

Colon cancer knowledge, screening barriers, and information-seeking in Northeastern Georgia

Jeffrey K. Springston¹ and Su-I Hou²

¹College of Journalism and Mass Communication, University of Georgia, Athens, GA, and ²College of Health & Public Affairs, University of Central Florida, Orlando, FL

Corresponding author: Jeffrey K. Springston • 120 Hooper St., Athens, GA 30605 • (706) 542-7833 • jspring@uga.edu

ABSTRACT

Background: The present study assessed utilization of colorectal cancer (CRC) screening and knowledge, barriers, and information-seeking among adults in northeastern Georgia.

Methods: A total of 245 people aged 40 years and older from selected rural, suburban, and small towns in northeastern Georgia participated in this cross-sectional survey.

Results: Respondents aged 50 years and older were more likely to think that they “don’t need screening at their current age” as compared with those in their 40s. Higher information-seeking correlated with lower screening barriers ($p < 0.001$), and colonoscopy history correlated with higher levels of information-seeking ($p = 0.001$).

Discussion: Respondents generally had a low level of knowledge about CRC. Individuals with lower perceived screening barriers indicated a higher likelihood to seek more information about CRC and therefore might be more likely to be screened by colonoscopy.

Key Words: colorectal cancer (CRC), knowledge, barriers, information-seeking

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INTRODUCTION

The American Cancer Society estimates that 136,000 new colorectal cancers (CRCs) are diagnosed each year, and that, annually, this disease causes more than 50,000 deaths (Siegel et al., 2014). Greater adherence to CRC screening guidelines promises to increase survival rates by allowing detection and removal of polyps before they progress to cancer. The present study examined CRC screening utilization, related knowledge (e.g., accuracy of assessment of risk by sex, racial group, family history, and prevention methods), barriers (physical, psychological, and financial), and CRC information-seeking among adults in northeastern Georgia (see Appendix A). Specifically, this study examined: (1) CRC screening rates, (2) recommendations of CRC screening by healthcare providers, and (3) CRC knowledge and perceptions towards CRC screening barriers by demographic characteristics and geographic location.

METHODS

This research was approved by the Institutional Review Board at the University of Georgia. This cross-sectional study utilized a randomized telephone survey that included both land-lines and mobile numbers in northeastern Georgia.

Most guidelines for CRC screening recommend starting at age 50, though some suggest screening earlier. The American College of Physicians recommends that individuals with high risk of cancer should begin screening at age 40 or 10 years younger than the age at which the youngest relative was diagnosed with CRC. (American College of Physicians (2006). ACP Internist—Colorectal cancer. Retrieved 2016, April 27, from <http://www.acpinternist.org/archives/2006/05/special.htm>). To obtain viewpoints from a broader perspective, the current study included respondents aged 40 and older. A total of 720 calls were made, with 62% unanswered or non-working numbers. Of the 271 connected calls, there was a refusal rate of 10%, leaving a total of 245 people aged 40 years and older who completed the survey.

The survey measured demographic categories (age, sex, income, and geographic location), cancer screening history (CRC and other cancers), and whether participants’ doctors had recommended cancer screening. CRC knowledge was measured by a 6-item scale adapted from a previous study (original Cronbach alpha of 0.93)(Rawl et al., 2012). Perceived CRC barriers were measured by a 15-item scale (Cronbach alpha of 0.914)(Rawl et al., 2012). Health information-seeking was measured by a 10-item scale

(Cronbach alpha of 0.886)(Yang et al., 2010). A Chi-square test was used to compare categorical variables; t-tests and ANOVA were utilized to compare continuous variables between groups.

RESULTS

Study Sample Characteristics. The sample consisted of 72% females and 28% males. Of these, 76.2% had had a colonoscopy, and 68.7% had had other cancer screenings. Of the participants, 76% were aged 50 or older, and nearly 40% had household incomes of \$35,000 or less. Overall, participants were average-risk individuals in the study areas based on responses related to inflammatory bowel disease, close relatives who have had colon polyps or CRC, and any known CRC-related genetic syndromes.

For analyses, study participants were grouped into four metropolitan statistical areas (MSAs): (1) rural (20.4%; n=50), (2) a college town with regional hospitals (24.5%; n=60), (3) a city with a medical center (34.7%; n=85), and

(4) a suburban area (20.4%; n=50). No significant differences were detected between MSAs and any of the key variables.

Cancer screening behaviors by demographics. Overall, respondents aged 61-70 had the highest rates of having had a colonoscopy (85.7%), other cancer screenings (85.7%), and received doctors’ recommendations on colonoscopy (73.0%) (Table 1). Older respondents were more likely to have had a colonoscopy and doctor recommendations for CRC screening. Female participants, relative to men, were more likely to have had other types of cancer screening (84.3% vs. 29.1%, p<0.001), and females were more likely to intend to obtain other types of cancer screening in the next year (72% vs. 27.5%, p<0.001)(not shown). On other study variables, no significant differences were found between males and females.

Table 1. Cancer screening history, doctor recommendations, and screening intentions by age

	41-50	51-60	61-70	71+	Total	P-value
Ever had colonoscopy	32.8% (n=19)	77.9% (n=53)	85.7% (n=54)	85.7% (n=48)	71.0% (n=174)	p<0.001
Ever had other cancer screening	59.6% (n=34)	80.9% (n=55)	85.7% (n=54)	76.8% (n=43)	76.2% (n=186)	p=0.006
Doctor recommended colonoscopy	39.7% (n=23)	73.5% (n=50)	73.0% (n=46)	70.9% (n=39)	64.8% (n=158)	p<0.001
Doctor recommended other cancer screening	58.6% (n=34)	55.9% (n=38)	63.5% (n=40)	62.5% (n=35)	60.0% (n=147)	NS
Intend to get colonoscopy in the next year	24.6% (n=14)	28.1% (n=18)	36.2% (n=21)	19.2% (n=10)	27.3% (n=63)	NS
Intend to get other cancer screening in the next year	56.1% (n=32)	67.7% (n=44)	76.3% (n=45)	54.7% (n=29)	64.1% (n=150)	NS

Colon cancer knowledge. In regard to knowledge, the mean (SD) score among study participants was 2.99 (1.16). The individual knowledge items receiving the lowest correct response were those asking which racial group (Whites, Blacks, or Latinos) and which sex has a higher risk of developing colon cancer (23.2% correct each). Those living in suburban areas were more likely to score lower on this item, compared with those who lived in the city with a medical center (item mean = 2.91 vs. 3.27; p=0.007).

Colonoscopy screening barriers and colon cancer information-seeking behaviors. Both scales showed satisfactory reliabilities, with Cronbach’s alpha values of 0.914 for the barrier scale (corrected item-total correlation [CITC] range 0.504 - 0.728) and 0.886 (CITC range 0.401 -

0.719) for the information-seeking scale. The overall means (SD) of screening barriers and information-seeking behavior scales were 2.83 (0.477) and 1.98 (0.336), respectively. Higher information-seeking scores correlated with lower cancer screening barrier scores (p<0.001), and those who had received a colonoscopy were more likely to have higher scores on the information-seeking scale (p<0.001). Those in the 50, 60, and 70 age groups were more likely to believe that they “don’t need screening at their current age” than those in the 40 age group (item mean 2.88-3.07 vs. 2.39; p<0.0001). Having previously had a colonoscopy was associated with higher CRC knowledge and greater CRC information-seeking barriers, but not CRC screening barriers (Table 2).

Table 2. CRC knowledge, barriers, and information-seeking by colonoscopy history

Mean (SD)	Ever had colonoscopy (Yes)	Ever had colonoscopy (No)	P-Value
CRC knowledge	2.96 (1.24)	2.85 (1.00)	0.013
CRC screening barriers	2.88 (0.52)	2.72 (0.41)	NS
CRC information-seeking	2.09 (0.36)	1.95 (0.28)	0.001

DISCUSSION/CONCLUSIONS

The results of this study show some encouraging signs. Overall, a fairly high percentage of respondents reported having had a colonoscopy. The likelihood was not significantly different for urban vs. rural respondents, or for those at different income levels. Also, a fairly high percentage (> 70%) of respondents 50 and older indicated that their health care providers had recommended CRC screening.

Most respondents, however indicated a low perception of developing CRC in their lifetime. This could be problematic in getting people to consider seriously the disease and the need for CRC screening. Further, a large number of respondents across all categories demonstrated a lack of knowledge about CRC and screening, and older participants perceived a lower need for being screened than those in the 40 age group.

The study has limitations. It relied on self-reported survey data, not confirmed by review of medical records. Although both land-line and mobile phone numbers were randomly called, telephone surveys have limitations. As with all types of telephone-based studies, the non-participants may differ appreciably from those who agree to participate.

Future research should focus on increasing knowledge of CRC and on the benefits of CRC screening. Efforts should also focus on reducing perceived barriers to screening, since individuals with lower perceived barriers to CRC screening

are more likely to seek more information about CRC and healthy behaviors. In turn, those individuals with higher levels of information-seeking appear to be more likely to obtain a colonoscopy. This study piloted three measurement scales and showed satisfactory reliabilities among a low-income population sample in four metropolitan statistical areas of northeastern Georgia. These validated measurement tools can be used for future research and for purposes of program evaluation.

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APPENDIX A**Colorectal Cancer Barriers, Knowledge, and Health Information Seeking Items****CRC Barrier Items**

The following items were answered on a Likert-type scale:

- Strongly Disagree = 1
- Disagree = 2
- Agree = 3
- Strongly Agree = 4
- Don't Know = 5

You would put off having a colonoscopy because:

- You worry about finding something wrong.
- It is embarrassing.
- You don't have time.
- You don't understand what will be done.
- It would be painful.
- The cost would be a problem.
- You don't have any bowel problems or symptoms.
- Having to find someone to drive you home would be hard.
- You don't want to have to cleanse your bowel.
- Having to limit what you eat before the test would be hard.
- Having to take the laxative before the test would be hard.
- You are afraid your colon would be injured.
- It is not that important right now.
- Thinking about having a colonoscopy makes you feel nervous or jittery.
- You would have to see a doctor you don't know.

CRC Knowledge Items

Who is more likely to get colon cancer? Would you say

1. A person younger than 50 years old
2. A person who is 50 or older
3. There's no difference, or
4. You don't know

Which group is more likely to get colon cancer? Would you say

1. Blacks
2. Whites
3. Hispanics
4. There's no difference, or
5. You don't know

Is a woman's chance of getting colon cancer

1. Much higher than a man's
2. About the same as a man's
3. Much lower than a man's, or
4. You don't know

Who is most likely to get colon cancer? Would you say

1. Someone whose husband or wife had colon cancer
2. Someone with one close blood relative, *like a parent, brother, or sister who had colon cancer*
3. Someone with two close blood relatives, *like a parent, brother, or sister who had colon cancer*
4. There's no difference, or
5. You don't know

Can colon cancer be prevented? Would you say

1. Yes
2. No
3. You don't know

Which of these is the most effective way for people to lower their chances of dying from colon cancer?

1. There's nothing people can do to lower their chance of dying from colon cancer
2. Exercising regularly
3. Finding and removing polyps
4. Limiting alcohol
5. You don't know

Health Information Seeking Items

The following items were answered on a Likert-type scale:

Strongly Disagree = 1

Disagree = 2

Agree = 3

Strongly Agree = 4

Don't Know = 5

I would likely to go out of my way to get information on colon cancer.

When the topic of colon cancer comes up, I try to learn more about it.

When the topic of colon cancer comes up, I try to tune it out.

Gathering a lot of information about the risks of colon cancer is a waste of time.

When the topic of colon cancer comes up, I go out of my way to avoid talking about it.

When I see or hear about colon cancer, I rarely spend much time thinking about it.

When I encounter information about colon cancer, I focus on only a few points.

If I learned that I needed to take action about colon cancer, advice from one expert is enough.

In order to be completely informed about colon cancer, the more viewpoints the better.

When I encounter information about colon cancer, I'm likely to stop and carefully think about it.