Adverse psychological outcomes in colorectal cancer screening: Does health anxiety play a role?

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Abstract

People who are anxious about their health are more likely to misinterpret health information as personally threatening and less likely to be reassured by medical investigations that show they are free from disease. Consequently, health anxious people would be expected to react more adversely to cancer screening, but this possibility has rarely been explored. The moderating role of health anxiety on the psychological impact of participating in colorectal cancer screening was examined among a sub-sample of 3535 participants in a large, community-based trial of colorectal cancer screening in the UK. The screening modality was flexible sigmoidoscopy, which examines the bowel for pre-cancerous polyps. It was predicted that health anxiety would be associated with more worry about cancer before screening, a greater increase in worry if polyps were detected, and less reassurance after a clear result. As expected, health anxious participants were more anxious and more worried about bowel cancer both before and after screening. However, they experienced greater reductions in anxiety and worry about cancer following the examination. They reported lower levels of reassurance following screening, but also expressed more positive reactions to the experience. The positive psychological benefits of attending medical investigations should be examined in future work, because this may go some way towards explaining why health anxious people repeatedly seek medical interventions.

Keywords: Colorectal; Screening; Health anxiety; Impact; Flexible sigmoidoscopy

Introduction

Individual differences in the way people process health-related information can influence its emotional impact. For example, people with a ‘monitoring’ attentional style are thought more likely to amplify health threats, to believe they are at risk of illness and to respond with greater levels of distress (Miller, Fang, Manne, Engstrom, & Daly, 1999). Such individual differences may in turn be modified by factors such as personal goals (Carver & Scheier, 1998), dispositional optimism (Andrykowski et al., 2002; Miller, Shoda, & Hurley, 1996), and current mood (Salovey & Birnbaum, 1989). One of the most serious health threats people face is cancer. It is the second most common cause of premature death after cardiovascular disease, and nationwide...
screening programmes mean that everyone is invited to be screened. Cancer screening therefore has the potential to cause an increase in anxiety about cancer.

Early detection tests, such as mammography screening for breast cancer and faecal occult blood (FOB) screening for colorectal cancer, can diagnose cancer, but they also yield a proportion of false positive results, where an apparently abnormal finding requires further investigation before cancer can be ruled out. The experience of a ‘near-miss’ may affect people’s sense of invulnerability to illness or induce a preoccupation with hidden disease. Tests aiming to detect pre-cancerous changes, rather than cancer per se (e.g. Pap smears for cervical cancer), identify a proportion of individuals as ‘high risk’ because they have abnormalities that could turn into cancer if left untreated (Bell et al., 1995; Ellman et al., 1989; Gilbert et al., 1998; Gram, Lund, & Slenker, 1990; Schwartz, Woloshin, Fowler, & Welch, 2004). This outcome may lead to distress at the realisation that an abnormality has been developing without the individual’s knowledge and concerns that the problem may recur.

The number of people diagnosed with cancer at screening is relatively low, but a substantial proportion of people attending screening will experience false positives or be found to have pre-cancerous abnormalities (Hofvind, Thoresen, & Tretli, 2004). The psychological distress arising from both false positive and high risk results has been shown to be relatively short-lived (Ellman et al., 1989; Lampic, Thurfjell, Bergh, & Sjoden, 2001; Lowe, Balanda, Del Mar, & Hawes, 1999; Parker, Robinson, Scholefield, & Hardcastle, 2002; Rimer & Bluman, 1997; Sutton, Saidi, Bickler, & Hunter, 1995; Thiis-Evensen, Wilhelmsen, Hoff, Blomhoff, & Saur, 1999; Wardle, Pernet, & Stephens, 1995; Wardle et al., 2003), however lingering concerns about the possible psychological sequelae of screening remain. A number of studies have shown that cancer-specific worries may persist for months and even years after screening (Absetz, Aro, & Sutton, 2003; Aro, Pilvikki Absetz, van Elderen, van der Ploeg, & van der Kamp, 2000; Brett & Austoker, 2001; Gram et al., 1990; Idestrom, Milsom, & Andersson-Ellstrom, 2003; Lowe et al., 1999). There is also evidence of vulnerable subgroups for whom a false positive or high risk result is particularly worrying. Neuroticism (Chen et al., 1996), poor social support networks, and information-seeking (‘monitoring’) coping styles (Clutton, Pakenham, & Buckley, 1999) have all been found to increase the impact of abnormal screening results. Surprisingly, the role of health anxiety in exacerbating any adverse emotional effects of screening has barely been explored.

Health anxiety is usually thought of as a continuum with ‘hypochondriasis’ at the extreme (Salkovskis & Bass, 1997; Warwick & Salkovskis, 1990). It is characterised by attentional biases towards illness-related information (Owens, Asmundson, Hadjistavropoulos, & Owens, 2004), and cognitive biases leading to the misinterpretation of information as personally threatening and catastrophic. Health anxious individuals are more likely to believe that somatic sensations signal serious illness (MacLeod, Haynes, & Sensky, 1998). They visit their doctor more frequently (Barsky, Ettner, Horsky, & Bates, 2001) and believe that their symptoms warrant referral to a specialist (Conroy, Smyth, Siriwardena, & Fernandes, 1999). They also show adverse emotional reactions to ambiguous diagnostic test results (Rimes & Salkovskis, 2002) and are less reassured following the medical investigation of symptoms, even when there is no evidence of disease (Lucock, White, Peake, & Morley, 1998; Meechan, Collins, Moss-Morris, & Petrie, 2005).

On the basis of the findings noted above, health anxious individuals would be expected to react more adversely to cancer screening. In addition, such adverse reactions may be particularly likely following screening for pre-malignant conditions (e.g. cervical smears) because of the greater potential for misunderstanding associated with such tests (Kavanagh & Broom, 1997).

The present study assessed the role of health anxiety in moderating the psychological impact of flexible sigmoidoscopy (FS) screening for the prevention of colorectal cancer, as part of the UK FS trial. Unlike previous research, this is a prospective study, allowing us to assess change in anxiety as a consequence of participating in a cancer screening procedure.

FS screening is designed to detect pre-malignant growths (adenomatous polyps) in the bowel and remove them before they become malignant. In the UK FS Trial, screening outcomes were categorised into three groups (those diagnosed with cancer were followed up separately): (i) negative result: no polyps detected, (ii) lower risk result: polyps were detected that were not classified as higher risk and were removed during the examination, and (iii) higher risk result: any of the following were detected—polyps above 1 cm in size; three or more adenomatous polyps; polyps with tubulovillous or villous histology, or severe dysplasia; or 20 or more hyperplastic polyps. People classified as higher risk were referred for a colonoscopy—a more invasive
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