



# A structural model for stress, coping, and psychosocial adjustment: A multi-group analysis by stages of survivorship in Korean women with breast cancer



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## ARTICLE INFO

### Keywords:

Social support  
Coping  
Adjustment  
Stress  
Breast cancer patient  
Self-efficacy

## ABSTRACT

**Purpose:** Prospective studies have examined factors directly affecting psychosocial adjustment during breast cancer treatment. Survivorship stage may moderate a direct effect of stress on psychosocial adjustment. This study aimed to examine relationships between stress, social support, self-efficacy, coping, and psychosocial adjustment to construct a model of the effect pathways between those factors, and determine if survivorship stage moderates those effects.

**Methods:** Six hundred people with breast cancer completed questionnaires. Examined stages of survivorship after treatment were as follows: acute (i.e., < 2 years), extended (2–5 years), and lasting (> 5 years). Stress (Perceived Stress Scale), social support (Multidimensional Scale of Perceived Social Support), self-efficacy (New General Self Efficacy Scale), coping (Ways of Coping Checklist), and psychosocial adjustment (Psychosocial Adjustment to Illness Scale—Self-Report—Korean Version) were measured.

**Results:** Self-efficacy significantly correlated with psychosocial adjustment in the acute survival stage ( $\gamma = -0.37, P < .001$ ). Stress inversely correlated with coping only in the extended survival stage ( $\gamma = -0.56, P < .001$ ). Social support's benefit to psychosocial adjustment was greater in the acute ( $\gamma = -0.42, P < .001$ ) and extended survival stages ( $\gamma = -0.56, P < .001$ ) than in the lasting survival stage. Stress's negative correlation with psychosocial adjustment was stronger in the lasting survival stage ( $\beta = 0.42, P < .001$ ) than in the acute survival stage.

**Conclusions:** Based on these results, it is necessary to improve self-efficacy, social support, and manage stress according to survival stage for psychosocial adjustment of female breast cancer patients.

## 1. Introduction

Cancer is among the most life-threatening conditions worldwide and in Korea. In 2013, breast cancer was the second-most common type of cancer among women in Korea (National Cancer Information Center, 2013). Recently, the number of cancer survivors has increased due to developments in surgery, anticancer chemotherapy, radiation therapy, hormonal therapy, and targeted therapy (Korea Breast Cancer Society, 2016; National Cancer Information Center, 2013). The incidence of breast cancer increases with age in Western countries. The median age at diagnosis of female breast cancer was 62 years in the SEER Cancer Statistics Review (Howlader et al., 2014). However, in Korea, the median age of women with breast cancer is 50 years, and most are aged

40–49 years (Korea Breast Cancer Society, 2016). These data suggest that Korean women with breast cancer are typically diagnosed earlier, and live longer as breast cancer survivors.

Mullen (1995) defined three stages of cancer survival (i.e., acute, extended, and lasting) based on the cancer's state and progress in treatment. The acute survival stage extends up to two years after diagnosis. In the acute survival stage, patients with breast cancer receive surgery, chemotherapy, and radiation therapy. The extended stage extends between two and five years from diagnosis while treatment is ongoing. In the extended survival stage, further therapy can be added to prevent or treat recurrence. Recurrence following completion of treatment is common during the extended stage. The lasting survival stage extends from five years after diagnosis; in this stage, most active cancer

**Abbreviations:** GFI, Goodness of Fit Index; AGFI, Adjusted Goodness of Fit Index; CFI, Comparative Fit Index; NFI, Normed Fit Index; RMSEA, Root Mean Square Error of Approximation; SRMR, Standardized Root Mean Square Residual

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<https://doi.org/10.1016/j.ejon.2018.01.004>

Received 18 May 2017; Received in revised form 4 January 2018; Accepted 7 January 2018  
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cells have disappeared (Lim and Han, 2008; Mullen, 1995).

Female breast cancer is expected to deteriorate a woman's sexual identity; thus, the impact in terms of stress may be greater than that of other diseases. Indeed, women with breast cancer experience more stress during survival than people with other conditions (Fu et al., 2008; Ho et al., 2015) and show treatment-related deterioration in cognitive ability during the acute survival stage (Reid-Arndt and Cox, 2012). Sources of stress affecting women with breast cancer include poor health and management of one's marriage, home, finances, and social life (Wu and Andersen, 2010). Women in the extended survival stage experience stressful life events, show low marital satisfaction (including after the cessation of treatment) (Kim et al., 2009; Lee and Lee, 2011), and show greater mental stress than physical stress (Cha et al., 2012). In the lasting survival stage, people (97.1% females and 2.9% males) with breast cancer commonly experience fear, anxiety, depression, and long-term sexual functional disturbance (Pumo et al., 2012).

The core concepts of the Transactional Model of Stress and Coping are stress, appraisal, and coping style (Lazarus and Folkman, 1984). Stressful experiences are understood as person-environment transactions in which environmental demands exceed the person's capacity to meet them, thereby reducing the person's well-being. "Stress appraisal" refers to the cognitive evaluation of stress; it may be divided into primary and secondary stages. The person's coping style affects his or her adaptive outcome. Coping is a mode of stress management and a form of psychosocial adjustment that people with breast cancer may use (Mukwato et al., 2010; Neipp et al., 2008). Self-efficacy, social support, optimistic character, and modes of coping affect psychosocial adjustment (Boinon et al., 2014; Kim and So, 2012; Rottmann et al., 2010). Social support provides people with breast cancer with the psychological resources they need to alleviate the negative effects of cancer stress (Rizalar et al., 2014; Usta, 2012). In a study of patients with breast cancer, it was found that the higher the level of social support, the greater was the coping, the higher the psychosocial adjustment, and the lower the symptom experience (Kim and So, 2012). It has been suggested that patients with breast cancer and gynecologic cancer should be provided with social support reflecting the stage of survival (Baik and Lim, 2011). Therefore, it is necessary to understand social support according to the stage of survival. Self-efficacy helps people to manage stressful factors of adjustment by promoting emotional confrontation, activity, and positive problem-solving attitude (Bandura, 1993; O'Brien and Moorey, 2010). In a study of patients with lung cancer and prostate cancer, including those with breast cancer, self-efficacy was identified as a factor influencing psychosocial adjustment (Mazanec et al., 2011).

Extensive research has examined stress in breast cancer patients; that research has mostly examined the period of active treatment immediately after diagnosis (i.e., the acute survival stage) and comparison of stages is yet to be conducted (O'Brien and Moorey, 2010; Rottmann et al., 2010). The key factors affecting stress, coping, and psychosocial adjustment at each stage of survival remain largely undetermined. Moreover, in the acute survival stage, women with breast cancer experience surgery, complications of treatment, and changes in their body image. In the extended and lasting stages, women who have been treated for breast cancer worry about recurrence and an uncertain future. Likewise, women with breast cancer experience different treatment methods and processes, psychological reactions, symptoms, and stress types in different stages of survival (Cha et al., 2012; Pumo et al., 2012; Reid-Arndt and Cox, 2012); nursing care for women with breast cancer should reflect the factors that most strongly affect stress and psychosocial adjustment at the patient's particular survival stage. Therefore, this study aimed to examine the possible relationships between stress, social support, self-efficacy, coping and psychosocial adjustment among women with breast cancer by stages of survivorship, using the Transactional Model of Stress and Coping (Lazarus and Folkman, 1984). We aimed to develop a model of the pathways of

influence between the research variables and provide data capable of informing and promoting psychosocial adjustment to stress among women with breast cancer in Korea.

### 1.1. The conceptual model

According to the Transactional Model of Stress and Coping by Lazarus and Folkman (1984), stress is a specific relationship between a person and the environment that is considered threatening to the individual's well-being by exceeding the limits of their resources or claiming their resources. Primary appraisal is to distinguish between situations, threats, and challenges when assessing stress in a situation where a person is perceived as stressed. Secondary appraisal is what can be done when a person is judged to be in a stressful situation; it has a direct impact on coping strategies.

The way of coping with stress refers to the response taken to resolve the stress by dealing with internal or external situations or the needs judged to exceed the resources of the individual. Problem-focused coping is a positive strategy that focuses on behavioral or cognitive efforts in the individual's situation. Emotion-focused coping is a passive coping strategy to control the negative emotional response induced by stress stimuli. Further, coping strategies eventually affect adaptive outcomes. The effective use of coping leads to the positive result of psychosocial adjustment. Integration of interpersonal and intrapersonal resources is required in the process of stress, coping, and psychosocial adjustment with cognitive evaluation as suggested by Lazarus and Folkman (1984).

Many studies have used the Transactional Model of Stress and Coping to examine stress' relationship with adaptive outcomes (Groarke et al., 2013; Kim and So, 2012; Mackay and Pakenham, 2012; McGinty et al., 2012). Kim and So (2012) examined women with breast cancer and tested a path analysis model that included "uncertainty" and "experiencing symptoms" in the primary appraisal and "social support" and "optimism" in the secondary appraisal (Kim and So, 2012). Another study examining four-month post-operative women with breast cancer tested a model that included social support in the secondary appraisal and depression, anxiety, negative influence, and positive influence as the adoptive outcomes (Groarke et al., 2013). Self-efficacy's effect on appraisal and coping with the fear of cancer recurrence has been supported among female breast cancer survivors who completed the necessary treatment (McGinty et al., 2012). Social support and self-efficacy appear to constitute coping resources during secondary appraisal and directly affect coping style and psychosocial adjustment (Bandura, 1993; Lazarus and Folkman, 1984).

Instead of providing consistent care based on the results of the previous studies in all patients with breast cancer, it is necessary to evaluate the stresses according to the stages of survival and reflect them in nursing practice. Therefore, the present study added stages of survivorship to the Transactional Model of Stress and Coping and developed a pathway model of effects between its factors (Lazarus and Folkman, 1984).

## 2. Methods

### 2.1. Study design and participant recruitment

From May 2015 to April 2016, participants were recruited from a university hospital in South Korea during admission and at the Out-Patient Department (OPD) clinic. Participants were either diagnosed with breast cancer and treated at the hospital at admission or OPD follow up. Eligibility criteria were as follows: histologically confirmed female breast adenocarcinoma, in the process of treatment or completed the treatment process, aged  $\geq 18$  years, and with no other cancers. Participants with impaired cognitive function or communication were excluded. After reviewing the charts (assessment for cognitive impairment and mental illness history – checking diagnosis of women

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