

Colorectal Cancer:
Psychosocial Interventions and Attitudes towards Seeking Psychological Help

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Introductory Chapter: Thesis Overview

This thesis consists of two chapters; a systematic review and an empirical paper. A description of both chapters and how they are linked is outlined below.

Chapter 1:

Given the high level of psychological distress among individuals with colorectal cancer (CRC) and the unique challenges these individuals face, the first part of this thesis is a systematic review of the efficacy of psychosocial interventions for individuals with CRC. Within this review, eight randomised controlled trials of psychosocial interventions are reviewed to establish the efficacy upon reducing psychological distress and improving quality of life. Synthesis of the results from these studies found evidence for the benefit of psychosocial interventions upon reducing psychological distress, yet little evidence for improvements in quality of life. The validity of these studies was also considered through the use of a quality assessment tool and recommendations for future research are provided.

Chapter 1 is intended for publication and is written in the style of the identified journal for submission, The European Journal of Cancer Care.

Chapter 2:

Whilst Chapter 1 considers the efficacy of psychosocial interventions for CRC patients, less attention has been given to factors that influence psychological service utilisation following a cancer diagnosis. Research has linked positive attitudes towards psychological help seeking to be a predictor of future service use. Yet to date, research has not applied

psychological theory to understanding attitudes to help seeking in the context of cancer. Given the well-recognised impact of attachment style upon care seeking, Chapter 2, the empirical paper, aimed to explore whether colorectal cancer patients' attachment style is related to their attitudes towards seeking psychological help in the context of cancer

This paper begins by outlining the prevalence of psychological distress among individuals with CRC, and the discrepancy between the benefits of psychosocial interventions and the small number that utilise such interventions. It continues by reviewing the role of attachment style and attitudes towards seeking help as predictors of service use. Eighty-six colorectal cancer patients completed measures of attachment style, attitudes towards seeking psychological help and potential covariates (psychological distress, perceived social support and Quality of Life). Hierarchical multiple regression analyses were used to explore the relationship between variables. A discussion of the results follows, with considerations given to how the results of this study add to the current literature. Additionally the clinical and research implications of the study are considered with regards to how services identify those whose attitudes may prevent them from seeking support.

Chapter 2 is intended for publication and is written in the style of the identified journal for submission, *Psycho-Oncology*.

Chapter 1:

A Systematic Review of the Efficacy of Psychosocial Interventions received by Individuals with Colorectal Cancer

Abstract

High levels of psychological distress are prevalent among individuals with colorectal cancer, yet there have not been any systematic reviews on the effectiveness of psychosocial interventions for reducing psychological distress and improving quality of life among this tumour group. In order to establish the efficacy of psychosocial interventions upon individuals with colorectal cancer, a systematic review of randomised controlled trials was conducted to establish the efficacy of psychosocial interventions upon psychological distress and quality of life. Four databases, Medline, PsycINFO, Scopus and Web of Knowledge were searched for articles between December 2013 and December 2015. Eight studies were quality assessed and synthesised as part of the review. Synthesis of the results from these studies found evidence for the benefit of psychosocial interventions upon reducing psychological distress, yet little evidence for improvements in quality of life. Interventions containing components of relaxation were found to have a beneficial effect on reducing psychological distress, whereas educational interventions did not lead to any reductions in psychological distress or improvements in quality of life. However, a number of limitations with the validity of the included studies require the results of this review to be interpreted with caution.

Keywords: Systematic review, colorectal cancer, psychosocial interventions, psychological distress

Introduction

Psychological distress in response to cancer and its treatment is common (National Comprehensive Cancer Network; NCCN, 2012). Clinically significant psychological distress is understood to be distress at a level that would normally warrant diagnosis as a clinical ‘case’, particularly of anxiety or depression, and requires an appropriate intervention. The overall prevalence rate for clinically significant psychological distress among individuals with cancer is estimated at 35% among varied cancer diagnoses (Zabora et al, 2001). Among cancer survivors, elevated psychological distress is problematic as it can be detrimental to health related quality of life (Korstjens et al, 2006) and treatment adherence (Schroevvers et al, 2000; Zabora, 2001). Psychological distress has also been associated with an increased likelihood of poor health outcomes (Holland and Alici, 2010) and increased health-harming behaviours, such as smoking, alcohol use, fatigue and altered sleep (Zelter et al, 2009).

Previous estimates of the prevalence of clinically significant psychological distress among individuals with colorectal cancer (CRC) have ranged from 6 to 37% (Kurtz et al, 2001; Lynch et al, 2008; Nordin et al, 2001; Tsunoda et al, 2005; Zabora et al, 2001), although more recent research suggests this is between 32% and 44% (Dunn et al, 2013). Individuals with CRC experience unique, long-term challenges such as fatigue, sleep difficulties, physical discomfort and pain, gastrointestinal problems, urinary and sexual dysfunction and difficulties with physical activities (Denlinger and Barsevick, 2009; Glaser et al, 2015; Schneider et al, 2007). Bowel dysfunction is also commonly reported by individuals with CRC who five years after treatment commonly continue to experience chronic diarrhoea and difficulties with frequency, urgency and bowel evacuations (Denlinger and Barsevic, 2009; Guren et al, 2005).

Elevated rates of psychological distress have also been found among cancer patients with stomas compared to cancer patients without stomas (Cotrim and Pereira, 2008; Sprangers et al, 1995). Those with stomas frequently report reduced quality of life (QoL), severe anxiety, depression, impaired sexual function, disturbance in body image, low self-esteem and suicidal ideation (Cotrim and Pereira, 2008; Glaser et al, 2015; Martinez, 2005; Marventano et al, 2013; Mohler et al, 2008; Ross et al, 2007; Sprangers et al, 1995; Sun et al, 2013). Additionally, patients with stomas report difficulties with the management of their stoma due to bowel function, clothing restrictions and dietary factors (McMullen et al, 2008; Sun et al, 2013). These challenges are often long-term, with individuals with CRC continuing to experience difficulties five years after stoma formation (Sun et al, 2013). Consequently individuals with CRC are required to make physical and psychological adjustments post treatment (McMullen et al, 2008).

For many individuals with cancer, coping with psychological distress is achieved through drawing on their own psychological resources and seeking emotional support from their social network (National Institute for Health and Care Excellence; NICE, 2004). However, for some patients with distress, professional psychosocial interventions can be helpful. Common psychosocial interventions offered to individuals with cancer include cognitive behavioural interventions, psycho-educational interventions, relaxation training, supportive interventions, group interventions, and telephone-assisted interventions. These interventions typically aim to reduce psychological distress and improve QoL among individuals with cancer and provide support to individuals throughout their cancer trajectory (Raingruber, 2011).

Several reviews of the effectiveness of such interventions among mixed tumour groups have been conducted (Campbell and Campbell 2012; Carlson and Bultz, 2008; Galway et

al, 2012; Osborn et al, 2006; Raingruber, 2011; Sheldon et al, 2008). Less attention has been given to the effectiveness of psychosocial interventions among specific tumour groups, including colorectal cancer. Given the high estimated prevalence of clinically significant psychological distress among individuals with CRC along the cancer trajectory (Dunn et al, 2013) and the unique challenges individuals with CRC experience (Denlinger and Barsevick, 2009; Glaser et al, 2015; Sun et al, 2013), there is a need for interventions to be effective. The effectiveness of psychosocial interventions has clinical implications for reducing psychological distress and improving QoL among individuals with CRC (Hoon et al, 2013).

A narrative summary of the efficacy of 11 psychosocial interventions on outcomes in individuals with CRC concluded that various forms of psychosocial interventions had been used to improve outcomes among this group (Hoon et al, 2013). However, the review included studies with a range of methodologies, such as single group designs, non-randomised trials and randomised controlled trials, making it difficult to compare the efficacy of interventions. Furthermore, the authors did not address the validity of the included articles within their review despite describing the use of a quality measure.

Given the lack of research regarding the efficacy of psychosocial interventions for individuals with CRC, the objective of this paper was to conduct a systematic review to identify psychosocial interventions offered to individuals with CRC and to establish the efficacy of these interventions upon measures of psychological distress and QoL. This paper aimed to overcome limitations of the previous review (Hoon et al, 2013) by reducing the heterogeneity in the methodology of the included studies by only including randomised controlled trials, and by critiquing the validity of the included studies.

Method

Eligibility criteria

The eligibility criteria were English language research articles published in peer-reviewed journals that had used randomised controlled trials (RCT) to evaluate the efficacy of psychosocial interventions among individuals diagnosed with CRC in relation to psychological distress and QoL. The review only included randomised controlled trials as these are considered to be the ‘gold standard’ in terms of methodology for assessing the effectiveness of interventions (Abel and Koch, 1999; Akobeng, 2005; Evans, 2003). Thus, single case design studies or non-randomised trials were excluded. Due to the paucity of studies, the review was not limited to a specific outcome measure, such as anxiety. Instead all studies that included measures of psychological distress, such as anxiety, depression, symptom severity, symptom interference and self-efficacy were included. Studies that included measures of quality of life (QoL) were also included. QoL was defined as a multidimensional concept that measures an “individual's overall satisfaction with life and general sense of personal well-being” (Spilker et al, 1990 p4).

Similarly, a broad notion of what constituted psychosocial intervention was employed to maximise the chance of including all relevant papers. Psychosocial interventions were defined as systematic actions developed to reduce psychological distress and/or improve QoL by bringing about psychological change in individuals with CRC. In line with previous reviews (Hoon et al, 2013; Raingruber, 2011; Osborn et al, 2006; Sheldon et al, 2008), any form of psychosocial interventions delivered by healthcare professionals were included such as: behavioural therapy, cognitive behavioural therapy, communication skills training, counselling, education, supportive interventions, group interventions, stress

management training, family therapy, problem-solving therapy and telephone –assisted interventions (Hoon et al, 2013).

Studies that involved participants with other forms of cancer, and interventions for individuals with cancer and their caregivers were also excluded. Articles were not excluded based on their date of publication.

Search strategy

To identify relevant literature, electronic databases PsycINFO, Medline, Scopus and Web of Knowledge were used to search for articles in peer-reviewed journals. Electronic databases were searched between 1st December 2013 and 1st December 2015. In line with previous reviews of psychosocial interventions within cancer (Hoon et al, 2013; Osborne et al, 2006; Raingruber, 2011; Sheldon et al, 2008), the following search terms were used: (colorectal cancer OR colorectal neoplasm OR colorectal tumo*r OR rectal neoplasm* OR colonic neoplasm* OR sigmoid neoplasm OR *rectal *carcinoma OR bowel cancer) AND (psycho* OR cognitive OR therap* OR mindful* OR intervention OR support OR programme OR psycho*oncology OR group OR individual) AND (emotion* OR distress OR anxi* OR worr* OR concern OR depress* OR wellbeing) AND (patient* OR survivor).

The type of research design (randomised controlled trial) was not specified in the search terms in order to avoid missing relevant articles (Raingruber, 2011). Reference lists of papers included in this review, as well as review papers that were found, were searched for additional studies that met the eligibility criteria.

Study selection

Search results from all of the databases were collated and duplicate articles were removed. The reviewer used the eligibility criteria to screen article titles and discard any articles that did not meet criteria. The remaining full-text articles were read by the reviewer to ensure they met eligibility criteria for participants, interventions, comparisons, outcomes and study design (PRISMA, 2009). As the review focussed on the efficacy of interventions upon psychological distress and QoL, only data relating to measures of psychological distress and QoL were synthesised in this review.

Quality measure

All studies included in the review were quality assessed using the Consolidated Standards of Reporting Trials Extension for Nonpharmacologic Treatment Interventions (CONSORT+NPT; Boutron et al, 2008). This quality tool was appropriate as the studies included in the review all adopted a RCT methodology, yet all studies described psychosocial rather than pharmacological interventions. This quality tool overcomes the limitations of using the standard Consolidated Standards of Reporting Trials (CONSORT) statement (Moher et al, 2010) alone, or other quality assessment tools for reviewing RCTs as it addresses specific issues that apply within non-pharmacological treatments, such as rehabilitation, psychotherapy and behavioural interventions.

The CONSORT+NPT consists of a 22-item checklist and an elaboration and explanation document (Boutron et al, 2008) that aims to help reviewers assess the quality of reporting of nonpharmacological interventions to enable critical appraisals of the validity and applicability of the results (Nagendran et al, 2013). Items on the checklist are rated to be present or not present indicated by a yes or no response. However, in practice

the tool was found to lack sensitivity in scoring, as the included papers often adhered partially to the listed items, but did not fulfil the full criteria. Furthermore, not all items were applicable to each study. As a way of increasing the sensitivity of the measure, the scores were quantified by the reviewer. The reviewer scored each item by allocating a 1 for items being 'present', 0.5 for items being 'partially present' or 0 for items that were 'not present'. To make scores comparable across studies, each study was given a score out of the total number of items that applied, and percentages were calculated based on total scores and number of items. Overall quality scores allocated for each study are provided in Table 1.1.

However, quality assessment tools should not be used in isolation, and reviewers should be alert to other sources of bias that might not be detected by quality assessment tools (Higgins and Altman, 2008). Therefore, use of the CONSORT+NPT was used to consider strengths and limitations of the included studies, and not as a basis for exclusion from the review.

Results

The search criteria yielded a total of 4437 articles. Five additional articles were identified from reading the reference list of a key review paper (Hoon et al, 2013). After duplicates were removed, 3432 articles remained. Using the eligibility criteria, these titles and abstracts were screened for eligibility which led to the removal of a further 3411 articles. Twenty-one full-text articles were read and assessed for eligibility leading to a further 13 articles being excluded: 12 were removed as they were not RCTs and one article was removed due to the analysis not focussing on the effect of the intervention on psychological distress (Ross et al, 2009). Eight articles met the inclusion criteria and were

included in this review (Carmack et al, 2011; Chaudhri et al, 2005; Cheung et al, 2003; Harrison et al, 2011; Hawkes et al, 2014; Ross et al, 2005; White et al, 2012; Zhang et al, 2014), four of which (Carmack et al, 2011, Chaudhri et al, 2005, Cheung et al, 2003, Ross et al, 2005) were included within a narrative summary by Hoon et al. (2013). It was observed that Hoon et al. (2013) state they included a paper by Ross et al. 2009, yet they report the results from an earlier paper which focused on psychological distress outcomes (Ross et al, 2005). The process of article selection is illustrated in Figure 1.1.

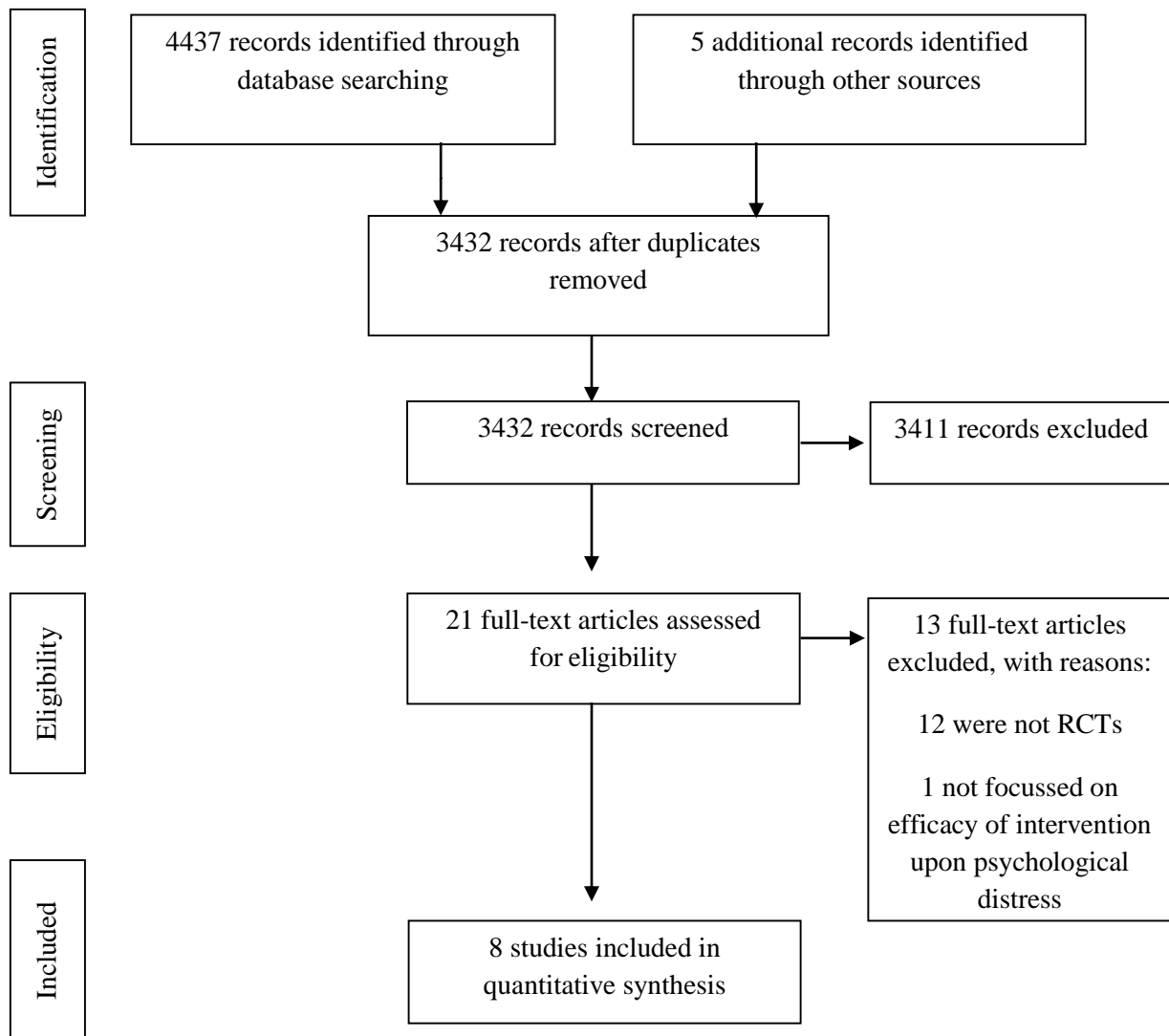


Figure 1.1. Flowchart of article selection

Study characteristics

Data was extracted from studies regarding participants, settings, study design, details of intervention, outcome measures in relation to psychological distress and QoL and the results of intervention on psychological distress and QoL. An overview of studies can be found in Table 1.1.

All eight studies used RCTs to investigate the efficacy of psychosocial interventions for CRC patients in reducing psychological distress and/or improving QoL. Studies were conducted in Australia (Harrison et al, 2011; Hawkes et al, 2014; White et al, 2012), China (Zhang et al, 2014), Denmark (Ross et al, 2005), Hong Kong (Cheung et al, 2003), United Kingdom (Chaudhri et al, 2005) and United States (Carmack et al, 2011).

The studies only included individuals with CRC, however there was a variation in the inclusion criteria between studies. Three studies included CRC patients post surgery (Carmack et al, 2011; Harrison et al, 2011; Ross et al, 2005), one study included CRC patients requiring stoma surgery (Chaudhri et al, 2005), one study included CRC patients post stoma surgery (Cheung et al, 2003), one study included CRC patients with a diagnosis of less than 3 months (stages I-IIIb; White et al, 2012), one study included patients with a diagnosis of less than 6 months (Zhang et al, 2014) and one study included patients with a diagnosis of less than 12 months (Hawkes et al, 2014). Participants were mainly recruited from cancer centres and clinics (Carmack et al, 2011; White et al, 2012) or hospitals (Chaudhri et al, 2005; Cheung et al, 2003; Harrison et al, 2011; Zhang et al, 2014). Two studies recruited from a Cancer Registry; a population-based registry that has a record of demographic and tumour details of residents in a specific area (Hawkes et al, 2014; White et al, 2012). The total number of participants in the studies varied from 39 to 647.

Table 1.1. *Summary of study characteristics*

Authors	Method of randomisation	Participants and settings	Design and intervention	Outcome measures ^a	Results	Quality score
Carmack et al. (2011)	Randomisation by using minimization	Patients post treatment (stage I-III) Total (<i>n</i> =39) Intervention (<i>n</i> =24) Control (<i>n</i> =15) Setting: Texas	“Healthy Expressions” expressive disclosure intervention consisting of 12 one-hour session of formal support group involving disclosure through written expression and facilitated discussion Control: Standard care Measures at baseline, 2 and 4 months Delivered by Master level therapists	<u>Primary</u> 1) Brief Symptom Inventory (BSI) ^b 2) Centres for Epidemiological Studies Depression scale (CES-D) 3) European Organisation for Research and Treatment of Cancer (EORTC) Quality of life questionnaire (Global and emotional functioning subscales only)	Sig improved scores on the BSI-Global Severity Index and CES at month 2 and 4 (<i>p</i> < .05) and sig improved scores on the BSI-Positive Symptoms Total (<i>p</i> = .038) at month 4 in intervention group compared to controls. Non-sig difference on EORTC-Global at month 2 or 4 between groups (<i>p</i> > .05). Non- sig difference on the EORTC-Emotional functioning subscale between groups at month 2 (<i>p</i> > .05), sig improved scores in the intervention group compared to controls at month 4 (<i>p</i> = .028).	17/25 (68%)
Chaudhri et al. (2005)	Randomised sealed envelopes	Patients undergoing resections requiring formation of a stoma Total (<i>n</i> =42) Intervention (<i>n</i> =21) Control (<i>n</i> =21) Setting: United Kingdom	Preoperative intensive community-based stoma education intervention in addition to standard care consisting of two 45-min pre-operative home visits to demonstrate stoma care Control: standard pre-and post-operative care. Measures at baseline and 6 weeks Delivered by Colorectal Nurse Specialists	<u>Secondary</u> 1) Hospital Anxiety and Depression Scale (HADS)	No major differences between the 2 groups for anxiety or depression on the HADS (alpha value not reported).	17.5/25 (70%)
Cheung et al. (2003)	Randomised sealed envelopes	Patients who had undergone stoma surgery Total (<i>n</i> =59) Intervention (<i>n</i> =29)	Progressive Muscle Relaxation Training (PMRT) intervention consisting of briefing and training session pre-intervention and provision of PMRT resources. Upon discharge patients were asked to	<u>Primary</u> 1) State trait anxiety inventory (STAI; Chinese version). 2) Quality of life index for colostomy (QOL-	Sig lower state-anxiety in the intervention group compared to controls over the 10 weeks (<i>p</i> < .01). Sig improved WHO-QOL and WHO-QOL domains (physical health,	22/26 (85%)

		Control (<i>n</i> =30) Setting: Hong Kong	practice 20 minutes of PMRT 2-3 times weekly for 10 weeks. Patients received 2 weekly telephone calls to monitor progress. Control: Standard care Measures at baseline, 5 and 10 weeks post surgery Delivered by a therapist	3) World Health Organization Quality of Life Measure-Abbreviated (WHO-QOL; Hong Kong Chinese version)	psychological, social relationship, environmental, general QoL) in the intervention group compared to controls over the 10 weeks (<i>p</i> < .001). Non-sig difference on the QOL-Colostomy between the intervention group and controls over time (<i>p</i> = .01) ^c	
Harrison et al. (2011)	Randomisation by computer generated randomization schedule	Patients post surgery (any stage) Total (<i>n</i> =75) Intervention (<i>n</i> =39) Control (<i>n</i> = 36) Setting: Australia	“CONNECT” supportive telephone intervention consisting of 5 calls in the 6 months after hospital discharge. Calls addressed physical, psychosocial, information, supportive care, and rehabilitation needs. Control: Standard care Measures at baseline, 1,3, 6 months post discharge Delivered by a Colorectal cancer nurse	<u>Secondary</u> 1) Functional Assessment of Cancer Therapy–Colorectal (FACT-C)	Non-sig difference for QoL between groups at any time point (<i>p</i> > .05).	22/24 (92%)
Hawkes et al. (2014)	Randomisation method not stated	Patients on Queensland cancer registry within 12 months of diagnosis Total (<i>n</i> =410) Intervention (<i>n</i> =205) Control (<i>n</i> =205)	“CanChange” acceptance and commitment therapy (ACT)-based telephone intervention consisting of 11 health coaching calls over 6 months. Calls addressed the cancer experience, CRC symptoms, and ACT processes and strategies relating to lifestyle behaviours (e.g. problem solving, goal setting and monitoring of health behaviours). Patients also received an educational handbook, motivational postcards, a pedometer and a study newsletter. Control: Standard care Measures at baseline, 6, and 12	<u>Primary</u> 1) Brief Symptom Inventory (BSI) 2) Functional Assessment of Cancer Therapy–Colorectal (FACT-C)	Non-sig difference for distress between groups at 6 or 12 months (<i>p</i> > .05). Sig improvement on cancer-specific quality of life subscale, physical wellbeing in intervention group compared to control group at 6 and 12 months. Non-sig difference between groups on other QoL subscales (overall QOL, social, emotional, functional, or additional	19.5/25 (78%)

		Setting: Australia	months. Delivered by health coaches with qualifications in nursing, psychology or health promotion.		wellbeing, and trial outcome),	
Ross et al. (2005)	Randomisation by computer generated table of random numbers	Patients undergoing abdominal surgery Total ($n=249$) Intervention ($n=125$) Control ($n=124$) Setting: Eastern Denmark	"INCA PROJECT" psychosocial intervention consisting of 10 home visits after discharge providing emotional support and information, with support via telephone when necessary. Control: standard care Measures at baseline, 3, 6, 12 and 24 months Delivered by a nurse or medical doctor	<u>Primary</u> 1) HADS 2) EORTC quality of life core questionnaire QLQ-C30 3) EORTC colorectal cancer module QLQCR38.	Non-sig difference for anxiety or depression between the intervention and controls at any time during the 2-year follow-up. No overall effect of intervention on EORTC QLQ-C30 or EORTC QLQ-CR38. Sig improved fatigue scores in intervention group at month 3, compared to controls ($p= .048$), however non-sig effect was found at the 2-year of follow-up.	19/26 (73%)
White et al. (2012)	Randomised within four age groups (18-49, 50-59, 60-69, 70-80)	Patients (stages I-IIIb) on the Victorian cancer registry that were within 3 months of diagnosis Total ($n=647$) Intervention ($n=306$) Control ($n=341$) Setting: Australia	Tailored telephone intervention consisting of patients being provided with written feedback on unmet needs and HADS results followed by an initial telephone contact offering emotional, informational and instrumental support, the development of a needs plan, a two week follow-up telephone call with additional calls as required. Patients also received written needs plan and primary care doctor involvement. Control: standard care Measures at baseline, 3, 6 and 9 months Delivered by trained volunteers	<u>Primary</u> 1) HADS	Sig reduced anxiety over time in the intervention group compared to the controls ($p < .01$). Non-sig difference in prevalence of elevated depression over time for either group ($p= .71$).	19/25 (76%)
Zhang et al. (2014)	Randomisation by computer	Patients with diagnosis <6 months	Self-efficacy-enhancing intervention consisting of 1 hour face-to-face	<u>Primary</u> 1) M.D. Anderson Symptom	Sig reduced anxiety ($p= .006$), depression ($p= .003$), symptom	21.5/26 (83%)

generated random numbers	Total (n=121) Intervention (n=68) control (n=53) Setting: Southern China	education session, a self-efficacy educational handbook, 30 minute audiotope with relaxation techniques, 4 monthly health coaching telephone follow up sessions Control: Standard care. Measures at baseline, 3 and 6 months Delivered by Senior oncology nurses with >10 years experience in cancer nursing	inventory (MDASI; Chinese version) 2) HADS (Chinese version), 3) Stanford Inventory of Cancer Patient Adjustment (SICPA), 4) Functional Assessment of Cancer Treatment-G (FACT-G)	severity (p= .01) and symptom interference (p= .025) in intervention group compared to controls over the six months. Sig improved self efficacy (total score; (p= .003) and sig improved scores on five out of six subscales on the self-efficacy measure (p< .05) in the intervention group compared to controls. A non-sig interaction between time and group assignment was found for one self-efficacy subscale, self-satisfaction (p= .311). Non-sig main effect for QoL in intervention group compared to controls.
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^a Outcome measures related to psychological distress and QoL only

^b screening measure ^c discrepancy in written results and statistics provided in paper

Psychosocial Interventions

Four studies described supportive interventions (Carmack et al, 2011; Harrison et al, 2011; Ross et al, 2005; White et al, 2012). Two of these interventions were supportive telephone-based interventions (Harrison et al, 2011; White et al, 2012). One provided five calls in the six months after hospital discharge and addressed physical, psychosocial, informational, supportive care and rehabilitation needs (Harrison et al, 2011). The other intervention was more tailored to the patient, providing patients with written feedback on the results of the baseline measures they completed (Hospital Anxiety and Depression Scale; HADS), along with a minimum of two telephone contacts offering emotional, informal and instrumental support, and developing a needs plan with the patient which was subsequently sent to the patient (White et al, 2012). The third supportive intervention was delivered through ten home visits that provided emotional support and information, with support via telephone when necessary (Ross et al, 2005). The fourth supportive intervention was a supportive group therapy intervention based on a social cognitive processing model that ran over 12 one-hour sessions and focussed on expressive disclosure through written expression and verbal discussion (Carmack et al, 2011).

The remaining four interventions consisted of relaxation and/or educational components. One intervention consisted of progressive muscle relaxation training (PMRT), including PMRT resources, ten weeks of individual PMRT practice and two to three times weekly telephone calls to monitor patients' progress (Cheung et al, 2003). One intervention was a self-efficacy enhancing intervention based on self-efficacy theory (Bandura, 1977; 1986) that involved an educational session on self-efficacy, self-efficacy resources, relaxation techniques and four monthly health coaching telephone follow-up

calls (Zhang et al, 2014). One intervention was a six month telephone intervention based on acceptance and commitment therapy (ACT; (Hawkes et al, 2014). This intervention consisted of 11 health coaching telephone calls which addressed individuals' CRC experience and symptoms, and focussed on ACT strategies such as mindfulness, values, and 'defusion' to improve health behaviours consistent with the individual's goals. Individuals also received an educational handbook containing information about health behaviours, ACT strategies and worksheets for self-monitoring health behaviours, along with motivational postcards, a pedometer and a quarterly study newsletter (Hawkes et al, 2014). The final study was an educational intervention delivered pre-operatively in two home visits that focussed on developing stoma care proficiency (Chaudhri et al, 2005).

Two interventions were delivered by therapists (Carmack et al, 2011; Cheung et al, 2003), three by specialist colorectal or oncology nurses (Chaudhri et al, 2005; Harrison et al, 2011; Zhang et al, 2014), one by a nurse and medical doctor (Ross et al, 2005), one by health coaches (Hawkes et al, 2014) and one by trained volunteers (White et al, 2012).

Seven studies aimed to investigate the effectiveness or feasibility of psychosocial interventions for CRC patients. More specifically, four studies aimed to reduce psychological distress and improve QoL (Carmack et al, 2011; Cheung et al, 2003; Hawker et al, 2014; Ross et al, 2005; Zhang et al, 2014), one study aimed to reduce psychological distress (White et al, 2012) and one specifically aimed to improve QoL (Harrison et al, 2011). The eighth study (Chaudhri et al, 2005) reported that their primary aim was to compare preoperative intensive, community-based stoma education with conventional postoperative stoma education; however, psychological distress was a secondary outcome measure.

Main outcome measures

Outcome measures were divided into measures of psychological distress, such as measures of anxiety, depression, symptom severity, symptom interference and self-efficacy; and measures of QoL, such as global QoL measures and specific CRC measures.

Psychological distress

Among the seven studies measuring psychological distress, anxiety and depression was measured by the HADS in four studies (Chaudhri et al, 2005; Ross et al, 2005; White et al, 2012; Zhang et al, 2014). Anxiety was measured by the State-Trait Anxiety Inventory (STAI) in one study (Cheung et al, 2003) and depression was measured by the Centres for Epidemiological Studies Depression scale (CES-D) in another study (Carmack et al, 2011). Symptom severity was measured by the Brief Symptom Inventory (BSI) in two studies (Carmack et al, 2011; Hawkes et al, 2014) and symptom severity and interference was measured by the M.D. Anderson Symptom Inventory (MDASI) in one study (Zhang et al, 2014). Self-efficacy was measured using the Stanford Inventory of Cancer Patient Adjustment (SICPA) in one study (Zhang et al, 2014).

Quality of life

Quality of life was measured in six of the studies. Global cancer measures for QoL were used by three studies (Carmack et al, 2011; Ross et al, 2005; Zhang et al, 2014). Versions of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) were used by Carmack et al. (2011) and Ross et al. (2005). However, Carmack et al. (2011) limited their analysis to just two of the

EORTC scales; the global scale and emotional functioning scale due to their small sample size. The Functional Assessment of Cancer Treatment-G (FACT-G, Version 4) was used by Zhang et al. (2014).

Two studies used a CRC specific QoL measure, the Functional Assessment of Cancer Therapy–Colorectal (FACT-C; Harrison et al, 2011; Hawkes et al, 2014). Another study (Ross et al, 2005) used a CRC specific QoL measure, the EORTC Quality of Life Questionnaire (QLQ-CR38), in addition to a global cancer QoL measure mentioned above. One study (Cheung et al, 2003) used a specific colostomy QoL measure, the Quality of Life index for Colostomy, in addition to a culture specific QoL measure, the Hong Kong Chinese version of the World Health Organisation Quality of Life Measure-Abbreviated Version (WHO-QOL).

Quality Assessment

According to the CONSORT+NPT the included studies were all of a good standard and scored similarly across the items (range 68%-92%; see Table 1.1 for scores). All studies provided a scientific background and explanation of the rationale for their study, and provided detailed accounts of their sample and the intervention being tested.

The CONSORT+NPT nevertheless highlighted some limitations of the included studies that influence the validity and applicability of the results (Nagendran, et al, 2013). The largest limitation was that only one out of the eight studies reviewed reported effect sizes in the results (Carmack et al, 2011). Yet, Carmack et al. (2011) poorly describe the effect sizes, which precluded a full understanding of the size of the effects found. Given that the studies have all used different scales, the lack of effect size

reported means no direct comparisons can be made across studies (Sullivan and Feinn, 2012). Seven studies reported alpha values for each result, however given that an alpha value alone does not reveal the size of the effect, the results cannot be fully understood (Sullivan and Feinn, 2012). Furthermore, one study did not report an alpha value for the results of their intervention upon their secondary outcome measure, the HADS (Chaudhri et al, 2005).

Another limitation common to all studies as highlighted by the CONSORT+NPT was the lack of detail reported regarding whether participants, care providers and/or researchers were blinded. Failure to use blinding has implications for the level of bias in the studies. For instance, if participants are not blinded, the knowledge of their group assignment may affect their responses upon outcome measures and affect compliance (Schulz and Grimes, 2002). For care providers or investigators that are not blinded, there is risk of information bias, in which researchers may provide more generous responses to their favoured intervention (Schulz and Grimes, 2002). These limitations need to be considered when considering the interpretation of the results.

An additional limitation was that whilst all studies defined primary outcome measures, five studies had multiple primary outcome measures and did not specify the outcome that was of greatest importance to the study (Carmack et al, 2011; Cheung et al, 2003; Hawkes et al, 2014; Ross et al, 2005; Zhang et al, 2014). This has implications for the interpretation of the results of these studies due to multiple analyses of the same data increasing the probability of type I errors (Moher et al, 2010; Tukey, 1977).

A further limitation was found with one of the papers (Cheung et al, 2003) in the form of discrepancies identified by the reviewer in the results section with regards to the

QoL outcome measures. These discrepancies made the results inconclusive and subsequently the reviewer excluded the results of the QoL measures from the synthesis of results.

Synthesis of study outcomes

Psychological distress

Three out of seven studies reported significant reductions in psychological distress in the intervention group compared to the control group (Carmack et al, 2011; Cheung et al, 2003; Zhang et al, 2014), one study showed mixed results (White et al, 2012) and three showed no improvements (Chaudhri et al, 2005; Hawkes et al, 2014; Ross et al, 2005).

Carmack et al. (2011) found the Expressive-Disclosure Group intervention group to have significantly reduced scores on symptom severity ($d = -2.11$, $p = .053$) and depression ($d = -1.82$, $p = .047$) at month 2 which were maintained at month 4 (symptom severity; $d = -2.40$, $p = .011$; depression; $d = -2.25$, $p = .017$). A significant reduction in symptom interference was also found in the intervention group compared to the control group at month 4 ($d = -1.89$, $p = .038$). Similarly, Zhang et al. (2014) found the self-efficacy enhancing intervention group to have significantly reduced anxiety ($F = 6.04$, $p = .006$), depression ($F = 6.96$, $p = .003$), symptom severity ($F = 5.30$, $p = .01$) and symptom interference ($F = 4.06$, $p = .025$) over a 6-month period compared to the control group. Significant improvements were also found in the intervention group over time compared to the control group for total score self-efficacy ($F = 7.26$, $p = .003$) and five out of six subscales on the self-efficacy measure; coping ($p = .031$), communication ($p = .003$), activity management ($p = .005$), personal management ($p = .008$) and affective

management ($p = .025$). A non-significant interaction between time and group assignment was found for one self-efficacy subscale, self-satisfaction ($p = .311$). Cheung et al. (2003) also found a PMRT intervention to lower state anxiety over time in the intervention group compared to the control group ($F(1,57) = 8.99, p < .01$). However, a significant time effect was observed, with state-anxiety reducing over time for participants in the control group as well as the intervention group ($F(2, 56) = 210.24, p < .001$).

One study (White et al, 2012) found a tailored telephone intervention to have mixed results on psychological distress. The intervention led to a significant reduction in anxiety over time in the intervention group compared to the control group ($\chi^2(3) = 13.5, p < .01$). However, a non-significant difference was found for the prevalence of elevated depression, with no change over the 9-month study period for either group.

Three studies (Chaudhri et al, 2005; Hawkes et al, 2014; Ross et al, 2005) did not find any significant effect of their intervention on psychological distress. Ross et al. (2005) found no significant differences between the intervention and control group regarding anxiety or depression at any time during the 2-year follow up. Hawkes et al. (2014) found significant improvements in distress at 6 and 12 months in both the intervention and control group, yet there was not a significant difference between groups. Chaudhri et al. (2005) also reported no 'major differences' between the intervention group and control group for anxiety or depression at the 6 week follow up, however they did not report whether the difference between the intervention and control group was statistically different.

Quality of life

Two out of six studies that measured QoL reported mixed results (Carmack et al, 2011; Hawkes et al, 2014) and three studies did not find any beneficial impact on QoL (Harrison et al, 2011; Ross et al, 2005; Zhang et al, 2014). The sixth study that measured QoL (Cheung et al, 2003) was not included in the synthesis of outcomes for QoL due to the discrepancies in their reported findings (see the quality assessment section above).

Carmack et al. (2011) reported non-significant differences between groups in global QoL at both time points as well as a non-significant difference between groups on emotional functioning QoL subscale at month 2. Yet, they reported significantly improved emotional functioning in the intervention group compared to the control group at month 4 ($d= 1.96$, $p= .028$). Similarly, Hawkes et al. (2014) overall reported non-significant differences between groups in global QoL, and QoL subscales (social, emotional, functional, or additional wellbeing, and trial outcome) at both 6 and 12 month follow up. The only exception was that the intervention group reported significantly improved scores on the QoL subscale, physical wellbeing compared to the control group at both 6 and 12 months.

Three studies did not report any beneficial impact of intervention on QoL, on individual domains on global measures of QoL (Harrison et al, 2011; Ross et al, 2005), or on CRC specific QoL measures (Ross et al, 2005; Zhang et al, 2014). The only exception was Ross et al. (2005), who reported a significant improvement upon symptoms of fatigue in the intervention group compared to the control group at the 3-month follow up ($p= .048$), but no significant effect was found at the 2-year follow-up.

Discussion

This review aimed to identify psychosocial interventions offered to individuals with colorectal cancer and to establish the efficacy of these interventions in reducing psychological distress and improving quality of life. The review revealed that overall the psychosocial interventions had a beneficial effect upon psychological distress, with half of the studies that measured psychological distress demonstrating improvements in anxiety (Cheung et al, 2003; White et al, 2012; Zhang et al, 2014), depression (Carmack et al, 2011; Zhang et al, 2014), symptom severity (Carmack et al, 2011; Zhang et al, 2014), symptom interference (Carmack et al, 2011; Zhang et al, 2014) or self-efficacy (Zhang et al, 2014). Yet there was less evidence that these interventions led to improvements in QoL. Only two studies out of five reported some benefit of intervention for QoL (Carmack et al, 2011; Hawkes et al, 2014). However these benefits were for specific subscales of QoL and not a global measure of QoL. Three studies did not find any beneficial impact on QoL (Harrison et al, 2011; Ross et al, 2005; Zhang et al, 2014).

The heterogeneity of the interventions within these studies as well as the small number of studies included in this review means we can only draw limited conclusions about efficacy. Nevertheless, this review can indicate directions for future research. The review indicates that interventions containing relaxation techniques are beneficial for reducing psychological distress among individuals with CRC. Two interventions that included relaxation as either the main focus of the intervention (Cheung et al, 2003) or as a sub-component of the intervention (Zhang et al, 2014) both reduced psychological distress. However, it is noteworthy that the intervention by Zhang et al. (2014) was underpinned by theory (Bandura, 1977; 1986) and also contained the most components

compared to the other interventions reviewed, such as a face-to-face education session, self-efficacy resources, an audiotape of relaxation techniques, and health coaching telephone calls. Given the benefits of basing interventions upon theory (Green, 2000; National Cancer Institute, 2005), it is difficult to establish whether the efficacy of this intervention was a result of it being underpinned by theory, a result of the sum of all the components, or the result of an individual component.

By contrast, the review suggests that supportive interventions delivered through home visits or telephone support are largely not helpful to individuals with CRC in reducing psychological distress, as both Ross et al. (2005) and Harrison et al. (2011) found no beneficial findings upon anxiety, depression or QoL. However, another supportive telephone intervention included in the review did find some beneficial outcome for anxiety, although not depression (White et al, 2012). This intervention was more structured and tailored to the individual than the other two interventions and provided tailored written feedback and an action plan in response to their needs. Notably, a structured supportive group intervention aimed at promoting disclosure through written and verbal discussion also improved symptom severity and depression (Carmack et al, 2011). Therefore, there is some support for tailored and structured support interventions resulting in reduced levels of psychological distress in individuals with CRC.

One study, Chaudhri et al. (2005) found an educational intervention that provided preoperative stoma education to individuals had no impact upon psychological distress (Chaudhri et al, 2005). However, no other purely educational interventions were included in this review therefore the generalisability of this finding is limited.

The effectiveness of psychosocial interventions in reducing anxiety, depression and symptom severity and interference is consistent with the positive results in previous reviews of the efficacy of psychosocial interventions for individuals with a range of cancer diagnoses (Carlson and Bultz, 2008; Osborne et al, 2006; Raingruber, 2011). Furthermore, other reviews of psychosocial interventions for cancer patients also support the finding that relaxation techniques have beneficial results upon psychological distress (Carlson and Bultz, 2008) whereas patient education does not lead to improved outcomes (Osborne et al, 2006). However, other reviews have reported inconclusive results (Galway et al, 2012), and also highlight poor quality of papers (Raingruber, 2011).

Based on the paucity of RCTs that specifically look at the impact of psychosocial interventions for individuals with CRC, it seems that specific CRC interventions are still in their infancy. For instance, unlike other reviews of psychosocial interventions for mixed tumour groups (Campbell and Campbell, 2012; Carlson and Bultz, 2008; Galway et al, 2012; Osborn et al, 2006), this review found no RCTs testing the efficacy of interventions using cognitive behavioural therapy with a purely CRC sample. Yet, the high levels of distress among individuals with CRC (Dunn et al, 2013), and the unique needs of individuals with CRC, with and without stomas (Cotrim and Pereira, 2008; Denlinger and Barsevick, 2009; Glaser et al, 2015; Guren et al, 2005; Martinez, 2005; Marventano et al, 2013; McMullen et al, 2008; Mohler et al, 2008; Ross et al, 2007; Schneider et al, 2007; Sprangers et al, 1995), provide a rationale for tailoring interventions to the specific needs of individuals with CRC (Sun et al, 2013).

The quality of the studies included in this review was of a good standard; however, a number of limitations of the studies need to be considered when drawing conclusions about the efficacy of the reported interventions. For example, the lack of effect sizes reported by seven out of the eight included papers; and the lack of sufficient detail included by Carmack et al. (2011) regarding their reported effect sizes, means it is not possible to compare the size of the effects found when significant improvements in the intervention group have been reported. Furthermore, the validity of the included studies is compromised by most papers not specifying a primary outcome measure, increasing the risk of the researchers reporting a type I error and also insufficiently addressing the risk of bias by providing insufficient detail about whether participants, care providers and/or researchers were blinded to the intervention. Thus, one cannot be sure that it was the intervention that led to positive changes, rather than participant or investigator factors, and if significant results were reported, whether these results are free from type I or type II errors. As always, researchers should be cautious when interpreting claims about the efficacy of interventions and be aware of limitations of these studies and the potential sources of bias.

Limitations

There are two main limitations of the review. First, the small number of studies included in the review and the heterogeneity of studies, including differences in interventions, as well as the variety of cultures in which interventions were conducted, affects how much the results of the review can be generalised to other cultures and settings. Furthermore, there are not enough studies within the same culture to generalise the findings of the interventions within cultures. However, this systematic review aimed

to overcome limitations of a previous narrative review of psychosocial interventions in individuals with CRC (Hoon et al, 2013) by reducing the heterogeneity of the methodology of the included studies and only including RCTs.

Second, whilst a quality assessment of studies was completed by the reviewer, studies were not assessed by a second reviewer. The introduction of a second reviewer would improve the reliability of quality ratings and reduce subjectivity of ratings. Nevertheless, the researcher strictly followed the elaboration and explanation document to guide the quality assessment (Boutron et al, 2008), and furthermore quantified the scoring system to improve the sensitivity of the measure, to allow distinctions to be made on quality items where studies had only partially adhered to the item.

Clinical implications

Based on the results of this review it is difficult to establish clear clinical implications as research into interventions for individuals with CRC is still in its infancy and the findings are somewhat inconsistent. From the evidence available, there is some support for the efficacy of interventions containing a relaxation component for individuals with CRC. In line with the four-level model of professional psychological assessment and support (NICE, 2004), there are subsequent implications for healthcare professionals working at levels 2 to 4. These healthcare professionals have varying roles in screening and assessing for psychological distress, and providing psychological support to individuals with CRC to ensure individuals are seen within a timely manner and receive the most appropriate level of support for their needs. For psychological specialists working at level 4, the implications are twofold. First within their own clinical work, psychological specialists need to be aware of the efficacy of incorporating relaxation

components into the current interventions provided to individuals with CRC. Second, there are implications for psychological specialists who support healthcare professionals working at level 2 by disseminating this knowledge and psychological techniques through training and clinical supervision.

Conclusion

This review found evidence to support the beneficial effect of psychosocial interventions on psychological distress in individuals with CRC. In contrast, there was little evidence to suggest these interventions led to improvements in QoL. Psychosocial interventions that contained a relaxation component seemed to be the most beneficial for individuals with CRC, whereas interventions that consisted solely of educational components were not found to be beneficial. Given the psychological distress levels experienced by individuals with CRC and the unique challenges they face, the continued development of specific CRC interventions is necessary.

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Chapter 2:

Understanding Attitudes towards Seeking Psychological Help in the Context of Cancer

Abstract

Attitude towards seeking help, as well as attachment style are both factors that influence whether cancer patients access psychological support services. Yet no study to date has considered the influence of attachment upon attitudes towards psychological help seeking. This study examined whether colorectal cancer patients' attachment style is related to their attitudes towards seeking psychological help in the context of cancer. Eighty-six colorectal cancer patients completed measures of attachment style, attitudes towards seeking psychological help and potential covariates (psychological distress, perceived social support and Quality of Life), as well as demographic and clinical information. Counter to prediction, hierarchical multiple regression analyses revealed that attachment style was unrelated to attitudes towards psychological help seeking. Instead age was the only significant predictor of attitudes towards seeking psychological help in the context of cancer, with younger age (those aged 69 years and below in this sample) being associated with more positive attitudes towards seeking psychological help. The results have implications for how services identify those whose attitudes may prevent them from seeking support. Developing a better understanding of why older generations may have less positive attitudes towards help seeking is likely to be an important next step.

Keywords: Attitudes towards psychological help-seeking, attachment, colorectal cancer

Background

Colorectal cancer (CRC; also known as bowel cancer) is the development of cancer in parts of the large intestine; the colon or rectum. Current estimates indicate 240,000 people in the UK are living with or beyond a diagnosis of CRC [1-2]. CRC incidence is strongly related to age, with age-specific incidence rates increasing sharply from around age 50 [2]. The NHS Bowel Cancer Screening Programme in England, which began in 2006, offers screening every 2 years to all men and women aged 60 to 74 [3]. Earlier identification along with advances in medicine, technology and treatment has led to a reduction in mortality from CRC [4-5]. Yet undergoing surgical and medical treatments, such as chemotherapy can have unintended negative consequences upon survivors' wellbeing [6].

Clinically significant psychological distress is understood to be distress at a level that would normally warrant diagnosis as a clinical 'case', particularly of anxiety or depression, that requires an appropriate intervention. Psychological distress following a diagnosis of cancer is common, with most patients experiencing some level of distress in response to the disease and its treatment at some point in the trajectory [5-7]. Estimates of the prevalence of clinically significant psychological distress range from 32% to 44% among individuals with CRC [8]. Elevated levels of psychological distress among cancer survivors are problematic as they can impair treatment adherence and health outcomes [7, 9-11]. Along with fears about the cancer spreading and uncertainty about the future [4, 12-14], individuals with CRC can also experience embarrassment, distress and anxiety in relation to body function, continence and odour [4, 15]. Those who require a colostomy are also more likely to experience social isolation, body image issues, intimacy problems, and marital strain [4, 12, 16-18]. The nature of these symptoms and the effects of treatment are also known to negatively affect CRC

patients' physical, functional, social and emotional well-being, commonly referred to as quality of life [QoL; 4, 13, 19-21].

Psychosocial interventions have been developed to support individuals throughout their cancer trajectory and aim to reduce psychological distress and improve QoL among individuals with cancer [22]. Indeed, both individual and group based psychosocial interventions delivered to CRC patients have been effective in reducing anxiety [23-25], depression, symptom severity, symptom interference [25-26] and improving self-efficacy [25]. Yet distress within cancer patients does not automatically indicate a desire or need for psychological intervention. Research studies suggest that between 38- 51% of cancer patients who have been identified as suffering significant distress had not sought help from, nor intended to use, support services in the future [27- 31]. Given the benefits of psychosocial interventions and the small number that utilise services, it is important to identify factors that influence psychological service utilisation following a cancer diagnosis.

Attitude towards seeking help is one factor that influences whether cancer patients access support services [32-36]. Negative attitudes towards seeking psychological help, such as perceiving help-seeking to be stigmatising, or lacking confidence in support agencies, are identified barriers to the utilisation of psychological service among mixed tumour groups [32-33]. Positive attitudes however have been identified as a predictor of increased psychological service utilisation [34-36]. For example, in a study of 439 cancer patients, those who had utilised psychological support services were more likely to have positive attitudes to help seeking [36]. Furthermore, for patients in this sample who had not utilised support services, having a positive attitude to help seeking was a significant predictor of the utilisation of these services six months later [34]. Recognising the influence of attitudes towards psychological help seeking is an important step to understanding cancer patients' use of psychological

services. Yet to date, research has not applied psychological theory to understanding attitudes to help seeking in the context of cancer.

Given the well-recognised impact of attachment style upon care seeking [37], attachment theory may provide a useful model for understanding patients' attitudes towards psychological help seeking in cancer. According to attachment theory, our early relationships with caregivers provide the framework for the development of internal representations or 'working models' of the self in relation to others [37-40]. Whilst emphasising attachment systems in early life, Bowlby [37] proposed that attachment behaviours are active across the lifespan and subsequently affect support seeking in later relationships. Developing over time and with experience of other relationships across the lifespan, working models of relationships are proposed to include concepts of the self and others [38]. Extending Bowlby's conceptualisation of the model of self and other, Bartholomew and Horowitz [41], proposed four attachment patterns; secure, preoccupied, dismissing and fearful. These patterns are conceptualised to vary on two dimensions; the model of self which can be positive or negative, and the model of other which can be positive or negative. The four combinations are as follows; i) the self is considered worthy of love (positive) and others are viewed as trustworthy and available (positive), ii) the self is not considered worthy of love (negative) and others are viewed as trustworthy and available (positive), iii) the self is considered worthy of love (positive) and others are viewed as unreliable and rejecting (negative) and (iv) the self is not considered worthy of love (negative) and others are viewed as unreliable and rejecting (negative).

Attachment patterns have been researched within medical settings because attachment behaviours are commonly activated within situations that involve heightened distress, personal vulnerability, and a reliance on help-seeking and trust [42]. For instance, receiving a

diagnosis of cancer, a potentially life threatening illness, and undertaking treatment can trigger attachment behaviours due to the distress caused by the illness or pain [43]. Once triggered, individuals' attachment style can influence their attitudes, distress response, health behaviours, and perceptions of and benefit derived from support [42, 44]. For example, cancer patients with a negative model of self and other commonly report a high number of symptoms, have high levels of psychological distress, hopelessness and anxious preoccupation, and have poorer outcomes in terms of their ability to perceive and access social support [45-48]. Yet high rates of primary care utilisation are reported among cancer patients with a negative model of self and a positive model of other, compared to those with a negative model of self and other, who are more likely to experience prolonged distress without taking up support from healthcare services [47]. This is in contrast to patients with a positive model of self and other, who experience better well-being and positive growth following a cancer diagnosis [45].

Although attachment and attitudes towards psychological help seeking have been investigated separately among cancer patients, no study to date has considered the influence of attachment upon attitudes towards psychological help seeking in the context of cancer. The purpose of the study is to investigate whether CRC patients' attachment style is related to their attitudes towards seeking psychological help in the context of cancer. Establishing the influence of attachment on patients' attitudes towards seeking psychological help is an important step to understanding why cancer patients may or may not access psychological support. It is hypothesised that participants with a positive view of themselves and others will hold more positive attitudes towards psychological help seeking than those with a negative view of themselves and others.

In order to isolate the effects of attachment on attitudes towards seeking psychological help, other influences that might be associated with attitudes towards help seeking need to be considered. Three main variables were controlled for; perceived social support, psychological distress and QoL. It will be important to control for perceived social support because sufficient social support from family and friends are identified reasons for why cancer patients refuse formal psychological support [31]. Conversely, cancer patients with less social support are more likely to report positive attitudes about the efficacy of psychological interventions [35]. Psychological distress will be controlled for because high levels of distress among cancer patients have been associated with more positive attitudes about the efficacy of, and intention to use, psychological support services [35]. Similarly, cancer patients with moderate levels of anxiety or depression have been found to utilise psychology services significantly more than those with lower levels of psychological distress [27] or those with no emotional problems [31]. QoL will be controlled for due to lower QoL being a recognised predictor of psychological service utilisation among cancer patients [36, 49].

Method

Participants and procedure

Participants were patients who attended a follow-up nurse-led CRC clinic within an acute teaching hospital in the North West of England between 26th June and 29th September 2015. Patients met the inclusion criteria if they had a primary diagnosis of colorectal cancer, were at least three months or more post-surgical resection of their tumour, were 18 years of age or older, and could speak and read English.

Clinical Nurse Specialists (CNS) at the CRC follow-up clinic identified patients who met the inclusion criteria for the research. These patients were sent information regarding the

study by post prior to their routine appointment by the hospital administration team. During clinical appointments, CNS's mentioned the study to all eligible patients and provided an information sheet to those who had not received one. Patients interested in participating met with the researcher at the end of their appointment in a quiet room at the hospital. This allowed the researcher to answer any questions about the research.

Participants were given up to seven days to provide written consent to participate. Those considered by their CNS or the researcher to be too distressed, too physically unwell, or to have cognitive impairment that precluded informed consent were excluded. Participants were given the option to complete the consent form and measures in a quiet room at the hospital, or to complete them at a later date and to return them by post. The researcher was available in person or by telephone for all participants whilst they completed the research.

All participants were offered a written summary of the research findings upon completion of the research. Upon receiving completed questionnaires from participants, the researcher asked participants' corresponding CNS to provide clinical information regarding participants' diagnosis and treatment.

Power calculations

Based on Cohen's [50] recommendation, for a linear regression analysis with up to four predictors, G power [51] calculated that 85 participants would be required to detect a medium effect size ($f^2 = 0.15$) at a power of 0.8 with an alpha of .05.

Measures

Attachment. In line with previous cancer studies the Relationship Questionnaire (RQ) and Relationship Scale Questionnaire (RSQ) were used together to obtain a composite measure of

adult attachment [52]. The RQ [53] contains four statements related to attachment styles. Statements are rated on a 7-point Likert scale. The RSQ [54] is a 30-item scale measuring attachment style in close relationships. Items are rated on a 5-point Likert scale.

Attitudes. The Inventory of Attitudes Towards Seeking Mental Health Services (IASMHS) is a 24-item scale measuring attitudes towards seeking support for mental health problems from mental health specialists, medical staff and the individuals' social circles [55]. Items are rated on a 5-point Likert scale. Higher scores indicate 'more psychological' attitude. To ensure face validity for a cancer population, a statement was added to the instructions asking participants to respond to the statements with regards to seeking psychological help in the context of their cancer.

Control variables. The Hospital Anxiety and Depression Scale (HADS; [56]) is a 14-item scale measuring psychological distress, and has been widely used in cancer settings [57]. Items are rated on a 4-point Likert scale, based on how often they have been experienced in the previous seven days. Higher scores indicate a greater level of anxious/depressive symptoms.

The Multidimensional Scale of Perceived Social Support (MSPSS) is a 12-item scale measuring three sources of perceived social support: family, friends, and significant others [58]. Items are rated on a 7-point Likert scale. Higher scores indicate higher levels of perceived social support.

The European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC-C30, v3) and EORTC QLQ colorectal module (EORTC-CR29, v2.1) were used to measure QoL. The EORTC-C30 is a 30-item scale used to assess cancer specific QoL [59]. The EORTC-CR29 is a 29-item scale used to assess CRC specific QoL [60]. All

items are rated on a 4-point Likert scale. Together, these questionnaires assess ten domains of functioning (physical, role, emotional, cognitive, social, body image, anxiety, weight, and sexual interest for men and women) and 27 symptoms and problems associated with cancer and its treatment, of which 18 are specific to CRC. On both measures higher scores on the functional scales indicate higher functioning whereas higher scores on the symptom scales indicate greater intensity of symptomatology or problems. For the purpose of the analysis, a total symptom score was derived for both the EORTC-C30 and EORTC-CR29 by calculating the mean of all physical symptoms scores. The EORTC-C29 mean symptom score excluded five symptom subscales (sexual interest for men, impotence, sexual interest for women, dyspareunia and stoma care problems) due to missing data on these subscales.

Demographic and clinical information. Participant self-reported demographic information included age, gender, who they lived with, relationship status, employment status and educational qualifications attained. The researcher did not have access to confidential case notes, instead information about type of cancer, date of diagnosis, treatment received and use of psychology services in relation to cancer was provided by participants' CNSs.

Statistical analysis

The data were analysed using SPSS for Windows version 22 [61]. Preliminary descriptive analyses were performed to gain an overview of the data.

There was no missing data on either the independent (RQ, RSQ) or dependent measures (IASMHS). There was 2.3% missing data on the social support measure (MSPSS) and 4.7% missing on the psychological distress measure (HADS). The cancer QoL measure (EORTC-C30) had 2.3% missing data. The CRC QoL measure (EORTC-CR29) had between 2.3% and 3.5% missing data on different items (31-55), with the exception of four symptom subscales

(sexual interest for men and women, dyspareunia and impotence). There was 8.96% missing data on the women's items (sexual interest for women, and dyspareunia) and 24.3% missing on the men's items (sexual interest for men and impotence). Missing data (<5%) was managed by interpolating the sample mean for the respective variable, whilst the four symptom subscales on the EORTC-CR29 were excluded from the analysis.

Pearson correlations were computed to explore the relationship between the independent variables (dimensions of attachment; model of self and model of other) and dependent variable (attitudes towards seeking psychological help). Correlations or t-tests were also computed as appropriate to explore the relationship between the dependent variable and demographic (age, gender, living alone or with others, relationship status, educational qualifications), clinical (cancer stage, years since diagnosis, treatment received), and other potential covariates identified within the literature (social support, QoL and psychological distress). Significant correlates of attitudes towards psychological help seeking were included in the analyses as covariates.

To test the hypothesis that participants with a positive view of themselves and others will have more positive attitudes towards psychological help seeking than those with a negative view of themselves and others, and to ascertain the role of covariates in any relationship, two hierarchical multiple regression analyses were performed. In Analysis one, only the independent variables (model of self and model of other) were entered into the regression model. In Analysis two, the demographic and clinical variables were entered into the model first as covariates, followed by the independent variables (model of self and model of other) which were entered as predictor variables.

Results

Sample Characteristics

Nurses asked 155 out of a total of 215 patients, for agreement to see the researcher. Ninety-one patients (59%) agreed to see the researcher and consented to take part in the study. Of these, 75 opted to complete the study at the hospital and 16 opted to complete it by post. A lack of time was the main reason given by non-consenting patients. A further five participants did not complete the questionnaires and were excluded from the study. The final sample consisted of 86 participants.

Fifty-four males (62%) and 32 females participated. The average age was 68.40 years (SD= 10.14, median= 69, range= 37-91). Demographic information can be found in Table 2.1.

Table 2.1.

Demographic information of the sample

Demographic Information	N	%
Relationship status		
In a relationship	48	55.8
Not in a relationship	38	44.2
Living alone or with others		
Living alone	27	31.4
Living with others	59	68.6
Employment status		
Employed	13	15.1
Not employed	73	84.9
Educational qualifications held		
Qualifications attained	44	48.8
None	42	51.2

Participants' clinical characteristics can be found in Table 2.2. Participants were diagnosed with CRC between January 2009 and April 2015. On average participants had received their

diagnosis 2.38 years previously (SD= 1.43). Only 7 participants reported having psychological therapy following their cancer diagnosis.

Table 2.2.

Key clinical characteristics of the sample

Clinical Characteristics	N	%
Years since diagnosis		
<0	6	7.0
1	19	22.1
2	24	27.9
3	21	24.4
4	7	8.1
5+	9	10.4
Duke's stage of cancer		
Dukes A	17	19.8
Dukes B	37	43.0
Dukes C	30	34.9
No residual cancer following surgery	2	2.3
Treatment received*		
Surgery	80	93.0
Chemotherapy	38	44.2
Radiotherapy	18	20.9
Colostomy/ stoma	20	23.3
Polypectomy	1	1.2
Psychology services	7	8.1
Total No. of Treatments received		
1	43	50.0
2-5	43	31.4
Outstanding Treatment		
Ongoing surveillance	82	95.3
Nil/ Discharged from clinic	4	4.7

*Patients could receive more than one treatment

Table 2.3 presents the descriptive data for the dependent variable (IASMHS), independent variables (RQ and RSQ) and the covariate measures (MSPSS, EORTC-C30 and EORTC-CR29, HADS).

The IASMHS range (36-87) demonstrates that all participants reported some degree of positive attitudes towards seeking psychological help, however without qualitative markers it is not possible to describe the extent of positivity by the sample Mean. Internal consistency in this study was acceptable for the IASMHS (Cronbach's $\alpha = 0.65$). There was no significant difference between males ($M = 67.11$, $SD = 11.28$) and females ($M = 69.38$, $SD = 11.74$); $t(84) = -.886$, $p = .378$.

As anticipated because of the way the score was calculated, the sample mean for model of self was .00 ($SD = 3.73$), and for model of other was .00 ($SD = 3.39$). Internal consistency cannot be calculated for the RQ as the four items each contribute to the two attachment dimension scores algorithmically. Yet internal consistency in this study was acceptable for the RSQ (Cronbach $\alpha = 0.75$).

The MSPSS Mean (71.74) demonstrates that most participants reported perceiving high levels of social support from others. Internal consistency in this study was acceptable for the MSPSS (Cronbach $\alpha = 0.91$). The mean score for the global health and QoL measure upon the EORTC C30 items was somewhat higher than a comparative sample of 1,773 CRC patients at all stages of CRC: $M = 60.7$, $SD = 23.4$; [62]. On the EORTC-C30, participants had similar levels of functioning across the five domains (physical, role, cognitive, emotional, and social). A range of symptoms were experienced by the sample. The most commonly reported symptoms on the EORTC-C30 were fatigue and insomnia. In this study the Cronbach's alpha was acceptable for the EORTC C30 ($\alpha = 0.93$). On the EORTC-CR29 functional scales; body image had the highest mean score compared to sexual interest which had the lowest mean scores. On the EORTC-CR29 symptom scales, the most commonly reported symptoms were impotence, urinary frequency, and flatulence. The internal consistency was again acceptable in this study (Cronbach $\alpha = 0.83$).

Table 2.3.

Mean scores, standard deviations, and ranges for participants' responses upon the dependent variable, independent variables and covariate measures

Variable	Mean	SD	Range		
			Min	Max	Max Total Score
IASMHS Total	67.95	11.44	36	87	96
RQ and RSQ					
Model of self	.00	3.73	-8.66	10.06	n/a
Model of other	.00	3.39	-9.51	8.18	n/a
MSPSS Total	71.74	13.75	18	84	84
EORTC QoL C30					
Global Health / QoL	69.86	20.30	16.67	100.00	100.00
Functional Scales					
Physical	76.98	23.84	13.33	100.00	100.00
Role	73.45	34.43	.00	100.00	100.00
Cognitive	76.16	25.88	.00	100.00	100.00
Emotional	74.42	30.35	.00	100.00	100.00
Social	76.36	29.54	.00	100.00	100.00
Symptom Scales/items					
Fatigue	33.01	28.72	.00	100.00	100.00
Nausea	11.63	20.30	.00	83.33	100.00
Pain	25.19	32.21	.00	100.00	100.00
Dyspnoea	25.19	33.89	.00	100.00	100.00
Insomnia	32.94	35.61	.00	100.00	100.00
Appetite	14.73	25.36	.00	100.00	100.00
Constipation	10.85	23.11	.00	100.00	100.00
Diarrhoea	14.34	27.79	.00	100.00	100.00
Financial	16.28	30.99	.00	100.00	100.00
EORTC-C30 mean symptom score	20.47	20.34	.00	94.44	100.00
EORTC QoL C29					
Functional scales					
Body Image	74.68	29.89	.00	100.00	100.00
Anxiety	68.99	31.01	.00	100.00	100.00
Weight	65.89	32.73	.00	100.00	100.00
Sexual interest (men)	41.48	31.10	.00	100.00	100.00
Sexual interest (women)	9.52	15.33	.00	33.33	100.00
Symptom scales/items					
Urinary frequency	38.95	26.40	.00	100.00	100.00
Blood and mucus in stools	2.71	9.17	.00	50.00	100.00
Stool frequency	21.90	22.90	.00	100.00	100.00
Urinary incontinence	10.85	19.43	.00	66.67	100.00
Dysuria	3.10	13.16	.00	100.00	100.00
Abdominal pain	12.79	25.65	.00	100.00	100.00
Buttock pain	9.30	17.45	.00	66.67	100.00
Bloating	17.44	24.38	.00	100.00	100.00
Dry mouth	27.91	30.62	.00	100.00	100.00
Hair loss	3.10	10.99	.00	66.67	100.00
Taste	5.81	15.50	.00	66.67	100.00
Flatulence	33.72	33.72	.00	100.00	100.00
Faecal incontinence	15.12	26.40	.00	100.00	100.00
Sore skin	18.99	29.17	.00	100.00	100.00
Embarrassment	25.19	36.13	.00	100.00	100.00
Stoma care problems	24.56	26.85	.00	66.67	100.00
Impotence	46.67	42.88	.00	100.00	100.00
Dyspareunia	3.57	10.50	.00	33.33	100.00
EORTC CR29 mean symptom score*	14.85	13.37	.00	57.14	100.00
HADS					
Anxiety scale	6.09	4.65	.00	21.00	21.00
Depression scale	3.87	3.33	.00	15.00	21.00

IASMHS=Inventory of Attitudes Towards Seeking Mental Health Services, RQ=Relationship Questionnaire, RSQ=Relationship Scale Questionnaire MSPSS=The Multidimensional Scale of Perceived Social Support, EORTC-C30=European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire, EORTC-CR29=Quality of Life Questionnaire colorectal module, HADS=Hospital Anxiety and Depression Scale.

*EORTC-CR29 mean symptom score excludes stoma care problems, impotence and dyspareunia symptom subscales

Participants had higher anxiety scores (M= 6.09, SD= 4.65) than depression scores on the HADS (M= 3.87, SD= 3.33), although both Means fell below clinical caseness of seven. Twenty-nine participants met clinical caseness for anxiety compared to 11 for depression. In this study the Cronbach's alpha was acceptable for the HADS Anxiety scale ($\alpha = 0.89$) and Depression scale ($\alpha = 0.79$).

The relationship between IASMHS and covariates

Younger age was associated with positive attitudes towards seeking psychological help in the context of cancer ($r = -.21, p = .05$). Participants in a relationship held more positive attitudes on the IASMHS (M= 70.17, SD= 10.90) compared to those who were not in a relationship (M= 65.16, SD= 11.63); $t(84) = 2.05, p < .05$. Similarly, participants living with other people also held more positive attitudes on the IASMHS (M= 69.95, SD= 11.27) than those who lived alone (M= 63.59, SD= 10.76); $t(84) = 2.46, p < .05$. Attitudes towards seeking psychological help in the context of cancer did not vary according to whether participants were in employment or held any educational qualifications. Age, relationship status and living alone or with others were subsequently used as covariates.

In relation to clinical variables, participants' attitudes towards seeking psychological help in the context of cancer did not vary according to time since diagnosis, Duke's stage, treatment options or the number of treatments received. Those with a stoma/colostomy held more negative attitudes on the IASMHS (M= 63.15, SD= 13.38) than those without a stoma/colostomy (M= 69.41, SD= 10.47); $t(84) = -2.19, p < .05$. The presence or absence of a stoma/colostomy was used as a covariate.

In relation to the other covariates measured, higher social support was associated with more positive attitudes towards seeking psychological help ($r = .21$, $p = .05$). Yet the dependent variable (IASMHS) was unrelated to QoL EORTC-C30 (global health/QoL, $r = -.08$; functional scales [physical $r = .04$, role $r = -.06$, cognitive $r = -.01$, emotional $r = -.02$, social $r = -.07$], mean symptom score, $r = .10$), EORTC-CR29 (functional scales [body image $r = .10$, anxiety $r = .04$, weight $r = -.06$], mean symptom score $r = -.00$), or psychological distress (HADS anxiety $r = .04$, HADS depression $r = .01$). Social support was used as a covariate.

The relationship between IASMHS and attachment style

In preliminary analysis of inter-correlations between attachment and attitudes towards seeking psychological help in the context of cancer, model of self was not significantly correlated with attitudes ($r = .08$). Yet model of other was positively correlated with attitudes towards seeking psychological help ($r = .39$, $p < .01$).

Hierarchical regression analyses

Multicollinearity was not present amongst the dependent variable (IASMHS), the demographic covariates (age, relationship status, living alone or with others), the clinical covariate (those with or without a stoma/colostomy), other covariates (social support) and the independent variables (attachment; model of self and model of other), with tolerance values above 0.1 and VIF values below 10.

Analysis 1

A hierarchical multiple regression was conducted with attitudes towards psychological help seeking (IASMHS) as the dependent variable and attachment style (model of self and model of other) as the independent variables, see Table 2.3.

Table 2.4.

Summary of Hierarchical Regression Analysis for Independent Variables Predicting Attitudes Towards Seeking Psychological Help in The Context of Cancer.

Variable	B	SE B	β	t	R	R ²	ΔR^2
Analysis 1					.39	.16	.16
Constant	67.95	1.15		59.21**			
Model of self	.03	.32	.01	.08			
Model of others	1.32	.35	.39	3.81**			

n = 86; **p* < .05, ***p* < .01

The hierarchical multiple regression revealed that model of self and model of other contributed significantly to the regression model, $F(2, 83) = 7.59, p < .01$ and accounted for 16% of the variation in attitudes towards seeking psychological help in the context of cancer. The only significant predictor of attitudes towards seeking psychological help was model of other, with positive model of other being correlated with positive attitudes towards seeking psychological help.

Analysis 2

A two stage hierarchical multiple regression was conducted with attitudes towards psychological help seeking (IASMHS) as the dependent variable. Demographic, clinical and other covariates (age, relationship status, living alone or with others, those with or without a

stoma/colostomy and social support) were entered at stage one of the regression to control for the influence of these factors. Attachment style variables (model of self, model of other) were entered at stage two as the independent variables. Regression statistics are in Table 2.4.

Table 2.5.

Summary of Hierarchical Regression Analysis for Variables Predicting Attitudes Towards Seeking Psychological Help in The Context of Cancer.

Variable	B	SE B	β	t	R	R ²	ΔR^2
Stage 1					.45	.20	.20
Constant	79.97	11.18		7.15**			
Age	-.32	.12	-.28	-2.69**			
In a relationship	-2.00	3.14	-.09	-.64			
Living with others	-3.93	3.34	-.16	-1.18			
Stoma/colostomy	7.41	2.91	.28	2.55**			
Social support	.07	.09	.08	.69			
Stage 2					.49	.24	.04
Constant	85.41	11.76		7.26			
Age	-.29	.13	-.26	-2.18*			
In a relationship	-2.17	3.11	-.10	-.70			
Living with others	-2.95	3.41	-.12	-.87			
Stoma/colostomy	5.81	3.04	.22	1.91			
Social Support	-.01	.10	-.02	-.13			
Model of self	.30	.34	.10	.89			
Model of other	.68	.44	.20	1.54			

n = 86; **p* < .05, ***p* < .01

At stage one, age, relationship status, living with others, stoma/colostomy and social support contributed significantly to the regression model, $F(5, 80) = 4.02$, $p < .01$ and accounted for 20% of the variation in attitudes towards seeking psychological help in the

context of cancer. Age and having a stoma/colostomy were the only significant predictors of attitudes towards seeking psychological help amongst this set of covariates.

At stage two, introducing the attachment variables (model of self and model of other) explained an additional 4% of variation in attitudes towards seeking psychological help in the context of cancer. Thus together the seven independent variables accounted for 24% of the variance in attitudes towards seeking psychological help in the context of cancer. Yet the change in R^2 was not significant, $F(7,78) = 3.52, p > .05$. When all seven variables were included in stage two of the regression model, neither model of self nor model of other were significant predictors of attitudes. Additionally having a stoma/colostomy did not remain a significant predictor at stage two, suggesting that this was not a robust effect. The largest and only significant predictor of attitudes towards seeking psychological help in the context of cancer was age ($\beta = -.26$), with younger age (relative to the sample) being correlated with more positive attitudes.

In light of the regression results, the relationship between age and model of other was tested by a Pearson correlation. Younger age was correlated with a more positive model of other ($r = -.19, p < .05$). In addition, the median age was used to subdivide the sample into two groups: those younger than the median age and those older than the median age. The median was used as it is considered a more robust estimate of the population central tendency than the mean [63]. Participants who were aged 69 and below held more positive attitudes on the IASMHS ($M = 70.73, SD = 10.64$) than those aged 70 and above ($M = 65.05, SD = 11.65$); $t(83) = 2.36, p < .05$.

Discussion

Summary of findings

This study examined the relationship between attachment style and attitudes towards seeking psychological help in the context of cancer. The hypothesis that participants with a positive view of themselves and others would hold more positive attitudes towards psychological help seeking than those with a negative view of themselves and others was not supported. Whilst having a positive model of others was a significant predictor of attitudes towards seeking psychological help in analysis 1, it did not remain a significant predictor when controlling for socio-demographic and clinical factors (analysis 2). Instead age was the only significant predictor of attitudes towards psychological help in the context of cancer, with younger age (those aged 69 years and below) being associated with more positive attitudes towards seeking psychological help. Within this sample, younger patients were found to hold more positive attitudes towards seeking psychological help compared to older ones.

Links to previous literature

Past research has made links between positive attitudes towards seeking psychological help and service utilisation [34-36], as well as between attachment style and service utilisation [45, 47]. Yet no study had considered the influence of attachment upon attitudes towards psychological help seeking in the context of cancer. This study does not support a direct link between attachment style and attitudes towards seeking psychological help.

The analysis indicates that attachment did not predict unique variance in attitudes towards seeking psychological help when controlling for covariates. Instead age was the key variable. Consistent with previous research [36], younger age (relative to the sample) was associated

with more positive attitudes towards psychological help seeking. In addition, there was a small correlation demonstrating that individuals who were younger had a more positive model of other. These results suggest that the interrelationship of age, model of other and help seeking needs to be explored further. For example, the association between age and model of other may reflect that attachment styles change over time [63-64] as they remain open to revision following life experiences [37, 39]. Therefore, older adults may hold a more negative model of others due to experiencing significant negative life events including loss of attachment figures [see 64-65]. Alternatively the association may reflect generational differences or cohort effects [64, 66]. This requires further exploration.

Other findings from this study add to previous research that considered help seeking in relation to experiencing distress. Whilst around half the sample (46.5%) met clinical caseness for either anxiety or depression, only a few patients (8.1%) had used psychological services following their cancer diagnosis. Yet, unlike previous research [27, 34], positivity towards seeking psychological help was unrelated to high levels of psychological distress. These results support previous findings that psychological distress does not necessarily indicate a desire or need for psychological help in the context of cancer [27-31]. However, the use of psychological service utilisation as a measure is problematic for a number of reasons. First, it does not account for patients that meet criteria for a referral for specialist psychological services but who have not been identified and offered formal help. Second it does not account for those that may have already received lower level psychological support from clinical staff as part of a four-level model of professional psychological assessment and support [67]. Whilst beyond the scope of this study, future work could further explore the relationship between psychological distress and attitudes towards seeking psychological help.

A previous study identified that having sufficient social support was a reason why cancer patients decline psychological interventions [31]. Within this study higher levels of perceived social support were associated with positive attitudes towards seeking psychological help. This may suggest that, whilst people may have positive attitudes towards help seeking, this is not necessary indicative of a perceived need for intervention.

Previous research has identified lower QoL to be a predictor of psychological service utilisation [37,50]. This study did not capture service utilisation. However there was no association found between QoL and attitudes towards seeking psychological help. This may be explained by insufficient variance in QoL, as this sample reporting higher ratings of QoL than previous studies [62]. Subsequently this sample may hold more neutral attitudes towards help seeking as they may be less likely to require psychological help.

Limitations

One limitation of the present study is that it explored attitudes towards seeking psychological help rather than utilisation of psychological services. Attitudes towards help seeking was chosen as the outcome measure due to the potential difficulties in measuring utilisation of psychological services. As outlined above, service utilisation is complicated by factors such as the failure of clinical services to identify all those that meet the criteria for a referral to psychological services, patients' potential reluctance to access specialist psychological intervention, and the provision of psychological input from clinical staff such as nurse specialists. Additionally, the low numbers of cancer patients that use psychology services following a cancer diagnosis meant that an extremely large sample would have been required in order for the study to be adequately powered. Nevertheless, this study still

contributes to previous research by providing information about predictors of attitudes towards seeking psychological help in the context of cancer.

The choice of attachment measures may also be a limitation as they rely on participants' self-report which can be variable over time and subjective. Yet, the brief measures used (the RQ and RSQ) have been found to have adequate reliability and good discriminant validity [68]. Furthermore, the use of the dimensional approach offers a more sensitive approach to measuring adult attachment than the categorical variables that arise from some other measures [69].

Clinical and Research Implications

Given that age was the only significant predictor of attitudes towards seeking psychological help, there are clinical implications around how psychological help seeking may be promoted to different age groups, such as those aged 69 and below, and those aged 70 years and above.

Previous research has identified negative attitudes towards seeking psychological help to be a barrier to people using such support. Thus there are potential implications for how services identify those that warrant referral for psychological services yet hold negative attitudes that preclude them from seeking interventions. Within this study, these individuals were more likely to be aged 70 or above. It is therefore important to equip health care teams with appropriate training and tools to assess patients' attitudes in conjunction with their levels of distress to identify this group. Additionally, the promotion of psychological services is likely to be helpful for raising awareness of support available and the potential benefits that accessing such support can have.

Developing a better understanding of why older generations (above 70 in this sample) may have less positive attitudes towards help seeking is likely to be an important next step. Future research would benefit from exploring whether age is a confounding factor in the relationship between attitudes towards seeking psychological help and model of others. That is, are older people more negative about help seeking because they have a more negative model of others [65]? If true, services need to be particularly aware of the importance of developing a trusting relationship with these patients in order to facilitate any future psychological intervention.

Conclusions

Attachment style was not found to be a predictor of positive attitudes towards psychological help seeking in the context of cancer. Instead age was the only significant predictor of attitudes towards seeking psychological help in the context of cancer, with younger age being associated with more positive attitudes towards seeking psychological help. Given that attitudes towards help seeking have previously been identified as influencing help seeking behaviours, the results have implications for how services identify those whose attitudes may prevent them from seeking support. Future research would benefit from developing a clearer understanding of the relationship between age and attitudes towards seeking psychological support. In particular, exploring the role of age in the relationship between attachment style and attitudes towards seeking psychological help, as well as the utilisation of specialist psychological services will be a helpful next step.

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