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

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Abstract

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 seeking; information scanning; risk perception

In the United States, it is estimated that over 1.3 million new cancer cases will be diagnosed this year, contributing to an estimated 564, 830 deaths (American Cancer Society, 2006). Although this is a serious health concern, there is growing evidence that early screenings for different types of cancers may reduce mortality rates, and increase the likelihood that a cancer is detected in the early stages where it is curable (Hendrick, Smith, Rutledge, & Smart, 1997; Mandel, 1999). Additionally, a number of studies have found that a person's cancer risk may be associated with certain lifestyle habits such as lack of physical activity and poor diets (see Schuit, van Loon, Tijhuis, & Ocke, 2002).

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 and/or scan for this information as part of their daily

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activities. Previous research in the area of cancer information has primarily focused on studying the active information seeking behaviors of cancer patients (Czaja, Manfredi, & Price, 2003; Leydon et al., 2000; Rees, Sheard, & Echlin, 2003). The majority of these studies examined the information needs and seeking characteristics of cancer patients (Boberg et al., 2003; Czaja et al., 2003; Rees et al., 2003); the quality of information received by cancer patients, or their preferences for different media (Mills & Davidson, 2002). Few studies have explored the information seeking behaviors of non-cancer patients (i.e., general population) related to cancer prevention. Brashers, Goldsmith, and Hsieh (2002) noted that although information seeking can lead individuals to a deeper understanding of prevention tactics and constitutes an important strategy for helping individuals make prevention decisions, little is known about what factors promote cancer-related information seeking among the general population. Brashers et al. (2002) contend that people may not always be motivated to seek information on their own, particularly when the topic is distressing, such as cancer. Therefore, it is important to identify conditions under which people are likely to seek cancer prevention information and conditions when people are likely to avoid information seeking.

While active information seeking may play an important role in the process through which individuals in the general population make cancer prevention decisions, it is likely that the majority of their exposure to cancer-related information occurs incidentally from mass mediated and interpersonal sources of information (Johnson, 1997). Berger (2002) discussed three different strategies available for information acquisition including the use of active searching (e.g., reading an article), passive information gathering (e.g., observing the environment), and interactive information seeking (e.g., talking to a doctor). Of these, individuals are said to gather the majority of their information through passive information gathering rather than through active searching. Several authors have acknowledged the importance of passive health information gathering (e.g., Griffin, Dunwoody, & Neuwirth, 1999; Dutta-Bergman, 2004) yet in some of this research, passive information gathering is operationalized in terms of intrinsic properties of certain media. For instance, television and radio are considered passive media while the internet and print sources are considered active media (Carlson, 2000; Dutta-Bergman, 2004). Recently, some scholars have argued that any media can be used actively and passively to acquire information, and developed a new construct called “information scanning,” defined as information that a person encounters and decides to attend to in the normal flow of interactions with different information sources (Niederdeppe et al., 2007; Shim, Kelly, & Hornik, 2006). Similar to information seeking, little is known about what factors promote or inhibit cancer-related information scanning among individuals in the general population. One factor likely to affect people's motivations to seek and/or scan for cancer-related information is perceived cancer risk.

Risk Perception, Information-Seeking, and Information-Scanning

Risk perception derives from threat appraisal, and the central premise is that individuals' motivation to enact health protective or health promoting behaviors increases as a direct function of their belief that they are susceptible to a health threat (Rimal, Flora, & Schooler, 1999). Specifically, Weinstein and Klein (1995) define perceived risk as one's belief about the likelihood of personal harm. In a meta-analysis across studies on various health issues, it

was found that increases in risk perceptions generally facilitated protective intentions and behaviors (Floyd, Prentice-Dunn, & Rogers, 2000). A number of studies have found perceived risk to be related with information seeking and scanning. For example, Friedman et al. (2006) found that among women with breast cancer symptoms, lower perceived risk for breast cancer was associated with greater delay in seeking medical consultation. Bernhardt, McClaine, and Parrott (2004) investigated people's online health information seeking for genetic information and found perceived risk for genetic abnormality to be a positive predictor. As for information scanning, Schwartz, Lerman, Miller, Daly, and Masny (1995) found that high perceived risk for ovarian cancer was associated with high scores on health monitoring (defined as the tendency to scan for threat-relevant information).

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. For example, in a study examining the association between risk perception and interest in being tested for genetic susceptibility for breast cancer, a positive association was found only among average risk women, but not among high-risk women (Shiloh, Petel, Papa, & Goldman, 1998). In a recent national survey of people with cancer history, almost a third of those sampled responded negatively to the question of whether or not they had looked for information about cancer (Ramanadhan & Viswanath, 2005). Individuals who perceive high risk for cancer may choose to avoid seeking and scanning cancer-related information that may cause them anxiety or stress, particularly if they feel there is little they can do to prevent cancer. Rimal and Real (2003) argued that efficacy beliefs moderate the relationship between risk perception and information seeking such that when efficacy beliefs are high, risk perception is strongly associated with information seeking. Conversely, when efficacy beliefs are low, risk perception is posited to have little impact on information seeking.

The purpose of this study was to examine the extent to which cancer risk and efficacy perceptions account for individuals' cancer-related information seeking and scanning behaviors (SSB) related to both cancer screening and lifestyle choices. Previous research has presented several models of cancer-related information seeking but these are limited in three ways: (1) they focus on the seeking behaviors of cancer patients rather than the non-patient (general) population, and (2) the models do not explicitly examine the role risk and efficacy perceptions play with regard to information-seeking (Czaja et al., 2003; Freimuth, Stein, & Kean, 1989; Johnson, 1997), and (3) the models do not account for cancer-related information scanning behaviors. A useful model to use as a theoretical guide for making predictions about information seeking and scanning as a function of perceived risk and efficacy is the risk perception attitude (RPA) framework.

The RPA Framework and Information Acquisition

The RPA framework (Rimal & Real, 2003) has primarily been used to predict the interactive effects of perceived risk and efficacy on information-seeking behaviors. The central proposition of the framework is that the relation between risk perception and information seeking is best understood by taking into consideration efficacy beliefs. Efficacy beliefs help to regulate human functioning and emotional well-being through a variety of processes

(Turner, Rimal, Morrison, & Kim, 2006). When faced with adverse events, those who perceive themselves to be highly efficacious are more likely to persevere than those perceiving themselves to have low efficacy (Turner et al., 2006).

Bandura (1983, 1999) defined self-efficacy as an individual's confidence in his or her ability to perform a given behavior. Those who have high self-efficacy are more likely to have fewer negative thoughts about themselves, and feel that they can exert greater control over a given event compared to those who have low self-efficacy (Ozer & Bandura, 1990).

The RPA framework posit that when risk perceptions are low, efficacy beliefs are expected to have little impact on risk-reducing behaviors (e.g., information seeking or scanning) because individuals are not motivated to consider the efficacy information (Rimal & Real, 2003; Turner et al., 2006). Conversely, when risk perceptions are high, efficacy beliefs play a more prominent role in affecting risk reducing behaviors. Witte (1992, 1994) argues that heightened levels of personal risk tend to generate anxiety and motivate individuals to carefully evaluate their perceived ability (i.e., efficacy beliefs) to decide how to behave. Those who feel efficacious are likely to view potential risks as challenges to overcome, whereas those lacking in efficacy are likely to interpret potential risks more fatalistically, and as a result are less likely to enact risk-reducing behaviors such as seeking or scanning for cancer-related information (Rimal & Real, 2003).

According to the RPA framework, individuals' risk perceptions and efficacy beliefs can be used to classify people into one of four categories. Individuals with both high risk perceptions and possess 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 in their abilities to effectively reduce this risk, responsive individuals are most likely to actively seek and scan for cancer-related information relevant for reducing their risk. Conversely, individuals 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 serves only to remind them of their risk status, and that there is little they can do to avert it. When individuals have low risk perceptions, but possess high efficacy beliefs, they are classified as having a *proactive attitude* toward coping with the risk. Similar to responsive individuals, those with proactive attitudes are also likely to actively seek and scan for cancer-related information, particularly about cancer prevention behaviors that may help reduce their cancer risks because of their desire to remain disease free. However, unlike their responsive counterparts, proactive individuals may be less likely to report high SSB related to cancer screening tests due to their low risk perceptions. Information about cancer screening tests may be less relevant for this group of individuals. Lastly, 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 hypothesized to be least motivated to seek and scan for cancer-related information. Based on previous RPA studies (Rimal & Real, 2003, study 2; Turner et al, 2006), the following pattern of results was expected in terms of SSB related to cancer screening information: Responsive > Proactive > Avoidant > Indifferent

	Low self-efficacy	High self-efficacy
High relative risk	Avoidant (-1)	Responsive (+2)
Low relative risk	Indifferent (-2)	Proactive (+1)

Method

Participants and Procedures

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

Measures

The variables of interest were: (a) participant's relative risk perceptions for colon, prostate, and breast cancer compared to individuals similar in age to the respondent, (b) their efficacy beliefs regarding cancer screening tests (colonoscopy, PSA test, and mammograms) and lifestyle behaviors (exercise, fruit and vegetable consumption, and dieting) in reducing their cancer risks, and (c) their cancer-related seeking and scanning behaviors 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. For men, they 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 prostate-specific antigen (PSA) test (men only) and getting a mammogram (women only). The response options ranged from (1) very unsure to (5) very sure.

Cancer-related information-seeking—Respondents were asked the extent to which they sought information on three cancer screening behaviors: Colonoscopy, the prostate-

specific antigen (PSA) test (men only), and mammography (women only). Sought exposure was assessed first, using two questions per topic. For instance, with colonoscopy, the section began with the statement, “Some people are actively looking for information about [colonoscopy], while other people just happen to hear or come across such information. Some people don't come across information about [colonoscopy] at all. 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 the 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): (1) doctors or other medical professionals; (2) family, friends or co-workers; (3) television or radio; (4) newspapers, magazines or newsletters; (5) the internet; (6) other sources?” The two questions were combined to form dichotomous measures of whether or not 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 cancer screening behaviors.

Cancer-related information scanning—Questions about scanned exposure were asked immediately after the questions about sought exposure for each behavior. Using the example of colonoscopy again, respondents were asked, “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 the 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 (answer for each source): (1) doctors or other medical professionals; (2) family, friends or co-workers; (3) television or radio; (4) newspapers, magazines or newsletters; (5) the internet, (6) 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 or not 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 behavior.

Results

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 females, colon plus prostate cancer for males). 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 risk for colon, prostate, and breast cancer with few individuals reporting having an avoidant attitude.

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" compared to others (i.e., range of relative risk was 2.10 to 2.17 out of 4). This finding is consistent with previous studies on risk perception (e.g., Clark, Lovegrove, Williams, & Macpherson, 2000) the current sample showed signs of an optimistic bias in their estimates of colon, prostate, and breast cancer risks in comparison with others their age. Similar biases have been reported in studies that measured people's perceptions of cancer worry, a closely related construct to perceived cancer risks. Hay, Buckley, and Ostroff (2005) reported in a review of the cancer worry literature 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 percent), 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 from 4.11 to 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 of 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 the least for the prostate-specific antigen test (see Table 2 for means).

Cancer-Related Seeking by RPA Clusters

Colonoscopy-related SSB—An 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 apriori to test the hypothesized pattern. Overall, the model was significant controlling for age, education, ethnicity, and sex, $F(3, 2051)=11.83$, $p<.001$, partial $\eta^2 =.02$.

Seeking of colonoscopy information in terms of the total number of sources turned to was highest among the responsive group ($M=.94$, $SD=.07$), which was significantly higher than the other three RPA groups respectively: avoidant ($M=.55$, $SD=.12$), proactive ($M=.68$, $SD=.04$), and indifferent ($M=.37$, $SD=.07$). Additionally, 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 ($M=2.36$, $SD=.09$), which was significantly higher than the proactive ($M=2.02$, $SD=.05$) and indifferent groups ($M=1.43$, $SD=.10$). Overall, the model was significant controlling for age, education,

ethnicity, and sex, $F(3, 2035)=18.14$, $p<.001$, partial $\eta^2 =.03$. Interestingly, the responsive group did not report significantly greater scanning than the avoidant group ($M=1.89$, $SD=.16$). 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 which focuses on asking the extent to which individuals are vigilant in monitoring cancer-related information.

Prostate-specific antigen 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 ($M=.85$, $SD=.09$) reporting a significantly higher amount of sources sought than those in the proactive ($M=.52$, $SD=.05$) and indifferent clusters ($M=.12$, $SD=.13$). Similar to the pattern of finding for colonoscopy-related seeking, no significant difference was found between responsive and avoidant clusters ($M=.43$, $SD=.23$) 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 ($M=1.88$, $SD=.13$), and lowest among the indifferent group ($M=0.83$, $SD=.20$), with both the avoidant ($M=1.51$, $SD=.33$) and proactive ($M=1.57$, $SD=.08$) in the middle. The responsive and proactive groups reported significantly higher number 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, $F(3, 1024)=13.74$, $p<.001$, partial $\eta^2 =.03$.

Seeking of mammography information in terms of the total number of sources actively sought out was highest among the responsive group ($M=1.15$, $SD=.08$), which was significantly higher than the both the proactive ($M=.68$, $SD=.05$), and indifferent ($M=.25$, $SD=.15$) groups respectively. Additionally, 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 differ significantly 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 ($M=2.71$, $SD=.10$), which was significantly higher indifferent group ($M=1.81$, $SD=.20$). The proactive group also reported significantly greater scanning of mammography information ($M=2.45$, $SD=.08$) than the indifferent group. The avoidant group ($M=2.13$, $SD=.31$) did not differ significantly 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, $F(3, 1171)=5.81$, $p<.01$, 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) are presented in Tables 3-5.

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 (Xiaoquan & Xiaomei, 2009) that 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).

The results of this study are somewhat consistent with previous work testing the RPA framework, finding only 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 risk for these cancers reported the highest levels of information seeking and scanning behaviors. 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. Based on the RPA cluster breakdown, most individuals reported holding a proactive attitude toward cancer risk (low risk perception but high efficacy perception). 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, Lovegrove, Williams, & Machperson, 2000).

Based on the findings in this study, the bottom-line message is that to promote greater active seeking of information related to colonoscopy, mammograms, 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 risk (i.e., high self-efficacy perceptions), greater effort should be expended to increase risk perceptions overall, particularly in terms of comparative cancer risk, such that individuals perceive themselves to be at greater risk for cancer compared to others their age. The challenge for health message designers is to overcome the optimistic bias that people have when it comes to health risks (i.e., that they are less vulnerable compared to others).

There were several 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 while 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 a level 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. Lastly, 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 risks.

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Table 1
Breakdown of Risk Perception Attitudes by Cancer Type

Risk Perception Attitude	N	Percent
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

Table 2
Means and Standard Deviations for Other Key Study Variables

Variables	M	S.D.
Colon cancer relative risk perception (those 50 and over)	2.10	.74
Prostate cancer relative risk perception (males 50 and over)	2.13	.74
Breast cancer relative risk perception (females 40 and over)	2.14	.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	.58	1.27
Prostate-specific antigen test information seeking	.40	1.06
Mammography information seeking	.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

Table 3
Colonoscopy SSB by Colon Cancer Risk Perception Attitudes

	# of Sources Sought		# of Sources Scanned	
Colon Cancer RPA	**M**	**S.E.**	**M**	**S.E.**
Responsive	.944[a]	.065	2.360[a]	.085
Avoidant	.554[bc]	.123	1.892[abc]	.163
Proactive	.680[b]	.040	2.022[b]	.053
Indifferent	.372[c]	.072	1.425[c]	.095

Note: Different subscripts represents significant differences at $p<.05$.

Table 4
Prostate-Specific Antigen Test SSB by Prostate Cancer Risk Perception Attitudes

	# of Sources Sought		# of Sources Scanned	
Prostate Cancer RPA	**M**	**S.E.**	**M**	**S.E.**
Responsive	.851[a]	.086	1.881[a]	.125
Avoidant	.434[abc]	.228	1.510[ab]	.325
Proactive	.520[b]	.052	1.568[a]	.075
Indifferent	.124[c]	.134	.830[b]	.199

Note: Different subscripts represents significant differences at $p<.05$.

Table 5
Mammography SSB by Breast Cancer Risk Perception Attitudes

	# of Sources Sought		# of Sources Scanned	
Breast Cancer RPA	**M**	**S.E.**	**M**	**S.E.**
Responsive	1.147[a]	.076	2.708[a]	.103
Avoidant	.534[abc]	.226	2.126[ab]	.310
Proactive	.679[b]	.052	2.446[a]	.072
Indifferent	.250[c]	.148	1.807[b]	.202

Note: Different subscripts represents significant differences at $p<.05$.