

The impact of screening on future health-promoting behaviours and health beliefs: a systematic review

CR Bankhead^{1*}

J Brett¹

C Bukach¹

P Webster¹

S Stewart-Brown²

M Munafo³

J Austoker¹

¹ Institute of Health Sciences, Oxford University, Headington, Oxford, UK

² Division of Health in the Community, Warwick Medical School, LWMS, The University of Warwick, Coventry, UK

³ General Practice Research Group, Department of Clinical Pharmacology, Oxford University, Radcliffe Infirmary, Oxford, UK

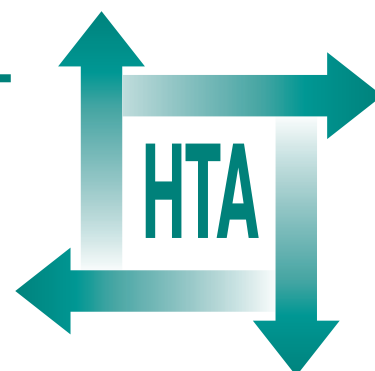
* Corresponding author



Executive summary

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Executive summary

Background

The review focuses on two types of screening: risk factor screening (cholesterol) and screening for early disease (breast and cervical cancer). Risk factor screening involves a strategy for primary prevention, whereas early or preclinical disease screening is secondary prevention.

Screening can be delivered as a systematic programme, an 'opportunistic' programme or an 'open-access' programme. A systematic programme is provider led and will actively seek out the eligible population and invite them to participate in screening. Opportunistic screening occurs when a patient consults a health professional about an unrelated problem, and the opportunity is taken (by a healthcare provider) to offer and conduct the screening. Open-access screening is user led, where the screened population is self-selected.

Objectives

To carry out a systematic review to examine the effects of cholesterol, breast and cervical cancer screening on actual or intended health-promoting behaviours and health-related beliefs.

In particular, the review addressed the following questions:

- What are the effects of screening for hypercholesterolaemia, breast cancer and cervical cancer on future health beliefs and behaviours?
- What are the implications for the NHS?

Methods

Data sources

Systematic searches of 11 electronic databases (between 1980 and 2000) were conducted.

Study selection

All English language studies that investigated the impact of cholesterol, breast and cervical screening programmes on health-promoting behaviours and beliefs were assessed for inclusion.

Data extraction

The data extraction form and quality assessment criteria were developed using the NHS Centre for Reviews and Dissemination guidelines. Initially, two reviewers extracted data and disagreements were resolved by discussion with a third reviewer. This procedure was changed owing to the large number of papers involved, to data being extracted by one reviewer and checked by a second reviewer; any disagreements were resolved by discussion with a third reviewer.

Data synthesis

Data were extracted and a non-quantitative synthesis was conducted. Reviewers categorised the outcomes into those that could be considered beneficial or detrimental to health. This categorisation was based on a value judgement that considered both statistical and clinical significance.

Results

The study designs used in the three screening types differed. The cholesterol studies used prospective designs more frequently. This may be explained by differing research agendas as the majority of the cholesterol papers were interested in observing changes in lifestyle following screening. However, participants who went for breast or cervical screening were not offered advice on lifestyle changes and most of the research into cancer screening programmes investigated issues related to uptake of screening services, explanations of why people are or are not screened and interventions to improve uptake.

All three screening programmes are associated with high levels of favourable health behaviours and beliefs that have been measured, although there is evidence that recommended follow-up after screening is often not adhered to. However, most of the research has been restricted to outcomes related to the condition being screened for (e.g. cancer-related beliefs as related to cancer screening). To explore fully the effects of screening on future health behaviours and beliefs a much wider range of outcomes should be studied. There were very few qualitative studies that could have

provided a better understanding of how and why participants in screening are affected by the processes they have undergone.

There was no literature on the cost-effectiveness regarding the wider implications of screening (only on reduction of disease-specific mortality/morbidity). This is possibly due to the outcomes being very broad and not easily categorised and classified.

Conclusions

Cholesterol screening

The studies reviewed suggest that cholesterol screening had a positive effect on health behaviours. However, these positive findings need to be interpreted in the light of methodological issues. For example, participation was voluntary and those screened were possibly more motivated to make changes. These results are therefore not generalisable to the entire population. Other factors include the lack of reliability and validity of tools to measure changes in health behaviours, study attrition and uncertainty of self-reports. Furthermore, uncertainty of long-term changes, inaccurate risk assessment, perception of cholesterol testing in a non-medical environment, perception of seriousness of the risk status due to lack of symptoms, readiness to accept advice, and convenience and cost of follow-up should all be considered.

Reduction in blood cholesterol levels was reported in all but two of the studies that assessed this outcome, suggesting that successful lifestyle changes were made. However, as most of the studies only reported follow-up of those screened, some of the reduction can be attributable to regression to the mean.

Breast and cervical screening

Whether breast and cervical screening affect future health behaviours and beliefs has not been directly measured in many studies and few studies have

collected baseline measures. Therefore, it is difficult to answer with certainty the question of what are the effects of these screening programmes on future health beliefs and behaviours. However, evidence suggests that women who attend breast and cervical screening once are likely to reattend and attendance is associated with several positive health behaviours. Many of these studies were cross-sectional or relied on retrospective data collection where the temporal relationship between screening and these behaviours cannot be assessed. Therefore, it cannot be confirmed whether the associations observed were a result of screening or because these women have a certain set of health behaviours and beliefs irrespective of their experience of screening.

Recommendations for research

To answer the question posed by the review, further research needs to be undertaken to include:

- measuring a much wider range of behaviours and beliefs (including long-term lifestyle changes) before and after screening is accepted or declined, to measure changes that could be attributed to screening
- specifically in cholesterol screening: the subgroup of participants who receive 'desirable' results and the impact of this on health beliefs and health-promoting behaviour
- qualitative research into the experiences of screening and how this interacts with knowledge and beliefs about other aspects of health, not simply those relating to the condition being screened for.

Publication

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NHS R&D HTA Programme

The NHS R&D Health Technology Assessment (HTA) Programme was set up in 1993 to ensure that high-quality research information on the costs, effectiveness and broader impact of health technologies is produced in the most efficient way for those who use, manage and provide care in the NHS.

Initially, six HTA panels (pharmaceuticals, acute sector, primary and community care, diagnostics and imaging, population screening, methodology) helped to set the research priorities for the HTA Programme. However, during the past few years there have been a number of changes in and around NHS R&D, such as the establishment of the National Institute for Clinical Excellence (NICE) and the creation of three new research programmes: Service Delivery and Organisation (SDO); New and Emerging Applications of Technology (NEAT); and the Methodology Programme.

This has meant that the HTA panels can now focus more explicitly on health technologies ('health technologies' are broadly defined to include all interventions used to promote health, prevent and treat disease, and improve rehabilitation and long-term care) rather than settings of care. Therefore the panel structure was replaced in 2000 by three new panels: Pharmaceuticals; Therapeutic Procedures (including devices and operations); and Diagnostic Technologies and Screening.

The HTA Programme will continue to commission both primary and secondary research. The HTA Commissioning Board, supported by the National Coordinating Centre for Health Technology Assessment (NCCHTA), will consider and advise the Programme Director on the best research projects to pursue in order to address the research priorities identified by the three HTA panels.

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Reviews in *Health Technology Assessment* are termed 'systematic' when the account of the search, appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

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