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The effectiveness of a self-efficacy-enhancing intervention for Chinese patients with colorectal cancer: A randomized controlled trial with 6-month follow up

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ABSTRACT

Background: Colorectal cancer is a major public health problem. There is growing support for colorectal cancer survivors who are experiencing problems after cancer treatment to engage in self-management programs to reduce symptom distress. However, there is inconclusive evidence as to the effectiveness of such program especially in Asian region.
Objectives: This study tested the effects of a six-month nurse-led self-efficacy-enhancing intervention for patients with colorectal cancer, compared with routine care over a six-month follow up.
Design: A randomized controlled trial with repeated measures, two-group design.
Setting: Three teaching hospitals in Guangzhou, China.
Participants: One hundred and fifty-two Chinese adult patients with a diagnosis of colorectal cancer were recruited. The intervention group ($n = 76$) received self-efficacy-enhancing intervention and the control group ($n = 76$) received standard care.
Method: The participants were randomized into either intervention or control group after baseline measures. The outcomes of the study (self-efficacy, symptom distress, anxiety, depression and quality of life) were compared at baseline, three and six months after the intervention.
Results: Sixty-eight participants in the intervention group and 53 in the control group completed the study. Their mean age was 53 (SD = 11.3). Repeated measure MANOVA found that the patients in the intervention group had significant improvement in their self-efficacy ($F = 7.26$, $p = 0.003$) and a reduction of symptom severity ($F = 5.30$, $p = 0.01$), symptom interference ($F = 4.06$, $p = 0.025$), anxiety ($F = 6.04$, $p = 0.006$) and depression ($F = 6.96$, $p = 0.003$) at three and six months, compared with the control group. However, no statistically significant main effect was observed in quality of life perception between the two groups.
Conclusions: The nurse-led self-efficacy enhancing intervention was effective in promoting self-efficacy and psychological well-being in patients with colorectal cancer, compared with standard care. The intervention can be incorporated into routine care. Future empirical work is required to determine the longer term effects of the intervention.

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What is already known about the topic?

- Colorectal cancer is a major public health problem.
- The toxic effects of chemotherapy for colorectal cancer can produce symptoms that cause significant distress in patients and reduce their quality of life and length of survival.
- Symptom management intervention should start at the time of diagnosis of cancer and continue throughout the progression of the illness. However, there is limited evidence of the effectiveness of such intervention on patients with colorectal cancer.

What the paper adds?

- Nurse-led self-efficacy-enhancing intervention is a more effective intervention for patients with colorectal cancer when compared with standard care in improving patients' self-efficacy, and reducing symptom distress, anxiety and depression over a six-month follow-up.
- The six-month nurse-led self-efficacy-enhancing intervention had a positive impact on patients with colorectal cancer.
- This study highlights the potential impact that improvement in self-efficacy can have on patients' well-being when receiving chemotherapy after cancer surgery.

1. Introduction

Colorectal cancer is a major global public health problem. In 2010, this disease afflicted nearly 1,000,000 individuals, resulting in 500,000 deaths worldwide (Chu, 2010). It has been estimated that the number of deaths due to colorectal cancer will reach approximately 376,700 by 2020 in Asia (Ferlay et al., 2010). The most common types of treatment for colorectal cancer are surgery, radiotherapy, chemotherapy and immunotherapy. Many patients have surgery as the primary treatment for their colorectal cancer, followed by adjuvant chemotherapy, which aims at destroying the possible residual tumor cells. The toxic effects of chemotherapy can produce symptoms such as pain, fatigue, lack of appetite, dry mouth, mucositis, dyspnea, constipation, diarrhea, anorexia, insomnia, nausea, vomiting, cognitive difficulties, depression and anxiety (Syvak et al., 2012). These symptoms, in turn, can significantly increase patients' distress and reduce the quality of life and the length of survival (Farrell et al., 2013; Omran et al., 2012; Yokoyama et al., 2012). Many patients often experience delayed chemotherapy during subsequent treatment cycles or premature discontinuation of treatment due to these symptoms. Increasing attention is being paid to promoting symptom self-management in the hopes of reducing symptom-related negative consequences among individuals with cancer (Landers et al., 2011; Patrick et al., 2003). The reduction of symptom distress is an important indicator of successful cancer management.

The World Health Organization (WHO) advocates that symptom management intervention should start at the time of diagnosis and continue throughout the progression of the illness to enhance patients' quality of life (WHO, 2011). It is also suggested that patients be encouraged to become actively involved in their symptom management plan. There has been evidence supporting effective symptom management's ability to reduce symptom distress, improve the quality of life of cancer patients (Buchanan et al., 2005; Sloan et al., 2007) and assist patients with colorectal cancer in mastering their treatment adverse effects such as oral mucositis, diarrhea, constipation, nausea, pain, fatigue and insomnia (Molassiotis et al., 2009).

Self-efficacy, an important factor that influences patients' ability to self-manage their symptoms (Bandura, 1977), is defined as the confidence or belief in one's ability to organize and execute the course of action required to produce a specific outcome (Bandura, 1977). Self-efficacy not only has a powerful effect on one's motivation, perseverance and thinking process, but also plays an important role in determining whether actions will be initiated, how much effort will be expended and how long the effort will be sustained in the face of obstacles and failures (Bandura, 1986).

Self-efficacy determines how a person thinks, feels, motivates and performs. Thus it is an important concept in symptom management because it is a prerequisite to the actual execution of tasks and strategies (Bandura, 1977). Self-efficacy beliefs are developed and influenced through four main factors: direct mastery experiences, vicarious experiences, verbal persuasion and arousal state. Direct mastery experiences, which include previous personal accomplishments and successes, represent the most powerful factor of self-efficacy. Vicarious experiences can be defined as situations in which a person increases his or her own self-belief by watching a similar individual achieve success in certain situations (i.e., "if they can do it, I can do it"). Verbal persuasion involves leading an individual, through feedback and verbal cues, to believe that he or she can be successful in a specific situation. Finally, arousal states are defined as how a person's physiological state and his or her interpretation of that state can affect whether an experience is empowering or disempowering. Following Bandura, all four factors are needed to enhance one's self-efficacy (Clark, 1996). To gain a sense of self-efficacy, an individual can complete a skill successfully, observe someone else doing a task successfully, acquire positive feedback about completing a task or rely on physiological cues (Bandura, 1986).

One important aspect of disease-related self-efficacy is a sense of control and involvement in the treatment. Patients' active involvement in medical encounters has been associated with increased satisfaction, increased adherence to treatment and positive treatment outcomes (Tennstedt, 2000). Studies have shown that patients with cancer who reported high levels of self-efficacy in symptom management had lower levels of psychological distress (Lev et al., 1999; Porter et al., 2008) and better adjustment (Beckham et al., 1997; Gallagher et al., 2002). Evidence has suggested that cancer patients who reported greater efficacy in coping with their disease and its treatment were better adjusted and enjoyed superior quality of life compared to patients with low self-efficacy (Merluzzi et al., 2001). Patients with low self-efficacy reported significantly higher levels of pain, fatigue, cancer

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