

Patient Preferences and Adherence to Colorectal Cancer Screening in an Urban Population

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We measured patient preferences for colorectal cancer (CRC) screening strategies and actual receipt of alternative CRC screening tests among an urban minority sample participating in an intervention study. The fecal occult blood test was the most preferred test, reportedly owing to its convenience and the noninvasive nature. For individuals who obtained a test that was other than their stated preference (41.1%), reasons for this discordance may be due to physician preferences that override patient preferences. (*Am J Public Health*. 2006;96:809–811. doi:10.2105/AJPH.2004.049684)

Screening for colorectal cancer (CRC) is recommended,^{1–3} but screening rates remain low in the United States.⁴ CRC screening tests differ in their sensitivity, specificity, cost, and safety.^{5,6} Undergoing 1 of several types of CRC screening is recommended rather than a specific test. Individuals' preferences should, therefore, be taken into account when deciding the best screening approach for an individual, as accommodating such preferences may increase likelihood of screening.^{7–10} But little is known about patient preferences for CRC screening and how these preferences translate into test performance, which is the focus of the current study.

METHODS

Our study was based on data collected as part of the Healthy Colon Project, a randomized trial evaluating tailored telephone intervention versus standard print communications for increasing CRC screening. Participants were members of a large health care workers

union (or beneficiaries) in the New York City metropolitan area who did not have a recent CRC screening test on the basis of self-report. Inclusion and exclusion criteria are described elsewhere.¹¹ Between November 2000 and July 2002, 6214 age-eligible members were contacted by telephone. Among them, 3548 (57.1%) did not meet inclusion criteria, 2210 (35.6%) were not interested, and 456 (7.3%) were randomized into the trial. Sociodemographic information was collected by telephone at the time of recruitment. The elicitation of a CRC test preference occurred at the first telephone education contact, which took place within 2 weeks of randomization. Our sample for this analysis included the 226 participants assigned to receive telephone education. We excluded the 10 participants that refused telephone intervention contacts.

The health educator presented participants with 3 screening options (a fecal occult blood test [FOBT] that would be done at home, flexible sigmoidoscopy, and colonoscopy), provided a description of each test, and established the participant's preference. The health educator probed for reasons underlying subject's preference and willingness to make a verbal commitment to obtain the preferred test. Reasons for preferences were coded into themes from the health educator's handwritten notes by 1 of the investigators. Intrarater reliability for a random sample of 30 participants was 100% for preferences and 97% for reasons. Follow-up calls varied in frequency and duration among participants and emphasized positive reinforcement, enhancement of perceived self-efficacy to overcome barriers, and the message that there is support from scientists, medical doctors, and health organizations for recommended screening.

Six months after randomization, subjects were interviewed by telephone to inquire if they had a CRC screening test, and research staff, unaware of the subjects' group assignment, verified self-reported CRC screening with medical claims data and medical records. We assumed that those who did not complete a 6-month follow-up survey (15 of the 216 [6.9%]) did not receive CRC screening. FOBT (defined as 2 samples from each of 3 consecutive bowel movements), flexible sigmoidoscopy, colonoscopy, or barium enema within 6 months postrandomization were considered

acceptable outcome measures (a single stool test was not). We used SPSS (Chicago, Illinois) for statistical analysis.

RESULTS

Characteristics of the sample are described in Table 1. There was a significant difference in preferences ($\chi^2=310.1$; $df=2$; $P<.0001$), with the majority ($n=194$, 89.8%) preferring the FOBT. The remaining 10.2% preferred either the colonoscopy ($n=12$, 5.6%) or had no preference ($n=10$, 4.6%). FOBT was preferred over colonoscopy ($\chi^2=160.8$; $df=1$; $P<.0001$); and over no preference ($\chi^2=166.0$; $df=1$; $P<.0001$). We found no association between test preference and demographic subgroups, except for income level. Although most preferred the FOBT in both income groups ($\leq 50K$ or $>50K$), participants with lower household income showed an even stronger preference toward the FOBT: 93% versus 78.8% (Fisher exact test, $P=.007$).

Table 2 shows reasons for choosing the preferred screening tests. Among the 194 participants who preferred FOBT, the main reason was convenience (76, 39.2%). Among the 12 preferring colonoscopy, 7 (58.3%) did so because they believed it was the most reliable and accurate test. Among the 10 participants who did not specify a test preference, 8 (80%) preferred to ask for their physician's recommendation.

Overall, of the 61 (out of 216) participants (28%) who had CRC screening tests, 58 (95%) stated a test preference at baseline (51 preferred FOBT; 7 preferred colonoscopy). Among them, 34 (58.6%) had the test that they had stated as preferring at baseline, and 24 (41.4%) had a different test. Among the 51 who stated a test preference for FOBT, 28 (54.9%) had FOBT and 23 (45.1%) had a different test (i.e., 20 had a colonoscopy, 2 had flexible sigmoidoscopy, and 1 had FOBT plus flexible sigmoidoscopy). Among the 7 that stated a test preference for colonoscopy, 6 (85.7%) had colonoscopy and 1 (14.3%) had an FOBT. Among the 3 that did not state a test preference at baseline, all 3 (100%) had colonoscopy.

We examined chart notes for possible reasons why 24 participants completed a CRC screening test that was different from the test they reportedly preferred. Among the 23

TABLE 1—Characteristics of Study Sample and CRC Screening Test Preference

	Total Sample (No.) %	Preferred FOBT, ^a (No.) %
Overall	216 (100)	194 (89.8)
Gender		
Men	66 (30.6)	57 (86.4)
Women	150 (69.4)	137 (91.3)
Age, y		
52-54	41 (19.0)	35 (85.4)
55-59	103 (47.7)	95 (92.2)
≥60	72 (33.3)	64 (88.9)
Race		
Black	151 (69.9)	138 (91.4)
White	27 (12.5)	24 (88.9)
Hispanic	13 (6.0)	10 (76.9)
Asian	13 (6.0)	11 (84.6)
Other	10 (4.6)	9 (90.0)
Refused	2 (0.9)	...
Marital status		
Single/never married	15 (6.9)	14 (93.3)
Married/living together	137 (63.4)	120 (87.6)
Divorced/separated	45 (20.8)	42 (93.3)
Widowed	18 (8.3)	17 (94.4)
Refused	1 (0.5)	...
Highest education		
High school graduate or less	126 (58.3)	112 (88.9)
Beyond high school	90 (41.7)	82 (91.1)
Annual household income ^b		
≤\$50 000	158 (73.2)	147 (93.0)
>\$50 000	52 (24.1)	41 (78.8)
Refused	6 (2.8)	...

Note. CRC = colorectal cancer; FOBT = fecal occult blood test.

^aParticipants that had a CRC screening test preference for an FOBT. The other participants had a CRC screening test preference for a colonoscopy or had no test preference.

^bComparison between annual household income level and CRC screening test preference (Fisher exact test; $P=.007$).

who preferred an FOBT, but received another test, most (73.9%, $n=17$) reported it was because their physician referred them for either a colonoscopy or a flexible sigmoidoscopy after their inquiry about an FOBT. The 1 individual who preferred a colonoscopy, but received an FOBT, reported that it was a routine annual procedure of the physician's office to give FOBT kits to its patients.

TABLE 2—Baseline Reasons for Patient Preferences for CRC Screening Tests

	No Test Preference, No. (%)	FOBT, No. (%)	Colonoscopy, No. (%)
No reason/didn't say	2 (20)	45 (23.2)	2 (16.7)
Noninvasive/wants to avoid hospital/fear of doctors	0	40 (20.6)	0
General convenience/can get by mail	0	76 (39.2)	0
Wants PCP's recommendation	8 (80)	0	0
Believes test would be PCP's recommendation	0	0	2 (16.7)
Most reliable/most accurate/"best test"	0	0	7 (58.3)
Would be "less pain"	0	8 (4.1)	0
Familiarity with test	0	6 (3.1)	0
Test would be "easy to do"	0	9 (4.6)	0
Test family would prefer them to do	0	1 (0.5)	0
Concerns about insurance reimbursement/hidden costs of other test	0	4 (2.1)	0
Do not want to handle their own stool	0	0	1 (8.3)
Less embarrassing/less "gross"/more private	0	5 (2.6)	0
Total	10	194	12

Note. CRC = colorectal cancer; FOBT = fecal occult blood test; PCP = primary care physician.

DISCUSSION

To our knowledge, this study is the first to examine the relation between CRC screening preferences and verified screening outcomes. Our study was different from previous studies^{7,9,10} in that we did not see such heterogeneity of patient test preferences. In contrast, we found an overwhelming preference for FOBT. All tests were fully covered by the participants' insurance. Our study was unique in that it allowed us to examine preferences for 3 screening strategies not confounded by out-of-pocket costs. This is significant now that Medicare covers the cost of all CRC screening tests.¹²

Our study is not generalizable to other populations, especially those with no health insurance. Further, preference data are based only on the perspective of the participant at the initial conversations with the study health educator. We do not have information on the nature or content of the interpersonal communication between the patient and the physician at the time the CRC screening test was ordered. We speculate that the discordances may be because of: (1) the physician's preference for colonoscopy; (2) other clinical findings that might have warranted a colonoscopy; (3) lack of office systems to track and follow-up FOBT; and (4) lack of reimbursement of physician time related to the FOBT mailing and tracking when done outside an office visit, despite

reimbursement of the FOBT itself. These possibilities need further exploration.

We did not explore the extent to which physicians' recommendations for tests other than those preferred by their patients might have contributed to the high rate of overall noncompliance (71.8%) for CRC screening. We speculate that it would. Further research is required to determine if this mismatch reduces test completion rates or patient satisfaction when seeking preventive care. ■

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Contributors

R.L. Wolf originated the study, supervised all aspects of its implementation, provided day-to-day leadership and management of the study and direct supervision of study personnel, conducted data analysis, interpreted

the study findings, and led the writing of the article. C.E. Basch developed study protocols, supervised all aspects of the study implementation, and assisted with interpretation of findings and writing of the article. C.H. Brouse assisted with development and implementation of the intervention, data collection, and writing of the article. C. Shmukler assisted with development and implementation of study protocols and provided medical oversight. S. Shea assisted with the study design, development of study protocols, interpretation of study findings, and writing of the article.

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Human Participation Protection

The study was approved by the institutional review boards of Teachers College, Columbia University, and the Columbia University Medical Center. Informed oral consent was obtained from all participants.

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