Patients' experiences and reported barriers to colonoscopy in the screening context – a systematic review of the literature
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CRD summary
The authors concluded that bowel preparation, lack of awareness of the importance of screening, and feelings of vulnerability in women were all significant barriers to uptake of screening colonoscopy. Facilitators included a positive attitude to screening, knowing someone with colorectal cancer, and clinician endorsement of the test. The conclusions reflect the evidence presented and are likely to be reliable.

Authors' objectives
To explore the patient's experience of colonoscopy screening.

Searching
MEDLINE, EMBASE, and PsycINFO were searched for English-language studies published between 1996 and 2009. The reference lists of selected articles were searched to locate additional studies. A full search strategy was reported to be available on request.

Study selection
Eligible for inclusion were qualitative and quantitative studies of the adult patient's experience of colonoscopy as a screening intervention, and studies examining patient-reported factors that influence adherence to colonoscopy, as an initial test or after an abnormal initial screening result. Excluded were case reports; studies of patients with specific disease entities or following bowel surgery; studies of pregnant women; and studies in which hereditary bowel cancer was the main topic.

Most of the included studies were cross-sectional and were conducted in North America; one study was conducted in the UK. Publication dates ranged from 2001 to 2008. Study characteristics varied for patients, setting, and method of data collection. All studies used interviews, questionnaires or surveys; some included focus groups or used mixed methods. Most studies focused on patient-reported concerns and factors that act as barriers and affect the uptake of colonoscopy.

The studies were selected for inclusion by two reviewers. Disagreements were resolved by consensus or by consulting a third reviewer.

Assessment of study quality
Quantitative studies were assessed with criteria adapted from the Critical Appraisal Skills Programme (CASP) checklist, with additional criteria for justification of the measurement tool and participation rate. The maximum score was 9 points. Qualitative studies were assessed using criteria from Pluye, et al. 2009; the maximum score was 6.

The authors did not state how many reviewers assessed study quality.

Data extraction
The data were extracted, using a thematic approach, by one reviewer. A second reviewer checked these data.

Methods of synthesis
A thematic narrative approach was used to synthesise the study findings. Lower quality studies were examined for their relative impact on the findings.

Results of the review
Fifty-six studies were included in the review – 26 were quantitative; 26 were qualitative; two had mixed methods; and two had unspecified designs. The quality of the quantitative studies ranged from 4 to 9 (median 7). The quality of the qualitative studies ranged from 4 to 6 (median 5).
Patient experience: Seven studies assessed the experience of screening. Compared with virtual colonoscopy or flexible sigmoidoscopy, the least favoured aspect of primary colonoscopy was perceived by patients to be moderate discomfort arising from the laxative bowel preparation. Other reported difficulties were attributed to pre-test fasting and liquid diet, pre-procedural anxiety, worry, and anticipation of pain. Pain and discomfort were reported during instrument insertion, together with embarrassment with the process. Inconvenience and a long time commitment were also reported. Studies collecting before-and-after measurements indicated that the actual difficulties were not as severe as had been anticipated. Intravenous sedation was used in all studies.

Adherence: Forty-seven studies assessed adherence to colonoscopy as an initial test. For patients who were considering a colonoscopy or had never been screened before, the barriers and facilitators were procedural and personal concerns, and practical and health system barriers and facilitators.

For procedural and personal concerns, laxative bowel preparation was the most frequent barrier. Other concerns were fully reported, and included the perceived risks of the test; women's specific issues about vulnerability in the process; and a lack of knowledge about colorectal cancer and screening recommendations. Influential motivators for uptake included the accuracy of the test; having a family history of the disease; and celebrity endorsement of the process.

Practical and health system barriers included time commitment and inconvenience in some studies; transport and appointment scheduling difficulties; financial cost; and access. Clinician endorsement, communication, and good-quality doctor-patient relationships were seen in many studies as positive drivers influencing the uptake of screening colonoscopy.

Similar procedural, personal, and practical concerns were reported in two studies focusing on colonoscopy after an initial positive faecal occult blood test (reported in the paper).

The evaluation of the lower quality studies revealed they had no significant impact on the outcome of the synthesis.

Authors' conclusions
Bowel preparation, lack of awareness of the importance of screening, and feelings of vulnerability in women were all significant barriers to uptake of screening colonoscopy. The facilitators included having a positive attitude to screening, knowing someone with colorectal cancer, and clinician endorsement of the test.

CRD commentary
The review question was clear, and the inclusion criteria were sufficiently specified. Three relevant databases were searched. The restriction to published studies may mean that relevant articles were missed. Steps were taken to minimise error and bias in study selection, and attempts were made to demonstrate consistency in data extraction and synthesis.

It was unclear how many reviewers carried out the quality assessment. Detailed results of the quality assessment were not reported, but the authors' summary suggested that overall quality was reasonable and the inclusion of lower quality studies did not significantly affect the findings. The method of synthesis seems to have been appropriate, with thematic analysis providing a helpful structure. The authors acknowledged that results of this review were based largely on studies conducted in North America, and may not be transferrable to other health care settings.

The conclusions reflect the evidence presented and are likely to be reliable.

Implications of the review for practice and research
Practice: The authors stated that efforts were needed to improve the bowel preparation process, enhance comfort and modesty during examination, and identify patients with anxiety before colonoscopy. Effective education could improve understanding of the screening process and tailored information could improve practical barriers to uptake and compliance. Clinicians should be aware of the positive impact of their endorsement of the process.

Research: The authors stated that more research was needed on the barriers and facilitators of colonoscopy after a positive faecal occult blood test, and on why patients decided to participate in screening, to help with future effective intervention design.
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