

Factors Affecting Compliance with Screening Sigmoidoscopy

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Background. A retrospective, qualitative study in a university setting was undertaken to better understand factors influencing patient compliance with screening sigmoidoscopy.

Methods. Individuals who completed screening sigmoidoscopy were interviewed to learn about the physician-patient relationship, general knowledge of cancer, family experience with cancer, exposure to the media, and specific reasons why sigmoidoscopy was completed.

Results. Respondents reported that their physician's recommendation had a strong positive influence on their decision to have sigmoidoscopic screening, as

did their family and personal experiences with cancer. In all cases, the patients stated that they would not have had a sigmoidoscopy without the recommendation of their physician. Respondents were little influenced by exposure to the media or by famous personalities.

Conclusions. The importance of the physician's recommendation for the patient to have sigmoidoscopy and demonstration of concern with early cancer detection may represent the primary motivating factors in completion of screening sigmoidoscopy.

Key words. Physician-patient relations; sigmoidoscopy; mass screening; patient compliance.
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Colorectal cancer is the second most common cause of cancer death in the United States. Persons with early-stage colorectal cancer at the time of diagnosis appear to have longer survival rates than persons with advanced disease.¹ Despite this knowledge, screening sigmoidoscopy has met with varying degrees of acceptance by patients at risk for colorectal carcinoma.^{2,3} Furthermore, among those for whom the procedure was recommended, despite initial patient acceptance, actual compliance has ranged from only 15% to 33%.⁴

A variety of recent studies have attempted to explain this low rate of compliance. These studies have considered the possible barriers to screening such as cost,⁵ patient attitudes, including health beliefs and normative values,^{4,6,7} and physicians' attitudes. None of these studies has provided an adequate explanation for the low compliance with screening sigmoidoscopy; moreover, the ability to predict compliance has been limited and inconsistent.⁸

The current study was undertaken to elucidate factors that influence patients to complete screening sigmoidoscopy.

Methods

This study examines retrospectively a cohort of patients who completed screening sigmoidoscopy and explores factors that led to their compliance. Previous investigations have dealt with barriers to compliance and asked, "Why don't individuals follow through with the recommendations of their physicians?" This study asked the question, "Why do individuals comply with screening recommendations?" The qualitative design allowed interaction with the respondent to understand more fully the personal motivating factors that contributed to individual behaviors. A series of questions were developed from a search of the literature to elucidate potential areas of importance in determining screening behavior. These questions were refined through pilot interviews. The factors studied were in four major categories: the physician-patient relationship, general knowledge of cancer, personal experience with cancer, and exposure to media. Respondents were asked to state specific reasons why

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they complied with their physician's recommendation to have a sigmoidoscopy.

Individual, open-ended interviews were conducted by the author with 20 patients who had recently completed a screening sigmoidoscopy. All were selected randomly from a university-based family practice residency program in a large metropolitan area. The interviews were performed in the family practice center. Included in the study were only those patients who (1) were asymptomatic, (2) had completed the examination for screening purposes within the preceding 6 months, (3) had not experienced a previous sigmoidoscopic examination, and (4) had a member of the practice (other than the author) as his or her regular physician.

During the interview, each respondent was asked the same standard set of questions; additional questions for follow-up or clarification were asked as necessary. Questions were open-ended, and included some of the following:

1. "What is your feeling about the advice your physician gives you?"
2. "Has anyone around you had cancer?"
3. "How did you feel about that?"
4. "What have you seen on TV or in the news regarding cancer?"
5. "Why did you have a sigmoidoscopy?"

In the course of each interview, an interpretation of the responses was summarized, after which respondents were asked to comment on the accuracy of the interpretation. After the data were collected, several colleagues were asked to review the data and the interpretations. This process of "triangulation," with input from both respondents and knowledgeable colleagues, is a widely accepted method of validity assessment in qualitative research.^{9,10} (A copy of the instrument used is available from the author on request.)

Results

Physician-Patient Relationship

Respondents reported a high level of patient advocacy by their respective physicians. Questions that probed the patient-physician relationship revealed it to be characterized by the physician's demonstration of concern, prompt attention to medical problems, and meticulous follow-up (Table 1). Listening and empathy were also recalled as behaviors that were exhibited by the physicians. All respondents believed that the physicians had their best interests in mind; and, although such findings

Table 1. Characteristics of a Positive Physician-Patient Relationship Mentioned by Patients Who Complied with Their Physician's Recommendation for Screening Sigmoidoscopy (N = 20)

Physician Behavior	Number of Patients Who Mentioned the Behavior*
Taking time	9
Listening	7
Caring	7
Considering the patient's opinion	7
Thoroughness	7
Making things understandable	3
Timely action	3
Alleviating fear	2
Empathetic	2

*Many patients mentioned more than one physician behavior.

have little relevance to clinical knowledge or technical skills, respect for and confidence in the physicians were evident. Presumably, this led to positive attitudes in the respondents and was reflected in the overall acceptance of advice offered by their physicians. None of the respondents discounted his or her physician's advice.

Personal Experience with Cancer

All but two respondents had some form of personal experience with cancer. Although this involvement varied greatly, generally, their experiences with cancer had a profound effect. To a certain extent, respondents had experienced the sequence of events one might expect if it had been their own terminal illness, including denial, anger, bargaining, depression, and eventually acceptance. Regardless of whether involvement was through direct assistance with care of a cancer patient, or indirect contact, fear was a common theme. The perceived threat of bodily deterioration and depression was common, and derived from their personal experiences with cancer. Loss of confidence in personal health and reprioritization of values was evident in response to this fear and uncertainty. Individuals with no life experiences involving cancer expressed no specific feelings with regard to terminal illness, but did note an apparent increase in the prevalence of cancer around them.

General Knowledge

Patients' general knowledge regarding cancer was relatively good (Table 2). Although there were frequent misconceptions, including the notion that exposure to air facilitates the spread of cancer, it was recognized that cancer is a leading cause of morbidity and mortality. Respondents noted that individuals frequently wait too long to see their physician regarding changes in their

Table 2. Patients' General Knowledge About Cancer Prevalence and Prevention (N = 20)

Patient Belief	Number of Patient Responses*
About prevalence	
Delay in recognition common	8
Major killer if left untreated	7
High likelihood of developing	5
Many different types	4
About prevention	
Correctable if caught early	9
Have sigmoidoscopy	8
Perform hemocult test	6
Watch for change in stool	6
Change diet: consume fiber	4
Have physical examinations	3
Early detection important	3
Perform self-examinations	2
Have barium enema	2

*Several patients gave more than one response.

health. Furthermore, all but one individual believed that it was at least moderately likely that they would develop some form of cancer in their lifetime. The prognosis of colorectal cancer was felt to be poor and characterized by such statements as "downhill path" and "hope for the best." The overwhelming consensus among the respondents appeared to be that early detection and prevention of disease was important.

Exposure to Media

Respondents exhibited extremely poor recall of cancer education in the media (Table 3). Exposure to the media was acknowledged by all participants, but the information that could be remembered was surprisingly small. Collectively, several famous personalities who had developed cancer were noted, but most individuals had difficulty naming even one. This finding was unexpected, and suggests that mass media may have less impact on patients' attitudes regarding cancer than originally thought.

Table 3. Patient Exposure to Cancer Information in the Media and Its Impact (N = 20)

Source and Impact of Cancer Information	Number of Patient Responses*
Media source	
Pamphlets	4
Television	4
"The 7 Warning Signs of Cancer"	2
Magazines	1
Impact	
No impression	7
Poor recall	3

*Some patients did not answer the questions, and some patients answered more than one question.

It was frequently noted that "the short news bits on TV go in one ear and out the other." Interestingly, one respondent reported that a much greater effect was exerted by a television program depicting a character with terminal illness.

In response to the question, "Why did you have sigmoidoscopy?" 90% of the respondents stated that the physician's recommendation was the primary reason for having the procedure completed. Fifty percent of the participants stated that family experience played an important part in their decision. It should be noted, however, that in every instance, despite knowledge, experience, or personal concern, it was the physician's recommendation and insistence that led each of the respondents to complete the examination. All individuals stated that without prompting, they would not have had this procedure done. None of the participants mentioned media exposure or public figures as contributing to their decision to proceed with sigmoidoscopy.

Prior knowledge of sigmoidoscopy was rather poor and incorrect. For the most part, what was known had been learned from the primary physician. Every participant stated that they would have another sigmoidoscopy if it was recommended by their physician. In general, most perceived the examination to be uncomfortable, but not intolerable. One individual stated that the examination laid many fears to rest. "I will definitely have another sigmoidoscopy" was stated in virtually every case without hesitation. Another participant noted that "it was well worth the discomfort for the peace of mind."

Discussion

This study subjectively revealed a strong positive relationship between physician recommendation and completion of sigmoidoscopy as well as a significant influence from personal experience with cancer. Exposure to mass media and public figures did not appear to play a significant role in compliance. It is apparent from these interviews that the physician's recommendation and demonstration of concern for early detection may represent the primary motivating factor in completion of screening sigmoidoscopy.

Compliance with screening recommendations is likely influenced by numerous factors including physician behavior, patient attitudes, and barriers to screening. Physicians' behavior is influenced by their interest in a screening procedure, their perception of the patient's willingness to participate, the ease with which a procedure can be integrated into the practice, and technical skills necessary to perform the procedure.⁴ An important determinant of the use of early cancer prevention tech-

niques with respect to colon cancer may be the physician's demonstration of concern with the importance of early detection, patient satisfaction with care, and the quality of the physician-patient relationship.¹¹ One study of individuals who completed sigmoidoscopy noted that a clear relationship existed between the performance of the procedure and the degree of patient contact (patients who were seen only once as compared with those seen more than three times).⁴ The results of this study support that conclusion.

Attempts to explain patient behavior include the Health Belief Model and the concept of normative values, both of which have significant shortcomings when one looks objectively at compliance.^{6,8,12,13} Furthermore, studies have demonstrated that views about cancer can be changed in a positive direction.¹⁴ Although neither age, education, subjective stress, or spouse's opinion have been shown to make an important contribution to screening behavior,⁶ the presence of some risk factors has been positively associated with acceptance.^{15,16} Subjects with one or more first-degree relatives with colorectal cancer were more likely to accept screening than to refuse it,⁶ and high-risk groups for whom the rewards of screening are greatest clearly respond positively to a "cue."^{6,17} This study supports these findings in that close personal experience with cancer was associated with screening compliance.

Some studies have shown that screening can be improved by mailed invitations,^{5,16} registers of patients and results, simple versions of leaflets,^{18,19} use of well-known personalities to promote screening, health education campaigns, and regular evaluation of records.²⁰ On the other hand, a recent study of randomized cancer screening in a family practice setting found, surprisingly, that a recall letter and patient education materials sent by mail to an intervention group had a significant adverse effect on the mean number of cancer screening tests performed on those patients compared with the number performed on patients in a control group.²¹ This finding may be related to fear. In any event, it is consistent with the findings of this study, which show no relationship between compliance and education or mass media. When one considers barriers to screening, cost has not in general been shown to influence acceptance.⁵

Biases inherent in this study were that the questionnaire was administered by a physician, a university medical center population was used, only a small cohort was interviewed, and the study was conducted retrospectively. Additionally, the physicians screening this cohort may have been more insistent regarding sigmoidoscopy than the physicians of those who did not comply with screening recommendations. Furthermore, the fear that led some individuals to seek screening may have led

others to avoid it. The structure of the interview itself was something of a learning experience and may have influenced subsequent responses, making interpretation difficult.

The importance of the patient-physician relationship cannot be underestimated. In every case, sigmoidoscopy had been contemplated but, according to the respondents, would never have been completed were it not for the recommendation of and follow-up by the primary care physician. In explaining the value that patients placed on their physician's judgment and their acceptance of the physician's advice, the participants mentioned repeatedly trust and confidence in the physician, as well as the personal nature of the patient-physician relationship. This was primarily the result of the physician taking time, demonstrating concern, listening attentively, caring, and acting in a timely manner. Although many factors contribute to compliance with screening sigmoidoscopy, previous exposure to cancer through close personal experience and physician recommendation are likely to be the most influential. The physician's recommendation and demonstration of concern for early detection may represent the primary motivating factors for completion of screening sigmoidoscopy.

A comparative study could investigate this further in a prospective manner, using a modified questionnaire and a nonphysician interviewer. Investigation could also concentrate on recommendations made by the personal physician compared with recommendations by another physician, those with personal experiences involving cancer compared with those with no exposure to cancer, and those with knowledge of screening recommendations compared with those with no prior knowledge. Furthermore, the knowledge obtained from such a study may be applicable to other screening procedures.

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For editorial comment, see page 564.
