

An Intervention-based Study to Explore Effectiveness of MBSR among Breast Cancer Patients

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ABSTRACT

Aims: To assess and compare the level of different psychosocial problems of both the groups (MBSR and CBT) at baseline level. To assess and compare the effect of MBSR and CBT on various psychosocial factors of both the groups (MBSR and CBT). To assess and compare the level of mindfulness of MBSR and CBT group.

Methods and Materials: Hamilton Anxiety Rating Scale, Beck Depression Inventory (BDI-II), WHO Quality of Life, Mental Adjustment to Cancer Scale, Impact of Stressful Event Scale and Cognitive and Affective Mindfulness Scale- Revised.

Result: The obtained result shows that MBSR group was more effective in reducing the negative psychosocial aspects in comparison to CBT group. It also helps in increasing their level of mindfulness.

Conclusion: It is easy to conclude that MBSR is more effective than CBT in influencing the psychosocial aspects of patients with breast cancer.

Keywords: Mindfulness-Based Stress Reduction; Cognitive-Behaviour Therapy; Breast Cancer; Anxiety; Depression

INTRODUCTION

According to WHO report of 2014, cancer caused about 8.2 million deaths in 2012 and is expected to rise from 14 million to 22 million in next two decades [1]. WHO report has also explained that around 1.5 million women suffer from breast cancer every year. Statistics of Breast Cancer (India) states that breast cancer accounts for 25-32% in females, where the highest number is found in Mumbai, Bangalore, etc [2]. It has been reported that about 80% of the women in world suffer from invasive ductal carcinoma (IDC) [3]. Due to lack of awareness, most of the patients approach when they are in Stage 2B and beyond, where the condition has gotten worse, therefore the survival rate is even lower as compared to rest of the world where patients approach in Stage 1 or 2 and survival rate is high (BreastCancer.org, 2018) [2]. On an average, women belonging to urban area have 2.1 children in comparison to rural women who on an average have 3 children, which could be another contributing factor in breast cancer [4].

Psychiatric conditions also happen to be comorbid with breast cancer, ranging from 29% to 47% [5]. According to a review conducted in 2010, about 10-25% of people suffering from cancer are diagnosed with major depressive and clinically significant depressive symptoms [6]. Cancer patients suffering from depression also reported to have post-traumatic stress disorder (PTSD, 30%), generalized anxiety disorder (24%) and panic disorder (18%) [7]. Attempted suicide rates are found in about 2-6% of breast cancer patients, especially at terminal stage [8,9]. Therefore, it is of importance to address to the psychiatric co-morbidity with breast cancer for proper and efficient treatment of the patients. If the psychological well-being of individual is maintained or they are prepared to deal with the consequences of chemotherapy, their recovery is swift and less painful.

Centres for Disease Control and Prevention (2013) points out that death from cancer could be prevented if proper information (in detail) is provided to the patients about the treatment along with psychological support [10]. Psychologists/ psychotherapists are developing new coping mechanisms for the patients to deal with breast cancer in more acceptable and positive manner. Psychosocial intervention helps patients not only accepting the diagnosis but also guides them towards better recovery process and healthy psychological well-being.

Different therapeutic approaches have been adopted that could help in managing patients with breast cancer, such as supportive psychotherapy, cognitive-behaviour therapy (CBT), relaxation, etc [11]. Among these, mindfulness-based therapy and cognitive behavioural therapy are been considered as the most effective and efficient in re-storing the psychological health of patients. Various studies have been conducted to explain its affect on patients with cancer, especially breast cancer. It has been found that mindfulness-based intervention for cancer patients helps in alleviating their stress level and works towards speedy recovery [12,13]. A systematic review based on mindfulness-based therapy for breast cancer patients have examined how it is an effective approach for the treatment of psychological conditions in breast cancer patients [12,13]. Another systematic review explained that cognitive behaviour therapy is effective for the breast cancer patients and survivors, helping them restore their disturbed quality of life and other psychological aspects [14]. Although, various researches have been conducted using mindfulness-based therapy and cognitive behavioural therapy, not many studies have been conducted that compares both therapies as an intervention for breast cancer patients, impacting their psychosocial factors.

With the aim to improve the psychosocial aspects of patients suffering from breast cancer, the present study has

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been designed to see the effect of mindfulness meditation (MBSR) and cognitive behaviour therapy (CBT) on these factors and contributing to existing researches that whether MBSR is an effective approach towards reducing cancer related negative aspects and converting them into positive ones or CBT is more effective.

Following objectives were formed for the current study:

- 1) To assess and compare the level of different psychosocial problems of both the groups (MBSR and CBT) at baseline level.
- 2) To assess and compare the effect of mindfulness meditation and cognitive behavioural therapy on various psychosocial factors of both the groups (MBSR and CBT)
- 3) To assess and compare the level of mindfulness of MBSR and CBT group

MATERIALS AND METHOD

Sample: Total 60 patients were taken for the psychosocial management. Patients of age range 35-55 years, diagnosed and referred breast cancer patients, having moderate-to-severe levels of stress, anxiety and depression, reduced quality of life and adjustment issues, having low level of mindfulness and gave consent for participation were selected.

Table 1 showing socio-demographic details of patients

Variables	Characteristics	MBSR group (n=30), %	CBT group (n=30), %
Age	35-45	(20) 66	(19) 64
	45-55	(10) 34	(11) 36
Marital status	Married	(18) 60	(18) 60
	Unmarried	(7) 23	(6) 20
	Widow	(5) 17	(6) 20
Occupation	Housewife	(25) 83	(26) 86
	Working	(5) 17	(4) 14
Religion	Hindu	(12) 40	(13) 43
	Muslim	(16) 54	(15) 50
	Others	(2) 6	(2) 6
Residence	Rural	(10) 33	(12) 40
	Urban	(20) 64	(18) 60
Socio-economic status	>10,000	(9) 30	(9) 30
	10,000-25,000	(20) 67	(20) 67
	< 25,000	(1) 3	(1) 3

Graph 1 showing socio-demographic details of patients

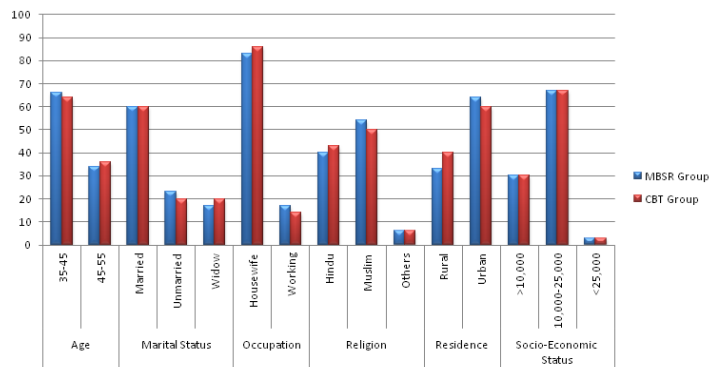


Table 1 and Graph 1 indicates that most of the patients were between the age-range 35-45, MBSR (66%) and CBT (64%). About 60% were married and 40% were widows. Majority of the patients belonged to urban area (63%) and were housewives (approx. 85%). Approximately 70% of the participants belonged from 10,000-25,000 income bracket.

Procedure

Total 60 patients suffering from invasive ductal carcinoma (IDC) referred from Radiotherapy OPD, Jawaharlal Nehru Medical College and Hospital, Aligarh Muslim University were taken for psychosocial management. Of these, patients within age range of 35-55 years diagnosed with IDC along with different psychological conditions (stress, anxiety, depression and poor quality of life) and who gave consent for the study were selected. All the patients were explained about the purpose of the study and after the attainment of their inform consent, assessment was done by Hamilton Anxiety Rating Scale (HAM-A) [15], Beck Depression Inventory-II (BDI-II) [16] and WHO QOL-BREF [17]. Along with these, Mental Adjustment to Cancer Scale [18] and Impact of Event Scale [19] were also used. Cognitive and Affective Mindfulness Scale-Revised (CAMS-R) [20] was used to assess the level of mindfulness. Patients showing moderate to severe levels of anxiety, depression and lowered quality of life were retained for the study. Those showing poor level of adjustment, strong and stressful impact of events and lowered level of mindfulness were also retained for the study. After 2 months of therapy, re-assessment was done using the same tools. The comparison between the two groups was done using appropriate statistical analysis to reach the conclusion.

2.3 Intervention: The selected patients were randomly assigned into two groups. Each group consisted of 30 patients; group one received mindfulness-based stress reduction (MBSR) intervention while the other group received cognitive-behavioural therapy (CBT). Patients of both groups were divided into 6 groups of 10, similar in respect with their therapy and technique, i.e. first group (3 groups) receiving MBSR and second group (3 groups) receiving CBT. The entire duration of intervention was of 8 weeks, 60-90 minutes a day. The MBSR intervention included weekly sessions with the therapist and daily practice at home. The MBSR intervention consisted of mindfulness body scan, mindfulness breathing, sleeping,

sitting, eating and acceptance. The CBT intervention consisted of detailed scientific psycho-education, cognitive restructuring, activity scheduling, relaxation, decatastrophizing and lifestyle modification.

Statistical Analysis

Using SPSS version 21, t-test was used to see the effect of mindfulness meditation from pre-to-post-intervention and comparison was made between both the two groups. Column graphs were used to show the socio-demographic details of the patients and to represent the effect of mindfulness meditation from pre-to-post-intervention.

RESULTS AND DISCUSSION

The aim of this study was to establish that mindfulness meditation helps in improving different psychosocial aspects of breast cancer patients and to explain how much this improvement leads to increment in level of mindfulness. Mindfulness awareness and acceptance guides women to take a proper decision and make peace with the consequences of therapy or surgeries, improving their psychological well-being as well. In a meta-analysis done in 2016, it was found that MBSR is an effective approach that has a positive impact on psychological well-being of patients and on their quality of life. This analysis also recommends MBSR as a rehabilitation approach for patients with breast cancer [21].

Jun Zhang (2016) conducted a study using MBT that helps in improving the physical and psychological health along with quality of life [22]. Present result also explained that MBT is an important factor in reducing anxiety, depression, fear of relapse, etc. associated with breast cancer as shown in Table 3. The level of anxiety reduced from M=23.3 to M=7.33 from pre-to-post intervention. Similar result was obtained for level of depression, M=41.73 before intervention and it reduced to 12.46 post-intervention. The quality of life also improved after the mindfulness meditation intervention, i.e. M=108.53 to M=331.53. Improved scores from pre-intervention (M=43.73) to post-intervention (M=97.53) on adjustment with cancer indicates that patients accepted and adjusted to their diagnosed cancer. Similar results were obtained on impact of stressful event scale, from pre-intervention (M=63.66) to post-intervention (M=17.26). All the results are found significant at <0.05 level.

In a systematic study conducted in 2012, MBT were found to be effective in improving the coping strategies of patients with breast cancer, reducing their distress level, providing emotional stability. But this meta-analysis explained that mindfulness-based therapies are more effecting reducing individual’s anxiety and stress levels [24]. Along with MBT, CBT has also been seen as effective approach for improving the psychosocial aspects affecting the breast cancer patients [23, 25]. Similar results were found in the present study (Table 5 and 6).

A study conducted in 2017 by Elisabeth Kenne Sarenmalm, MBSR has been found to be an effective technique in not only improving the various psychosocial problems but also lending patients a helping hand in their coping abilities [26]. This finding was supported by Else M. Bisseling’s study

(2017), explaining that MBSR approach is effective enough to reduce the level of distress among patients of breast cancer [27]. Similar results were obtained in the present study, explaining that among MBSR and CBT, MBSR is more effective (Table 2, 3, 4 and 5).

Table 2 shows the effect of mindfulness meditation of MBSR group on various psychosocial factors of patients (pre-to-post-intervention)

	Variables	M	SD	T	Sig.
Pre Intervention	Anxiety	23.3	2.33	33.38	<0.05
Post Intervention		7.33	1.6		
Pre Intervention	Depression	41.73	10.11	24.11	<0.05
Post Intervention		12.46	4.89		
Pre Intervention	Quality of Life	108.53	5.25	66.79	<0.05
Post Intervention		331.53	17.26		
Pre Intervention	Adjustment	43.73	3.31	25.89	<0.05
Post Intervention		97.53	12.28		
Pre Intervention	Impact of Stressful Event	63.66	7.61	35.70	<0.05
Post Intervention		17.26	2.04		

Table 3 shows the effect of mindfulness meditation of CBT group on various psychosocial factors of patients (pre-to-post-intervention)

	Variables	M	SD	T	Sig.
Pre Intervention	Anxiety	23.5	2.34	32.09	<0.05
Post Intervention		8.36	0.99		
Pre Intervention	Depression	42.66	9.68	16.49	<0.05
Post Intervention		13.96	2.39		
Pre Intervention	Quality of Life	111.4	3.91	91.95	<0.05
Post Intervention		295.93	10.91		
Pre Intervention	Adjustment	42.26	3.1	41.34	<0.05
Post Intervention		89.9	4.64		
Pre Intervention	Impact of Stressful Event	66.26	7.69	35.89	<0.05
Post Intervention		18.2	1.82		

Table 4 shows the difference between MBSR and CBT group on various psychosocial domains (post-intervention)

Group		MBSR	CBT
Psychosocial Domains			
Anxiety	t	*4.03	
	SD	1.6	0.99
	M	7.33	8.36
Depression	t	*1.8	
	SD	4.89	2.39
	M	12.46	13.96
Quality of Life	t	*9.21	
	SD	17.56	11.16
	M	331.53	296.2
Adjustment	t	*3.14	
	SD	12.28	4.64
	M	97.53	89.9
Impact of Stressful Event	t	*3.34	
	SD	2.04	1.82
	M	17.26	18.2

*Significant at 0.05 level

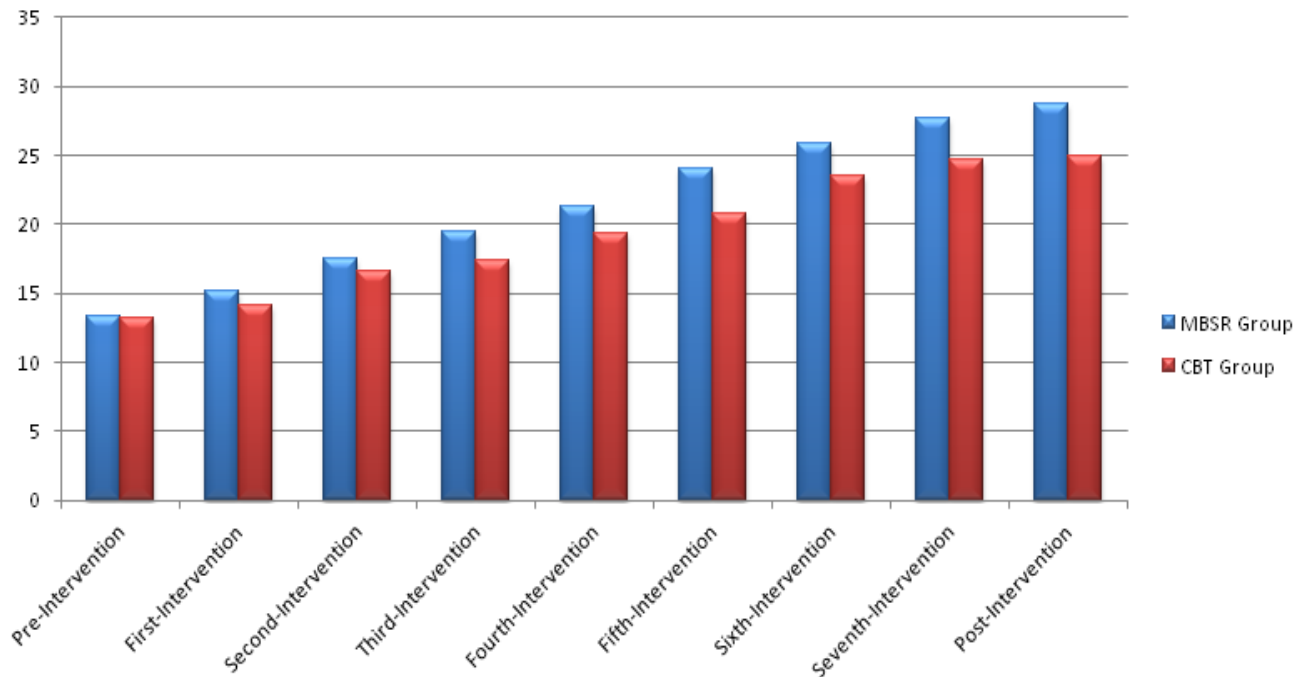
Park S et al in 2018 conducted another study, examining mindfulness-based cognitive therapy as an effective technique in providing relief to the patients and improving their quality of life as well [28]. These studies helps in concluding our findings and explaining that mindfulness-based therapies, in our case mindfulness meditation, is an efficient step towards providing patients with breast cancer an another chance at life, but in the most healthy and cost-friendly manner. Despite many indications, there’s still a long way for psychologists to achieve their importance in oncology informing that psychosocial management of cancer, especially MBT, is the first and foremost step towards making the world a better place for them.

Table 5 shows the level of mindfulness of patients of both MBSR and CBT groups having breast cancer (every session, pre-to-post, n=30)

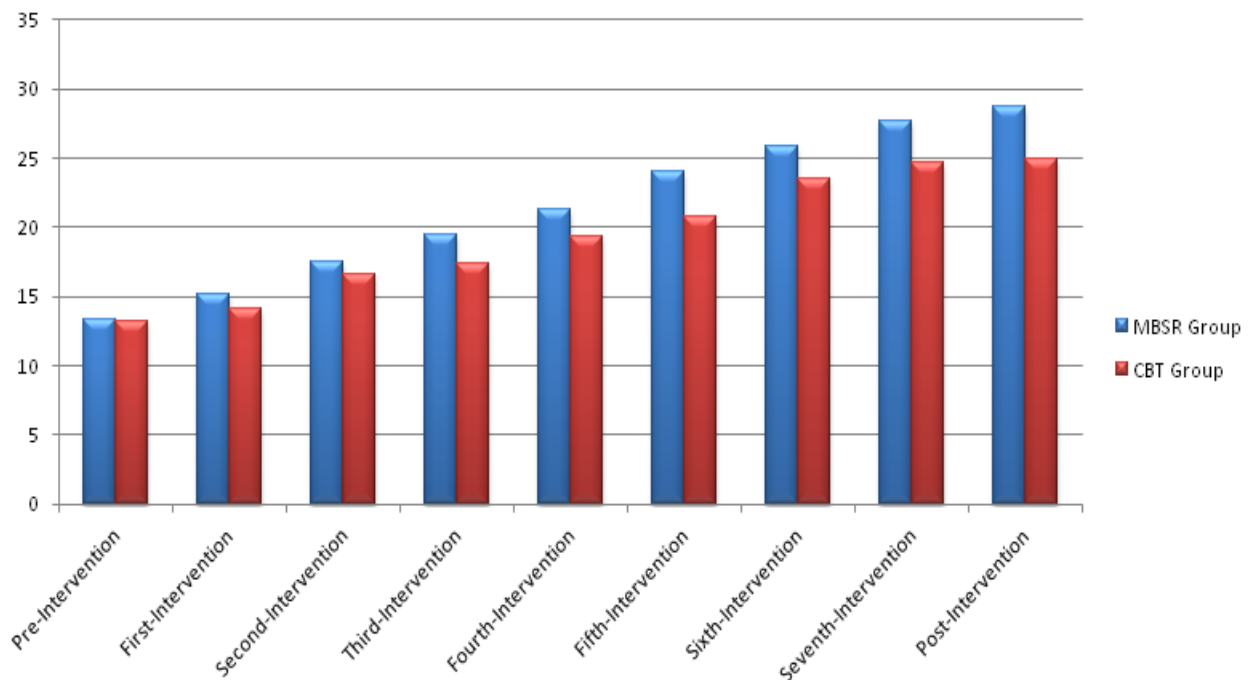
Group		MBSR	CBT
Intervention			
Pre Intervention	t	0.46	
	SD	1.71	1.62
	M	13.4	13.2
First Intervention	t	*2.15	
	SD	1.96	1.86
	M	15.16	14.1
Second Intervention	t	*1.57	
	SD	1.9	2.47
	M	17.46	16.56
Third Intervention	t	*4.32	
	SD	2.04	1.82
	M	19.5	17.33
Fourth Intervention	t	*3.56	
	SD	2.26	3.32
	M	21.3	19.33
Fifth Intervention	t	*4.55	
	SD	2.17	3.32
	M	24.03	20.73
Sixth Intervention	t	*3.23	
	SD	1.85	3.49
	M	25.83	23.5
Seventh Intervention	t	*4.5	
	SD	1.74	3.34
	M	27.73	24.66
Post Intervention	t	*4.85	
	SD	2.26	3.55
	M	28.7	24.96

*Significant at 0.05 level

Graph 2 shows the difference in mean score of patients on various psychosocial domains after-intervention (MBSR & CBT)



Graph 3 shows level of mindfulness (mean scores) of patients after receiving intervention (MBSR & CBT)



Graph 2 shows how the intervention has affected patient's level of anxiety, depression, quality of life, adjustment level and impact of stressful event. The graphical representation also explains how MBSR is more effective technique than CBT.

The above graphical representation (Graph 3) shows how level of mindfulness increases when MBSR and CBT are given as an intervention and that MBSR is more effective in increasing level of mindfulness of breast cancer patients in comparison to CBT.

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