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Provider perspectives on the utility of a colorectal cancer screening decision aid for facilitating shared decision making

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Abstract

Background Decision aids for colorectal cancer (CRC) screening have been shown to enable patients to identify a preferred screening option, but the extent to which such tools facilitate shared decision making (SDM) from the perspective of the provider is less well established.

Objective Our goal was to elicit provider feedback regarding the impact of a CRC screening decision aid on SDM in the primary care setting.

Methods Cross-sectional survey.

Participants Primary care providers participating in a clinical trial evaluating the impact of a novel CRC screening decision aid on SDM and adherence.

Main outcomes Perceptions of the impact of the tool on decision-making and implementation issues.

Results Twenty-nine of 42 (71%) eligible providers responded, including 27 internists and two nurse practitioners. The majority (> 60%) felt that use of the tool complimented their usual approach, increased patient knowledge, helped patients identify a preferred screening option, improved the quality of decision making, saved time and increased patients' desire to get screened. Respondents were more neutral is their assessment of whether the tool improved the overall quality of the patient visit or patient satisfaction. Fewer than 50% felt that the tool would be easy to implement into their practices or that it would be widely used by their colleagues.

Conclusion Decision aids for CRC screening can improve the quality and efficiency of SDM from the provider perspective but future use is likely to depend on the extent to which barriers to implementation can be addressed.

Introduction

Engaging patients to participate in the decision-making process when confronted with preference-sensitive choices related to cancer screening or treatment is fundamental to the concept of patient-centred care endorsed by the Institute of Medicine, US Preventive Services Task Force and the Centers for Disease Control and Prevention.[1–3] Ideally, this process should occur within the context of shared decision making (SDM), whereby patients and their health-care providers form a partnership to exchange information, clarify values and negotiate a mutually agreeable medical decision.[4,5] SDM, however, has been difficult to implement into routine clinical practice in part owing to lack of time, resources, clinician expertise and suitability for certain patients or clinical situations.[6,7] The use of patient-oriented decision aids outside of the context of the provider–patient interaction has been proposed as a potentially effective strategy for circumventing several of these barriers.[3,8] Decision aids are distinct from patient education programmes in that they serve as tools to enable patients to make an informed, value-concordant choice about a particular course of action based on an understanding of potential benefits, risks, probabilities and scientific uncertainty.[9–11] Besides facilitating informed decision making (IDM), decision aids also have the potential to facilitate SDM by improving the quality and efficiency of the patient–provider encounter and by empowering users to participate in the decision-making process.[11] Studies to date have demonstrated that while decision aids enhance knowledge, reduce decisional conflict, increase involvement in the decision-making process and lead to informed value-based decisions, their impact on the quality of the decision, satisfaction with the decision making process and health outcomes remains unclear.[11]

Besides enabling patients to make informed choices, decision aids also have the potential to facilitate SDM by improving the quality and efficiency of the patient–provider encounter. Relatively few studies have examined the utility of decision aids for promoting effective SDM from the perspective of the provider. Studies to date have largely focused on provider perspectives on the quality of the decision tools themselves or issues related to implementation into clinical practice.[11–15] The overall objective of this study was to elicit provider feedback regarding the extent to which the use of a novel colorectal cancer (CRC) screening decision aid facilitated SDM in the primary care setting within the context of a randomized clinical trial.

Methods

Brief overview of decision aid and randomized clinical trial

Details of the decision aid, recruitment process, study design and secondary outcome results have been previously published.[16] The overall objective of the trial was to evaluate the impact of a novel computer-based decision aid on SDM and patient adherence to CRC screening recommendations. The decision aid uses videotaped narratives and state-of-the-art graphics in digital video disc (DVD) format to convey key information about CRC and the importance of screening, compare each of five recommended screening options using both attribute- and option-based approaches, and elicit patient preferences. A modified version of the tool also incorporated the web-based '*Your Disease Risk (YDR)*' CRC risk assessment tool (http://www.yourdiseaserisk.wustl.edu). To assess its impact on SDM and screening adherence, average-risk, English-speaking patients 50–75 years of age due for CRC screening were randomized to one of the two intervention arms (decision aid plus the *YDR* personalized risk assessment tool with feedback or decision aid alone) or a control arm, each of which involved an interactive computer session just prior to a scheduled visit with their primary care provider at either the Boston Medical Center or the South Boston Community Health Center. After completing the computer session, patients met with their providers to discuss screening and identify a preferred screening strategy. Although providers were blinded to their patients' randomization status, they received written notification in the form of a hand-delivered flyer from all study patients acknowledging that they were participating in the 'CRC decision aid study' to ensure that screening was discussed. Outcomes of interest were assessed using pre/post-tests, electronic medical record and administrative databases. The study to date has found that the tool enables users to identify a preferred screening option based on the relative values they place on individual test features, increases knowledge about CRC screening, increases satisfaction with the decision-making process and increases screening intentions compared to non-users. The study also finds that screening intentions and test ordering are negatively influenced in situations where patient and provider preferences differ. The tool's impact on patient adherence awaits more complete follow-up data, which should be available in early 2011.

Study design

We conducted a cross-sectional survey of primary care providers participating in the randomized clinical trial in January and February of 2009. At the time of the survey, 725 eligible patients had been randomized to one of the three study arms. The surveys were distributed just prior to monthly business meetings conducted by the Sections of General Internal Medicine and Women's Health at Boston Medical Center and Adult Medicine at the South Boston Community Health Center. Respondents were asked to sign an attestation sheet if they completed the survey to identify providers not in attendance. For those who were not in attendance, the survey was distributed electronically as an email attachment; respondents were asked to return the survey via facsimile to preserve anonymity. Two email reminders with attached surveys were sent 2 weeks apart after the initial email to optimize response. The study was deemed exempt by the Institutional Review Boards at both participating institutions.

Subjects

The survey sample included board-certified primary care providers (general internists and nurse practitioners) at Boston Medical Center and the South Boston Community Health Center who had referred patients to the randomized clinical trial. Of the 50 providers who had referred patients to the study since its commencement in 2005, 42 were still practicing at the participating sites at the time of the survey. All had exposure to at least one patient in an intervention arm and at least one patient in the control arm; all but two of the targeted providers had multiple patients in each arm. None of the participants had formally reviewed the content of the decision aid nor received special training in SDM.

Practice settings

The Boston Medical Center is a private, non-profit academic medical centre affiliated with the Boston University School of Medicine, which serves a mostly minority patient population (only 28% White, non-Hispanic). The South Boston Community Health Center is a community health centre affiliated with BMC, which serves a mostly White, non-Hispanic, low-income patient population.

Survey instrument

The survey instrument included a cover letter, 23 closed-ended questions and two open-ended questions. Much of the content was derived from instruments used in previously published studies by Holmes-Rovner *et al.* and Graham *et al.*[6,15] The cover letter briefly described the purpose of the study, a statement that participation was completely voluntary, the approximate amount of time required to complete the survey, and a statement that all responses are anonymous and confidential. The closed-ended questions include one item related to eligibility [confirmation of participation in the clinical trial (yes/no)], two items related to demographics (provider degree and year of graduation), 12 items related to perspectives on the impact of the tool on various patient and provider components of SDM for

CRC screening (see Table 1), and eight items related to perspectives on implementation or content modification (see Tables 2 and 3). The framing of the questions inferred a comparison between patients exposed to the decision aid and those not exposed, i.e., standard care patients, regardless of their involvement in the study. All of the items related to SDM used a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Six of the items related to implementation or content modification also used the same 5-point Likert scale, and two used a single best answer format. The two open-ended questions inquired about suggestions for improving the decision aid and complaints. The questionnaire took ∼10 min to complete.

Statistical analyses

Descriptive statistics were used to characterize the study population and response data for all closed-ended questions. Frequency data for the 5-point Likert scale items were collapsed into three categories: 'agreed/strongly agreed', 'neutral' and 'disagreed/strongly disagreed'. Mean response scores ± standard deviations were also calculated for the same data using Microsoft Excel functions. Responses to open-ended questions were summarized according to themes.

Results

Study population

In total, 29 of the 42 (71%) possible providers, including 27 physicians and two nurse practitioners, responded to the survey and acknowledged that they had referred patients to the randomized clinical trial. Of the 29 respondents, 4 (14%) had received their degrees between 2000 and 2009, 15 (52%) between 1990 and 1999, and 6 (28%) before 1990; two declined to answer the question.

Perspectives on SDM

As shown in Table 2, the majority of providers (>60%) agreed or strongly agreed that the decision aid complemented their usual approach

Table 1 Provider perspectives on the utility of the decision aid for facilitating SDM

	Response category, *n* (%)			
From my clinical perspective, the decision aid	Strongly agree/agree	Neutral	Strongly disagree/disagree	Mean item score (SD)*
4. Complemented my usual approach to CRC screening	24 (86)	4 (14)	0	4.3 ± 0.7
5. Improved my usual approach to CRC screening	16 (59)	8 (30)	3 (11)	3.7 ± 1.0
6. Helped me tailor my counselling about CRC screening to my patient's needs	12 (44)	11 (41)	4 (15)	3.5 ± 1.0
7. Saved me time	18 (64)	6 (21)	4 (14)	3.8 ± 1.0
8. Improved the quality of patient visits	14 (52)	9 (33)	4 (15)	3.6 ± 1.0
9. Increased my patients' satisfaction with my care	10 (40)	13 (52)	2 (8)	3.4 ± 0.8
10. Is an appropriate use of my patient's clinic time	27 (93)	1 (3)	1 (3)	4.1 ± 0.6
11. Increase patient knowledge about the different CRC screening options	26 (90)	3 (10)	0	4.3 ± 0.6
12. Helped patients understand the benefits/risks of the recommended screening options	24 (83)	5 (17)	0	4.1 ± 0.7
13. Helped patients in identifying preferred screening option	21 (72)	7 (24)	1 (3)	4.0 ± 0.8
14. Improved the quality of the decision making	22 (79)	6 (21)	0	4.0 ± 0.7
15. Increased patients' desire to get screened	21 (75)	5 (18)	2 (7)	3.9 ± 0.9

CRC, colorectal cancer; SD, standard deviation; SDM, shared decision making.
*1 = strongly disagree; 5 = strongly agree.

Table 2 Provider perspectives on decision aid implementation

The decision aid	Response category, *n* (%) Strongly agree ⁄ agree	Neutral	Strongly disagree ⁄ disagree	Mean item score (SD)*
16. Would be easy to use in my practice outside of a research stetting	12 (48)	9 (36)	4 (16)	3.4 ± 1.0
17. Use would require reorganization of my practice for routine clinical use	14 (58)	6 (25)	4 (17)	3.6 ± 1.1
18. Is likely to be used by most of my colleagues	11 (41)	12 (44)	4 (15)	3.4 ± 0.9
19. Should include a discussion of costs	13 (50)	5 (19)	8 (31)	3.5 ± 1.2
20. Should be disseminated as an Internet-based tool	17 (63)	8 (30)	2 (7)	3.7 ± 0.9
21. Should be disseminated as a DVD-based tool	15 (56)	8 (30)	4 (15)	3.6 ± 0.9

DVD, digital video disc; SD, standard deviation.
*1 = strongly disagree; 5 = strongly agree.

Table 3 Preferences for clinical use and content modification

Item	*N* (%)
22. When would you want your patient to view the decision aid:	
Before initiating CRC screening discussion (pre-visit)	21 (72)
After initiating CRC discussion (post-visit)	6 (21)
Both	2 (7)
23. Would you prefer the decision aid to contain information about:	
All of the recommended screening options	15 (52)
A more restricted list of options	12 (41)
No opinion	2 (7)

CRC, colorectal cancer.

to CRC screening, was an appropriate use of their patient's clinic time, saved them time, increased patient knowledge about the various CRC screening options and their risks and benefits, helped the patients identify a preferred screening option, improved the quality of decision making, and increased their patients' desire to get screened. Providers were more neutral in their assessment of the decision aid's utility for improving their usual approach to CRC screening, helping them tailor their counselling style to their patients' needs, improving the quality of patient visits, and increasing patient satisfaction with their care. Relatively few providers disagreed or strongly disagreed with any of these measures.

Perspectives on clinical use and content modification

There was less consensus when asked about implementation of the tool into routine clinical practice. As shown in Table 2, < 50% of respondents agreed or strongly agreed that the decision aid would be easy to use in their practice outside of a research setting or that it would be used by most of their colleagues. A slim majority (58%) also believed that implementation would require reorganization of their practice. Respondents mostly agreed or were neutral in their assessment of whether the decision aid should be disseminated as an Internet- or DVD-based tool. When asked to identify a preferred time for having their patients review the tool (Table 3), 72% chose prior to initiating the CRC screening discussion, 21% chose after initiating the screening discussion, and 7% chose both. Among the 21 providers who chose the pre-visit approach, 13 preferred that the tool be used in the office just prior to the pre-arranged visit, five preferred at home use and three preferred both; among the six providers who chose the post-visit approach, five preferred in-office use and one preferred at home use.

There was also a lack of consensus when asked about content modification. Whereas 50% of respondents agreed or strongly agreed that the decision aid should include a discussion of costs, 31% disagreed or strongly disagreed

(Table 2). Similarly, whereas 52% of providers preferred that the decision aid include a discussion of all of the recommended screening options, 41% preferred a more restricted list of options and 7% had no opinion on the issue (Table 3).

Only seven providers made suggestions for improving the current decision aid. These included creating non-English versions of the tool (*n* = 2), clearly distinguishing colonoscopy as the best screening option (*n* = 2), enabling patients to print out their preferred screening option (*n* = 2), and taking into consideration that patients may not have access to the Internet at home if the decision aid was to be disseminated as a web-based tool (*n* = 1). There were no complaints.

Discussion

Decision aids are evidence-based tools that enable patients to make informed, value-concordant choices, but the extent to which such tools facilitate SDM from the perspective of the provider is less well established. In an effort to gain new insight into the issue, we conducted a survey of primary care providers participating in a clinical trial evaluating the impact of a novel, DVD-formatted decision aid on SDM and adherence to CRC screening. Our study finds that a majority of providers perceived that the tool was a useful, time-saving adjunct to their usual approach to counselling about CRC screening and increased the overall quality of decision making. Moreover, providers also felt that review of the tool just prior to a scheduled office visit was an appropriate use of patient's time as it enabled the patient to make an informed choice among the different screening options. Together, these findings suggest that much of the tool's perceived utility was related to its ability to better prepare patients for the screening discussion outside of the clinical encounter and, in so doing, increased both the efficiency and quality of the interaction.

Few studies have explored provider perspectives on the utility of decision aids for improving SDM. A trial by Green *et al.* evaluating the effectiveness of genetic counselling vs. counselling preceded by use of a computer-based decision aid for breast cancer susceptibility found that although there were no significant differences in perceived effectiveness, use of the tool saved time and shifted the focus away from basic education towards a discussion of personal risk and decision making.[17] A second study by Siminoff *et al.* found that a decision aid for breast cancer adjuvant therapy facilitated a more interactive, informed discussion and helped physicians understand patient preferences.[13] Similarly, Brackett *et al.* also found that pre-visit use of decision aids for prostate and CRC screening was associated with greater physician satisfaction, as it saved time during the visit and changed the conversation from one of the informational exchanges to one of the values and preferences.[18] A fourth study by Graham *et al.* explored provider perceptions of three decision aids prior to their actual use.[15] Although responses were based on perceptions alone and not on clinical experience, their findings were similar to our own. A majority agreed or strongly agreed that the decision aids could meet patients' informational needs about risks and benefits and enable patients to make informed decisions. Similarly, although many felt that the decision aids were likely to complement their usual approach, responses were more neutral when asked about the overall impact of the tools on the quality of the patient encounter, patient satisfaction and issues related to implementation. The most striking difference, however, was that relatively few of the respondents in the study by Graham *et al.* felt that use of the tool saved time, which could be a reflection of either the complexity of the decisions under consideration and/or the lack of explicit instructions regarding how the tools were to be used with respect to the timing of the intervention and/or need for provider involvement.

Our findings also corroborate a more extensive body of literature on barriers to the implementation of decision aids into clinical practice.[14] Even though our study design circumvented many of the barriers related to workflow, accessibility and costs, only 48% of providers felt that actual implementation of the decision aids into their practices outside of the context of a clinical trial would be easy. Based on their feedback, however, most preferred that the tool be used prior to initiating the screening discussion rather than after initiation of the discussion. Moreover, regardless of the timing, a majority preferred that the tool be used in the office rather than at home. Although it is quite possible that their preferences reflected their personal experiences with our study protocol, Brackett *et al.* also found that pre-visit use was preferred over post-visit use.[18]

One of the most commonly cited barriers to implementation of SDM is the time requirement. Although studies to date have provided conflicting data regarding the impact of decision aids on consultation time for other conditions,[17–22] we postulated that by educating patients about the risks and benefits of the different screening options and facilitating IDM prior to the provider–patient encounter, our decision aid would have the potential of improving the efficiency of SDM and thus save time, as noted by Green *et al.* and Brackett *et al.*[17,18] We found that although a majority of providers agreed or strongly agreed that pre-visit use of the tool saved time, 21% were neutral on the issue and 14% disagreed or strongly disagreed. It is conceivable that this diversity of opinion might be a reflection of the extent to which provider and patient preferences agreed or disagreed. In instances where there was concordance between preferences, as was often the case that since colonoscopy was preferred by majority of both patients and providers,[16] one would expect that the time required for deliberation and negotiation would be substantially shorter than in situations where there was discordance. Alternatively, these differences might reflect differences in case mix with respect to patient factors, such as literacy level or desired level of participation in the decision-making process.

A secondary objective of our study was to elicit provider feedback regarding content and format preferences to gain insight into potential modifications that might enhance future uptake. Because of an ongoing debate in the CRC screening literature,[23–27] we focused on content issues related to cost information and number of screening options to include in the decision aid. Both questions elicited a divergence of opinions. Whereas nearly 50% of respondents felt that cost information should be included, the remainder was either neutral or opposed to its inclusion. Similarly, when asked about the number of screening options to include, ~50% preferred the full menu of options and ~40% preferred a more limited menu. This diversity of opinion highlights some of the key challenges in designing tools with broad dissemination potential. In the light of recent evidence suggesting that the number of screening options may influence test choice but not interest in screening and that the importance of out-of-pocket costs declines as the number of screening options discussed increases,[26] one approach would be to develop one tool that presents the full menu of screening options without cost information and a second that includes a more limited set of options with cost information. A more appealing approach would be to develop a more comprehensive tool that includes both the full menu of options and cost information in a format that permits navigation so that patients could tailor their use to fit their own informational needs and/or recommendations of their provider. Internet-based tools are ideally suited for this purpose but, as noted by several participants in our study, access remains a potential barrier for a sizeable, albeit declining, proportion of the target population. Providers in our study felt that both Internet- and DVD-formatted tools were viable options for dissemination, even though the DVD-formatted tool offers less navigation potential.

Our study has several notable limitations. First, the survey was conducted among primary care providers at only two institutions, and hence, the findings may not be generalizable to providers in other health care settings. It is noteworthy, however, that the study was conducted among a diverse patient population with respect to both race/ethnicity and educational status.[16] Second, as participating providers never formally reviewed the decision aid, we were unable to assess their opinions with respect to actual content or format. Third, the content of our survey instrument did not allow us to tease out the extent to which use of the decision aid impacted on individual steps of the SDM process.[4,5] Even though satisfaction with the decision-making process was universally high among patients participating in the clinical trial,[16] especially those in the intervention groups, only a relative minority of providers felt that use of the tool helped them tailor their counselling about CRC screening to their patients' needs or increased patient satisfaction with their care. Fourth, the anonymous nature of our survey precluded any attempt to correlate response data with exposure rates. It is conceivable that the perceptions of providers exposed to multiple patients in the intervention arms might differ from those exposed to only a few patients. Lastly, we cannot rule out the possibility of social response bias, whereby respondents may have felt compelled to offer more positive responses than they actually believed.

In conclusion, our study finds that a majority of providers perceived that pre-clinic use of our decision aid for CRC screening was a useful, time-saving adjunct to their usual approach to counselling about CRC screening and increased the overall quality of decision making. Nevertheless, many of the providers felt that implementation of the decision aid into their practices outside of the context of a clinical trial would be challenging, thus highlighting the need for cost-effective strategies for addressing provider, practice and organizational level barriers to routine use. We speculate that Internet-based tools with enhanced navigation functionality have the greatest dissemination potential, as they offer a feasible, low-cost solution to many of the structural barriers to implementation, as well as a way to reconcile the diversity of opinion related to content.

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Conflicts of interest

The authors have no conflict of interests.

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