The influence of demographics, psychological factors and self-efficacy on symptom distress in colorectal cancer patients undergoing post-surgical adjuvant chemotherapy

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ABSTRACT

Purpose: To explore the influence of self-efficacy and demographic, disease-related, and psychological factors on symptom distress among Chinese colorectal cancer patients receiving postoperative adjuvant chemotherapy.

Methods: Two-hundred and fifty-two colorectal cancer patients who had undergone postoperative adjuvant chemotherapy completed Chinese versions of M. D. Anderson Symptom Inventory (MDASI-GI), Stanford Inventory of Cancer Patient Adjustment (SICPA), and Hospital Anxiety and Depression Scale (HADS). Associations between patients' self-efficacy and demographic, disease-related, psychological factors and symptom distress were examined.

Results: Patients' overall symptom distress level was mild; MDASI median subscale scores showed mild symptom severity and symptom interference. Anxiety and depression were positively associated with symptom distress. Multivariable analysis showed that more severe symptoms were associated with age ≥60 years, female gender, suburban residence, body mass index <18.5, and stage III cancer. Age ≥60 years, female gender, marital status of single or divorced, and suburban residence were associated with greater symptom interference with daily activities. Greater self-efficacy was associated with milder symptoms severity and less symptom interference with daily life. After adjusting for confounders, patients with higher SICPA scores had less symptom distress.

Conclusions: Self-efficacy is strongly associated with reduced symptom severity and symptom interference with daily life in CRC patients. Symptom severity is associated with age >60 years, female gender, body mass index <18.5, suburban residence and stage III disease. Nurse-administered self-efficacy interventions may help to improve self-efficacy and reduce symptom distress.

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Introduction

Colorectal cancer (CRC) is a major health problem worldwide and is the third most commonly diagnosed cancer globally, with 1.23 million newly diagnosed CRC patients in 2008, representing 9.7% of the total number of cancer patients diagnosed (Ferlay et al., 2010). In 2012, 746,000 CRC cases were diagnosed in men and 614,000 cases in women; based on current trends, it is predicted that the number of CRC cases will increase to 2.4 million cases worldwide by 2035 (Ferlay et al., 2012). Over the past decade, a dramatic increase in CRC incidence has been reported in many Asian Pacific countries, including China, Japan, Korea, Singapore, and Taiwan (Sung et al., 2005). It has been estimated that by 2020 the annual number of deaths due to CRC in Asia will reach nearly 400,000 (Ferlay et al., 2010). CRC and gastric cancer are currently the leading cause of cancer-related deaths and the most prevalent type of cancer in China (Sung et al., 2005). The incidence of colorectal cancer is increasing rapidly in China, with 172,000 cases and 99,000 deaths reported in 2005, exceeding those reported in the United States (Yang et al., 2005; Jemal et al., 2008). The incidence rates of males and females with CRC are 15.0/100,000 and 9.7/

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100,000, respectively, with mortality rates of 8.6 and 5.4 per 100,000, respectively (Yang et al., 2005). The incidence and mortality rates are estimated to increase continuously in China, making CRC the most common malignant tumor with rising incidence. The increase of CRC in China is attributed jointly to the environment, diet, lifestyle and genetic factors (Wan, 2009).

Receiving a diagnosis of CRC is itself associated with distressing symptoms such as anxiety and depression (Breen et al., 2009). The treatment choice for CRC is surgery, which may be followed by adjuvant chemotherapy for certain patients in more invasive CRC stages II, III and IV (corresponding to Duke's classification B, invading deep muscle and serosa; C, lymph node metastasis; and D, distant metastasis). However, both the surgery and subsequent chemotherapy may affect patients physically, emotionally, and socially and may increase their level of disease-related and treatment-related symptom distress (Cleeland et al., 2000). Multiple studies have documented the wide range of serious physical and psychological symptoms associated with cancer and adverse effects of cytotoxic medications used in chemotherapy regimens (Ryan, 1996; Stanton et al., 2005; Breen et al., 2009; Syvak et al., 2012). Pain, fatigue, lack of appetite, dry mouth, mucositis, dyspnea, constipation, diarrhea, anorexia, insomnia, nausea, vomiting, cognitive difficulties, depression and anxiety are common symptoms experienced by cancer patients who are undergoing chemotherapy (Ryan, 1996; Prigozin et al., 2010). Distress from multiple concurrent symptoms, both physical and psychological, often leads patients to delay seeking treatment or, later in the course of their disease, to terminate treatment early (Syvak et al., 2012). It seems important, therefore, to understand CRC patients' levels of symptom distress and factors that may increase or decrease symptom distress, which was a basis for conducting the present study.

Increasing evidence indicates that a vital ingredient in health-related behavioral change is patients' perceived self-efficacy. Bandura defines self-efficacy as the confidence or belief in one's ability to organize and execute the course of action required to produce a specific outcome (Bandura, 1997). Self-efficacy beliefs determine how people feel, think, motivate themselves, and then behave; these diverse effects are produced through cognitive, motivational, affective, and selection processes (Bandura, 1997). In patients undergoing treatment, increased self-efficacy is associated with increased adherence to treatment, increased self-care behaviors, and decreased physical and psychological symptoms (Bisschop et al., 2004). Helping people with chronic illnesses to change their health-related behavior is important to encourage patients' self-management and to achieve the best possible results of treatment. In cancer treatment, this approach has been particularly effective in disease prevention, early detection, and helping patients adjust to having cancer and receiving treatment (Mystakidou et al., 2010; Robb et al., 2013). Cancer patients who have difficulty maintaining a sense of control report more psychological disorders than do patients who have a greater feeling of control (Kohno et al., 2010). Among gastrointestinal cancer survivors, greater self-efficacy has led to better quality of life, with lower levels of anxiety and depression, and less post-traumatic stress (Kohno et al., 2010).

Despite a large body of literature addressing various aspects of cancer treatment, and studies that address the role of self-efficacy in patients' response to having cancer and undergoing treatment (Kohno et al., 2010; Akin et al., 2008; Porter et al., 2008), the factors influencing symptom distress among CRC patients during chemotherapy remain unclear, and have not been studied in a Chinese population. Given the rising incidence and prevalence of CRC in China, we hypothesized that understanding the factors influencing patients' symptom distress could be important in providing appropriate care and support for Chinese CRC patients during treatment phases, and also to provide a reference for future intervention studies. The aim of the present study was to explore the influence of self-efficacy, psychological status, and demographic characteristics on symptom distress among Chinese CRC patients receiving postsurgical adjuvant chemotherapy. The results of this study may provide valuable information to design interventions to improve self-efficacy, help reduce symptom distress, and improve the quality of care and quality of life of CRC patients.

Methods

Study design

This is a prospective cross-sectional study using previously validated self-reported questionnaires to evaluate levels of symptom distress, anxiety and depression, and self-efficacy of consecutive CRC patients treated between March 2010 and May 2012 at the Oncology Departments of four affiliated hospitals of Sun Yat-sen University in Guangzhou and Guangdong Province, China.

Study enrollment

From March 2010 to May 2012, 285 consecutive CRC patients being treated in the Oncology Departments of four hospitals affiliated with Sun Yat-sen University in Guangzhou, China, were invited to participate in the study. Patients were eligible for enrollment in the study if they: (1) had a diagnosis of CRC; (2) were 18 years of age or older; (3) were able to understand and communicate in Chinese; and (4) knew that they had cancer and were receiving adjuvant chemotherapy after cancer surgery. Exclusion criteria were: (1) a diagnosis of other cancers; (2) recurrence of CRC; (3) evidence of metastasis; and (4) current treatment by mental health professionals for any psychiatric disorder or cognitive impairment. Sample size was calculated using the following formula: $n = 1.96^2 \times p \times (1-p)/d_2$, where $p = 38/100,000$, representing the most recent (2008) 5-year prevalence of colorectal cancer in China, which was based on 509,140 CRC cases per 1,325,000,000 total population of China at that time (Ren et al., 2012); $d = 0.0025$ was the acceptable margin of error. The calculated sample size was 234. And 285 consecutive CRC patients were screened to ensure the sample size would be enough (>234) when some of the patients had to be excluded. Of the 285 patients screened, 33 patients were excluded, including 26 who declined to participate and 7 who met the inclusion criteria but were too ill to complete the questionnaire assessment. Finally, the remaining 252 patients were included in the study.

Measurement instruments

Symptom distress

Symptom distress was evaluated by the Chinese version of the M.D. Anderson Symptom Inventory (MDASI)(Cleeland et al., 2000). This instrument consists of an 18-item symptom scale and a 6-item interference scale. The reliability and validity of both the original version and the Chinese version have been demonstrated previously (Ye and Xu, 1993; Wang et al., 2004). The symptom scale scores the severity of each symptom in the previous 24 h, from 0 ("Not at all") to 10 ("I can't imagine it being any worse"). Each symptom is rated at its most severe level during the past 24 h. The interference scale scores the extent to which the symptom interfered with a variety of aspects of the patient's daily life. It scores each symptom within the previous 24 h on a scale from 0 ("It didn't interfere at all") to 10 ("It completely interfered"). Lower scores indicate milder symptoms severity and less interference. The scores were divided into the following three levels: "mild" (1–4),