

ORIGINAL RESEARCH

Shared Decision Making in Colorectal Cancer Screening: A Scoping Review

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Introduction: Colorectal cancer (CRC) is easily detectable with screening, but due to a variety of factors, over a third of eligible people do not get screened. One barrier to people getting adequate screening is confusion about what type of test to use. Shared decision making (SDM) is a way for the clinician to help the patient decide about whether to get screened for CRC and if so, which test to use. This scoping review examines literature about shared decision making in CRC screening to identify key factors affecting a patient's decision.

Methods: We identified studies published from January 1, 2010 through May 18, 2024 through searching 4 databases. Studies were peer reviewed publications in English that investigated the role of shared decision making in colorectal cancer screening in average risk adults, aged 45–75, in the United States and Canada. Two independent researchers screened all titles and abstracts for eligibility and reviewed all included full text articles. The included studies were examined for themes affecting a patient's choice of screening test.

Results: Of the 5672 unique records identified, we included 28 studies in this scoping review. Four themes emerged as being important to the process of shared decision making in colon cancer screening: knowledge of specific aspects of each test, clinician recommendation, acknowledgment of strong emotions surrounding screening, and importance of external factors in decisions around screening. Patients relied on family members for information about screening and made decisions about screening using this information as well as logistics of the test chosen.

Conclusion: Future work can focus on the importance of external factors in screening decisions and recognizing and addressing the real emotions about CRC screening. (J Am Board Fam Med 2025;38:635–660.)

Keywords: Cancer Screening, Colorectal Cancer, Communication, Shared Decision-Making

Introduction

Colorectal cancer (CRC) is the second leading cause of cancer death in the US. In 2023, approximately 153,000 people were diagnosed with CRC

and almost 53,000 people died from CRC in the US.¹ Although colon cancer is most frequently diagnosed in people over 65, over 10% of new cancers are diagnosed in people under age 50, signaling a 15% increase over the past 20 years. CRC is easily detectable with screening, but due to a variety of factors, over a third of eligible people do not get screened. In 2021, the USPSTF recommended that all adults from 45 to 74 get screened for CRC (“A” recommendation for 50 to 74 and “B” recommendation for 45 to 50).² Several types of screening tests are available for CRC including stool-based tests, CT colonography direct visualization, and blood tests. Colonoscopy is considered the “gold standard” screening test as it can see cancer but also can find and remove precancerous polyps thereby preventing future cancer. However, doing the bowel preparation for a colonoscopy is difficult

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for some people and the procedure requires the patient and their support person take a day off work, which may not be financially or logistically possible for everyone.³

One barrier to people getting adequate screening is confusion about what type of test to get and how to decide whether to get screened or not. Shared decision making (SDM), a communication strategy where the clinician explains the potential harms and benefits of any test and the patient discusses what is important to them, is a way for the clinician to help the patient decide about whether to get screened for CRC and if so, which test to use.^{4,5} The decision making process regarding CRC screening is a complex one that incorporates patient education, socioeconomic, cultural, and psychological components.⁶ The interaction between a trusted clinician and the patient making the decision can also impact screening decisions.⁶ A 2020 systematic review looked at decision making about CRC screening within the context of the Health Belief Model and found that perceived susceptibility to being diagnosed with CRC, potential benefits of screening tests, and cues to encourage screening were associated with people getting screened.⁷ The American Cancer Society (ACS) has developed SDM tools to help clinicians counsel their patients about CRC screening, recognizing that the decision of whether to get screened and further which test to use is potentially confusing but these tools are not widely available.⁸ Furthermore, the ACS has recommended that clinicians limit choices due to literature showing that having too many choices can be paralyzing for patients.⁸ The current guidance is unclear for primary care clinicians. Therefore, we sought to determine what factors impact shared decision making related to colorectal cancer screening with the plan of developing guidance for primary care clinicians.

We used a scoping review methodology to evaluate the available data on the use of shared decision making in screening for CRC.⁹ Our goal in this scoping review was to examine available literature about the decision of whether to get screened and further determine what factors affect a patient's decision of which particular screening test to use. We looked to the health belief model and grounded theory as theoretical models to guide our analysis as well as a published framework looking at SDM in CRC screening.¹⁰ The Health Belief Model is a description of how many people make health-related decisions based on a predetermined set of

criteria including their perception of the risk of the disease, the likelihood that they think they will get the disease, and the impact of how screening can affect their risk of getting the disease.⁷ Using a Grounded Theory approach helped the researchers collect data from each article without a predetermined hypothesis about important factors for SDM. Delineating the barriers and facilitators that affect people's perceptions and decisions around CRC screening will enable primary care clinicians to focus screening efforts on factors that matter to their patients.

Methods

Our scoping review was conducted in accordance with the JBI methodology for scoping reviews.¹¹ We followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines.¹² (see Appendix)

Search

The review team collaborated with a research librarian (LC) to develop and execute a comprehensive search of the literature. This search combined controlled vocabulary and keyword terms related to shared decision making in colorectal screening of average risk patients after the development of fecal home test kits (see appendices for full database search strategies). The search was developed in PubMed and then translated into the following databases: Scopus (Elsevier), CINAHL Plus with Full Text (EBSCO), and PsycINFO (EBSCO). All searches were run on May 28, 2024. A date limit of 2010 to present was applied to the search results to exclude records from before home testing was available, as screening methods have changed since then. No other filters (language, publication type, age, etc) were used. Results were downloaded to a citation management software (EndNote) and underwent manual deduplication by the librarian using the method described by Bramer.¹³ Unique records were uploaded to a screening platform (Covidence) for independent review by project team members using predetermined inclusion/exclusion criteria. (see Appendix for review details)

Screening & Eligibility Criteria

Studies were screened based on the following inclusion/exclusion criteria decided on by the review

team: (Table 1). We included peer reviewed publications in the English language and had an outcome of interest centered around shared decision making in CRC screening or the process of decision making for patients when discussing screening options with a health care clinician. Studies were also published in or after 2010 to account for the development of at-home screening tests. Population data from the studies were from average risk adults aged 45 to 75 to account for current screening recommendations. During initial evaluation of abstracts, the team decided to include studies that had broader age ranges as long as the 45 to 75 year age-group was also included. But, studies that focused exclusively on older patients (over age 75) were not included. Finally, we only included publications from the United States or Canada, and only discussed common screening tests used in these countries, such as colonoscopy or stool-based tests. Articles from other English-speaking countries (ie, Australia or the UK) were excluded due to differences in screening guidelines and available tests.

Two team members (SS and HW) reviewed the titles and abstracts of studies found in the database and determined inclusion or exclusion based on the predetermined criteria. Next, 2 study team members (SS and HW) reviewed full text of publications using the same criteria to examine eligibility for data extraction with a reason for exclusion given if a study was ineligible. Much of this involved reviewing a given study's methods, their study population, and given results. All screening of studies occurred using the Covidence platform. In each step, 2 independent reviewers (SS and HW) voted on a study's eligibility. If a conflict arose, a discussion between the 2 initial reviewers occurred or a third independent reviewer (LY) was available as a final vote.

Data Extraction

Data extraction occurred for all eligible studies following the title and abstract and the full-text screens. Articles had their results analyzed independently by 2 members of the study team (SS and HW). Results of interest were centered around shared decision making in colorectal cancer screening and barriers or facilitators to shared decision making (SDM). Examples of study results included preferred test characteristics of patients (ie, home based test, need for preparation, need for medical procedure), emotions regarding testing, and patient preference on the information given by their clinician. These themes were recorded into individual spreadsheets by each reviewer. On completion of full data extraction, the compilation of results was summarized for key themes on how patients make decisions in colorectal cancer screening. The final summarization of themes was performed together as a study team.

Results

Selection of Sources of Evidence

After duplicates were removed, a total of 5672 studies were identified from searches of electronic databases. Based on the inclusion criteria, 5477 studies were excluded, with 195 full text articles to be retrieved and assessed for eligibility. Of these, 167 were excluded for the following reasons: 114 did not discuss the process of decision/making/shared decision making, 16 were outside the US/Canada, 11 were not data-driven articles, 8 were the wrong patient population (either high risk or older than 75, 7 had no data about patients, 5 were not peer reviewed articles, 3 had incomplete studies, 2 had no discussion of colon cancer screening, and 1 discussed a blood test for screening. The remaining 28

Table 1. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Adults (45 to 75)	Older adults (>75 years old)
Average risk	High risk individuals (i.e. family history of colon cancer, history of inflammatory bowel disease, presence of high risk genetic mutations)
English language	Outside of US or Canada
US or Canada	Study about treatment of colon cancer or high risk polyps
Study focused on screening for CRC	Editorials, commentaries, dissertations, conference abstracts
Peer reviewed publication	
Discussed the process of decision making	

studies were considered eligible for this review. (Figure 1—Prisma flow diagram)

We identified 4 main domains that are related to a patient’s decision making about CRC screening. 1. Patients desire detailed descriptions of each test including test accuracy (sensitivity and specificity), the process of the test, description of the procedure, and the likelihood that it will detect cancer to make a decision about whether to get screened and which test to use. 2. Patients place high value on their personal physician’s recommendations regarding CRC screening. 3. There are strong emotions surrounding many of these CRC testing options. Getting a colonoscopy, specifically, triggers deep anxiety for many people. 4. The impact of external factors such as culture, socioeconomic status, and family input have a significant impact on the decision regarding CRC screening. (Table 2) (Figure 2)

Importance of Knowing Test Attributes^{14–35}

Patients want to know details about test attributes to help make their decision. How is the study performed? Can they do the test at home or do they

need to go to a health care facility? Most prioritized tests that prevented cancer, were accurate, and sensitive. They also wanted to know the pros/cons of each test, what the preparation for the procedure would entail, details about the actual procedure with logistics (ie, cost, time, transportation). These specific details were important to participants in the studies to help them make a decision about whether to get screened and which test to use. Important details that were discussed included the fact that a colonoscopy is the most invasive test, takes the longest for prep, and necessitates time off work while at the same time is the most effective at diagnosis and prevention of CRC. Home based stool studies, on the other hand, are much easier to perform, but do not have as high sensitivity and specificity for CRC. Most of the participants in these studies rated accuracy and ability to detect and prevent CRC as the most important aspect of their choice.

Examples:

- Patients ranked CRC screening tests based on specific criteria in the following order: test effectiveness, features of the test (complications,

Figure 1. Prisma flow diagram.

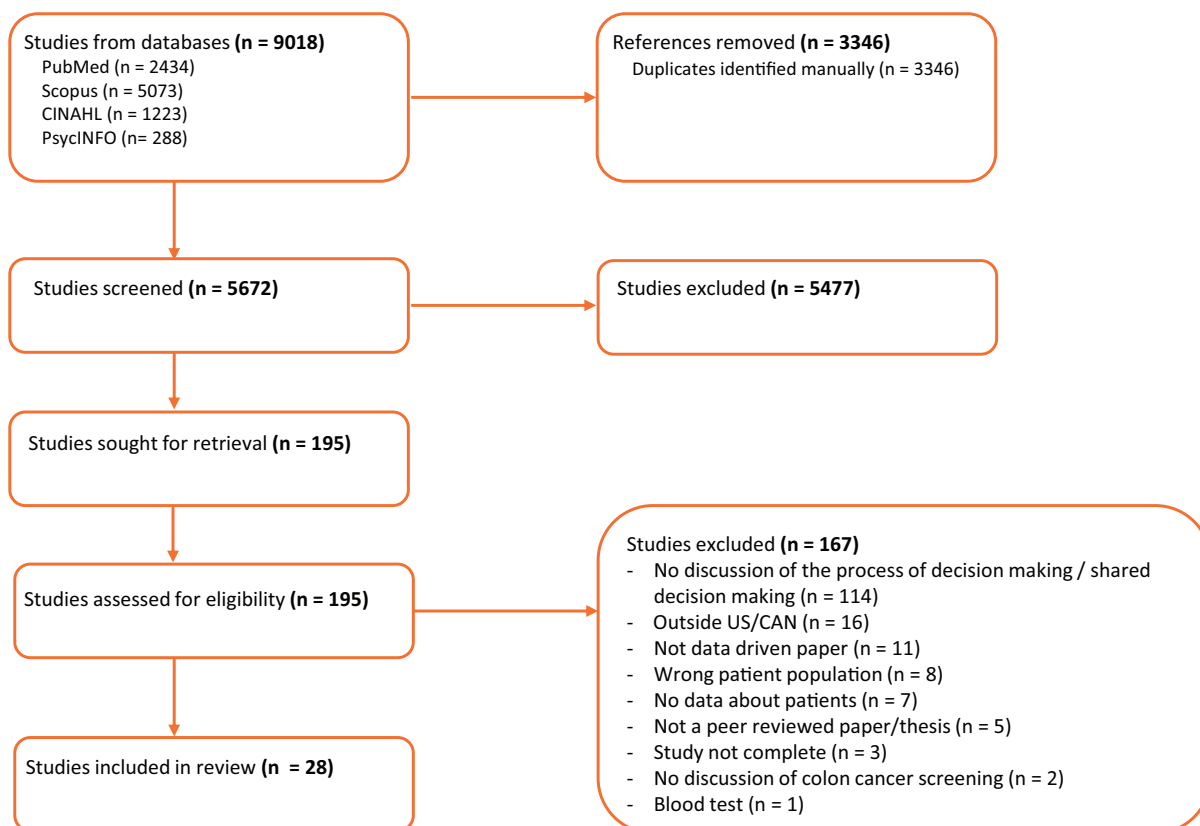


Table 2. List of Papers Included in the Scoping Review

Author	Title	Description of the Study	Results	Themes
Brenner 2014 ¹⁴	Comparing 3 values clarification methods for colorectal cancer screening decision-making:	Online survey of participants from the US and Australia after reviewing screening info and being assigned to a values clarification method (a ranking activity) N = 920 total (451 from the US)	Risk reduction was the most important attribute across all groups. Participants who had not been screened in the past were less likely to choose risk reduction as an attribute compared to those who had been screened. FOBT was the most popular test across all respondents (55.9%)	Importance of knowing test attributes
Brittain 2012 ⁴⁰	Family Support and Colorectal Cancer Screening Among Urban African Americans	Survey to examine the correlations between family support and influence, cultural identity, CRC beliefs, and their relationship to an informed decision about CRC screening among African Americans and to test the model of an informed decision. N = 129	Participants self-ranked social/family support in 5 domains (emotional, informational, tangible, affectionate support, and positive social interactions): Significant positive correlates ($P < .01$) of an informed decision were seen with family support and CRC beliefs.	External factors that influence decision making
Dolan 2013 ¹⁵	Patients' preferences and priorities regarding colorectal cancer screening	Interview consisting of: a) an overview of current colorectal cancer screening recommendations; b) a multi-criteria decision analysis using the Analytic Hierarchy Process (AHP); c) collection of information about the participant including demographics, knowledge of colorectal cancer screening, literacy and numeracy; and d) an evaluation of the AHP-based priority assessment procedure. Participants compared the screening options and judged the relative priorities of the 4 major decision criteria: - Preventing Cancer - Avoiding Side Effects - Minimizing False - Logistics. Logistics was further divided into three sub-criteria: Screening Frequency, Preparation for Screening, and the Screening Procedure. N = 484	Most important criteria priorities for tests: Prevent Cancer (54%), avoid side effects (18%), minimizing false positives (15%), logistics (12%) Logistical priorities: screening procedure (44%), screening frequency (32%), preparation for screening (24%)	Importance of knowing test attributes

Continued

Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Dyer 2019 ¹⁶	Patient-Reported Needs Following a referral for colorectal cancer screening	Focus groups about (1) patient narratives about their recent experience obtaining a physician recommendation for CRC screening, (2) information needs and barriers to screening following receipt of the recommendation, (3) perspectives on using an electronic patient portal for health-related decision support (both general and CRC screening specific), and (4) reactions to sample program content/messaging N = 45 (7 focus groups)	Participants expressed a desire to know exactly what to expect from a procedure (including the preparation required), alternatives to colonoscopy and their advantages/disadvantages. Also, they wanted simple and clear explanations. Participants wanted to understand the reasoning behind a physician's recommendation (when one is given). They were divided on the willingness to depend on clinician recommendations: half were okay, other half wanted info on all tests. Time restraints for screening discussions: patients desire dedicated time to discuss this.	Importance of knowing test attributes. Impact of relationship with the clinician. Acknowledgment of real emotions surrounding screening.
Ellison, 2011 ³⁶	Colonoscopy screening information preferences among urban Hispanics	Cross sectional survey and face-to-face interviews to identify preferred sources of CRC screening information among Hispanic urban men and women, the majority of whom are immigrants, low income, and prefer Spanish as their spoken language N = 400	Participants wanted to get information from the following sources: doctor (99%), brochure (84%), TV (80%), someone who speaks their language (80%), family (78%) or another healthcare clinician (76%)	Impact of relationship with the clinician.
Flocke, 2011 ¹⁷	Patient-rated importance and receipt of information for colorectal cancer screening	Completion of a pre-visit telephone survey, audio-recording of the scheduled office visit and completion of a brief post-visit survey. Participants ranked different components. N = 415 patients and 49 primary care clinicians	Screening purpose (88.7%), test accuracy (85.3%), testing alternatives (83.4%), testing pros/cons (85.8%), and testing process (77.8%) were rated very important by patients. Questions raised by patients (%) in the visit: Logistics (45%, included scheduling, location, needing driver), Screening process (29%, test process, prep, frequency, results / follow-up/next steps), Purpose (9%), alternatives (4%), screening risk/benefits (2%, risk of getting CRC and risk of procedure)	Importance of knowing test attributes.
Hawley, 2014 ¹⁸	Managed care patients' preferences, physician recommendations, and colon cancer screening	Audio recordings of periodic health exams were reviewed for physician recommendation. Pre-visit survey: patients rated 7 different attributes of screening tests (test accuracy, preparation required, complications/side effects, need for sedation, frequency of the test, degree of pain/discomfort associated with the test, and whether a stool sample was necessary) and indicated which of the attributes listed was the first, second, and third most important when deciding which screening test to use. N = 415	Accuracy was chosen as the most important screening attribute 47% of the time. Followed by risk of complications (16.2%). Test prep (3.7%) and stool collection at home (1.7%).	Importance of knowing test attributes.

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Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Heidemreich 2022 ¹⁹	Colorectal cancer screening preferences among physicians	Cross-sectional online survey that included discrete choice experiment to elicit preferences of individuals at average risk and physicians. N = 1,249 patients and 400 physicians (200 PCPs and 200 gastroenterologists)	Participants preferred blood tests and at home stool tests over colonoscopy. They also valued regular screening (every year or 3 years). True negative and true positive rates were important for patients, with true negative rates being rated lower between the two. Screening precision was considered more important than frequency of screening and the test type. Older aged individuals in this cohort rated true positive and true negative rates to be more important more often than younger participants. Trade-offs: participants were willing to accept a reduction of the true-positive rate from 100% to 90% (-10.6%) if that was compensated by an increase in the true-negative rate from 80% to 100% (+16.0%). Similarly, they were willing to accept a reduction in the true-negative rate from 90% to 80% (-8.6%) and screening frequency from every year to every 3 years (-1.6%), if the true-positive rate was increased from 80% to 90% (-10.8%)	Importance of knowing test attributes.
Hennelly 2015 ²⁰	Narrative message targets within the decision-making process to undergo screening colonoscopy among Latinos: a qualitative study	Patient interviews based on grounded theory to assess screening colonoscopy decision-making and storytelling. Participants were asked about their personal beliefs, beliefs of other people in their community, and actual information about CRC and colonoscopy, as knowledge has been associated with completion of colonoscopy in our prior studies. N = 12	<p>Barriers:</p> <ul style="list-style-type: none"> - Lack of knowledge regarding details of colonoscopy: procedure, if it hurts, its use/purpose - Fear of pain during colonoscopy - Fear of positive test - Other more pressing health issues <p>Facilitators:</p> <ul style="list-style-type: none"> - physician stating that there should be no pain due to using sedation - benefit of early diagnosis - peace of mind - health seeking behaviors - narratives/stories of others who have completed screening <p>Physician recommendation: All participants agreed that having a physician's recommendation was essential: most participants said that having a colonoscopy was their physician's idea, and they would not have independently initiated conversation about CRC screening, citing unfamiliarity with screening</p>	<p>Importance of knowing test attributes.</p> <p>Impact of relationship with the clinician.</p> <p>Acknowledgment of real emotions surrounding screening.</p>

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Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Hoffman 2010 ²³	Decision-making processes for breast, colorectal, and prostate cancer screening: the DECISIONS survey	Telephone survey. Participants answered a variety of questions about nine common types of medical decisions, including screening for breast, colorectal, and prostate cancer. Participants answered a variety of questions about their knowledge of basic facts about the particular cancer, the importance of various sources of information used in making screening decisions, the processes used in making screening decisions, the communications with their health care clinicians, and the outcomes of the decision-making process. N = 1,082	Sources of information regarding cancer screening: -Health care clinicians, the media, and family members were ranked highly as important sources of information about cancer screening.	Importance of knowing test attributes. Impact of relationship with the clinician.
Hoffman 2014 ²¹	Lack of shared decision making in cancer screening discussions: results from a national survey	A 2011 national Internet survey of adults aged 50+ years who made cancer screening decisions (breast, colorectal, and prostate) within the previous 2 years. Participants were asked about their perceived cancer risk; how informed they felt about cancer tests; whether their healthcare clinician addressed pros/cons of testing, presented the option of no testing, and elicited their input; whether they were tested; and their confidence in the screening decision. N = 1,134	Reported responses from patients (separated by gender): - Most clinicians discussed reasons to have a test (59% F, 67% M) - Most clinicians did not discuss cons of testing (87% for both) - Most clinicians explained a choice on whether or not to be tested (68% F, 76% M) - Clinicians also asked if they wanted the test most of the time - Clinicians often expressed opinions about test (77% F, 85% M) - Clinicians often recommended testing (75% F, 81% M) - Around 55% of the respondents report making the decision "mainly on their own" while 38% reported making the decision with their clinician	Importance of knowing test attributes. Impact of relationship with the clinician.
Hoffman 2016 ²²	Knowledge and values for cancer screening decisions: Results from a national survey	Conducted a national, population-based Internet survey of adults aged 40+ to characterize perceptions about cancer screening, the importance of information sources, cancer screening knowledge, values and preferences for screening, and the most influential drivers of decisions. N = 1,452	Respondents CRC screening values and preferences: - Finding cancer early (F 68%, M 60%) - Knowing whether you have cancer or not (F 75%, M 66%) - Importance of choosing a test that does not require annual testing (F 39%, M 28) Reasons for undergoing screening: - Health care clinicians recommendation (F 51%, M 58%) - Personal preference (F 32%, M 31%) Would make same decision again?: - 91% of women and 94% men	Importance of knowing test attributes. Impact of relationship with the clinician.

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Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Honeim- AbouHaidar 2016 ²⁴	Systematic Review and Meta-study Synthesis of Qualitative Studies Evaluating Facilitators and Barriers to Participation in Colorectal Cancer Screening	Review the qualitative literature and explore factors that determine the decision to participate in colorectal cancer screening. Also explored factors influencing screening in groups with previously reported low colorectal cancer screening participation (ethnic minorities, patients with low SES) and in men and women. N = 94 studies included	Facilitators: - awareness of CRC risk and importance of screening - purpose of screening - clinician recommendation - Positive attitude toward screening is related to peace of mind, comfort/ease of some tests - motivators for screening include having a friend or family member diagnosed with CRC. Barriers: - Lack of awareness or recommendation - fear of cancer and treatment; "it's inevitable" - embarrassment of test (ex. colonoscopy scoping, handling stool) - logistics - scheduling, other health concerns, transport - cultural/SES- health literacy, health beliefs, language barrier, getting off work, other Modifiers: - education - physician recommendation and explanation	External factors that influence decision making. Importance of knowing test attributes. Impact of relationship with clinician. Acknowledgment of real emotions surrounding screening.
Hyams 2021 ²⁵	Evaluating preferences for colorectal cancer screening in individuals under age 50 using the Analytic Hierarchy Process	Survey with hierarchy choices to identify preferences for CRC screening strategies and to assess preferences for key characteristics of screening modalities. N = 247	Criteria ranking: test effectiveness was more important than features of the test (complications, convenience, procedure, prep) which was more important than screening plan (follow-up, frequency) Frequency of the test and follow up needed were nearly equal in importance. Test ratings: - colonoscopy had best effectiveness and screening plan ratings - FIT had favored test features (easy to do prep/procedure/convenience wise)	Importance of knowing test attributes.
Imaeda 2010 ²⁶	What is most important to patients when deciding about colorectal screening?	Survey to assess patient experiences with a Maximum Differences Scaling (MDS) tool for eliciting values about CRC screening test characteristics and determine whether patients vary in how they prioritize test characteristics and whether this variation relates to test preferences. N = 92	Top 3 attributes: sensitivity of the test, risk of a tear, need for a second test Older individuals concerned with sedation. Other considerations: sedation, pain risk, colon prep, stool handling, rectal exam / insertion, scheduling (ride, work) Colonoscopy was an overwhelming favorite (62%), colon capsule (23%), CT colonography (10%), FOBT (4%). Those choosing colonoscopy assigned greater importance to sensitivity of screening test.	Importance of knowing test attributes.

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Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Kiviniemi 2018 ³⁴	Decision-making and socioeconomic disparities in colonoscopy screening in African Americans	Surveyed participants regarding perceived benefits and barriers to colonoscopy, attitudes, self-efficacy, fear of colonoscopy, CRC knowledge, SES, and screening behavior. N = 1,841	Higher education and income was associated with perceived benefits to screening and greater knowledge of CRC/ screening.	Importance of knowing test attributes. External factors that influence decision making.
Ko 2014 ²⁷	Cultural and linguistic adaptation of a multimedia colorectal cancer screening decision aid for Spanish-speaking Latinos	Using focus groups, researchers sought to describe the adaptation of a current CRC decision aid into Spanish. N = 30 in 4 focus groups	<p>Barriers:</p> <ul style="list-style-type: none"> - fear/embarrassment: language barriers, colonoscopy invasiveness - machismo/masculinity: homosexual connotation with some men regarding colonoscopy <p>Facilitators:</p> <ul style="list-style-type: none"> - participants preferred to see the person in the video (not narrated) and liked personalism in those explaining test choices - family members being viewed in the decision aid to show that patients perform the screening to be around for their families - seeing individuals who were Hispanic in the aid (who look like you) <p>Participants also desired knowing the costs of tests and needed follow-up.</p>	<p>External factors that influence decision making.</p> <p>Importance of knowing test attributes.</p> <p>Acknowledgment of real emotions surrounding screening.</p>
Molokwu 2017 ⁴¹	Decision-Making Preferences Among Older Hispanics Participating in a Colorectal Cancer (CRC) Screening Program	Decision making style was assessed using the Control Preferences Scale. Questions addressed general beliefs about the patients' preferences. N = 780	<p>Less acculturated individuals (more Spanish speaking at home) were less likely to prefer an active role.</p> <p>Those recruited in a clinic setting were more likely to prefer a collaborative role than those recruited from community.</p> <p>Married individuals were more likely to prefer active/ collaborative role compared to those that are unmarried.</p> <p>No significant results for preferred role for educational differences, health status, regular doctor, gender, or income level.</p>	<p>External factors influence decision making.</p>

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Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Nagelhout 2017 ²⁸	Barriers to Colorectal Cancer Screening in a Racially Diverse Population Served by a Safety-Net Clinic	Participants were asked to complete a self-report questionnaire assessing barriers to, awareness of, and occurrence of clinician recommendation for CRC screening. Barriers were assessed using a list of potential barriers (operationalized as yes/no responses) for colonoscopy and blood stool test, separately. N = 197	<p>Barriers to colonoscopy:</p> <ul style="list-style-type: none"> - Fear of results (28%) - unable to leave work for appt (27%) - being unaware of the need of colonoscopy (25%) - no clinician recommendation (25%) - Hispanics: lack of clinician trust (51%); also reported more barriers than White Individuals.; also less likely to be aware of what colonoscopy and FIT testing are - Pacific Islanders were less likely than white individuals, to be aware of what colonoscopy is and were less likely to have family members who have had CRC <p>Clinician recommendation:</p> <ul style="list-style-type: none"> - 16.2% report ever receiving a clinician recommendation - Hispanics 76% less likely to receive a recommendation compared to white participants - recommendation was associated w/ greater completion rates of screening 	<p>External factors that influence decision making.</p> <p>Importance of knowing test attributes.</p> <p>Impact of relationship with clinician.</p> <p>Acknowledgment of real emotions surrounding screening.</p>
Pignone 2012 ²⁹	Conjoint analysis versus rating and ranking for values elicitation and clarification in colorectal cancer screening	Eligible participants were given basic information about CRC screening and six attributes of CRC screening tests, then randomized to complete either a choice-based conjoint analysis with 16 discrete choice tasks or a rating and ranking task. N = 104	<p>Conjoint analysis group rankings:</p> <ul style="list-style-type: none"> - most important attributes in order of importance were ability to reduce CRC incidence/mortality, the nature and frequency of the test, potential complications and cost. <p>Rating and ranking group:</p> <p>Overall, ability to reduce CRC incidence/mortality, was most important feature, followed by costs and discomfort.</p>	<p>Importance of knowing test attributes.</p>

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Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Redwood 2019 ³⁰	Alaska Native Patient and Clinician Perspectives on the Multitarget Stool DNA Test Compared with Colonoscopy for Colorectal Cancer Screening	Survey to determine the feasibility and application of MT-sDNA; patient and clinician barriers to MT-sDNA and colonoscopy. N = 1,616 patients and 87 clinicians	<p>42% of patients stated they had never been screened, reasons:</p> <ul style="list-style-type: none"> - never thought about it 46% - no symptoms 28% - did not know they needed it 21% - no doctor suggestion 25% <p>Barriers to colonoscopy (have had it done):</p> <ul style="list-style-type: none"> - Prep with laxatives 51% - travel 47% - fear of injury 36% - discomfort 34% - fear of pain 32% <p>Barriers to colonoscopy (haven't had it done):</p> <ul style="list-style-type: none"> - fear of pain 65% - discomfort 63% - travel 60% - colon prep 57% - fear of injury 49% <p>The top colonoscopy barriers overall included travel (44%), preparation for colonoscopy (40%), fear of pain (35%), discomfort with a tube in their rectum (34%), and fear of injury (30%).</p> <p>Other barriers were anesthesia, needing to take off work, and finding a ride.</p> <p>MT-sDNA had fewer barriers to completion:</p> <ul style="list-style-type: none"> - belief that colonoscopy was better (56%) - discomfort collecting stool (32%) - needing private place to perform test (29%) - having to perform test every 3 years (27%) - embarrassment (18%) <p>Unscreened patients and younger patients were more likely to prefer MT-sDNA.</p>	<p>External factors that influence decision making.</p> <p>Importance of knowing test attributes.</p> <p>Impact of relationship with clinician.</p> <p>Acknowledgment of real emotions surrounding screening.</p>
Rogers 2022 ³⁹	Psychosocial determinants of colorectal Cancer screening uptake among African-American men: understanding the role of masculine role norms, medical mistrust, and normative support	Focus groups led by principal investigators. Recruited participants through ads and community partners. N = 84 (11 focus groups)	<p>2 greatest barriers: masculine norms and medical mistrust.</p> <ul style="list-style-type: none"> - masculine norms: stigma of homosexuality from scoping, invasiveness (rectal exam); needing to be a clinician for the family; and fear of a positive test - medical mistrust: historical malpractice, lack of a strong patient-clinician relationship <p>Greatest facilitator of screening: Support via family or social groups.</p> <ul style="list-style-type: none"> - family and community groups who discuss screening, share experience, and recommendation 	<p>External factors that influence decision making.</p> <p>Acknowledgment of real emotions surrounding screening.</p>

Continued

Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Ruggieri 2013 ³¹	Perceived colonoscopy barriers and facilitators among urban African American patients and their medical residents	Surveyed patients and third-year resident physicians who received care or who worked in a general internal medicine clinic regarding beliefs, risks, benefits, and barriers they perceived to be associated with colonoscopy screening. N = 102 patients and 29 3 rd year residents.	Barriers to colonoscopy: - pain, fear, and concern for complication were all important - less important factors included cost, feeling other options were better, finding someone to care for family Facilitators for colonoscopy: - highly rated... colonoscopy is good for early detection, less frequent screening, accuracy, ability to remove polyps - another important factor for patients was peace of mind Other: - a trusted physician recommendation is important - some did not prefer screening because cancer is "God's will"	External factors that influence decision making. Importance of knowing test attributes. Impact of relationship with the clinician. Acknowledgement of real emotions surrounding screening.
Schroylji 2011 ³²	The impact of a novel computer-based decision aid on shared decision making for colorectal cancer screening: A randomized trial	Before the visit, participants were given either a decision aid or decision aid plus personalized risk assessment or no information (control arm). Outcome measures were patient preferences, knowledge, and satisfaction with decision making process. Subsequently, clinicians discussed screening during the visit and recorded preferences. Satisfaction was recorded in post-visit surveys. N = 665	Colonoscopy was most often preferred (59%), with the most common reasoning being test accuracy (81 %). FOBT was chosen by 26%, with patients identifying concerns about discomfort (31%), inconvenience (23%), and bowel preparation (18%) as reasons (to not choose colonoscopy).	Importance of knowing test attributes.
Schwartz 2019 ³⁵	Impact of including quantitative information in a decision aid for colorectal cancer screening: A randomized controlled trial	Participants viewed either a verbal decision aid or a quantitative decision aid. Baseline survey and post-intervention survey. Measures included perceived risk of CRC, benefits and barriers, screening intent, decision conflict and test choice. N = 668	Quantitative information did not affect patient attitudes.	Importance of knowing test attributes.
Wordley 2014 ³³	Assessing stated preferences for colorectal cancer screening: a critical systematic review of discrete choice experiments	Systematic review/meta-analysis. Studies screened evaluated stated preferences and choice experiments in decision making. N = 9 studies included.	Reported that the studies included were not all uniform in how they described attributes, but they tried to summarize. Important attributes from studies: - accuracy and clinical effectiveness are influential - screening interval - sensitivity more important than specificity - cost - access and prep; pain Least influential attributes from studies: - test interval - location of test - pain, specificity, cost	Importance of knowing test attributes.

Continued

Table 2. Continued

Author	Title	Description of the Study	Results	Themes
Wunderlich 2010 ³⁷	Inconsistencies in patient perceptions and observer ratings of shared decision making; the case of colorectal cancer screening	Audio-recordings of primary care visits were observer-coded for elements of SDM. A post-visit patient survey assessed patient-reported decision-making processes and relational communication during the visit. Association of patient-reported SDM with observer-rated elements of SDM, as well as patient, physician and relational communication factors were evaluated using generalized estimating equations. N = 363	Pre-survey data: - 70% of patients preferred to share a decision with their clinician regarding preventative health decisions; 18% wanted to make a decision themselves after considering physician input Communication: - relational communication with their physician was positive more often for those who reported sharing the decision - patients who reported SDM reported that the following occurred more often in their discussions compared to patients who reported no SDM: clinician was interested in talking to me, seemed to care if I liked them, was sincere, willing to listen, honest, wanted to cooperate, was open to my ideas.	Impact of relationship with the clinician.
Zhu 2021 ³⁸	Barriers to utilization of three colorectal cancer screening options - Data from a national survey	Phone survey. Participants self-reported use of each of the CRC screening options. Participants who reported they had not completed screening using a particular CRC screening option were asked about the barriers to utilization of that screening option. N = 1,595	Those who had not been screened by any of the options: - most common barrier was lack of knowledge - lack of clinician recommendation was second most common, followed by lack of access Those who had performed colonoscopy, but no stool tests: - lack of clinician recommendation was most cited barrier - lack of knowledge was second most common Those who had never performed colonoscopy: - Top barrier was psychosocial burden, followed by lack of clinician recommendation - lack of knowledge and suboptimal access followed Stool tests were seemingly not affected by psychosocial barriers or access.	External factors that influence decision making. Importance of knowing test attributes. Impact of relationship with the clinician. Acknowledgment of real emotions surrounding screening.

Abbreviations: CRC, colorectal cancer; FOBT, fecal occult blood test; SDM, shared decision making.

convenience, procedure, prep) and follow up frequency.²⁵ In this study, ability to detect CRC outweighed convenience and discomfort of the test.

- Patients ranked the top 3 attributes of CRC screening tests: sensitivity of the test, risk of a tear, need for a second test²⁶
- Risk reduction of a screening test was the most important attribute.¹⁴
- People designated accuracy as the most important characteristic of a CRC screening test.³²
- Most important attribute was ability of screening test to reduce the incidence and mortality from CRC and the second most important was to avoid complications.²⁹

Impact of Relationship with the Clinician^{16,20–24,27,28,30,31,36–38}

Patients have high regards for their clinician in these decisions and the recommendation of a trusted clinician had a large impact on their decision. The average person knows nothing about CRC screening so they rely on their clinician to know when it is needed, the purpose of screening, and value their recommendation on some of the tests. SDM is a preferred method of discussion with the clinician, but many people value input from their PCP to help guide them in their decision making and depend on recommendations. They also prefer to learn information about screening from their clinician rather than from a pamphlet or video. The trusting relationship between a PCP and a patient was a significant factor that impacted many people's decisions about screening for CRC.

Examples:

- Clinician recommendations are welcome but patients want a rationale for each recommendation.¹⁶
- Clinician knowledge, information, lead/initiation, and recommendation were appreciated by patients given their overall positive rating in decision confidence.²³
- Overall, physician demeanor, attitude, and conversation style matters in SDM as when they approach the conversation in a friendly manner and consider patient perspectives, patients are more likely to report a shared decision being made.³⁷
- A trusted physician's recommendation was important in the decision of whether or not to get CRC screening.³¹

Acknowledgment of Real Emotions Surrounding Screening^{16,20,24,27,28,30,31,37–39}

The emotions of patients should be considered because of the impact they have on decision making. Patients described fear and stigma influencing their decisions about whether to be screened for CRC and which test to use. Colonoscopy, especially, seems to trigger strong emotional reactions. Many people have fear and embarrassment about the test. Studies described a need for normalization of the available tests and clear and detailed explanations to help people move past their fears. There was mixed data about the effect of providing stories of personal experiences from people who have been screened.

Examples:

- Fear and embarrassment about the invasiveness of the colonoscopy is a barrier to screening.²⁷ The process of having a tube inserted into their body is a challenge for many people to overcome.
- Discomfort and embarrassment when handling stool is a hurdle for FIT testing.^{24,30,32} FIT testing is undesirable because patients need to collect their own stool for test completion.
- Fear of cancer diagnosis and treatment is a barrier to screening.²⁴ People are afraid of having a positive test result and therefore avoid screening.
- Some people want to avoid bad news and had heard about negative experiences from family and friends regarding colonoscopies.¹⁶ Many people have heard how hard the colonoscopy prep is and want to avoid it.
- Influence of “masculine norms” and stigma of homosexuality related to colonoscopy.³⁹

External Factors That Influence Decision Making^{24,27,28,34,36,39–41}

Patients' culture, family and socioeconomic status impacted the choice of a CRC screening test. Family support and experiences, ability to communicate with clinicians, and level of education and income affect how people make decisions about CRC screening. Participants are influenced by family members who have received screening and need for transportation and work absences. Family members who have undergone any screening method who share their experience, whether it was positive or negative, can impact patient's perceptions of the test. Colonoscopy requires transportation to and from the clinic during normal business hours, which can be a strain on patients and their work schedule.

Examples:

- A significant positive correlation was found between family support and the incidence of informed decision making about CRC screening.⁴⁰ Family support allows patients to discuss their values and concerns with a specific test. Additionally, family members who have experienced CRC screening themselves can be another aid in decision making.
- Less acculturated individuals (more Spanish speaking at home) were less likely to prefer an active role in CRC decision making.⁴¹
- Higher education and income is associated with perceived benefits to screening and greater knowledge of CRC/screening.³⁴
- Family and community groups who discuss CRC screening and experiences greatly impact decisions about screening.³⁹ Learning about the testing process from those who have pursued it gives patients an expectation of the preparation, process, and recovery of a given test.

Discussion

This scoping review identified 4 key themes that affect a patient's choice of CRC screening (whether to get screened and if yes, which test to choose) through shared decision making with their primary care clinician. These themes highlight the importance of the primary care clinician's role in the shared decision making process, as well as the importance of providing the patient with adequate information to make the most effective decision for themselves. Existing literature describe the determination of health belief model constructs (such as perceived benefit of screening and assessment of personal risk of getting CRC) and how they directly relate to a patient's screening intention or behavior with the goal of increasing screening rates,⁷ but our article goes one step further with identifying themes related specifically to the act of shared decision making for CRC screening. It focuses less on the outcome and more on the process of shared decision making and what factors are important for patients in that process. This article is innovative in that it offers a foundation for the creation of new algorithms or decision aids for decision making around CRC screening that acknowledge strong emotions related to CRC screening, clearly delineate potential harms and benefits of each screening method, leverage the existing relationship with the PCP, and involve family and friends in the decision making process.

In particular, the focus on addressing emotions surrounding the process of CRC screening is a useful finding. Primary care clinicians can focus on their relationships with patients, making sure that people get adequate information about different CRC screening options, and acknowledging external factors that impact decisions. But, developing tools to address the fear and embarrassment that surround colonoscopy screening specifically must be a priority. Dozens of handouts and articles are available to convince people to not be afraid of a colonoscopy. These articles included facts as well as testimonials. Data in our sample and in the literature is mixed about whether people want to hear personal stories about colonoscopies.^{20,27,42,43}

Limitations for this scoping review include only using studies in the US and Canada as well as studies only in the English language. Given that 1 of the 4 themes identified was external factors that influence decision making, of which culture and language are included, this limitation does impact whether these results can be attributable to other non-North American patient populations, as different sociocultural conditions can play a role in the concept of shared decision making. Studies included were also limited from 2010 onwards, and we only used completed studies with an outcome related to shared decision making in CRC screening. Other publications or gray literature like dissertations or conference abstracts not meeting our criteria were not included, which narrowed our sample size and could potentially lead to publication bias. These limitations had the potential for some relevant articles to be missed from our initial screen. General limitations to scoping reviews is the ability to only include articles that have been published within our parameters.

Future work in the creation of a formal framework for physicians to use when discussing CRC screening with their patients can be considered. In clinic visits where many patient concerns are addressed, having something akin to an algorithm or decision aid outlining options for CRC screening that incorporates these 4 factors that patients can review in advance of their visit could potentially improve screening rates and help patients feel more comfortable in their choice. A study including the creation of such a decision aid and measuring outcomes of number of CRC screening tests ordered, adherence to completing the

ordered test, and patient satisfaction with the decision making process could be considered.

Conclusion

Through our scoping review of studies related to shared decision making for CRC screening, 4 main themes were elucidated as factors contributing to a patient's decision regarding screening: information about the screening test, a patient's relationship with their primary care clinician, a patient's emotional reaction to the screening test, and external factors such as culture/family/socioeconomic status. These themes are important for primary care physicians to know as they proceed with shared decision making with their patients in this realm.

This information can be used to create a new framework that primary care physicians can use as a more formalized and efficient tool for shared decision making for CRC screening. Future research should evaluate if addressing the themes identified by this scoping review within a primary care visit contribute to increased rates of CRC screening.

To see this article online, please go to: <http://jabfm.org/content/38/4/635.full>.

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Appendix

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Page 1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Abstract
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Page 1
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Page 1
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	NA
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Page 2
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Page 2
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Page 2
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Page 3
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Page 3
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Page 3
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	NA

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	Page 3
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Page 3
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	NA
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	NA
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	NA
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Page 3
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Page 6
Limitations	20	Discuss the limitations of the scoping review process.	Page 7
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	Page 6
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	NA

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med.* 2018;169:467–473. doi: [10.7326/M18-0850](https://doi.org/10.7326/M18-0850).

PubMed

(Jan 1, 2010 – May 28, 2024)

2434 Results

("Decision Making, Shared"[Mesh] OR "shared decision"[tiab:~3] OR "shared decisions"[tiab:~3] OR "sharing decision"[tiab:~3] OR "sharing decisions"[tiab:~3] OR "informed decision"[tiab:~3] OR "informed decisions"[tiab:~3] OR "informed choice"[tiab:~3] OR "informed choices"[tiab:~3] OR ((share*[ti] OR sharing*[ti] OR informed*[ti]) AND (decision*[ti] OR deciding*[ti] OR choice*[ti])) OR "Decision Making"[mesh:noexp] OR "Choice Behavior"[mesh:noexp] OR "Decision Support Techniques"[mesh:noexp] OR "Decision Support Systems, Clinical"[mesh] OR "Patient Participation"[mesh] OR "Patient Preference"[mesh] OR "Professional-Patient Relations"[mesh:noexp] OR "Physician-Patient Relations"[mesh] OR "Patient-Centered Care"[mesh:noexp] OR "decision making"[tiab:~3] OR "decisions making"[tiab:~3] OR "decision maker"[tiab:~3] OR "decisions maker"[tiab:~3] OR "decision makers"[tiab:~3] OR "decisions makers"[tiab:~3] OR "decision mak*"[tiab] OR decisionmak*[tiab] OR "decision support"[tiab:~3] OR "decisions support"[tiab:~3] OR "decision supporting"[tiab:~3] OR "decisions supporting"[tiab:~3] OR "decision supports"[tiab:~3] OR "decisions supports"[tiab:~3] OR "decision supported"[tiab:~3] OR "decisions supported"[tiab:~3] OR "decision aid"[tiab:~3] OR "decision aids"[tiab:~3] OR "decision aiding"[tiab:~3] OR "decision aiding"[tiab:~3] OR "decision aided"[tiab:~3] OR "decision aided"[tiab:~3] OR "choice behavior"[tiab:~3] OR "choice behaviors"[tiab:~3] OR "choices behavior"[tiab:~3] OR "choices behaviors"[tiab:~3] OR "choice behaviour"[tiab:~3] OR "choice behaviours"[tiab:~3] OR "choices behaviour"[tiab:~3] OR "choices behaviours"[tiab:~3] OR "patient participation"[tiab:~3] OR "patient participations"[tiab:~3] OR "patients participation"[tiab:~3] OR "patients participations"[tiab:~3] OR "consumer participation"[tiab:~3] OR "consumer participations"[tiab:~3] OR "consumers participation"[tiab:~3] OR "consumers participations"[tiab:~3] OR "client participation"[tiab:~3] OR "client participations"[tiab:~3] OR "clients participation"[tiab:~3] OR "clients participations"[tiab:~3] OR "patient involvement"[tiab:~3] OR "patient involvements"[tiab:~3] OR "patients involvement"[tiab:~3] OR "patients involvements"[tiab:~3] OR "consumer involvement"[tiab:~3] OR "consumer involvements"[tiab:~3] OR "consumers involvement"[tiab:~3] OR "consumers involvements"[tiab:~3] OR "patient preference"[tiab:~3] OR "patient preferences"[tiab:~3] OR "patients preference"[tiab:~3] OR "patients preferences"[tiab:~3] OR "consumer preference"[tiab:~3] OR "consumer preferences"[tiab:~3] OR "consumers preference"[tiab:~3] OR "consumers preferences"[tiab:~3] OR "client preference"[tiab:~3] OR "client preferences"[tiab:~3] OR "clients preference"[tiab:~3] OR "clients preferences"[tiab:~3] OR "patient centered"[tiab:~2] OR "patient centred"[tiab:~2] OR "patient focused"[tiab:~2] OR "patient oriented"[tiab:~2] OR "client centered"[tiab:~2] OR "client centred"[tiab:~2] OR "client focused"[tiab:~2] OR "client oriented"[tiab:~2] OR "consumer centered"[tiab:~2] OR "consumer centred"[tiab:~2] OR "consumer focused"[tiab:~2] OR "consumer oriented"[tiab:~2] OR "people centered"[tiab:~2] OR "people centred"[tiab:~2] OR "people focused"[tiab:~2] OR "people oriented"[tiab:~2] OR "person centered"[tiab:~2] OR "person centred"[tiab:~2] OR "person

focused"[tiab:~2] OR "person oriented"[tiab:~2] OR ((decision*[ti] OR choice*[ti]) AND (making*[ti] OR make*[ti] OR support*[ti] OR behavior*[ti] OR behaviour*[ti] OR aid[ti] OR aids[ti] OR aiding[ti] OR aided[ti])) OR ((patient*[ti] OR consumer*[ti] OR client*[ti]) AND (involv*[ti] OR participat*[ti] OR prefer*[ti])) OR ((nurse*[ti] OR physician*[ti] OR clinician*[ti] OR doctor*[ti] OR practitioner*[ti] OR gp[ti] OR gps[ti] OR ((health[ti] OR healthcare[ti] OR medical[ti]) AND (professional*[ti])) OR provider*[ti] OR resident*[ti])) AND (patient*[ti] OR consumer*[ti] OR client*[ti])) AND ("Colorectal Neoplasms"[mesh] OR ((colorect*[tiab] OR CRC[tiab] OR colon*[tiab] OR bowel*[tiab] OR intestine*[tiab] OR rectal[tiab] OR rectum*[tiab] OR sigmoid[tiab] OR anal[tiab] OR anus[tiab]) AND (cancer*[tiab] OR neoplas*[tiab] OR tumor*[tiab] OR tumour[tiab] OR carcinom*[tiab] OR sarcom*[tiab] OR adenocarcinom*[tiab] OR adenom*[tiab] OR lesion*[tiab] OR polyp*[tiab]))) AND (("Mass Screening"[mesh] OR "Early Detection of Cancer"[mesh] OR "Occult Blood"[mesh] OR "Immunochemistry"[mesh] OR "Guaiac"[mesh] OR screen*[tiab] OR "early detect"[tiab:~3] OR "early detects"[tiab:~3] OR "early detected"[tiab:~3] OR "earlier detect"[tiab:~3] OR "earlier detects"[tiab:~3] OR "earlier detected"[tiab:~3] OR "early detection"[tiab:~3] OR "early detections"[tiab:~3] OR "earlier detection"[tiab:~3] OR "earlier detections"[tiab:~3] OR "occult blood"[tiab:~1] OR gFOBT*[tiab] OR FOBT*[tiab] OR FOB[tiab] OR FOBs[tiab] OR HSgFOBT*[tiab] OR FIT[tiab] OR FITs[tiab] OR immunochem*[tiab] OR "immuno chem*" [tiab] OR immunohistochem*[tiab] OR "immuno histochem*" [tiab] OR immunol*[tiab] OR guaiac[tiab] OR gaiac[tiab] OR haemoccult[tiab] OR hemoccult[tiab] OR sensa[tiab] OR hemocare[tiab] OR hema-screen[tiab] OR hemascreen[tiab] OR "hema chek"[tiab:~0] OR "hema wipe"[tiab:~0] OR hemofec[tiab] OR hemo-fec[tiab] OR fecatest[tiab] OR fecatwin[tiab] OR cologuard[tiab] OR coloscreen[tiab] OR seracult[tiab] OR ez-detect[tiab] OR ezdetect[tiab] OR colocare[tiab] OR flexsure[tiab] OR hemoquant[tiab] OR immocare[tiab] OR hemochaser[tiab] OR "bayer detect"[tiab:~0] OR hemeselect[tiab] OR immudia[tiab] OR monohaem[tiab] OR insure[tiab] OR hemodia[tiab] OR instant-view[tiab] OR immocare[tiab] OR magstream[tiab] OR Hemdetect[tiab] OR Peroheme[tiab] OR Lifeguard[tiab] OR Okokit[tiab] OR early-detector[tiab] OR Fe-cult[tiab] OR Feca-eia[tiab] OR Surescreen[tiab] OR "Camco PAK"[tiab:~0] OR ColoAlert[tiab] OR Hematest*[tiab] OR "feca test"[tiab:~0] OR MT-sDNA[tiab]) OR ("Colonoscopy"[mesh] OR colonoscop*[tiab] OR sigmoidoscop*[tiab] OR proctoscop*[tiab] OR rectosigmoidoscop*[tiab] OR proctosigmoidoscop*[tiab] OR COL[tiab] OR SIG[tiab] OR FSIG[tiab])) AND (2010:2024[pdat])

Scopus (Elsevier)

(Jan 1, 2010 – May 28, 2024)

5,073 Results

(((TITLE-ABS-KEY (decisionmak* OR "decision mak*" OR ((shared OR sharing OR informed) W/3 (decision*)) OR ((informed) W/3 (choice*)) OR ((decision* OR choice*) W/3 (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((patient* OR consumer* OR client*) W/3 (participation* OR involvement* OR preferences*)) OR ((patient* OR client* OR consumer* OR people OR person) W/2 (centered OR centred OR focused OR oriented)))) OR (TITLE (((patient*

OR consumer* OR client*) AND (participat* OR involv* OR prefer*) OR ((share* OR sharing OR informed) AND (decision* OR deciding OR choice*)) OR ((decision* OR choice*) AND (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((nurse* OR physician* OR clinician* OR doctor* OR practitioner* OR gp OR gps OR provider* OR resident*) AND (patient* OR consumer* OR client*)) OR ((health OR healthcare OR medical) AND (professional*) AND (patient* OR consumer* OR client*)))) AND (TITLE-ABS-KEY(((colorect* OR CRC OR colon* OR bowel* OR intestine* OR rectal OR rectum* OR sigmoid OR anal OR anus) AND (cancer* OR neoplas* OR tumor* OR tumour OR carcinom* OR sarcom* OR adenocarcinom* OR adenom* OR lesion* OR polyp*)))) AND (TITLE-ABS-KEY(screen* OR ((early OR earlier) W/2 (detect*)) OR "occult blood" OR gFOBT* OR FOBT* OR FOB OR FOBs OR HSgFOBT* OR FIT OR FITs OR immunochem* OR "immuno chem*" OR immunohistochem* OR "immuno histochem*" OR immunol* OR guaiac OR gaiac OR haemocult OR hemocult OR hemmoccult OR sensa OR hemocare OR hema-screen OR hema-chek OR hema-wipe OR hemofec OR hemo-fec OR fecatest OR fecatwin OR cologuard OR coloscreen OR seracult OR ez-detect OR ezdetect OR colocare OR flexsure OR hemoquant OR immocare OR hemochaser OR bayer-detect OR hemeselect OR immudia OR monohaem OR insure OR hemodia OR instant-view OR immocare OR magstream OR Hemdetect OR Peroheme OR Lifeguard OR Okokit OR early-detector OR fe-cult OR feca-eia OR Surescreen OR Camco-PAK OR coloalet OR hematest OR feca-test OR MT-sDNA OR colonoscop* OR sigmoidoscop* OR proctoscop* OR rectosigmoidoscop* OR proctosigmoidoscop* OR COL OR SIG OR FSIG))) AND PUBYEAR AFT 2009

CINAHL Plus with Full-Text (EBSCO)

(Jan 1, 2010 – May 28, 2024)

1,223 Results

((MH ("Decision Making+" OR "Consumer Participation+" OR "Patient Preference+" OR "Professional-Patient Relations+" OR "Patient Centered Care")) OR (TI (decisionmak* OR "decision mak*" OR ((shared OR sharing OR informed) N3 (decision*)) OR ((informed) N3 (choice*)) OR ((decision* OR choice*) N3 (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((patient* OR client* OR consumer* OR people OR person) N2 (centered OR centred OR focused OR oriented)))) OR (AB (decisionmak* OR "decision mak*" OR ((shared OR sharing OR informed) N3 (decision*)) OR ((informed) N3 (choice*)) OR ((decision* OR choice*) N3 (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((patient* OR consumer* OR client*) N3 (participation* OR involvement* OR preferences*)) OR ((patient* OR client* OR consumer* OR people OR person) N2 (centered OR centred OR focused OR oriented)))) OR (TI (((patient* OR consumer* OR client*) AND (participat* OR involv* OR prefer*)) OR ((share* OR sharing OR informed) AND (decision* OR deciding OR choice*)) OR ((decision* OR choice*) AND (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((nurse* OR physician* OR clinician* OR doctor* OR practitioner* OR gp OR gps OR ((health OR healthcare OR medical) N2 (professional*)) OR clinician* OR resident*) AND (patient* OR consumer* OR client*)))) AND ((MH ("Colorectal Neoplasms+")) OR (TI (((colorect* OR CRC OR colon* OR bowel* OR intestine*

OR rectal OR rectum* OR sigmoid OR anal OR anus) AND (cancer* OR neoplas* OR tumor* OR tumour OR carcinom* OR sarcom* OR adenocarcinom* OR adenom* OR lesion* OR polyp*)))) OR (AB (((colorect* OR CRC OR colon* OR bowel* OR intestine* OR rectal OR rectum* OR sigmoid OR anal OR anus) AND (cancer* OR neoplas* OR tumor* OR tumour OR carcinom* OR sarcom* OR adenocarcinom* OR adenom* OR lesion* OR polyp*)))) AND ((MH ("Cancer Screening" OR "Early Detection of Cancer" OR "Occult Blood" OR "Immunochemistry+" OR "Guaiac" OR "Colonscopy+" OR "Proctoscopy")) OR (TI (screen* OR ((early OR earlier) N2 (detect*)) OR "occult blood" OR gFOBT* OR FOBT* OR FOB OR FOBs OR HSgFOBT* OR FIT OR FITs OR immunochem* OR "immuno chem*" OR immunohistochem* OR "immuno histochem*" OR immunol* OR guaiac OR gaiac OR haemoccult OR hemoccult OR hemmoccult OR sensa OR hemocare OR hema-screen OR hema-chek OR hema-wipe OR hemofec OR hemo-fec OR fecatest OR fecatwin OR cologuard OR coloscreen OR seracult OR ez-detect OR ezdetect OR colocare OR flexure OR hemoquant OR immocare OR hemochaser OR bayer-detect OR hemeselect OR immudia OR monohaem OR insure OR hemodia OR instant-view OR immocare OR magstream OR Hemdetect OR Peroheme OR Lifeguard OR okokit OR early-detector OR Fe-cult OR Feca-eia OR Surescreen OR camco-pak OR Coloalert OR Hematest OR feca-test OR MT-sDNA OR colonoscop* OR sigmoidoscop* OR proctoscop* OR rectosigmoidoscop* OR proctosigmoidoscop* OR COL OR SIG OR FSIG)) OR (AB (screen* OR ((early OR earlier) N2 (detect*)) OR "occult blood" OR gFOBT* OR FOBT* OR FOB OR FOBs OR HSgFOBT* OR FIT OR FITs OR immunochem* OR "immuno chem*" OR immunohistochem* OR "immuno histochem*" OR immunol* OR guaiac OR gaiac OR haemoccult OR hemoccult OR hemmoccult OR sensa OR hemocare OR hema-screen OR hema-chek OR hema-wipe OR hemofec OR hemo-fec OR fecatest OR fecatwin OR cologuard OR coloscreen OR seracult OR ez-detect OR ezdetect OR colocare OR flexure OR hemoquant OR immocare OR hemochaser OR bayer-detect OR hemeselect OR immudia OR monohaem OR insure OR hemodia OR instant-view OR immocare OR magstream OR Hemdetect OR Peroheme OR Lifeguard OR Okokit OR early-detector OR Fe-cult OR Feca-eia OR Surescreen OR camco-pak OR Coloalert OR Hematest OR feca-test OR MT-sDNA OR colonoscop* OR sigmoidoscop* OR proctoscop* OR rectosigmoidoscop* OR proctosigmoidoscop* OR COL OR SIG OR FSIG)))

PsycINFO (EBSCO)

(Jan 1, 2010 – May 28, 2024)

288 Results

(((TI (decisionmak* OR "decision mak*" OR ((shared OR sharing OR informed) N3 (decision*)) OR ((informed) N3 (choice*)) OR ((decision* OR choice*) N3 (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((patient* OR client* OR consumer* OR people OR person) N2 (centered OR centred OR focused OR oriented)))) OR (AB (decisionmak* OR "decision mak*" OR ((shared OR sharing OR informed) N3 (decision*)) OR ((informed) N3 (choice*)) OR ((decision* OR choice*) N3 (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((patient* OR consumer* OR client*) N3 (participation* OR involvement* OR

preferences*)) OR ((patient* OR client* OR consumer* OR people OR person) N2 (centered OR centred OR focused OR oriented)))) OR (TI(((patient* OR consumer* OR client*) AND (participat* OR involv* OR prefer*)) OR ((share* OR sharing OR informed) AND (decision* OR deciding OR choice*)) OR ((decision* OR choice*) AND (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((patient* OR client* OR consumer* OR people OR person) N2 (centered OR centred OR focused OR oriented)) OR ((nurse* OR physician* OR clinician* OR doctor* OR practitioner* OR gp OR gps OR ((health OR healthcare OR medical) N2 (professional*)) OR provider* OR resident*) AND (patient* OR consumer* OR people*)))) OR (SU(decisionmak* OR "decision mak*" OR ((shared OR sharing OR informed) N3 (decision*)) OR ((informed) N3 (choice*)) OR ((decision* OR choice*) N3 (making* OR support* OR behavior* OR behaviour* OR aid*)) OR ((patient* OR client* OR consumer* OR people OR person) N2 (centered OR centred OR focused OR oriented)))) AND ((TI (((colorect* OR CRC OR colon* OR bowel* OR intestine* OR rectal OR rectum* OR sigmoid OR anal OR anus) AND (cancer* OR neoplas* OR tumor* OR tumour OR carcinom* OR sarcom* OR adenocarcinom* OR adenom* OR lesion* OR polyp*)))) OR (AB (((colorect* OR CRC OR colon* OR bowel* OR intestine* OR rectal OR rectum* OR sigmoid OR anal OR anus) AND (cancer* OR neoplas* OR tumor* OR tumour OR carcinom* OR sarcom* OR adenocarcinom* OR adenom* OR lesion* OR polyp*)))) OR (SU (((colorect* OR CRC OR colon* OR bowel* OR intestine* OR rectal OR rectum* OR sigmoid OR anal OR anus) AND (cancer* OR neoplas* OR tumor* OR tumour OR carcinom* OR sarcom* OR adenocarcinom* OR adenom* OR lesion* OR polyp*))))) AND ((TI (screen* OR ((early OR earlier) N2 (detect*)) OR "occult blood" OR gFOBT* OR FOBT* OR FOB OR FOBs OR HSgFOBT* OR FIT OR FITs OR immunochem* OR "immuno chem*" OR immunohistochem* OR "immuno histochem*" OR immunol* OR guaiac OR gaiac OR haemocult OR hemocult OR hemmoccult OR sensa OR hemocare OR hema-screen OR hema-chek OR hema-wipe OR hemofec OR hemo-fec OR fecatest OR fecatwin OR cologuard OR coloscreen OR seracult OR ez-detect OR ezdetect OR colocare OR flexsure OR hemoquant OR immocare OR hemochaser OR bayer-detect OR hemeselect OR immudia OR monohaem OR insure OR hemodia OR instant-view OR immocare OR magstream OR Hemdetect OR Peroheme OR Lifeguard OR Okokit OR early-detector OR Fe-cult OR Feca-eia OR Surescreen OR camco-pak OR Coloalert OR Hematest OR feca-test OR MT-sDNA OR colonoscop* OR sigmoidoscop* OR proctoscop* OR rectosigmoidoscop* OR proctosigmoidoscop* OR COL OR SIG OR FSIG)) OR (AB (screen* OR ((early OR earlier) N2 (detect*)) OR "occult blood" OR gFOBT* OR FOBT* OR FOB OR FOBs OR HSgFOBT* OR FIT OR FITs OR immunochem* OR "immuno chem*" OR immunohistochem* OR "immuno histochem*" OR immunol* OR guaiac OR gaiac OR haemocult OR hemocult OR hemmoccult OR sensa OR hemocare OR hema-screen OR hema-chek OR hema-wipe OR hemofec OR hemo-fec OR fecatest OR fecatwin OR cologuard OR coloscreen OR seracult OR ez-detect OR ezdetect OR colocare OR flexsure OR hemoquant OR immocare OR hemochaser OR bayer-detect OR hemeselect OR immudia OR monohaem OR insure OR hemodia OR instant-view OR immocare OR magstream OR Hemdetect OR Peroheme OR Lifeguard OR Okokit OR early-detector OR Fe-cult OR Feca-eia OR Surescreen OR camco-pak OR Coloalert OR Hematest OR feca-test OR MT-sDNA OR colonoscop* OR sigmoidoscop* OR proctoscop* OR

rectosigmoidoscop* OR proctosigmoidoscop* OR COL OR SIG OR FSIG)) OR OR (SU (screen* OR ((early OR earlier) N2 (detect*)) OR "occult blood" OR gFOBT* OR FOBT* OR FOB OR FOBs OR HSgFOBT* OR FIT OR FITs OR immunochem* OR "immuno chem*" OR immunohistochem* OR "immuno histochem*" OR immunol* OR guaiac OR gaiac OR haemocult OR hemocult OR hemmocult OR sensa OR hemocare OR hema-screen OR hema-chek OR hema-wipe OR hemofec OR hemo-fec OR fecatest OR fecatwin OR cologuard OR coloscreen OR seracult OR ez-detect OR ezdetect OR colocare OR flexsure OR hemoquant OR immocare OR hemochaser OR bayer-detect OR hemeselect OR immudia OR monohaem OR insure OR hemodia OR instant-view OR immocare OR magstream OR Hemdetect OR Peroheme OR Lifeguard OR Okokit OR early-detector OR Fe-cult OR Feca-eia OR Surescreen OR camco-pak OR Coloalert OR Hematest OR feca-test OR MT-sDNA OR colonoscop* OR sigmoidoscop* OR proctoscop* OR rectosigmoidoscop* OR proctosigmoidoscop* OR COL OR SIG OR FSIG))))