IJBPAS, July, 2017, 6(7): 1356-1371

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

MINDFULNESS-BASED COGNITIVE GROUP THERAPY FOR WOMEN WITH BREAST AND GYNECOLOGICAL CANCER: A PILOT STUDY TO DETERMINE SAFETY AND ACCEPTABILITY

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Received 27th January 2017; Revised 28th February 2017; Accepted 30th March 2017; Available online 1st July 2017

ABSTRACT

Mindfulness-Based Cognitive Therapy (MBCT) was developed to prevent relapse in recurrent depression. Group MBCT is frequently used in psycho-oncology literature, but it is not clear whether the approach is a safe and acceptable preventive option to deliver to women with cancer. The aim of study was to explore the safety and acceptability of MBCT for women with breast and gynecologic cancer.

Forty one women were selected to participate in eight weekly 2:30-h MBCT sessions. Out of the forty-one patients who were approached, twenty-nine participants completed the slightly modified 8-week MBCT program. In the assessment of safety and acceptability of

MBCT trend analysis were run during therapy session from week 1 to week 8, considering MBCT to be a safe program as assessed through Outcome Rating Scale (ORS), through focus group conversation and also considered MBCT to be an acceptable program as assessed through Group Session Rating Scale (GSRS), through focus group conversation.

Outcome assessment of safety (ORS) in groups has significant difference (F=45.791, df 4.401, 123.23 P<.000; eta=.602). The effect size is 0.621 and it is higher than average and outcome assessment of acceptability (GSRS) in groups has significant difference (F=17.950, df4.345, 121.660 P<.000; eta=.391). The effect size is 0.391 and it is higher than low.

Findings suggest that MBCT program is safety and it is acceptable by women with breast and gynecologic cancers. Future, more comprehensive trials are needed to provide systematic evidence of this therapy in oncology settings.

Keywords: Mindfulness-Based Cognitive Therapy, Cancer, Safety, Acceptability

INTRODUCTION

Cancer is an overwhelming disease for a large number of individuals around the globe. WHO reported more than 70% of all cancer deaths occurred in low- and middle-income countries. Deaths from cancer worldwide are projected to continue rising, with an estimated 11.5 million deaths in 2030. More than 30% of cancers are caused by several leading behavioral and environmental risks that are potentially modifiable. Tobacco use is the single largest preventable cause of cancer in the world today. It is responsible for up to 1.5 million cancer deaths a year [1]. According to the Association of Population-based Cancer Registries in Iran [2], cancer is the third leading cause of death in Iran.

Treatment of cancer is the series of interventions, including psychosocial support, surgery, and radiotherapy, chemotherapy that is aimed at curbing the disease or prolonging life considerably while improving the patient's quality of life [1].

Mindfulness was originally described as a stress reduction technique [3]. There is preliminary evidence that MBCT is cost effective compared with the current treatment of choice, maintenance antidepressants [4]. Mindfulness-based cognitive therapy was developed as a psychosocial intervention intended to teach people with a history of depression the skills to stay well in the long term [5]. Mindfulness-based cognitive therapy is a manualized psychosocial, group-based relapse prevention programme for people with a history of depression who wish to learn long-term skills for staying well [6].

The research with the fundamental work of Zindel Segal, Mark Williams and John Teasdale [7] based on Jon Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) program showing benefits of MBCT in the treatment of recurrent depression, stress, anxiety disorders, eating disorders, addiction and chronic illness [8,9].

Review of literature showing the effectiveness of MBCT for a variety of issues clients face in psychological distress. A successful stress reduction treatment is MBCT, which has been found to improve both physical and mental health outcomes [9,10]. Mindfulness has been reported to reduce emotional reactivity [11]. A review of research papers concluded that mindfulness-based interventions improved immune function and distress outcomes, with a small to moderate effect size, for people with cancer [12]. MBCT may be able to improve the function of immune cells implicated in causing cancer. Some of the mindfulness practices encourage a state of physical arousal reduction (relaxation), these states of relaxation can reduce psychological and physiological arousal. If mindfulness skills reduce the frequency with which an individual enters a state of physiological arousal. This may be a mechanism for improving physical health status [13]. Through meditation, breathing exercises and mindful-movement practices, mindfulness-based interventions aim to teach participants to become aware of and increase flexibility to switch between different cognitive modes of mind [14, 15]. While MBCT cancer groups focus on bodily sensations, this is a more significant that mindfulness exercises, such as the body scan, requiring participants to focus attention upon areas of the body affected by cancer can be challenging for some individuals also the body scan practice should proceed at a more moderate pace than in the standard classes. It is also recommended that initially the focus more general, and less specifically upon painful body sensations [16]. According to Vaziri and colleagues [17], mindfulness-based cognitive therapy may be effective to reduce maladaptive cognitive emotion regulation strategies in females with breast cancer, but no significant differences were observed in the increase of adaptive cognitive emotion regulation strategies and decrease of clinical symptoms between the two intervention and control groups. Mindfulness-based cognitive therapy has been demonstrated to be effective in reducing anxiety, depression and fatigue in cancer patients and also improved emotional, psychological and social well-being among cancer patients [18]. There is

evidence of MBCT acceptability to patients and referrers [19, 20].

METHOD

Participants In this study was decided to fix the sample size as women with breast and gynecologic cancer in the age range of 24 - 65 years were referred by a hematologist, oncologist, gynecologist, surgeon, and primary care physicians who are affiliated with Cancer Research Center (CRC) of Shahid Beheshti University of Medical Science (SBMU) community-based hospital (Shohada Tajrish Hospital) located in Tehran within 8 months following a diagnosis of cancer. Out of the 41 patients who were approached to the study, 12 declined to take part in the study, the study population consisted of 29 women with breast and gynecological cancers.

Procedure According to Segal and colleagues [21], the number of participants comprising a MBCT treatment group depends on the facilities available. Participants were divided into three treatment groups. MBCT treatment for the present study comprised 8 weekly meetings lasting approximately 2 hours and 30 minute each. The 8 weekly MBCT group sessions following the manualized MBCT program including guided relaxation and mindfulness meditations, group discussions, psychoeducation, and homework assignments (30-45 minute daily mindfulness practice using instructional CDs). In order to enhance their compliance with protocols, the handouts used the format outlined by Segal and colleagues (2002). Following completion of 8 MBCT sessions, the participants received two follow-up telephone calls to encourage participants to use the MBCT methods and to ascertain their present condition. Researcher administered self-report, quantitative measures at baseline immediately after each group.

Ethical consideration Ethical approval for the study was obtained from the Human Research Ethics Board (HREB) at the SBMU and from CRC. All potential participants received a written explanation of the study and were given the opportunity to discuss the study with the researchers if they wished. Anyone not wishing to participate was assured that their normal care would not be affected in any way. If they wished to discuss any emotional issues raised during the interview or questionnaire, the researchers provided them with the contact details of the psycho-oncology service and cancer society. Participants were also told that they could end their participation in the study at any stage.

Measures

The Outcome Rating Scale (ORS) [22] is a brief 4-item (individual, interpersonal, social, and overall wellbeing) visual analogue self-report measure designed to monitor clients on a session-by session basis and to assess areas of life functioning known to change as a result of therapeutic intervention [23, 24, 22]. Clients respond to items by making a mark on each of the 10 cm lines. An overall score (general sense of psychological well-being) is then totaled, ranging from 0_40. Reliability of the ORS has been demonstrated in previous studies (alpha_.93, test-retest, r _.66) [25]. In general clinical practice, the ORS allows practitioners to predict the value of therapy and the value of ongoing therapy with the same therapist [26].

Operational definition of safety in this study is (a) the absence lack of harm or damage to, or deterioration in of the participants' levels of functioning as a result of the participation in this intervention as demonstrated by no significant decreases in individual, interpersonal, social, and overall wellbeing session to session or from Session 1 to Session 8. To closely monitor safety session by session, Researchers assessed ORS total scores from session to session for striking decreases potentially suggesting deterioration in participants 'wellbeing. Researchers closely monitored participants' physical wellbeing by checking in with them each week and asking them to report any physical side-effects or concerns.

The Group Session Rating Scale (GSRS) [27] is adapted from the Session Rating Scale (SRS), which was designed for session-by-session monitoring of the therapeutic alliance during therapy [23,24,25].

The GSRS consists of four items, for each item, participants are instructed to place a mark on an unmarked 10-cm visual analogue scale. The GSRS items focus on three main elements of the therapeutic alliance: the relationship, goals and topics and the approach or method used. The fourth item requires participants to generally evaluate the intervention session. Given that 10 is the highest possible score on each line and that 40 is the highest total possible score, any score lower than 9 or 36 respectively could be a source of concern, in which case, and in the case of clinical work, the therapist should invite the client to comment [22]. Furthermore, Howard and colleagues [28] argued that measures of participant's experience of the therapeutic alliance can be used to determine the appropriateness of the interventions. Bowen and Kurz [29] found that the overall fit or therapeutic alliance of mindfulness

based treatments predicted the benefit of the program for participants. Researchers considered the use of the GSRS to be entirely appropriate for the study purposes in assessing the acceptability of MBCT program.

RESULTS

The research question and associated hypotheses were tested after screening data and elimination of extreme scores.

Does MBCT intervention significantly safe and acceptable program in women diagnosed with cancer?

$H_{1.a}$.The cancer patients which received MBCT, will consider MBCT is a safe program.

Table 1: It shows mean and standard deviation of outcome rating in intervention group during the eight session therapy.

Table 2: It shows the Wilk's Lambda's index is significant. In other words the general model is significant and has high effect size.

Table 3: It shows that the Mauchly Sphericity test is significant and modified index of Greenhouse-Geisser should be used in test report.

Table 4, shows that outcome assessment in groups has significant difference (F=45.791, df 4.401, 123.23 P<.000; eta=.602). The effect size is 0.621 and it is higher than average.

Table 5: It shows that three significant changes trends are observed in evaluating outcome: Linear trend, third grade trend and fourth sequential trend. However, the effect size of linear trend is too much and it is concluded that according to the participants in meetings, treatment linearly was effective.

Table 6: It shows that the participants almost gradually evaluated the outcome rating more effective significantly.

Overall, based on the data from ORS participants endorsed MBCT as a safe program for women with breast and gynecological cancers. The outcome assessment in groups has significant difference (F=45.791, df= 4.401, 123.23 P<.000; eta=.602). The effect size is 0.621 and it is higher than average. The only time that the ORS mean of outcome rating was blow than Session 1 is at Session 2 .No significant decreases were found Session 1 to Session 8 and session-to-session. The quantitative findings suggest that MBCT is a safe program.

$H_{1.b}$. The cancer patients which received MBCT, will consider MBCT is an acceptable program.

Table 7: It shows mean and standard deviation of general schedule

rating in intervention group during the eight session therapy.

Table 8: It shows the Wilk's Lambda's index is significant. In other words the general model is significant and has high effect size.

Table 9: It shows that the Mauchly Sphericity test is significant and modified index of Greenhouse-Geisser should be used in test report.

Table 10: It shows that general schedule assessment in groups has significant difference (F=17.950, df 4.345, 121.660 P<.000; eta=.391). The effect size is 0.391 and it is higher than low.

Table 11: It shows that two significant changes trends are observed in evaluating outcome: Linear trend and third grade trend. However, the effect size of linear trend is more than third grade trend and it is concluded that according to the participants in meetings, treatment linearly was effective.

Table 12: It shows that the participants significantly evaluated the general schedule progressively more effective. So that the first sessions are better than the last sessions.

Based on the data from GSRS participants found the MBCT program acceptable. Program acceptability was highly supported by the quantitative GSRS data. The assessment in groups has significant difference (F=17.950, df 4.345, 121.660 P<.000; eta=.391). The effect size is 0.391 and it is higher than low. No statistically significant differences were found session-to-session. To summarize, overall quantitative findings support the acceptability of the modified MBCT program for women with cancer.

Table 1: Descriptive statistics for ORS

	Mean	Std. Deviation	N
Outcome Rating1	27.21	4.586	29
Outcome Rating2	27.03	4.709	29
Outcome Rating3	28.10	4.670	29
Outcome Rating4	28.48	3.661	29
Outcome Rating5	29.66	4.099	29
Outcome Rating6	29.66	3.921	29
Outcome Rating7	30.41	3.869	29
Outcome Rating8	31.72	3.545	29

Table 2: Multivariate Tests in ORS

	Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Outcome	Pillai's Trace	.920	36.054	7.000	22.000	.000	.920
	Wilks' Lambda	.080	36.054	7.000	22.000	.000	.920
	Hotelling's Trace	11.472	36.054	7.000	22.000	.000	.920
	Roy's Largest Root	11.472	36.054	7.000	22.000	.000	.920

Table 3: Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Outcome	.131	51.727	27	.003	.629	.760	.143

Table 4: Tests of Within-Subjects Effects in ORS

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Outcome	Sphericity Assumed	534.138	7	76.305	45.791	.000	.621
	Greenhouse-Geisser	534.138	4.401	121.370	45.791	.000	.621
	Huynh-Feldt	534.138	5.323	100.338	45.791	.000	.621
	Lower-bound	534.138	1.000	534.138	45.791	.000	.621
Error(Outcome)	Sphericity Assumed	326.612	196	1.666			
	Greenhouse-Geisser	326.612	123.23	2.651			
	Huynh-Feldt	326.612	149.05	2.191			
	Lower-bound	326.612	28.000	11.665			

Table 5: Tests of Within-Subjects Contrasts in ORS

Source	Outcome	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Outcome	Linear	509.806	1	509.806	164.407	.000	.854
	Quadratic	6.214	1	6.214	7.779	.009	.217
	Cubic	.013	1	.013	.015	.905	.001
	Order 4	11.538	1	11.538	8.899	.006	.241
	Order 5	.061	1	.061	.035	.853	.001
	Order 6	.075	1	.075	.057	.814	.002
	Order 7	6.430	1	6.430	2.572	.120	.084
Error(Outcome)	Linear	86.825	28	3.101			
	Quadratic	22.369	28	.799			
	Cubic	25.176	28	.899			
	Order 4	36.303	28	1.297			
	Order 5	48.693	28	1.739			
	Order 6	37.251	28	1.330			
	Order 7	69.996	28	2.500			

Table 6: Pairwise Comparisons in ORS

(I) Outcome	(J) Outcome	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	.172	.238	1.000	-.650	.995
	3	-.897	.327	.293	-2.024	.231
	4	-1.276	.289	.004	-2.273	-.278
	5	-2.448	.283	.000	-3.426	-1.470
	6	-2.448	.377	.000	-3.748	-1.148
	7	-3.207	.389	.000	-4.549	-1.865
	8	-4.517	.308	.000	-5.582	-3.453
2	1	-.172	.238	1.000	-.995	.650
	3	-1.069	.409	.399	-2.481	.343
	4	-1.448	.335	.005	-2.605	-.292
	5	-2.621	.359	.000	-3.861	-1.380
	6	-2.621	.379	.000	-3.930	-1.311
	7	-3.379	.451	.000	-4.935	-1.824
	8	-4.690	.372	.000	-5.973	-3.406
3	1	.897	.327	.293	-.231	2.024
	2	1.069	.409	.399	-.343	2.481
	4	-.379	.389	1.000	-1.722	.963
	5	-1.552	.339	.002	-2.721	-.382

	6	-1.552	.414	.023	-2.981	-.123
	7	-2.310	.355	.000	-3.535	-1.086
	8	-3.621	.342	.000	-4.800	-2.441
4	1	1.276	.289	.004	.278	2.273
	2	1.448	.335	.005	.292	2.605
	3	.379	.389	1.000	-.963	1.722
	5	-1.172	.314	.024	-2.257	-.088
	6	-1.172	.258	.003	-2.064	-.281
	7	-1.931	.289	.000	-2.929	-.933
	8	-3.241	.231	.000	-4.039	-2.444
5	1	2.448	.283	.000	1.470	3.426
	2	2.621	.359	.000	1.380	3.861
	3	1.552	.339	.002	.382	2.721
	4	1.172	.314	.024	.088	2.257
	6	.000	.409	1.000	-1.413	1.413
	7	-.759	.374	1.000	-2.048	.531
	8	-2.069	.285	.000	-3.052	-1.086
6	1	2.448	.377	.000	1.148	3.748
	2	2.621	.379	.000	1.311	3.930
	3	1.552	.414	.023	.123	2.981
	4	1.172	.258	.003	.281	2.064
	5	.000	.409	1.000	-1.413	1.413
	7	-.759	.284	.346	-1.738	.220
	8	-2.069	.302	.000	-3.110	-1.028
7	1	3.207	.389	.000	1.865	4.549
	2	3.379	.451	.000	1.824	4.935
	3	2.310	.355	.000	1.086	3.535
	4	1.931	.289	.000	.933	2.929
	5	.759	.374	1.000	-.531	2.048
	6	.759	.284	.346	-.220	1.738
	8	-1.310	.258	.001	-2.202	-.418
8	1	4.517	.308	.000	3.453	5.582
	2	4.690	.372	.000	3.406	5.973
	3	3.621	.342	.000	2.441	4.800
	4	3.241	.231	.000	2.444	4.039
	5	2.069	.285	.000	1.086	3.052
	6	2.069	.302	.000	1.028	3.110
	7	1.310	.258	.001	.418	2.202

Table 7: Descriptive statistics for GSRS

	Mean	Std. Deviation	N
GS Rating1	32.90	4.411	29
GS Rating2	31.93	4.375	29
GS Rating3	32.79	3.277	29
GS Rating4	32.52	3.302	29
GS Rating5	33.10	3.687	29
GS Rating6	34.00	2.976	29
GS Rating7	34.86	2.997	29
GS Rating8	35.97	2.353	29

Table 8: Multivariate Tests in GSRS

			Hypothesis				
	Effect	Value	F	df	Error df	Sig.	Partial Eta Squared
GS	Pillai's Trace	.775	10.829	7.000	22.000	.000	.775
	Wilks' Lambda	.225	10.829	7.000	22.000	.000	.775
	Hotelling's Trace	3.446	10.829	7.000	22.000	.000	.775
	Roy's Largest Root	3.446	10.829	7.000	22.000	.000	.775

Table 9: Mauchly's Test of Sphericity in GSRS

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
GS	.126	52.818	27	.002	.621	.749	.143

Table 10: Tests of Within-Subjects Effects in GSRS

	Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
GS	Sphericity Assumed	366.328	7	52.333	17.950	.000	.391
	Greenhouse-Geisser	366.328	4.345	84.310	17.950	.000	.391
	Huynh-Feldt	366.328	5.242	69.880	17.950	.000	.391
	Lower-bound	366.328	1.000	366.328	17.950	.000	.391
Error (GS)	Sphericity Assumed	571.422	196	2.915			
	Greenhouse-Geisser	571.422	121.660	4.697			
	Huynh-Feldt	571.422	146.783	3.893			
	Lower-bound	571.422	28.000	20.408			

Table 11: Tests of Within-Subjects Contrasts in GSRS

Source	GS	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
GS	Linear	280.973	1	280.973	57.389	.000	.672
	Quadratic	71.449	1	71.449	39.289	.000	.584
	Cubic	1.254	1	1.254	.544	.467	.019
	Order 4	.727	1	.727	.263	.612	.009
	Order 5	3.668	1	3.668	.917	.346	.032
	Order 6	6.910	1	6.910	3.491	.072	.111
	Order 7	1.346	1	1.346	.508	.482	.018
Error(GS)	Linear	137.087	28	4.896			
	Quadratic	50.920	28	1.819			
	Cubic	64.556	28	2.306			
	Order 4	77.328	28	2.762			
	Order 5	111.952	28	3.998			
	Order 6	55.416	28	1.979			
	Order 7	74.164	28	2.649			

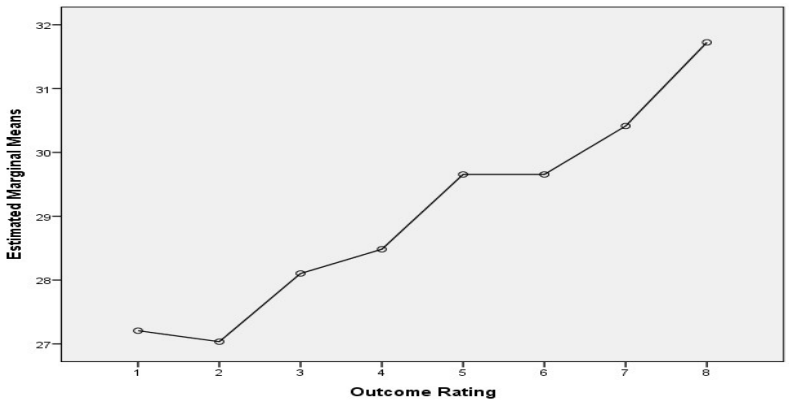

Figure 1: Mean plot in ORS

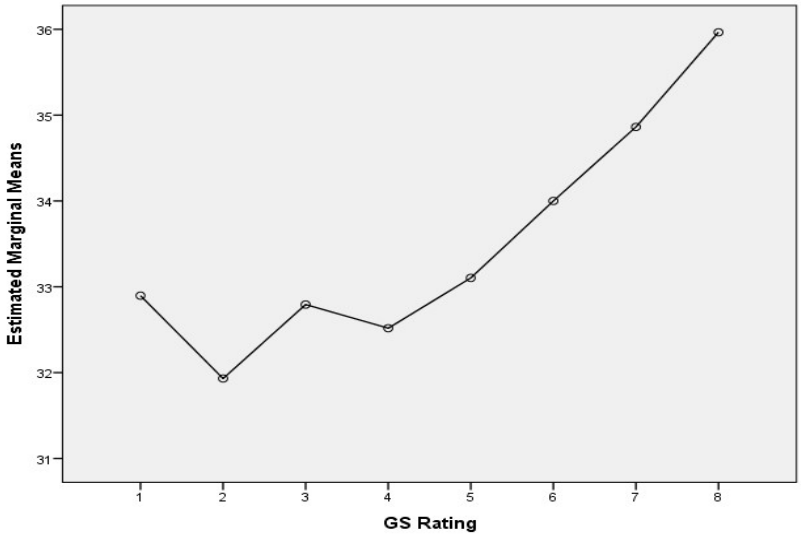

Figure 2: Mean plot in GSRS

Table 12: Pairwise Comparisons in GSRS

(I) GS	(J) GS	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
	2	.966	.629	1.000	-1.205	3.136
1	3	.103	.392	1.000	-1.249	1.456
	4	.379	.442	1.000	-1.147	1.906
	5	-.207	.422	1.000	-1.664	1.251
	6	-1.103	.431	.451	-2.591	.384
	7	-1.966	.425	.002	-3.434	-.497
	8	-3.069	.486	.000	-4.747	-1.391
	1	-.966	.629	1.000	-3.136	1.205
2	3	-.862	.554	1.000	-2.775	1.051
	4	-.586	.558	1.000	-2.513	1.341
	5	-1.172	.548	1.000	-3.065	.720
	6	-2.069	.559	.026	-3.999	-.139
	7	-2.931	.633	.002	-5.118	-.744
	8	-4.034	.644	.000	-6.258	-1.811
	1	-.103	.392	1.000	-1.456	1.249
3	2	.862	.554	1.000	-1.051	2.775
	4	.276	.310	1.000	-.793	1.344
	5	-.310	.407	1.000	-1.714	1.093
	6	-1.207	.379	.100	-2.516	.102
	7	-2.069	.318	.000	-3.165	-.973
	8	-3.172	.378	.000	-4.478	-1.867
	1	-.379	.442	1.000	-1.906	1.147
4	2	.586	.558	1.000	-1.341	2.513
	3	-.276	.310	1.000	-1.344	.793
	5	-.586	.417	1.000	-2.025	.852
	6	-1.483	.320	.002	-2.588	-.378
	7	-2.345	.359	.000	-3.583	-1.106
	8	-3.448	.396	.000	-4.814	-2.082
	1	.207	.422	1.000	-1.251	1.664
5	2	1.172	.548	1.000	-.720	3.065
	3	.310	.407	1.000	-1.093	1.714
	4	.586	.417	1.000	-.852	2.025
	6	-.897	.456	1.000	-2.470	.677
	7	-1.759	.411	.006	-3.178	-.339
	8	-2.862	.429	.000	-4.343	-1.381
	1	1.103	.431	.451	-.384	2.591
6	2	2.069	.559	.026	.139	3.999

	3	**1.207**	**.379**	**.100**	**-.102**	**2.516**
	4	**1.483**	**.320**	**.002**	**.378**	**2.588**
	5	**.897**	**.456**	**1.000**	**-.677**	**2.470**
	7	**-.862**	**.339**	**.472**	**-2.033**	**.309**
	8	**-1.966**	**.308**	**.000**	**-3.028**	**-.903**
	1	**1.966**	**.425**	**.002**	**.497**	**3.434**
7	**2**	**2.931**	**.633**	**.002**	**.744**	**5.118**
	3	**2.069**	**.318**	**.000**	**.973**	**3.165**
	4	**2.345**	**.359**	**.000**	**1.106**	**3.583**
	5	**1.759**	**.411**	**.006**	**.339**	**3.178**
	6	**.862**	**.339**	**.472**	**-.309**	**2.033**
	8	**-1.103**	**.273**	**.011**	**-2.047**	**-.160**
	1	**3.069**	**.486**	**.000**	**1.391**	**4.747**
8	**2**	**4.034**	**.644**	**.000**	**1.811**	**6.258**
	3	**3.172**	**.378**	**.000**	**1.867**	**4.478**
	4	**3.448**	**.396**	**.000**	**2.082**	**4.814**
	5	**2.862**	**.429**	**.000**	**1.381**	**4.343**
	6	**1.966**	**.308**	**.000**	**.903**	**3.028**
	7	**1.103**	**.273**	**.011**	**.160**	**2.047**

DISCUSSION

A popular programme Mindfulness is "A Practical Guide to Finding Peace in a Frantic World"[30]was developed to introduce mindfulness in ways that are believed to be safe and engaging and it shows promising evidence of effectiveness. The back pain study [31] reported no serious adverse effects, despite temporary increases in pain during both MBSR and CBT. Another study stated the effects of cognitive behavioral group therapy cash to improve psychological well-being of women with breast cancer [32]. Unfortunately, psychological treatment is not always successful and occasionally it causes harm. In fact, research consistently shows that 5-10% of clients get worse with psychotherapy [33, 34]. In combination, these studies are encouraging in suggesting that MBSR and MBCT can be used safely in participants with a variety of vulnerabilities. However, much more research on this question is needed.

In the last ten years mindfulness-based intervention has not only proven to be a feasible and acceptable intervention in cancer patients, but it also seems to be effective in reducing psychological distress. In general, the results suggest that MBCT is an acceptable and credible treatment that was associated with significant psychological distress symptoms, quality of life and physical health improvement. MBCT could be a helpful program in a large health care system. Psychosocial interventions that effectively reduce the burden of disease associated with cancer are a priority in cancer care.

Quantitative findings of this study support the safety of MBCT as an intervention for women with cancer. Result shows that the participants almost gradually evaluated the outcome rating (ORS) more

effective significantly and also Quantitative findings support the acceptability of MBCT as an intervention for women with cancer. In addition, the quantitative data collected on the Session Experience subscale of the GSRS points to participants' views on the overall acceptability of each session and the program as a whole. Result shows that the participants significantly evaluated the general schedule progressively more effective. So that the first sessions are better than the last sessions.

Understanding the limitations of psychological treatments for cancer, because of their weakness highlights the complexity of the cancer problem in the world and the need for opting psycho-oncologist and scientist search for other solutions along with medical treatment.

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