

## Mindfulness Based Breast Cancer Management: Review Study

Review Article

Farahbakhsh K<sup>1</sup>, Mokri Vala M<sup>2\*</sup><sup>1</sup> Associated Professor, Psychology Department, Allameh Tabataba'i University, Tehran, Iran.<sup>2</sup> PhD, Psychology Department, Allameh Tabataba'i University, Tehran, Iran.

### Abstract

**Background & Aim:** Breast cancer are involved with physiological, psychological, pathological, cultural and even social factors therefore for breast cancer management a comprehensive assessment and an individualized plan should be provided. This review attempted to illustrate the present evidence supporting mindfulness based methodologies and therapeutic approaches, and demonstrate the process of interventions for breast cancer pain syndrome.

**Methods:** This study included all indexed studies during last 10 years. We searched MEDLINE, CINAHL, PsycINFO, Cochrane, SID and Magiran from 2006 through April 2016. We included prospective, controlled health care intervention studies of female with breast cancer populations, focusing on pain.

**Results:** Eight studies met the inclusion criteria mostly focused on mindfulness-based therapies. This systematic review found some evidence for the effectiveness of mindfulness based stress reduction in improving psychological health such as quality of life, stress, anxiety, depression, anxiety, social support, unhappiness etc.

**Conclusion:** We found moderate strength of supports in case of effectiveness of mindfulness interventions, particularly mindfulness based stress reduction that introduced as third view therapies.

**Keywords:** Breast Cancer; Pain; Psychology; Mindfulness.

### Introduction

Breast cancer is a heterogeneous disease with a number of factors that influence the prognosis and chance for cure [1]. In Iran the economic burden of breast cancer is US\$ 947,374,468. Most of the cost (77%) pertained to the productivity lost due to breast cancer deaths and the direct medical cost accounted for 18.56% of the estimated total cost [2]. Similar to other developing countries, the incidence rate of breast cancer has increased in Iran in recent years and it is the most common cancer in women [3].

In breast cancer, assessment can identify concurrent psychological symptoms such as depression [4] or anxiety [5] as well as the psychosocial sequelae of pain including fear [6], insomnia [7], or agitation [8]. Therefore, the treatment of cancer pain inherently requires psycho as well as physical therapies.

Despite the importance of pain management, the patients and physicians are going through common available method of

using medications which results to many side effects and more complications in treatment process [9]. Chemotherapy found to be associated with nausea, vomiting, hair loss, cognitive dysfunction, fatigue, changes in sexual functioning and reductions in quality-of-life ratings [10]. On the other hand, experienced physicians faced frequently with breast cancer patients who presents pain without any physical sign or reason. While some other are adjusted quickly with cancer pain breast cancer consequences [11]. Hence, more non aggressive ways for managing breast cancer are needed [12]. Psychosocial interventions are aimed at enhancing a sense of control over the pain or underlying disease. Breathing exercises, relaxation, imagery, hypnosis, and other behavioral therapies can be very useful. Among different recent psychotherapy approaches, mindfulness-based stress reduction (MBSR) seems to be especially effective for a variety of psychosocial cancer symptoms such as stress, depression, anxiety, and reduced quality of life [13-15]. Mindfulness based therapies is designed to help people avoid habitual negative thoughts, emotions and behavioural patterns. Instead, increased awareness and acceptance is seen as allowing

#### \*Corresponding Author:

Mehrnoush Mokri vala, PhD,  
Psychology Department, Allameh Tabataba'i University, Tehran, Iran.  
E-mail: mehrnoushmokri1362@gmail.com

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for new ways to respond and cope both in relation to oneself and the wider world. Mindfulness training has been linked to changes in areas of the brain responsible for affect regulation, and to stress impulses reactions; in turn, these changes influence body functions [16].

Some reviews already conducted in term of cancer management indeed previous reviews addressed general cancer populations. This study specifically addressed breast cancer populations, complications such as breast loosing, body image, self-confidence, depression and anxiety is more common. Such patients frequently have multiple coexisting symptoms and other sources of suffering; thus, the effects of interventions on pain outcomes may differ in this population. Consequently, we conducted a systematic review to evaluate the effectiveness of acceptance-based interventions targeting pain in patients with breast cancer.

## Methods

We searched PubMed, Scopus, google scholar, MEDLINE, CINAHL, PsycINFO, Cochrane, SID and Magiran from 2009 through April 2016 additional studies from reference lists of eligible articles and relevant systematic reviews, as part of an review of interventions for pain management among patients with breast cancer.

We included randomized and non-randomized studies with control group that included a majority of breast cancer patients with acceptance-based therapies. The author screened the abstract and then at the full article level for eligibility (Figure 1). Abstracted data from included articles, abstracted information on population characteristics, study design, setting, description of interventions, types of interventions used, study outcomes, including pain related out comes and study statistics. We did not conduct meta-analysis because the reporting of outcomes was too heterogeneous to allow for quantitative synthesis.

Studies of mindfulness-based interventions that were clearly different from the original MBSR or MBCT programs, such as mindfulness-based exercise or art therapy were excluded, but variations of the MBSR or MBCT programs, such as those of

program length, frequency, or duration did not hinder inclusion. Studies that included patients with a diagnosis of breast cancer regardless of current treatment status were selected, but studies that included heterogeneous cancer populations were excluded.

## Results

### Study Characteristics

We screened 315 titles and abstracts and 177 articles; 46 met the criteria for full review. Of these 46 articles, 8 met all the inclusion criteria for health care interventions targeting pain in patients with breast cancer (Figure 1).

The 10 included studies spanned the years 2007 to 2015. The median sample size was 116.5 patients (range 16-271; Table 1). In all, eight studies examined breast cancer populations [17]. Mean age of study participants, by study, ranged from 50 years to approximately 66 years. Of 8 study 5 targeted to examine the effectiveness of mindfulness based intervention on stress, one included coping styles, 6 of them targeted depression, five considered anxiety, in 6 study quality of life was main variable, in two studies social support assessed in pre and post intervention. All studies were randomized-controlled trials (RCTs).

## Discussion and Conclusion

The field of psychosocial oncology has advanced over the past 2 decades, with a strong body of evidence supporting the efficacy of cognitive-behavioral interventions. Social workers and psychologists are skilled in the assessment of psychological needs and selection of coping strategies [27]. The management of symptoms in women with breast cancer is challenging and is frequently made even more so by the potentially psychological related complications [28]. Although some women with breast cancer can live for long periods. Maintaining the highest quality of life while optimizing disease control should be the mainstay of care [1].

This systematic review found some evidence for the effectiveness of mindfulness based stress reduction in improving psychological

**Figure 1. Selection Procedure.**

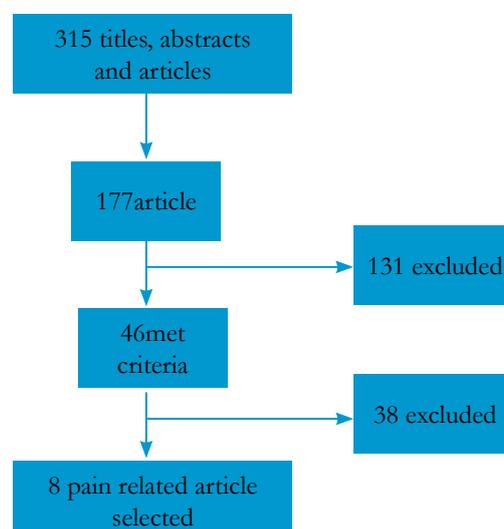


Table 1. Included Studies Characters.

Author/year	Design	Sample size	Intervention	Effectiveness	Outcomes
Carlson et al., [26] (2015)	RTC	92	MBCR	S	mood and stress symptoms
Henderson et al., [18] (2012)	RTC	163	MBSR	S	depression, paranoid hostility, anxiety, unhappiness, emotional control
Henderson et al., [19] (2013)	RTC	172	MBSR	S	quality of life and psychosocial coping
Carlson et al., [20] (2013)	RTC	271	MBCR	S	stress symptoms, quality of life, and social support
Lengacher et al., [21] (2010)	RTC	19	MBSR	S	perceived stress, anxiety, depression, and QOL
Foley et al., [25] (2010)	RTC	115	MBCT	S	depression, anxiety and distress and quality of life
Sharplin et al., [22] (2010)	RTC	16	MBCT	S	Depression, anxiety
Lengacher et al., [23] (2009)	RTC	84	MBSR	S	depression, anxiety, perceived stress, fear of recurrence, optimism, social support

health such as quality of life, stress, anxiety, depression, anxiety, social support, unhappiness etc. in breast cancer patients, although the evidence was limited by incomplete reporting and shortcomings in the methodology specially in explanation of techniques and underlying mechanisms of them. Rarely authors paid attention on reason of efficacy of the therapy. In addition, mostly in studies breast cancer patients of different stages considered as a same group while the patients quality of life and pain level extremely affected by illness stage. As previous reviews also mentioned no study reported adverse events, and reasons for dropouts were poorly reported. Those findings are unsatisfying, because safety is a major focus in the evaluation of therapies [29].

The existing data are promising, but further and more rigorous research is needed before the evidence for mindfulness in supportive breast cancer treatment can be conclusively judged.

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