Factors influencing participation in fecal occult blood testing to screen for colorectal cancer in Australia: a scoping review protocol

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Review question: The objective of this scoping review is to examine and map the evidence on the range of factors influencing a person’s decision to screen or not screen for colorectal cancer using a fecal occult blood test (FOBT) in Australia, with the view to identifying gaps in the research and informing appropriate questions for future systematic reviews. The question of this review is: what evidence is available around the barriers and facilitators that influence an individual’s decision to screen or not screen for colorectal cancer using a fecal occult blood test in Australia?

Keywords bowel cancer; colorectal cancer; fecal occult blood test; screen


Introduction

Colorectal cancer is ranked as the third most common cancer worldwide, with nearly 1.4 million cases diagnosed in 2012.¹ In Australia, it is the second most common cancer after prostate, with one in 12 people developing the disease by age 85.² It is also the second most common cause of cancer-related deaths in Australia after lung cancer with an age-standardized rate of 16 deaths per 100,000 persons in 2013.² However when detected and treated early, the five-year survival rate is as high as 93%.³,⁴

The ability to detect and treat precursors of colorectal cancer such as polyps, as well as cancers in their early stages, in conjunction with high rates of the disease, makes population-based screening of asymptomatic average-risk individuals a viable option for reducing colorectal cancer incidence and mortality.⁵-⁸

Population CRC screening programs were first introduced in Germany in 1971 and continue to be rolled out worldwide.⁹ A recent paper by Schreuders et al.⁹ provides a comprehensive global overview of existing programs and demonstrates that implementation of population screening varies markedly between the 61 countries examined. Differences are seen for screening modality (guaiac fecal occult blood test/fecal immunochemical test/flexible sigmoidoscopy/colonoscopy/digital rectal examination), type of program (organised versus opportunistic), starting year (ranging from 1971 to 2014), lower age limit (ranging from 40 to 55 years), upper age limit (ranging from 69 to 75 years for organized programs, with no upper limit for opportunistic programs) and interval between testing (ranging from 12 months to 10 years).

In Australia, opportunistic screening programs have been available since 1982 when the Rotary Club of Lismore first introduced what is now known as the Bowelscan program.¹⁰ The annual month-long campaign targets men and women aged 40 years and over, and provides subsidized fecal occult blood test (FOBT) kits through selected pharmacies nationally. These kits are also available year round through pharmacies, general practitioners and community cancer organizations. In response to recommendations by the National Health and Medical Research Council (NHMRC),¹¹ and based on results from a pilot study,¹² Australia’s first organized, population-wide National Bowel Cancer Screening Program (NBCSP) was established in 2006.¹³ Now in its 11th year, the program continues to be rolled out and will be available biennially to men and women aged 50 to 74 years from January 2019.
Of the 2.2 million individuals sent a free fecal occult blood test (FOBT) kit between January 2013 and December 2014, only 37% participated in the program. Compared with other Commonwealth Government screening programs such as BreastScreen Australia (54.4% in 2012–2013) and the National Cervical Screening Program (57.8% in 2013–14), these rates are relatively low.

Internationally, participation rates vary from 17% to 77% in countries using FOBT kits for screening, and from 16% to 93% in countries using colonoscopy as a screening tool. The reasons for these wide variations in screening rates are unclear but research shows a number of possible barriers and facilitators.

Thirteen systematic reviews describing various factors associated with CRC screening uptake have been published in the last 10 years. Invitation letters, client reminders, recall systems, small media, systematic screening, general practitioner recommendation/endorsement, scheduled appointments, decision aids, perceived risk, and influence of friends and family were all found to be associated with increased CRC screening. Conversely, low income, less education, being uninsured, having limited access to health care, female gender, not having a spouse, cultural beliefs, disgust, and language barriers were all found to be associated with reduced screening.

What is not clear from these systematic reviews is which of these factors are relevant to the Australian context; an organized, national program where immunochemical FOBT kits are sent to eligible individuals (based on age in a given year), participation is tracked and monitored by the government, and health care provider involvement is discretionary until follow-up of a positive test is required.

Different CRC screening modalities and programs are likely to present with different barriers and facilitators, yet, of the 13 systematic reviews conducted, only two clearly differentiated between screening modality, that is, they reported barriers and facilitators for FOBT distinct from colonoscopy or flexible sigmoidoscopy. Similarly, only two reviews clearly distinguished between organized screening and opportunistic screening methods.

In contrast to Australia, opportunistic screening is used in the United States (US) whereby asymptomatic individuals are tested when they present to a doctor for reasons unrelated to CRC screening. Available screening modalities in the US include guaiac FOBT, immunochemical FOBT, flexible sigmoidoscopy, colonoscopy, computed tomographic colonography and double-contrast barium enema. The test chosen is based on a patient’s decision made in consultation with their doctor. Reported facilitators such as scheduled appointments and decision aids are therefore more likely to be relevant to the US than Australia. Similarly, female gender as a barrier to CRC screening may more likely reflect the US system where colonoscopy is the most common screening test since in Australia, men are less likely to participate in CRC screening than women.

The health care system in the US also differs from that in Australia in terms of cost to the user. In 2013, public sources accounted for 68% of overall health spending in Australia, compared to 48% in the US, reflecting the importance of private health insurance in providing primary health care coverage for much of the US population. This difference is likely to impact on reported barriers such as low income, being uninsured and having limited access to care, which may be more relevant in the US context.

Given the majority of papers cited in the systematic reviews originated in the US and the distinct differences in CRC screening programs and health systems between the two countries, it is reasonable to question the applicability of the results to the Australian context. Specifically, two of the 13 reviews exclusively examined research conducted in the US, six reviews comprised at least 70% US papers, and the remainder ranged from 35%-65%. In contrast, the proportion of Australian research included in the systematic reviews ranged from 3% to 11%, with five reviews containing no reference to Australian research.

To better understand the Australian situation, the proposed scoping review will examine the range and extent of qualitative, quantitative and gray literature, focusing on factors influencing participation in CRC screening in Australia using fecal occult blood testing. A socio-ecological model will be used to guide the inclusion criteria and map the data, ensuring a focus on individual, interpersonal, organizational, community and public policy as factors that can influence health behavior. This will deliver a comprehensive scoping of literature that includes but is not limited to: socio-demographic data, personal 

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and cultural beliefs, perceptions of risk and self-efficacy, influence of family and friends, client-directed interventions, role of health care providers, role of local government and community organizations, the Australian health system and the workings of the screening program per se.

The results are intended to identify gaps in the evidence and inform future systematic reviews and research. A preliminary search of the JBI Database of Systematic Reviews and Implementation Reports, Cochrane Database of Systematic Reviews and PubMed found no systematic or scoping reviews on factors influencing colorectal cancer screening participation in Australia.

Inclusion criteria

Participants

This scoping review will consider literature that includes individuals aged 40 years and over, regardless of gender, ethnicity, personal history of cancer or family history of cancer.

Literature will be included regardless of the type of FOBT kits used, or the way in which kits were obtained. This includes but is not limited to organized screening programs (free or subsidized), community/GP programs and pharmacies.

As per the socio-ecological model, literature that examines individual, interpersonal, organizational, community and public policy as factors that can influence bowel cancer screening participation will be included.

Literature that focuses solely on colonoscopy, sigmoidoscopy, endoscopy or genetic testing as a screening tool, without mention of FOBT, will be excluded.

Concept

The concept examined by this scoping review is factors that influence an individual’s decision to screen or not screen for colorectal cancer using a fecal occult blood test kit in Australia.

Context

This scoping review will consider literature relevant to FOBT screening in the Australian context, regardless of kit type, distribution method and financial costs (either to the program or individual).

Types of studies

Studies will be considered that focus on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, qualitative description, action research and feminist research. The scoping review will also consider quantitative studies, mixed method studies and literature reviews.

Gray literature including unpublished theses, policies, opinion papers and reports will also be considered for inclusion in this scoping review.

Methods

Search strategy

The search strategy aims to locate both published and unpublished literature. In undertaking this review, a three-step search strategy will be employed. An initial limited search of PubMed and CINAHL will be undertaken followed by an analysis of the text words contained within the title, keywords/index terms and abstract. A second search using all identified keywords and index terms will then be undertaken across all the included databases. Thirdly, the reference list of all identified reports and articles will be searched for additional literature.

Literature published between the time of the review and 1982 will be considered as this period covers the introduction of FOBT screening programs in Australia including Rotary’s Bowelscan campaign and the National Bowel Cancer Screening Program. Given the focus on the Australian context, only literature published in English will be included in the review.

Databases to be searched for published literature: PubMed, CINAHL, Embase, PsycInfo, Scopus.


Initial keywords to be used include: fecal; faecal; cancer; colorectal cancer; bowel cancer; screen”; FOBT; participate”; barrier”; facilitate”; compliance; adherence; determinant”; health behaviour”; Australia”; psychology of health decision making; choice”; intervention; general practitioner; public policy

Identified literature will then be assessed for relevance to the review, based on the information provided in the title and abstract, by two independent reviewers. The full article/document will be retrieved for all literature that meets the inclusion criteria of the review. If the relevance of an article/document is
unclear from the abstract, the full article/document will be retrieved. The two reviewers will then independently examine the articles/documents to assess if they conform to the inclusion criteria. Any disagreements that arise between the two reviewers will be resolved through discussion or with a third reviewer. Any additional literature obtained from reference list searches will also be assessed for relevance based on the title and abstract.

**Data extraction**

Data will be extracted from papers included in the scoping review by two independent reviewers using the draft data extraction tool, adapted from the JBI scoping review data extraction tool (Appendix I). The data extracted will include specific details about the populations, concept, context and study methods of significance to the scoping review question and specific objectives. Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer. Authors will be contacted to request missing or additional data where required.

In line with JBI scoping review methodology, the draft data extraction tool will be revised and modified as necessary during the process of extracting data from each included study. This will allow the reviewers to chart any unforeseen data as they become increasingly familiar with the nature of the evidence. Modifications will be detailed in the full scoping review report.

**Data mapping**

The extracted data will be presented in a manner that aligns to the objective and question of this scoping review. As previously described, the data from the literature will be mapped against a socio-ecological model, which includes five levels of health behavior influence: individual, interpersonal, organisational, community and public policy.

A narrative summary will accompany the tabulated results and will describe how the results relate to the reviews objective and question.

**References**


### Appendix I: Draft data extraction instrument/s

For published and unpublished research

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