of relative cancer risk reported, overall levels of cancer-related information seeking and scanning were also low. Out of a possible six sources, the average number of sources people turned to for cancer-related information was about one (i.e., a single source). Cancer-related information seeking was highest for information about mammography, followed by colonoscopy, and was the lowest for the PSA test (see Table 2 for means).

Cancer-Related Seeking by RPA Clusters

Colonoscopy-related SSB. An analysis of variance (ANOVA) model with the four RPA clusters as the grouping factor and colonoscopy-related information seeking as the dependent measure was tested. Specific contrast coefficients were assigned to the RPA clusters *a priori* to test the hypothesized pattern. Overall, the model was significant, controlling for age, education, ethnicity, and sex, $F(3, 2{,}051) = 11.83$, $p < .001$ (partial $\eta^2 = .02$).

Seeking of colonoscopy information in terms of the total number of sources turned to was highest among the responsive group ($M = 0.94$, $SD = 0.07$), which was significantly higher than the other three RPA groups, respectively: avoidant ($M = 0.55$, $SD = 0.12$), proactive ($M = 0.68$, $SD = 0.04$), and indifferent ($M = 0.37$, $SD = 0.07$). In addition, people with proactive attitudes toward colon cancer risk reported significantly greater information seeking than those who held an indifferent attitude toward colon cancer risk. Those reporting indifferent and avoidant attitudes did not differ significantly in their colonoscopy information-seeking behaviors.

Scanning of colonoscopy information in terms of the total number of sources people reported coming across was also highest among the responsive group ($M = 2.36$, $SD = 0.09$), which was significantly higher than the proactive ($M = 2.02$, $SD = 0.05$) and indifferent groups ($M = 1.43$, $SD = 0.10$). Overall, the model was significant, controlling for age, education, ethnicity, and sex, $F(3, 2{,}035) = 18.14$, $p < .001$ (partial $\eta^2 = .03$). Interestingly, the responsive group did not report significantly greater scanning than the avoidant group ($M = 1.89$, $SD = 0.16$). A possible explanation for this may be due to the large discrepancy in the two groups being compared, with the responsive group having a cell size almost four times that of the avoidant group. Similar to colonoscopy information seeking, scanning of colonoscopy information was significantly greater among proactive than indifferent individuals. This is consistent with the *scanning* concept that focuses on asking the extent to which individuals are vigilant in monitoring cancer-related information.

PSA test-related SSB. An ANOVA model with the four RPA clusters as the grouping factor and PSA test-related information seeking as the dependent measure was tested. The overall model controlling for age, education, ethnicity, and sex was significant, $F(3, 841) = 7.67$, $p < .001$ (partial $\eta^2 = .03$). Seeking of information regarding the PSA test was highest among the responsive cluster ($M = 0.85$, $SD = 0.09$) reporting a significantly higher amount of sources sought than those in the proactive ($M = 0.52$, $SD = 0.05$) and indifferent clusters ($M = 0.12$, $SD = 0.13$). Similar to the pattern of findings for colonoscopy-related seeking, no significant differences were found between responsive and avoidant clusters ($M = 0.43$, $SD = 0.23$), although the means would suggest otherwise. The lack of a significant difference may be due to the disparity in cell sizes for the two clusters.

Scanning of PSA test-related information was highest among the responsive group ($M = 1.88$, $SD = 0.13$) and lowest among the indifferent group ($M = 0.83$, $SD = 0.20$), with both the avoidant ($M = 1.51$, $SD = 0.33$) and proactive ($M = 1.57$, $SD = 0.08$) groups in the middle. The responsive and proactive groups reported significantly higher numbers of sources that they scanned for PSA-related information than the indifferent group. No other significant differences were found between the four RPA clusters.

Mammography-related SSB. An ANOVA model with the four RPA clusters as the grouping factor and mammography-related information seeking as the dependent measure was tested. The model was significant controlling for age, education, ethnicity, and sex, $F(3, 1{,}024) = 13.74$, $p < .001$ (partial $\eta^2 = .03$).

Table 3 Colonoscopy Seeking and Scanning Behaviors by Colon Cancer Risk Perception Attitudes

	No. of Sources Sought		No. of Sources Scanned	
Colon Cancer Risk Perception Attitude	*M*	*SE*	*M*	*SE*
Responsive	0.944_{a}	0.065	2.360_{a}	0.085
Avoidant	$0.554_{b,c}$	0.123	$1.892_{a,b,c}$	0.163
Proactive	0.680_{b}	0.040	2.022_{b}	0.053
Indifferent	0.372_{c}	0.072	1.425_{c}	0.095

Note. Different subscripts represent significant differences at $p < .05$.

Seeking of mammography information in terms of the total number of sources actively sought out was highest among the responsive group ($M = 1.15$, $SD = 0.08$), which was significantly higher than the both the proactive ($M = 0.68$, $SD = 0.05$) and indifferent ($M = 0.25$, $SD = 0.15$) groups, respectively. In addition, people with proactive attitudes toward breast cancer risk reported significantly greater information seeking than those who held an indifferent attitude toward colon cancer risk. Those reporting indifferent and avoidant attitudes did not significantly differ in their mammography information seeking.

Scanning of mammography information in terms of the total number of sources people reported recalled passive exposure to was also highest among the responsive group ($M = 2.71$, $SD = 0.10$), which was significantly higher than the indifferent group ($M = 1.81$, $SD = 0.20$). The proactive group also reported significantly greater scanning of mammography information ($M = 2.45$, $SD = 0.08$) than the indifferent group. The avoidant group ($M = 2.13$, $SD = 0.31$) did not significantly differ from any of the RPA clusters in terms of their mammography information scanning behaviors. Nevertheless, the overall model was significant, controlling for age, education, ethnicity, and sex, $F(3, 1{,}171) = 5.81$, $p < .01$ (partial $\eta^2 = .02$). A summary of the comparisons between the RPA clusters for seeking and scanning regarding the three cancer-screening tests (colonoscopy, mammography, and the PSA test) is presented in Tables 3–5.

Table 4 Prostate-Specific Antigen Test Seeking and Scanning Behaviors by Prostate Cancer Risk Perception Attitudes

	No. of Sources Sought		No. of Sources Scanned	
Prostate Cancer Risk Perception Attitude	*M*	*SE*	*M*	*SE*
Responsive	0.851_{a}	0.086	1.881_{a}	0.125
Avoidant	$0.434_{a,b,c}$	0.228	$1.510_{a,b}$	0.325
Proactive	0.520_{b}	0.052	1.568_{a}	0.075
Indifferent	0.124_{c}	0.134	0.830_{b}	0.199

Note. Different subscripts represent significant differences at $p < .05$.

Table 5 Mammography Seeking and Scanning Behaviors by Breast Cancer Risk Perception Attitudes

	No. of Sources Sought		No. of Sources Scanned	
Breast Cancer Risk Perception Attitude	*M*	*SE*	*M*	*SE*
Responsive	1.147_{a}	0.076	2.708_{a}	0.103
Avoidant	$0.534_{a,b,c}$	0.226	$2.126_{a,b}$	0.310
Proactive	0.679_{b}	0.052	2.446_{a}	0.072
Indifferent	0.250_{c}	0.148	1.807_{b}	0.202

Note. Different subscripts represent significant differences at $p < .05$.

Discussion

This study provided another test of the RPA framework within the context of cancer-related information acquisition. Recently, a study was conducted to test the RPA framework in predicting smokers' cancer information-seeking behaviors (Zhao & Cai, 2009), which did not yield support for the RPA framework. Given that there has been some support of the RPA framework in past studies (e.g., Rimal & Real, 2003; Turner et al., 2006), it was worthwhile to conduct another test of the RPA framework to determine its utility in predicting health information-seeking behaviors.

The results of this study are somewhat consistent with previous work testing the RPA framework, finding partial support for the framework's predictions (Rimal & Real, 2003; Turner et al., 2006). For all three cancers examined (i.e., colon, prostate, and breast), individuals with a responsive attitude toward dealing with the risks for these cancers reported the highest levels of information SSB. This is consistent with previous RPA studies in that those with high risk and efficacy beliefs are typically the most active information seekers. Those with an indifferent attitude toward cancer risks reported the least amount of seeking and scanning in terms of the number of information sources used, consistent with the RPA framework. Interestingly, although those with a proactive attitude toward coping with cancer risk (low risk perception, but high efficacy beliefs) were second in terms of amount of cancer-related SSB reported, the amount did not significantly differ from those with an avoidant attitude toward coping with cancer risk (high risk perception, but low efficacy beliefs). One possible explanation may be due to the small number of avoidant individuals, compared to proactive individuals in the study. Based on the RPA cluster breakdown, most individuals reported holding a proactive attitude toward cancer risks. This was not surprising given that the surveys were administered to a general populace. Previous studies on health-risk perceptions have found that most people have an optimistic bias in their estimates of health risks for various conditions, including cancer (e.g., Clark et al., 2000).

Based on the findings in this study, the bottom-line message is that to promote greater active seeking of information related to colonoscopy, mammography, or

the PSA test, health campaigns need to focus on increasing both people's cancer risk perceptions and self-efficacy perceptions (i.e., to motivate individuals to develop a responsive attitude toward dealing with cancer risks). Given that the majority of individuals already hold a proactive attitude toward cancer risks (i.e., high self-efficacy perceptions), greater effort should be expended to increase risk perceptions overall, particularly in terms of comparative cancer risks, such that individuals perceive themselves to be at a greater risk for cancer compared to others their age. Future research should explore why people feel they are not susceptible to cancer to better understand the motivations behind the optimistic bias people hold with regard to cancer risks. The challenge for health-message designers is to overcome the optimistic bias that people have when it comes to health risks. One potential way may be to present cancer risk information in comparative terms (i.e., compared to others of your sex and age), rather than in absolute terms (i.e., lifetime risk estimate), as that may help make the information more personally relevant for the individual.

There were a few limitations to this study. First, responsive efficacy was not assessed as part of efficacy perceptions. In previous RPA studies, both self-efficacy and response efficacy beliefs were taken into account. This is important because it may be that, although most individuals report high self-efficacy regarding getting a cancer-screening test, they may hold low response efficacy regarding the tests' abilities to detect cancer, which may motivate them to not seek/scan for cancer-related information.

Second, given the cross-sectional nature of the data, it is unclear what the causal direction is between RPA and SSB. It may be that individuals who seek and scan a great deal of cancer-related information develop a responsive/proactive attitude toward cancer risks or, conversely, that those who have a responsive/proactive attitude seek and scan at levels consistent with their attitudes. In other words, future research may address the issue of whether risk and efficacy perceptions drive information seeking and scanning, or vice versa.

Finally, the information seeking and scanning measure used in this study only captures the total number of sources sought and scanned from regarding information on colonoscopy, mammography, and the PSA test. What is not adequately captured is the *amount* of seeking and scanning that occurred. It may be that individuals sought and scanned a great deal of information from only a few limited sources, or sought and scanned very little from a wide variety of information sources. Nevertheless, it is of interest to find significant differences in the total number of sources reported for seeking and scanning as a function of participants' risk perception attitudes toward cancer. Future research could probe further by asking respondents the number of times individuals sought from specific sources about cancer-related information within a specified time frame (e.g., past 3 months, past 6 months, or past year).

In closing, this study examined the extent to which people sought information about cancer-related prevention behaviors as a function of their cancer risk perceptions and efficacy beliefs. The results show that information-seeking and information-scanning behaviors are, to a great extent, driven by efficacy beliefs, so future interventions may want to talk more about this aspect of cancer prevention in

addition to presenting risk information. The next step beyond information seeking and information scanning is to see whether such information engagement translates to actual cancer-prevention behaviors.

References

American Cancer Society. (2011). *Cancer facts and figures 2011*. Atlanta, GA: Author.

Bernhardt, J. M., McClain, J., & Parrott, R. L. (2004). Online health communication about human genetics: Perceptions and preferences for Internet users. *CyberPsychology & Behavior*, *7*, 728–733.

Clark, V. A., Lovegrove, H., Williams, A., & Macpherson, M. (2000). Unrealistic optimism and the health belief model. *Journal of Behavioral Medicine*, *23*, 367–376.

Friedman, L. C., Kalidas, M., Elledge, R., Dulay, M., Romero, C., Chang, J., & Liscum, K. (2006). Medical and psychosocial predictors of delay in seeking medical consultation for breast symptoms in women in a public sector setting. *Journal of Behavioral Medicine*, *29*, 327–334.

Hay, J. L., Buckley, T. R., & Ostroff, J. S. (2005). The role of cancer worry in cancer screening: A theoretical and empirical review of the literature. *Psycho-Oncology*, *14*, 517–534.

Kelly, B., Hornik, R., Romantan, A., Schwartz, J. S., Armstrong, K., DeMichele, A., . . . Wong, N. (2010). Cancer information scanning and seeking in the general population. *Journal of Health Communication*, *15*, 734–753.

Kelly, B., Niederdeppe, J., & Hornik, R. C. (2009). Validating measures of scanned information exposure in the context of cancer prevention and screening behaviors. *Journal of Health Communication*, *14*, 721–740.

Niederdeppe, J., Hornik, R. C., Kelly, B. J., Frosch, D. L., Romantan, A., Stevens, R., & Weiner, J. (2007). Examining the dimensions of cancer-related information seeking and scanning behavior. *Health Communication*, *22*, 153–167.

Ramanadhan, S., & Viswanath, K. (2005, December). *Disparities in information-seeking among persons with a history of cancer: Evidence from a national survey*. Paper presented at the annual meeting of the American Public Health Association, Philadelphia, PA.

Rimal, R. N., & Real, K. (2003). Perceived risk and efficacy beliefs as motivators of change: Use of the Risk Perception Attitude (RPA) framework to understand health behaviors. *Human Communication Research*, *29*, 370–399.

Schwartz, M. D., Lerman, C., Miller, S. M., Daly, M., & Masny, A. (1995). Coping disposition, perceived risk, and psychological distress among women at increased risk for ovarian cancer. *Health Psychology*, *14*, 232–235.

Shiloh, S., Patel, Y., Papa, M., & Goldman, B. (1998). Motivations, perceptions, and interpersonal differences associated with interest in genetic testing for breast cancer susceptibility among women at high and average risk. *Psychology and Health*, *13*, 1071–1086.

Turner, M. M., Rimal, R. N., Morrison, D., & Kim, H. (2006). The role of anxiety in seeking and retaining risk information: Testing the Risk Perception Attitude framework in two studies. *Human Communication Research*, *32*, 130–156.

Weinstein, N. D., & Klein, W. M. (1995). Resistance of personal risk perceptions to debiasing interventions. *Health Psychology*, *14*, 132–140.

Zhao, X., & Cai, X. (2009). The role of risk, efficacy, and anxiety in smokers' cancer information seeking. *Health Communication*, *24*, 259–269.