



Factors associated with fear of progression in chinese cancer patients: sociodemographic, clinical and psychological variables

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ABSTRACT

Objective: Fear of progression (FoP) is a widespread problem among cancer patients and is considered to be one of the most distressing psychological consequences of cancer. The aim of this study was to investigate the association of sociodemographic, clinical, and psychological variables to FoP in Chinese cancer patients.

Methods: In this cross-sectional study, six hundred and thirty-six cancer patients were recruited. All participants were asked to complete a personal information sheet, the Chinese version of Fear of Progression Questionnaire-Short Form (FoP-Q-SF), Patient Health Questionnaire (PHQ-9) and General Anxiety Disorder Questionnaire (GAD-7). Descriptive statistics and hierarchical multiple regression was conducted to analyze the data.

Results: Hierarchical multiple regression revealed that childhood severe illness experience ($P = .011$), stress ($P < .001$), anxiety ($P < .001$), depressive symptom ($P < .001$) and personality ($P = .042$) were independently predictive of higher FoP. The final regression model explained up to 40.0% (adjusted R square: 38.8%) of the observed variance.

Conclusion: There are a number of factors that increase the likelihood of the development of FoP. The findings underline the necessity to provide effective psychological intervention for patients with high FoP in the future.

1. Introduction

Many different labels have been used to describe fears about the spread or recurrence of disease, such as fear of progression (FoP) [1], fear of recurrence/fear of cancer recurrence (FoR or FCR) [2], or worry about disease progression [3] etc. However, researchers tend to believe that these descriptions are virtually comparable on a conceptual level [1,4,5], and for practical purpose, there is indeed very strong overlap among them. Fear of progression (FoP) is often defined as the fear that the illness will progress with all its biopsychosocial consequences or that it will recur [6,7]. Previous literature has shown that FoP is one of the most frequent distress symptoms of patients with cancer and with other chronic diseases, such as diabetes mellitus [6] and heart disease [8].

FoP is considered as an appropriate, rational response to the real threat of cancer and relevant treatments [1]. Previous studies indicated that most patients reported low or moderate level of FoP, and still suffer

from it even years after their initial diagnosis [9]. A recent review suggested that about 50% of cancer patients experienced moderate to severe FoP [10], and one investigation indicated that 55–90% of breast cancer patients reported FoP throughout survivorship [11]. Due to the lack of a clear consensus regarding clinically significant FoP, the valid estimate of the rate of patients with FoP is always inconsistent.

As one of the most important emotional burdens for cancer patients, the determinants and consequences of FoP have been preliminarily addressed by several investigations, especially in western society. Significant negative relationships were found between FoP and treatment adherence, quality of life and patient's psychosocial well-being [12]. A systematic review of 130 studies found that younger age, female, lower level of optimism and education background were significantly associated with higher fears [10]. Various clinical variables were also found to be strong predictor of higher FoP, such as the receipt of chemotherapy [13], and having more physical symptoms [4]. However, these findings were often conflictive.

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Up to date, only a few FoP studies were conducted in Chinese population. In 2015, Wu et al. [14] first translated and tested the validity and reliability of the Chinese version Fear of Progression Questionnaire-Short Form (FoP-Q-SF) and found that female, younger age and economic burden were independent predictive factors of the development of FoP. Liao et al. [15] tested a mediation model of the contribution of conscientiousness, positive reappraisal and hopelessness to FoP and indicated that hopelessness was significantly associated with patient's fear levels and physical well-being. Cho et al. [16] interviewed 77 Chinese American women with breast cancer and found that higher levels of pain interference and fatigue were associated with higher FoP, which was further related to lower psychological quality of life. Determinants of FoP have not been investigated in detail in mainland Chinese cancer patients.

A new review by Fardell et al. [17] reported that previous losses [18], concurrent stressors [19], and uncertainty due to lack of information [20] maybe key additional factors to understand why some patients develop and maintain clinically significant FoP. Based upon the illness representation model [2,21], Lee-Jones et al. [2] argued that the reason why individuals develop different levels of fear may be due to individual differences (personalities, past coping, and previous psychological defenses). Leventhal et al. [22] also emphasized that persons will construct their cognition that are consistent with their cultural traditions and personal traits. For example, positive individuals may tend to represent their cancer as an acute, controllable disease rather than a chronic, uncontrollable disease. In addition, Shiloh [23] argued that personal experience is unique and is able to result in different illness representations among individuals. Previous study showed [24] that breast cancer patients who recalled childhood abuse tended to report more psychological distress, post-traumatic stress, self-blame and shame. Therefore, researchers believed that it is of importance to enquire about patients' previous experience as well as the meaning of their experience. Besides past experience and personality factors, a family history of cancer may also increase a sense of personal vulnerability and affect the patient's evaluation of personal health, as heredity is also viewed as a key factor in the 'cause' component of the theoretical model [21]. Moreover, previous research [25,26] has pointed out that certain lifestyle factors, such as alcohol consumption, could make an influence on the risk of cancer recurrence. To the author's best knowledge, only one study [27] explored whether FoP was related to lifestyle (physical activity and smoking), and findings showed that patients who were doing only 'some' or 'no' physical activity reported greater fears compared to the patients who reported doing more physical activity. However, those novel variables have not been previously investigated in the context of FoP in Chinese cancer patients.

This is a preliminary study to first test whether sociodemographic, clinical, and psychological variables factors are correlated with FoP. Furthermore, we believe it is meaningful to identify and investigate how potential novel factors become salient and how they are integrated in the evaluation of personal health. In the present study, we hypothesize that:

- 1) Besides traditional sociodemographic, clinical, and psychological variables, other factors (i.e. stress) are also related to FoP;
- 2) Patients who had anxiety/depressive symptom, past adverse experience (i.e. childhood abuse, bullying/childhood cancer experience), stress, a family cancer history and comorbidity (i.e. heart disease) are more likely to develop higher FoP;
- 3) Patients with positive personality and better lifestyle (non-smoker, daily exercise time > 60 min) tend not to develop higher FoP.

2. Methods

2.1. Design and participants

This is a cross-sectional study that included a sample of cancer

patients in mainland China. A power analysis was used to determine sample size. All cancer patients were recruited from two hospital sites (both top level III hospitals in mainland China): Department of Oncology, Southern Medical University Nanfang Hospital, and the Cancer Centre of Guangdong General Hospital. Data were collected from January to June 2018. Patients were eligible if they were: 1) above 18 years old; 2) able to read, write and understand Chinese; 3) with a clear cancer diagnosis. Patients were excluded if they were: 1) blind/deaf; 2) had disturbance of consciousness; 3) receiving palliative treatment; 4) cannot communicate in Cantonese/mandarin.

2.2. Measure

2.2.1. Personal information sheet

A study specific set of questions were formulated to collect information about patient's basic demographic and clinical data (such as, age, gender, marital, cancer stage etc.). Treatment received, physical comorbidity, childhood adversity experience, childhood severe illness experience and smoking behavior were assessed by 'Yes/No' questions: 1) Did you received surgery/chemotherapy/radiotherapy? 2) Do you suffer from any other physical comorbidity, such as diabetes, hypertension, musculo-skeletal, etc.? 3) Have you ever experienced any childhood adversity experience, such as sexual abuse, bullying, traffic accident, natural calamities, etc.? 4) Have you ever experienced any childhood severe illness, such as childhood cancer, traumatic injury, etc.? 5) Are you a current smoker? Patient's personality tendency was measured by a single question derived from the Chinese version Personality Traits Questionnaire [28]: what do you think is your dominant personality trait (Positive or Negative)? Stress was assessed using a self-designed question: what is your current stress level? Four responses were provided, namely: none, mild, moderate and high level. For those patients who were unclear about their cancer stage, data were recollected from patient's medical notes.

2.2.2. Fear of progression questionnaire-short form (FoP-Q-SF)

FoP-Q-SF is a 12-item short form of the original 43-item Fear of Progression Questionnaire (FoP-Q) [7]. It has been successfully applied to samples of different cancer patients [29–31]. The items are scored on a five-point Likert scale, ranging from 1 (never) to 5 (very often). The resulting sum score of the FoP-Q-SF ranges from 12 to 60, and higher sum score indicates higher FoP. The psychometric properties of the Chinese FoP-Q-SF has been tested by Wu et al. and it has been proved to be a valid instrument for measuring fear of progression in Chinese patients (Cronbach's alpha = 0.883) [14]. In the original version, a score of 34 or above indicates a dysfunctional level of FoP [32]. However, no cut-offs for dysfunctional has been provided in the Chinese FoP-Q-SF.

2.2.3. Patient health questionnaire (PHQ-9)

The Patient Health Questionnaire was developed as a screener for depression in primary care and is commonly used in medical settings. It is a 9-item self-report measure that evaluates the degree of depressive symptoms. Its response anchors range temporally from 0 (not at all) to 3 (nearly everyday) [33]. The PHQ-9 has been validated in numerous specific medical populations as well as in general population. The Chinese version of PHQ-9 showed good psychometric properties, the internal consistency was 0.89 [34]. A total score of 5 or more indicated depressive symptoms.

2.2.4. General anxiety disorder questionnaire (GAD-7)

The General Anxiety Disorder Questionnaire (GAD-7) was a brief self-report scale used to measure individual's anxiety level. Response options were not at all, several days, more than half the days, and nearly every day, scored as 0, 1, 2, and 3, respectively [35]. A total score of 5 or more indicated anxiety symptoms. The original internal consistency of the GAD-7 was excellent (Cronbach's alpha = 0.92), and

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