Illness cognitions and the associated socio-demographic and clinical factors in Chinese women with breast cancer

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\textbf{ABSTRACT}

\textbf{Purpose:} Illness cognitions are important mediators between disease and psychological adjustment. Evidence related to illness cognitions among patients with breast cancer remains limited. The purpose of this study was to examine illness cognitions among Chinese women with breast cancer and associations with socio-demographic and clinical factors.

\textbf{Methods:} A cross-sectional study was carried out involving 313 women with breast cancer recruited from a general hospital and a social cancer support club in Beijing from October 2016 to May 2017. Data were collected using the Illness Cognition Questionnaire.

\textbf{Results:} Participants reported positive overall cognition regarding breast cancer (helplessness, 13.70 ± 4.24; acceptance, 16.86 ± 4.30; perceived benefits, 17.93 ± 3.86). A multiple regression model indicated that six factors were associated with illness cognitions: treatment phase of disease, having no children, not returning to work (positive associations with helplessness, negative associations with acceptance); age (negative associations with helplessness, positive associations with acceptance); treatment phase of disease, having no medical insurance (negative associations with perceived benefit); and disease duration (positive associations with acceptance).

\textbf{Conclusions:} This study reports on the presence of different illness cognitions in Chinese women with breast cancer and the associated factors, and the results could help oncology medical and nursing staff identify risk factors for poor emotional adjustment to breast cancer and the patients who may benefit from interventions aimed at improving the presence of positive illness cognitions.

\section{1. Introduction}

Breast cancer is one of the most common cancers in women in China and even worldwide, and the mean age of women with breast cancer was 45-55 years in China (Chen et al., 2016). Due to advances in treatment efficacy and improvements in survival rates, breast cancer is considered a chronic disease (Niclas, 2005). The 5-year relative survival rate for breast cancer has been reported to be up to 70% in urban parts of China (Wang and Ouyang, 2014; Zheng et al., 2013). A high survival rate does not necessarily mean that patients have successfully accepted, adjusted to, or positively coped with their disease. Physical and psychosocial problems, such as insomnia, fatigue, sexual dysfunction, distress, anxiety, and self-image issues may be exhibited throughout the breast cancer treatment and rehabilitation processes (Quintard et al., 2014; Schmid-Büchi et al., 2011). The level of hopelessness and depression among breast cancer patients is significant (Watson et al., 2005). Previous studies have indicated that anxiety and depression among women with breast cancer are associated with the type of coping strategies adopted and cognitions regarding the disease (Osowiecki and Compas, 1998; Schou et al., 2004). Illness cognitions have been found to be important mediators between disease and psychological adjustment, influencing recovery (Evers et al., 2001).

Illness cognitions are patients’ perceptions, interpretations, and understanding about their disease, treatment, and future, and enable a patient to make sense of their personal inner world and deal with their illness (Hagger and Orbell, 2003). According to Lazarus's Transactional Model (Lazarus, 1993), which focuses on cognition processes of stress, with coping and emotion determined by underlying cognitions, illness cognition is a significant mediator between medical conditions and well-being (Evers et al., 2001; Hagger and Orbell, 2003; Hudson et al., 2014). Patients’ perceptions and beliefs about their illness predict emotional and coping variables, such as anxiety and distress (de Ridder and Schreurs, 2001), psychological adaptation (Evers et al., 2001), and coping behaviors (Searle et al., 2007). Positive illness cognitions are
such as gender and age. Young female adults with chronic illness since patients receiving outpatient chemotherapy found that illness acceptance and clinical factors, have found no associations for professional status (Czerw et al., 2016). Studies that have investigated factors associated with illness acceptance after breast cancer remain (Johansson et al., 2011) among breast cancer patients. Acceptance for et al., 2004; Johansson et al., 2011), decreased health-related quality of life (Johansson et al., 2011), poorer survival (Johansson et al., 2011; Okano et al., 2001), while tumor site and stage had no e. Watton et al., 2015).

Acceptance was found among older patients with gastric cancer than among their younger counterparts (Palgi et al., 2013). Illness cognitions have also been associated with disease characteristics and disease duration. A study on young adults, with a chronic illness since childhood, found that participants with a variable or negative course of disease, those who used medications or medical devices, and those who reported tiredness or problems with sitting, reported less acceptance and more helplessness than those without these disease characteristics (Verhoof et al., 2014). For hemodialysis and stroke patients, illness cognitions have been found to become more positive over time (Field et al., 2008; Tasmoc et al., 2013; van Mierlo et al., 2015).

It is not clear which socio-demographic and disease characteristics are associated with illness cognitions among breast cancer patients, although it is widely accepted that illness cognitions are an important factor in the well-being of people with breast cancer. A review of the literature indicates that most studies of breast cancer related to psychological issues have focused on coping strategies (Elumelu et al., 2015; Jensen et al., 2014; Taleghani et al., 2006), and the importance of illness cognitions has been indirectly reported in these studies’. Helplessness, related with anxiety and depression, was the expectation that future negative outcomes (Swendsen, 1997), which has been associated with psychological outcomes among breast cancer patients, such as resilience (Peréz et al., 2016), distress (Andreu et al., 2012), and depression and anxiety (Wang et al., 2013). Individuals with hopelessness responses reported more anxiety and depression (Grassi et al., 2004; Johansson et al., 2011), decreased health-related quality of life (Johansson et al., 2011), poorer survival (Johansson et al., 2011; Watson et al., 2005), and increased pain (Johansson et al., 2011; Okano et al., 2001), while tumor site and stage had no effect on helplessness (Johansson et al., 2011) among breast cancer patients. Acceptance for patients with breast cancer has been reported as moderate to high (Czerw et al., 2016; Nowicki et al., 2015). However, findings on the factors associated with illness acceptance after breast cancer remain conflicting. Acceptance is reportedly associated with education, occupation, residence, and income, with higher acceptance among educated white-collar workers living in cities who are in a good financial position (Nowicki et al., 2015). However, a study involving 193 breast cancer patients receiving outpatient chemotherapy found that illness acceptance depended on income, and did not differ by educational level or professional status (Czerw et al., 2016). Studies that have investigated illness acceptance and clinical factors, have found no associations for disease characteristics such as surgery type or disease duration (Czerw et al., 2016; Nowicki and Ostrowska, 2008; Nowicki et al., 2015). As an adaptive illness cognition, experiencing perceived benefits has been assessed in terms of other psychological factors, for example, post-traumatic growth. The level of posttraumatic growth among breast cancer survivors was found to be moderate to high, and it was shown to be associated with income, education, work status, and having a co-morbid chronic disease (Wang et al., 2014).

As far as we know, generic illness cognitions (such as helplessness, acceptance, and perceived benefits) have not previously been investigated among Chinese women with breast cancer. In addition, irrespective of the illness cognition investigated, most of the previous studies were mainly designed to identify other factors, such as psychological outcomes and physical health. Improving, or at least preventing, any worsening of illness cognitions in women with breast cancer can have beneficial effects for clinical nursing practice, such as promotion of patients’ psychological adaptation and active engagement with treatment. The aim of this study was to identify the illness cognitions of women with breast cancer, as well as the associated socio-demographic and clinical factors. It is anticipated that the findings will assist in identifying patients who may benefit the most from interventions directed at problematic cognitions.

2. Methods

2.1. Design

A cross-sectional, correlational surveys was carried out and data were collected between October 2016 and May 2017.

2.2. Participants

A convenience sampling method was used to recruit patients with breast cancer from a general hospital and a social cancer support club in Beijing, China. The inclusion criteria were: newly diagnosed breast cancer; awareness of the illness; tumor, node and metastasis (TNM) stage I–III; no history of other types of cancer; > 18 years of age; female; and no cognitive impairments, with an ability to express opinions.

To ensure appropriate statistical power, the formula \( n = \left( \frac{Z_{\alpha /2} \times \sigma}{\delta} \right)^2 \) was used to calculate the sample size, where \( Z_{\alpha /2} = 1.96 \), \( \delta = 0.5 \) and \( \sigma = 4.30 \) (based on the mix standard deviation of the three ICQ subscale scores among women with breast cancer in a preliminary study involving 43 women). Therefore, the calculated sample size was \( n = 284 \). We increased the sample size by a further 10% to allow for attrition, so 313 participants were recruited.

2.3. Data collection

Notices about the study were posted in the breast cancer center and at the social cancer support club. Participation involved completing a paper-and-pencil questionnaire. One of the researchers (J. H.) worked in the breast cancer center as a practice nurse, and she invited eligible patients to take part in the study on the days she was working at the breast cancer center. Medical staff and managers of the social cancer support club recommended that the club members take part in the study according to the medical records and inclusion criteria, and, in addition, three research team members volunteered weekly in the club activities, and recruited breast cancer survivors. The purpose of the study was described to potential participants and assurances of confidentiality were provided. After giving consent, the participants completed the questionnaires individually (either during treatment in the breast cancer center or after completing the activities at the club), which took about 10 min. During completion of the questionnaires, a researcher (J. H.) was available to answer any questions about the questionnaire, and she read the questionnaire and recorded the
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