

# Concerns and Returns to Work in Patients with Breast Cancer Receiving Outpatient Chemotherapy: a Pilot Study

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## ABSTRACT

**Objective:** Breast cancer survivors are increasing in number among survivors of all types of cancer, and survivors returning to work are extremely important. The development of outpatient chemotherapy has increased the working population of patients undergoing cancer therapy. Consequently, a significant number of breast cancer survivors experience physical, psychological, and social problems. This study aimed to clarify differences in concerns among patients with breast cancer receiving outpatient chemotherapy according to their employment status. **Methods:** Twenty-eight patients with breast cancer undergoing outpatient chemotherapy were recruited. A questionnaire was used to survey the attributes, employment status, and levels of concern in these patients based on the Cancer-chemotherapy Concerns Rating Scale (CCRS). Data from three groups (employed full time, employed part-time, and unemployed) were analyzed using

multiple comparison tests. **Results:** The patients' mean age was (55.1 ± 9.9) years. According to the CCRS findings, the following three parameters differed between the three groups: scores for the items "I always think about my disease" (employed vs. unemployed,  $P = 0.005$ ) and "I can't work (housework/schoolwork)" (employed full time vs. part time,  $P = 0.045$ ), and scores for the "self-existence" subscale (employed vs. unemployed,  $P = 0.024$ ). **Conclusions:** This study revealed the characteristics of concerns in patients with breast cancer according to their employment status. Being able to continue working is considered to enhance the social health of these patients. Predicting concerns in employed patients will help gain perspective in early nursing interventions.

**Key words:** Breast cancer, concern, outpatient chemotherapy, work

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## Introduction

Over the past three decades, significant improvements in the management of cancer have reduced cancer-related mortality rates and thereby increased the number of cancer survivors.<sup>[1,2]</sup> The development of outpatient chemotherapy has increased the working population of patients undergoing cancer therapy. However, a significant number of cancer survivors experience physical, psychological, and social problems.<sup>[3]</sup> Physical suffering and psychological distress increase because of the side effects of chemotherapy. In addition to the obvious financial benefits, employment is associated with physical and psychological well-being, since patients are able to retain their identity and self-respect.<sup>[4-8]</sup> Breast cancer treatment varies according to the site and stage of disease and may include one or more of the following interventions: surgery, radiation therapy, chemotherapy/hormonal therapy, and biotherapy/targeted agents. Therapy may have a significant impact on an individual's health, and the associated symptoms may be physical, psychological, or neurological. In general, cancer and treatment-related symptoms, including treatment side effects, are major stressors for patients.<sup>[9,10]</sup> Of these, concern and depression are the most common psychological symptoms.<sup>[11]</sup> Some patients may be required to make adjustments in their job roles because of physical, cognitive, or psychological problems as a result of cancer or cancer treatment.<sup>[11,12]</sup>

### Statement of the problem

For patients with cancer, there are concerns regarding disease recurrence, sickness-associated changes, disease progression, social attitudes, financial aspects, future expenses, and medical treatments.<sup>[13]</sup> Patients receiving chemotherapy are more anxious than those undergoing radiotherapy and experience a lower quality of life (QOL).<sup>[14]</sup> It is not easy for nurses and oncologists to understand the psychological state of patients undergoing outpatient chemotherapy. Thus, it is especially important to understand patients' concerns so that these can be addressed effectively.

### Problem justification

Only a few studies have assessed the relationship between the psychological concerns experienced by patients with cancer and employment status. In addition, it is not clear whether there are any physiological differences between patients who work and patients who only recuperate from regular outpatient chemotherapy or whether patients who work find greater meaning in life by continuing their social life, reducing their economic problems, and having a better QOL. Moreover, the number of people suffering from breast cancer in Japan is increasing steadily.<sup>[15]</sup> Employment is

related to QOL in women with breast cancer.<sup>[16]</sup> Therefore, it is important to identify distinctions between these patient groups to provide an improved support system.

### Purpose of the study

This study aimed to determine the differences in the levels of concern among patients with breast cancer receiving outpatient chemotherapy according to their employment status.

## Methods

### Research setting and population

This was a cross-sectional study using self-administered questionnaires. Potential participants were recruited from the Outpatient Chemotherapy Unit at Kyoto Prefectural University Hospital. The inclusion criteria were patients who (1) were diagnosed with breast cancer, (2) aged 31–69 years (working age), (3) had stage I to III breast cancer, (4) had an Eastern Cooperative Oncology Group (ECOG) performance status (PS) of 0 or 1, and (5) had received an explanation of the study and agreed to participate.

### Participant recruitment process

The suitability of each patient for participating in this study was consulted to an oncologist (K.S.). After providing an explanation of the study's objective, we obtained approval and consent from each patient before participation.

### Research instrument

The demographic data included age, sex, caregivers, employment status at the time of diagnosis, and current employment status. Information regarding cancer stage and ECOG PS was obtained from medical records. We used the Cancer-chemotherapy Concerns Rating Scale (CCRS) for medical management-related concerns in patients undergoing outpatient chemotherapy.<sup>[17-20]</sup> The CCRS consists of a 15-item questionnaire with four subscales: reorganization of daily life, social and economic concerns, self-existence, and disease progress. These items are rated on a four-point Likert-type scale. Patients were expected to answer each item using the following ratings: 1 = not at all, 2 = a little bit, 3 = quite a bit, and 4 = very much. We calculated the participants' total scores for each item. Cronbach's alpha coefficient was 0.88, and higher scores indicated greater concern.

### Data collection procedure

From September 2015 to August 2017, the researchers conducted a survey of the participants who provided consent.

### Ethical approval

Ethical approval for this study was received from the Institutional Review Board of Kyoto Prefectural University of Medicine (Approval No.: ERB-E-82-5). These patients were informed of the research plan and were provided assurances that participation was voluntary and that their private information would remain confidential during and after the project. All patients provided written informed consent.

### Data management and analysis

Based on employment status, the participants were divided into three groups: employed full time, employed part-time, and unemployed. Statistical comparisons of each CCRS subscale were performed using the Kruskal–Wallis test to analyze the differences in scores for each employment status. A value of  $P < 0.05$  was considered to indicate statistical significance. We used the Statistical Package for the Social Sciences version 22.0 (IBM Institute Inc., Tokyo, Japan) for all statistical calculations.

## Results

Twenty-eight patients with breast cancer undergoing outpatient chemotherapy were recruited. The clinical characteristics of the patients were grouped according to employment status and are shown in Table 1. The

participants were all female, with an overall mean age of  $(55.1 \pm 1.8)$  years. Half of the participants were employed (50%). Twenty-one patients (75.0%) were married and seven (25.0%) were single. Only five patients (17.9%) were homemakers, whereas 23 cases (82.1%) were not. The caregivers of 15 patients (53.6%) were their respective partners; the remaining caregivers were either children or parents.

A questionnaire was administered to survey the attributes, employment status, and level of concerns in these patients based on the CCRS.<sup>[20]</sup> Data from the three groups were analyzed using multiple comparison tests. Statistical comparisons of each CCRS subscale were performed using the Kruskal–Wallis test to analyze differences in scores for each employment status.

According to the CCRS findings, the following three parameters differed between the three groups [Table 2]: “I always think about my disease” (employed vs. unemployed,  $P = 0.005$ ), “I can’t work (housework/schoolwork)” (employed full time vs. part time,  $P = 0.045$ ), and the “self-existence” subscale (employed vs. unemployed,  $P = 0.024$ ).

## Discussion

When it comes to cancer diagnosis and treatment in patients who are employed full time, there are several factors

**Table 1: Clinical characteristics of the participants grouped by employment status, n (%)**

	All subjects (n=28)	Full time employment (n=14)	Part taim e employment (n=5)	Unemployed (n=9)	P
Age (years, Mean±SD)	55.1±1.8	50.64±2.1	57.0±4.2	60.8±3.5	
Gender					
Male	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	
Female	28.0 (85.3)	14.0 (100.0)	5.0 (100.0)	9.0 (100.0)	
Stage					
I	5.0 (18.0)	2.0 (13.0)	2.0 (25.0)	1.0 (20.0)	
II	15.0 (53.0)	10.0 (67.0)	3.0 (37.0)	2.0 (40.0)	
III	8.0 (29.0)	3.0 (20.0)	3.0 (37.0)	2.0 (40.0)	
IV	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	
Performance status					
0	13.0 (46.4)	7.0 (50.0)	3.0 (60.0)	3.0 (33.3)	0.974
I	15.0 (53.6)	7.0 (50.0)	2.0 (40.0)	6.0 (66.7)	
Martial status					
Married	21.0 (75.0)	10.0 (71.4)	3.0 (60.0)	7.0 (77.8)	0.500
Single	7.0 (25.0)	4.0 (28.6)	2.0 (40.0)	2.0 (22.2)	
Homemakers					
Yes	5.0 (17.9)	9.0 (50.0)	1.0 (20.0)	1.0 (11.1)	0.315
No	23.0 (82.1)	9.0 (50.0)	4.0 (80.0)	8.0 (88.9)	
Caregivers					
Partner	15.0 (53.6)	10.0 (71.4)	3.0 (60.0)	3.0 (33.3)	0.39
Child	10.0 (35.7)	5.0 (35.7)	2.0 (40.0)	3.0 (33.3)	
Parent	10.0 (29.4)	9.0 (64.3)	1.0 (20.0)	0.0 (0.0)	
Sibling	10.0 (35.7)	8.0 (57.1)	1.0 (20.0)	1.0 (11.1)	
Office	5.0 (17.9)	4.0 (28.6)	0.0 (0.0)	0.0 (0.0)	
Others	9.0 (32.1)	5.0 (35.7)	2.0 (40.0)	2.0 (22.2)	

**Table 2: Cancer-chemotherapy Concerns Rating Scale (CCRS) in patients with breast cancer according to employment status, median (max-min) (n=28)**

Item	Full time employment (n=14)	Part time employment (n=5)	Unemployed (n=9)	P
The 15 items of the Cancer-chemotherapy Concerns Rating Scale are divided into four subscales. The total score for each item was calculated	36.0 (21.0-47.0)	29.0 (20.0-35.0)	33.0 (20.0-42.0)	0.272
Disease progress	5.5 (3.0-8.0)	8.0 (8.0-12.0)	5.0 (3.0-8.0)	0.180
Reorganization of daily life	10.5 (6.0-18.0)	8.0 (6.0-14.0)	11.5 (6.0-16.0)	0.385
Self-existence	10.5 (9.0-12.0)*	8.0 (8.0-12.0)*	8.5 (6.0-11.0)*	0.024*
Social and economy concerns	7.5 (3.0-11.0)	6.0 (3.0-9.0)	8.0 (3.0-9.0)	0.532
Sub-item				
Disease progress				
I always think about my disease	4.0 (3.0-4.0)*	3.0 (2.0-4.0)*	3.0 (2.0-3.0)*	0.007**
I have anxiety about recurrence and metastasis	3.5 (3.0-4.0)	3.0 (3.0-4.0)	3.0 (2.0-4.0)	0.595
My will-power and physical strength are decreased	3.0 (2.0-4.0)	3.0 (2.0-4.0)	3.0 (1.0-4.0)	0.242
Reorganization of daily life				
I am not able to take care of myself	1.0 (1.0-3.0)	1.0 (1.0-1.0)	1.0 (1.0-3.0)	0.364
I cannot maintain the rhythm of my daily life	2.0 (1.0-3.0)	1.0 (1.0-4.0)	1.0 (1.0-2.0)	0.478
I cannot work (housework/schoolwork)	3.0 (1.0-4.0)*	1.0 (1.0-2.0)*	2.0 (1.0-3.0)	0.049*
Self-existence				
I restrict my life	2.5 (1.0-4.0)	1.0 (1.0-3.0)	3.0 (1.0-3.0)	0.250
I am restricted by my family's worry	1.5 (1.0-4.0)	1.0 (1.0-4.0)	2.0 (1.0-3.0)	0.958
I feel alienated from society	1.0 (1.0-4.0)	1.0 (1.0-2.0)	1.0 (1.0-3.0)	0.560
I do not feel like myself	1.5 (1.0-4.0)	1.0 (1.0-2.0)	2.0 (1.0-3.0)	0.274
I want to rely on someone or something	2.0 (1.0-3.0)	1.0 (1.0-3.0)	2.0 (1.0-3.0)	0.810
I lost a human relationship	1.0 (1.0-4.0)	1.0 (1.0-1.0)	1.0 (1.0-2.0)	0.413
Social and economy concerns				
I worry about my family's future	2.0 (1.0-4.0)	2.0 (1.0-3.0)	3.0 (1.0-4.0)	0.556
I worry about not being able to fulfill my duties	2.5 (1.0-4.0)	1.0 (1.0-3.0)	3.0 (1.0-4.0)	0.206
I worry about my financial future	3.0 (1.0-4.0)	3.0 (1.0-3.0)	2.0 (1.0-4.0)	0.991

\*P<0.05; \*\*P<0.01

to consider, including difficulties in managing symptoms associated with cancer.<sup>[21]</sup> In addition, stresses related to work may negatively affect working patients with cancer, who have physical and psychological limitations. Working hours and occupational roles in patients with cancer may be reduced by psychological symptoms such as fear, concern, and depression.<sup>[22]</sup> However, there is increasing evidence that working is beneficial for patients with cancer since most patients with cancer consider work an important aspect of reestablishing normal life.<sup>[23]</sup> In general, working patients with cancer would benefit from the financial stability, self-identity, sense of normality, and emotional well-being associated with their work.<sup>[4,5,22,24,25]</sup> However, some working patients with cancer lose self-confidence and experience difficulties in coping with symptoms.<sup>[25,26]</sup>

The number of women who are active in society is increasing. Many of these active women fulfill several roles, such as employee, wife, mother, and daughter. Furthermore, those diagnosed with cancer also play the role of patient. Even without a cancer diagnosis, fulfilling several roles are a very difficult task. Patients with breast cancer, however, juggle many roles while suffering from symptoms due to treatment, experience many stresses related to work,

and remain active in society. In cases of breast cancer, for patients to live like themselves, it is necessary to support them in achieving the lifestyle they desire.

The type of concern most frequently raised by patients with cancer receiving outpatient chemotherapy was “disease progress.”<sup>[18]</sup> Many patients did not talk to others about those concerns which led them to think about “self-existence” or “death.”<sup>[18]</sup> The CCRS score was significantly higher among unemployed individuals compared to those who were employed.<sup>[19]</sup> However, it is unclear whether there are any physiological differences between patients who are employed full-time vis-à-vis and those who are unemployed.

In our study, the scores for the “disease progress” subscale and the item “I always think about the disease” were highest in the employed group. Patients who were working felt responsible for their families and were anxious about their families’ and their own future. In general, patients with cancer always have a fear of relapse and metastasis, and patients in the employed group often regarded their disease and its treatment as being interwoven with their work. The scores for the item “I can’t work (housework/schoolwork)” were highest in the employed group. Horii *et al.*<sup>[27]</sup> reported that patients with cancer did not try to work when they were



physically unable to and made an effort to balance work and housework. They realized that it would be impossible to work with a decline in willpower and physical strength or fatigue. Working patients may spend days feeling frustrated at being unable to work as expected. The scores for the item “self-existence” were highest in the employed group. Patients who are working may feel uneasy regarding their future life and constantly worry about their families. According to the CCRS results, the employed group was “always thinking about the disease,” felt that they “can’t work (housework/schoolwork),” and were anxious about “self-existence.” Our study indicates the importance of assessing the mental status of patients with cancer throughout the management of the disease.

### Recommendations

Additional studies are required to examine the time of onset of symptoms and their pattern over the course of cancer treatment. The ability to predict concerns strongly experienced by employed patients will help provide perspective in early nursing interventions. It is important to understand patients’ employment circumstances, including current employment status, work details, and workplace support systems, by contacting patients’ family members and colleagues. It is also important for patients to share information with their family, friends, and medical staff so that their fears and distress can be addressed and to ensure that they access necessary social services. Two-way information exchange, active listening, and informed consent may provide clear solutions to problems.<sup>[28]</sup> Our results can also help nurses offer better supportive care to patients with cancer who are at risk of experiencing psychological symptoms. Knowledge of psychological status is important for medical staff to improve the QOL of patients with cancer. However, further research is required to identify patients who are at a growing risk of psychological distress. There may be benefits to functional outcomes and employees’ health by facilitating information flow between medical specialists and employers. Further research may develop guidelines to facilitate the feedback method to promote the psychological well-being of patients. This will guarantee a patient-centered approach in supporting the achievement of patients’ goals. This cross-sectional study provided information about the psychological symptoms of patients with cancer.

### Limitations

The major limitation was that this study included a small number of patients within a single institution, which limited our ability to generalize our findings. However, this study offers some valuable knowledge and opinions regarding the levels of concern experienced by patients

with cancer in different employment situations. Future research should involve larger numbers of patients and many social and economic factors. In addition, longitudinal studies are recommended to obtain information about the psychological symptoms experienced by patients with cancer over time.

## Conclusion

This study revealed the characteristics of concerns in patients with breast cancer according to their employment status. Being able to continue working is considered to enhance the social health of these patients. Predicting serious concerns of employed patients and collecting the relevant information will help provide perspective in early nursing interventions.

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### Conflicts of interest

There are no conflicts of interest.

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