Efficacy of bowel cancer appeals for promoting physical activity

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Introduction

Recently, increasing evidence has emerged of physical activity as a means for the primary prevention of cancer.[1] According to Friedenreich and Orenstein,[2] "the evidence for decreased risk with increased physical activity is classified as convincing for breast and colon cancers, probable for prostate cancer, possible for lung and endometrial cancers and insufficient for cancers at all other sites" (p. 3456S). Furthermore, evidence is increasing that exercise reduces cancer-related fatigue,[3-5] improves quality of life[6] and survival after cancer diagnosis.[7] However, cancer organisations in Australia have not actively promoted the protective effects of physical activity on common cancers, and people's awareness of links between physical inactivity and increased risk for cancer is minimal. The question arises then of whether increasing people's awareness of the link between physical activity and cancer could be effective in motivating increased physical activity among relatively inactive people.

This paper presents the results of a study investigating the persuasiveness of messages about bowel cancer prevention (new message) relative to messages about cardiovascular disease prevention (established message) in increasing intentions to be more physically active. Bowel cancer was chosen because the evidence for decreased risk with increased physical activity is convincing, and, excluding skin cancers other than melanoma, bowel cancer is the most frequently occurring cancer in Australia.[8]

Abstract

Issue addressed: To investigate the potential efficacy of bowel cancer prevention messages in increasing intentions to be more physically active.

Methods: A convenience sample of 281 physically inactive persons aged 30-60 years was recruited in the Perth city centre and randomly assigned to a bowel cancer and physical activity message or a heart disease and physical activity message. After reading a booklet containing information about physical activity and its link either to bowel cancer (n=141) or cardiovascular disease (n=140), respondents filled in a self-completion questionnaire. The main response measures were impact on intentions to be more physically active, and perceived believability and relevance of the message.

Results: Perceived believability of the message was high in both conditions. Perceived personal relevance of the message was substantially lower in the bowel cancer than the cardiovascular disease condition. Overall, the cardiovascular disease condition achieved somewhat higher behavioural intentions than the bowel cancer condition.

Conclusions: The finding that two in three respondents in the bowel cancer condition had increased intention to increase their level of physical activity provides support for the potential efficacy of promoting physical activity in reducing the risk of bowel cancer.

Key words: Physical activity, bowel cancer, health promotion

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So what?

The perceived personal relevance of the message was substantially lower in the bowel cancer than the cardiovascular disease condition. Increasing people's awareness of the prevalence of bowel cancer and greater understanding of the link between bowel cancer and physical inactivity may serve to increase people's motivation to increase their level of physical activity.

Methods

Participants

A convenience sample of 281 respondents aged 30-60 years was recruited by professional interviewers in the Perth city centre and randomly assigned to a bowel cancer and physical activity message or a heart disease and physical activity message. Only persons who "in the past two weeks, did not do any regular vigorous physical activity which made them breathe harder or puff and pant" were included in the study as this is the target group for a physical activity message. Quotas were set to achieve a similar age distribution in each condition (30% of respondents aged 30-39 years, 40% aged 40-49 years, and 30% aged 50-60 years), and to ensure that males and females were approximately equally represented in each subcell. A response rate of 67% was achieved.

Procedure and measures

Respondents were asked to read a four-page booklet containing information about physical activity and its link either to bowel cancer or cardiovascular disease. The booklet described how modern technology and changes in lifestyle had reduced people's level of physical activity over time, and that people who led inactive lives were more likely to suffer from health problems, particularly heart disease. The booklet differed for the two conditions as follows. In the heart disease condition, respondents read that: "Heart disease is among the leading causes of death in Australia", while in the bowel cancer condition, respondents read: "However, new research provides evidence that people who lead inactive lives are more likely to suffer from bowel cancer. This adds to what we already know that good nutrition reduces the risk of bowel cancer. Bowel cancer is among the leading causes of death in Australia." The booklet then presented information about the negative health consequences of heart disease or bowel cancer respectively. Respondents in both conditions were advised to be more physically active to reduce their risk of heart disease or bowel cancer.

After reading the booklet, respondents were given a self-completion questionnaire. Behavioural intention to be more physically active as a result of reading the messages was assessed via "How much, if at all, has the message about bowel cancer and physical activity increased or decreased your intention to try to increase your physical activity" (increased intention a lot; increased intention somewhat; no change; decreased intention somewhat; decreased intention a lot). Message believability and relevance were assessed on four-point scales (very, somewhat, a little, not at all). The interview took approximately 20 minutes.

Table 1: Behavioural intention, believability and relevance ratings.

	Condition	
	Cardiovascular disease n=140 %	Bowel cancer n=141 %
Behavioural intention		
Increased intention a lot	19	11
Increased intention somewhat	46	53
No change	34	36
Decreased intention somewhat	0	1
Decreased intention a lot	0	0
Total	100	100
Believability		
Very believable	79	62
Somewhat believable	18	28
A little believable	2	9
Not at all believable	0	1
No response	1	0
Total	100	100
Relevance		
Very relevant	56	32
Somewhat relevant	31	40
A little relevant	9	21
Not at all relevant	3	7
No response	0	1
Total	100	100

Results

Behavioural intention

In both conditions, approximately two in three respondents had increased intention to increase their level of physical activity (cardiovascular disease: 65%; bowel cancer: 64%) (see Table 1). However, the proportion of respondents reporting they had "increased intention a lot" was significantly higher in the cardiovascular disease than the bowel cancer condition (19% vs. 11%, $p=0.04$). Both believability ($p=0.00$) and relevance ($p=0.00$) were significant predictors of behavioural intention.

Perceived believability

In both conditions, the vast majority of respondents rated the messages as 'very' or 'somewhat' believable (cardiovascular disease: 97%; bowel cancer: 90%). However, the 'very' believable response was significantly higher in the cardiovascular disease condition than the bowel cancer condition (79% vs. 62%, $p=0.00$).

Perceived relevance

The proportion of respondents who rated the messages as 'very' or 'somewhat' relevant was high for both conditions, but significantly higher in the cardiovascular disease condition than the bowel cancer condition (87% vs. 72%, $p=0.00$; 'very' relevant: 56% vs. 32%, $p=0.00$).

Discussion

The perceived believability and relevance of the bowel cancer message were relatively high, although significantly lower than

for the cardiovascular disease condition. This may be due to the fact that the bowel cancer message is a new message and that awareness of the prevalence of bowel cancer is relatively low. Furthermore, the link between physical inactivity and bowel cancer may be harder to comprehend than that between physical inactivity and heart disease.

Overall, the data provided support for promoting physical activity via a message of reducing the risk of bowel cancer. However, developing a concrete way of showing the link between physical inactivity and bowel cancer may be important in public education strategies, along with increasing people's perceived personal relevance of the message via increasing awareness of the prevalence of bowel cancer in the community.

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