Journal of Psychosomatic Research 111 (2018) 120–126

Contents lists available at ScienceDirect

Journal of Psychosomatic Research

journal homepage: www.elsevier.com/locate/jpsychores

Beyond the fear that lingers: The interaction between fear of cancer recurrence and rumination in relation to depression and anxiety symptoms

Jianlin Liu[a,b], Chao-Xu Peh[a,c], Sébastien Simard[d], Konstadina Griva[e], Rathi Mahendran[a,f,g,*]

[a] Department of Psychological Medicine, National University of Singapore, Singapore
[b] Institute of Mental Health, Singapore
[c] Department of Psychology, National University of Singapore, Singapore
[d] Université du Québec à Chicoutimi (UQAC), Centre de recherche de l'Institut Universitaire de Cardiologie et de Pneumologie de Québec
[e] Nanyang Technological University, Singapore
[f] Department of Psychological Medicine, National University Hospital, Singapore
[g] Duke-NUS Medical School, Singapore

ARTICLE INFO

Keywords:
Cancer recurrence
Rumination
Depression
Anxiety

ABSTRACT

Objective: The Fear of Cancer Recurrence (FCR) is reported to be a normal response to cancer, but little is known about the interaction between FCR and maladaptive cognitive processes, which may increase the risk for depression and anxiety disorders among cancer survivors. Previous studies have shown the influence of rumination on depression and anxiety in other populations. Thus, the present study aimed to examine how FCR and rumination may relate to depression and anxiety symptoms among cancer survivors.

Methods: The present study included cancer survivors ($N = 388$) who had completed their active treatment at the National University Cancer Institute Singapore, and achieved complete remission from cancer. All participants completed self-report measures of FCR (Fear of Cancer Recurrence Inventory), rumination (Rumination Response Scale), depression, and anxiety symptoms (Hospital Anxiety and Depression Scale).

Results: The present study observed that (1) FCR and rumination were associated with more severe depression and anxiety symptoms, and (2) the interaction between FCR and rumination was associated with more severe depressive symptoms ($p = .01$). Specifically, rumination was significantly associated with higher depressive symptoms in individuals with high FCR ($p < .001$), while rumination was not associated with depressive symptoms in individuals with low FCR ($p > .05$).

Conclusion: Habitual rumination may be a maladaptive cognitive style to cope with high FCR. Therefore, the present study's findings elucidate the moderating effect of rumination on FCR, and such findings may better inform psychological interventions to reduce the risk of depression and anxiety among cancer survivors who experience high FCR.

1. Introduction

A cancer diagnosis is a stressful, major life event, due to the numerous physical, emotional, social, and financial demands imposed by the illness, which require significant individual life adjustments [4, 24, 38]. Difficulties in adjusting to these demands can be overwhelming and despite many efforts to cope, often time most individuals are left feeling helpless [30, 31]. For those who have had cancer and are in remission, past memories of their cancer experience often linger, and may perpetuate the fear that the cancer will recur, and a need to repeat a tumultuous cycle of adjustment to a major life stressor [13, 22, 39].

The diagnosis of cancer can be devastating for many patients, however, equally debilitating is the fear of cancer recurrence (FCR) that is reported to occur along the continuum of the illness; patients may develop FCR at diagnosis, during active treatment, while in remission, or in palliative care [9, 18, 33, 36]. FCR is reported to be a prevalent psychosocial concern among cancer survivors (27% to 87% of cancer survivors) [33, 36], and has been endorsed as one of the top five concerns among cancer survivors regardless of past diagnosis and cancer stage [15, 18, 32, 33]. Importantly, previous studies have shown that persistent and elevated FCR is associated with clinical depression, anxiety, post-traumatic stress, and quality of life impairment [9, 15, 33]. Notably, a systematic review on long-term (≥ 5 years) cancer survivors has also revealed that levels of FCR were comparable between short-term and long-term cancer survivors, which suggests that FCR may be a persistent concern throughout survivorship [15].

* Corresponding author at: Department of Psychological Medicine, National University Health System, NUHS Tower Block, Level 9, 1E Kent Ridge Road, 119228, Singapore.
E-mail address: rathi_mahendran@nuhs.edu.sg (R. Mahendran).

https://doi.org/10.1016/j.jpsychores.2018.06.004
Received 26 March 2018; Received in revised form 6 June 2018; Accepted 8 June 2018

While there is a growing research interest in FCR, current research on FCR is still at an early stage; the majority of research studies have focused on examining the prevalence and correlates of FCR, and evaluating the clinical utility of FCR measures [9, 17, 33, 36]. However, little is known about potential moderating factors that may have an influence on FCR, which might better explain the relationship between FCR and depression and anxiety disorders. More research is needed to elucidate the effects of potential moderating variables on FCR, and such findings may better inform psychological interventions to reduce the risk of depression and anxiety disorders among cancer survivors.

In the recent literature on FCR, cognitive mechanisms have been suggested to be important transdiagnostic factors for the development of pathological FCR [5, 6, 32]. Given that FCR is shown to be a multidimensional construct, and is comprised of cognitions, affect, and behaviour, the cognitive behavioural model appears to be the most appropriate model to conceptualize the effects of FCR and potential moderating factors on psychological outcomes [7, 11, 19, 25].

Accordingly, research studies on FCR have begun to explore the moderating effects of positive and negative cognitive styles. For example, findings from a recent cross-sectional study did not observe any moderating effect of avoidance and positive reappraisal on the link between FCR and quality of life impairment among a sample of Chinese cancer survivors [6]. On the other hand, another cross-sectional study found that more negative metacognitions, specifically, catastrophic worry/rumination about negative thoughts (e.g. uncontrollability and perceived sense of danger), was significantly associated with elevated levels of FCR among a sample of cancer survivors [5]. However, how FCR and rumination may interact to affect emotional outcomes such as depression and anxiety has yet to be carefully examined.

The role of rumination as a process underlying the development and maintenance of depression and anxiety has been well studied in both cancer (42; [16, 40]) and non-cancer populations [2, 23, 35]. Guiding these research studies would be the Response Styles Theory [27], which broadly conceptualizes rumination as a maladaptive cognitive style that involves a preoccupation with recurring negative thoughts about symptoms, causes, and consequences of emotional distress [27, 35]. According to the Response Styles Theory, habitual rumination precipitates and perpetuates a vicious cycle of rumination, negative thoughts, and emotional distress through cognitively biased processing of, and attention to negative cognitive content, which results in catastrophic thoughts [26, 27, 35]. Consequently, rumination has been shown to disrupt information processing, impairs problem-solving, and exacerbates emotional distress, all of which increase the risk for escalating depressive and anxiety symptomatology [16, 27, 28, 35].

Prior to examining the relationships among FCR, rumination, depression and anxiety symptoms, it should be clarified that both FCR and rumination are conceptually distinct constructs. FCR is shown to be more associated with worries which are oriented towards a future threat, such as the need to undergo treatment or one's mortality [32]. On the other hand, experimental studies have shown that rumination is associated with greater recall of negative memories of the past, more negative interpretations of the present, and a tendency to view the future with greater pessimism and hopelessness [28, 35]. While there are some overlaps between worry and rumination, conceptual distinctions in terms of specific cognitive content and behaviour have been proposed [35]. Specifically, rumination involves less verbal content and a lower tendency to engage in problem solving behaviours compared to worry [35]. This corroborates well with current conceptual understandings of FCR, which includes worry as a central component, as well as associated coping strategies and reassurance behaviours [17, 34].

Taking everything together, there is good evidence to support the importance of examining the interaction between FCR and rumination on psychopathological outcomes. Specifically, while FCR involves worries which are oriented towards future threats, this could potentially be influenced by past stressful experiences. Thus, ruminating about stressful life events (e.g. past diagnosis and treatment) may have an impact on worries of future cancer recurrence. Accordingly, the study of rumination may extend current understandings on habitual, maladaptive cognitive processes engaged by cancer survivors in response to stressful life events. More importantly, the interaction between FCR and rumination may explain the transition from a rational fear of cancer to the development of depression and anxiety symptoms. Thus, more research which examines rumination as a maladaptive cognitive process might potentially shed new insight on the relationship between FCR and depression/anxiety symptoms among cancer survivors.

Based on theoretical and empirical evidence, the present study thus sought to examine potential interactions between FCR and rumination in relation to self-reported depression and anxiety among a sample of cancer survivors who were in complete remission. The extension of current knowledge on FCR and associated psychopathological risk factors is vital for the prevention of psychopathology among cancer survivors. Therefore, we hypothesized that: (1) higher FCR and more rumination will be associated with more self-reported depression and anxiety symptoms. Given that previous studies have shown associations between FCR and maladaptive coping styles, it was hypothesized that: (2) the interaction between FCR and rumination is associated with more self-reported depression and anxiety symptoms, such that individuals with higher FCR and more rumination would experience higher levels of self-reported depression and anxiety symptoms.

2. Materials and methods

2.1. Participants

Participants were identified and recruited during their follow-up appointment at the National University Cancer Institute Singapore (NCIS). Participants were included if they (a) had achieved complete remission from cancer, (b) had completed treatment (surgery, chemotherapy, and/or radiotherapy) at least 1 year prior to study participation, (c) were Singapore citizens or permanent residents between 21 and 84 years, and (d) were able to understand and read either English or Mandarin. The study received ethics approval from the National Healthcare Group Domain Specific Review Board (Reference: 2015/00003). Following written informed consent, participants completed a series of self-report measures.

Of a total of 927 patients approached, 405 eligible participants participated in the study between February 2015 and August 2016. Due to the personal data protection act, we were not able to obtain further demographic or medical information from those who refused participation in the study. Data from some of the participants (n = 17) were excluded because these participants did not complete the outcome measures adequately, or indicated a zero-pattern response. The final sample included 388 eligible participants (41.8%).

2.2. Outcome measures

2.2.1. Socio-demographic and medical variables

The following socio-demographic information was obtained through a self-report questionnaire: Age, gender, ethnicity, marital status, education, income, and psychiatric comorbidities (psychiatric diagnoses were clinically determined by the participants' attending psychiatrist and self-reported in the questionnaire). Medical variables were abstracted from the participants' medical records: Previous cancer diagnosis and stage (early = Stage 1 or 2 and late = Stage 3 or 4), previous cancer treatment received (surgery, chemotherapy and radiotherapy), duration since completed treatment (months).

2.2.2. Fear of cancer recurrence

The Fear of Cancer Recurrence Inventory (FCRI; [34]) is a 42-item self-report measure, which was used to assess for FCR. The FCRI comprises of seven subscales, which include severity, triggers, psychological