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Effects of a Five Weeks of MBSR Program on HADS and EORTQLC-C30 among Cancer Patients in Malaysia

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Abstract

Introduction: Anxiety and depression are widespread among cancer patients, and they have a negative impact on their health-related quality of life. MBSR has been used to treat psychological problems in a variety of chronic conditions, including cancer, for many years. It has been utilized clinically all around the world. In Malaysia, MBSR has been evaluated on medical doctors, nurses, and medical students, but not on disease patients, particularly cancer patients. **Objective:** This study looked at the effects of a five-week MBSR intervention on a group of cancer patients in Penang, Malaysia. **Methodology:** A purposive convenient sampling was used and upon consented, we manage to recruit 55 cancer patients for this study. To increase the number of participants, we choose patients regardless of their diagnosis types, stage, and duration of cancer. The patients were randomly assigned to the MBSR intervention group or the Waitlist group: The Intervention group was given a five-week MBSR intervention in addition to their regular check-up. The Wait-list group, on the other hand, was required to undergo regular medical examinations. Both groups had their HADS and EORTQLC-C30 pre and post intervention data gathered. **Result:** The intervention group had 22 patients, while the wait-list group had 16. The MBSR Intervention Group had reduced levels of anxiety and depression, while the wait list had greater levels of both. ($p < 0.05$). The EORTQLC-C30 finding, however, was inconclusive. **Conclusion:** These findings support the use of the MBSR programme for cancer patients with anxiety and depression. However, EORTQLC-C30 requires further elaboration on the sub-domain of the result.

Keywords: MBSR, EORTQLC-C30, HADS, Cancer, 5 Weeks Intervention.

Introduction

A cancer diagnosis is a traumatic experience (Alhusban, 2019; Ernst, 1998; Hassali et al., 2015, Maryam et al., 2013). If the problem is not addressed properly, it can lead to anxiety and depression, which can affect patients' health-related quality of life, treatment compliance, and clinical outcomes (Barre et al., 2018; Leplege & Hunt, 2009; Nikbakhsh et al., 2014; Saniah & Zainal, 2010; Yahaya et al., 2015; Efficace et al., 2007; Khalil et al., 2016). Unfortunately, pharmaceutical treatments for negative symptoms have been related to significant side effects (Aminisani et al., 2017; Ng et al., 2017; Yusof et al., 2016). As a result, non-

pharmacologic therapies are required to reduce these adverse effects and improve patients' health-related quality of life. Even though Psycho-oncologists are available in Malaysian clinical settings the number is limited (Ng et al., 2017). The available oncology counsellors on the other hands lack the required tools and knowledge to deal with cancer patients (Sherina et al., 2018). As a result, a non-invasive, cost-efficient, and successful approach to patients is required.

Mindfulness-based Stress Reduction (MBSR) is a program clinically proven for the treatment of psychological distress among patients with chronic diseases including cancer, however it has never been tested on patients in Malaysia including cancer patients in Malaysia.

This study was conducted to evaluate the effects of a Five-weeks of MBSR program on psychological distress among cancer patients in Penang, Malaysia. Hospital Anxiety and Depression Scale (HADS) and The European Organization for Research and Treatment of Cancer (EORTQLC) QLC-C30 were used as study tools.

Literature Review

The mindfulness-based Stress Reduction (MBSR) program is an eight-week intervention that includes mindfulness meditation, bodily awareness, yoga, and the study of patterns of behaviour, thinking, feeling, and action used in MBSR (Kabat-Zinn, 2003; Martin, 2020). MBSR program is a clinically effective method for treating various chronic diseases, including anxiety and depression in patients, particularly cancer patients (Russell et al., 2018).

MBSR has increased the popularity of this mindfulness-based activity in the clinical setting (Allen et al., 2006). The eight-week Intervention was the most commonly used, as proven in many systematic searches (Sharma & Rush, 2014). However, some qualitative studies suggest that 5-week MBSR is not less effective (Mitchell & Heads, 2015).

Rouleau et al. investigated the impact of MBSR on symptom reduction, positive psychological growth, and biological results among cancer patients in meta-analyses, literature reviews, and book chapters between 2005 and 2015. There were, however, disparities in anxiety and depression across patients with various socio-demographic, socioeconomic, and illness characteristics (Nikbakhsh et al., 2014). MBSR was brought to Malaysia in 2012 by Dr Phang Cheng Kar, who adjusted the program to suit the local populations' cultural and spiritual health beliefs (Phang, 2012).

In Malaysia, MBSR was tested on a few groups of medical students and health care professionals, and found to be effective MBSR, on the other hand, has yet to be used on cancer patients (Phang et al., 2016). The goal of this study was to see how a five-week MBSR intervention affected a group of cancer patients utilizing the HADS and EORTQLC-C30 score sheets as our research tools.

Methodology

This study involved a group of cancer patients in MAKNA (*Majlis Kanser Negara*) activity center in Penang, Malaysia, from January to March 2019. The inclusion criteria were patients, of 18 years old and above, male and female, reporting of having cancer of any types, stages

and duration Patients who were illiterate, on palliative care or having any mental illness before the cancer diagnosis were excluded.

The intervention research was approved by Joint Ethics Committee of School of Pharmaceutical Sciences, USM and Hospital Lam Wah Ee on Clinical Studies [USM-HLWE/IEC/2018 (0002)] (Appendix E). All participants in the intervention phase were informed regarding the confidentiality of the information provided and were assured that the refusal to participate would not affect their treatment. Each respondent was asked to fill in consent form before participating in the study.

A purposive convenient sampling was applied for this study. Upon consented patients were divided the patients randomly into the MBSR Intervention and the Waitlist groups. The demographic data were taken in all patients. The MBSR intervention group were assigned for the Five weeks of MBSR program besides following their regular check-up. Patients in the Waitlist group were only to follow the regular check-up. The HADS and EORTQLC-C30 score were measured before and after the five weeks of sessions in both group. Results were then analyzed and compared using SPSS (Statistical Package for Social Sciences).

Table 1

The Five Weeks of MBSR Program

	EXERCISE AT CENTRES	HOME EXERCISES with the assistance of video sent through WA group
Week 1	<ul style="list-style-type: none"> • Mindful breathing and stretching • Mindfulness meditation and body scan 	<ul style="list-style-type: none"> • Stretching • HTC (Hearing, Touching and Seeing) • Mindfulness breathing
Week 2	<ul style="list-style-type: none"> • Yoga-like movement 	<ul style="list-style-type: none"> • Stretching • HTC (Hearing, Touching and Seeing) • Mindfulness breathing • Mindfulness S.T.O.P and Imaginary
Week 3	<ul style="list-style-type: none"> • Mindfulness waking meditation 	<ul style="list-style-type: none"> • Stretching • HTC (Hearing, Touching and Seeing) • Mindfulness breathing • Mindfulness S.T.O.P and Imaginary Mindfulness Scan
	EXERCISE AT CENTRES	HOME EXERCISES with the assistance of video sent through WA group
Week 4	<ul style="list-style-type: none"> • Mindfulness eating 	<ul style="list-style-type: none"> • Stretching • HTC (Hearing, Touching and Seeing) • Mindfulness breathing • Mindfulness S.T.O.P and Imaginary Mindfulness Scan • Mindfulness song
Week 5	<ul style="list-style-type: none"> • Mindfulness song 	<ul style="list-style-type: none"> • Mindfulness Scan • Mindfulness Song

After the weekly session, participants were given a video of exercises through WhatsApp (WA) as home exercises, and they were alerted through WA messages each time they need to perform them. A checklist booklet was also provided to them containing the list of exercises that they need to perform on their own as the home exercises. After each exercise, they were to tick it in the booklet. The booklets were checked when they came for the next exercise schedule.

Results

Demographic and socioeconomic characteristics

There were 22 participants in the MBSR Intervention Group and 16 in the Wait-list Group. The mean age was 49.2 +/- SD 7.08 (Min=36, Max 63) years old in the MBSR Intervention Group and 51.2 +/- SD 10.8 in the Wait-list. Most of them were females, which predominated by Malays. Majority of them were from the Secondary School level (77.3%; n=17) married. However, in general, there were no significant differences in the demographic and socioeconomic characteristic of the patients between both groups (Table ii).

Table 2

Demographic and socioeconomic characteristic of the participants.

Characteristic	MBSR Intervention Group (n=22)	Waitlist Group (n=16)	P value
Age (years old) Mean +/- SD	Age (Mean = 49.2+/-7.08 SD) min =36 , max= 63 n=22	Age (Mean =51.2+/-10.8 SD) min =25 , max= 67 n=16	0.532
Age groups (years old)	n=22	n=16	
18-27	0 (0 %)	1 (6.3 %)	0.705
28-37	2 (9.1 %)	0 (0 %)	
38-47	8 (36.4 %)	5 (31.3 %)	
48-57	9 (40.9 %)	7 (43.8 %)	
58-67	16 (13.6 %)	3 (18.8 %)	
>67	0 (0 %)	0 (0%)	
Gender	n=22	n=16	
Male	0 (0.0%)	0 (0%)	1.000
Female	22(100%)	16 (100%)	
Race	n=22	n=16	
Malay	21 (95.5 %)	15 (93.8%)	0.671
Chinese	0 (0.0 %)	1 (6.3 %)	
Indian	1 (4.2 %)	2(4.08%)	
*Others	0 (0 %)	0 (0%)	
Religion	n=22	n=16	
Islam	21 (95.5 %)	15 (93.8%)	0.476
Buddhism	0 (0.0 %)	1 (6.3 %)	
Hinduism	1 (4.2 %)	2(4.08%)	

Characteristic	MBSR Intervention Group (n=22)	Waitlist Group (n=16)	P value
**Others	0 (0 %)	0 (0%)	
Education status	n=22	n=16	
Primary	1 (4.5 %)	1 (6.3%)	0.220
High School	17 (77.3 %)	9 (56.3%)	
Diploma/Matriculation	3 (13.6 %)	1 (6.3%)	
University Degree	1 (4.5 %)	4 (25.0%)	
Never go to school	0 (0%)	1(6.3%)	
Marital status	n=22	n=16	
Single	1 (4.5 %)	1 (6.3 %)	1.000
Married	20 (90.9 %)	14 (87.5 %)	
Divorced	0 (0 %)	0 (0%)	
Widowed	1 (4.5 %)	1 (6.3%)	
Employment status	n=22	n=16	
Employed	2 (9.1 %)	4 (25.0 %)	0.603
Unemployed	17 (70.8 %)	10(87.5 %)	
Retired	2 (8.3 %)	1 (6.3 %)	
Home maker	2 (3.4 %)	1 (6.3 %)	
Monthly income in MYR/month	n=22	n= 16	
<1500	9 (40.9 %)	4 (25.0 %)	0.540
1500-3500	9 (40.9 %)	7 (43.8 %)	
>3500	4 (2.9%)	5 (31.3 %)	

Disease Characteristic of the Participants

There were no significant differences in terms of their disease characteristic regarding the disease characteristic between the MBSR Intervention Group and the Waitlist group except for treatment received and the history of side effects. (Table iii)

Table 3

Disease characteristic of the participants.

Characteristic	MBSR Intervention Group (n=22)	Wait-list Group (n=16)	P value
Median IQR			
Health check up before cancer diagnosis	n=22	n=16	
Every 3 months	4 (18.2 %)	7 (6.3 %)	0.393
Twice a year	4 (18.2 %)	7 (6.3 %)	
Every year	8 (36.4 %)	6 (37.5 %)	

Characteristic	MBSR Group (n=22)	Intervention Wait-list Group (n=16)	P value
Never	6 (27.3 %)	8 (50 %)	
Medical insurance	n=22	n=16	
Yes	3 (13.6 %)	1 (6.3 %)	0.624
No	19 (86.4 %)	15 (93.8%)	
Duration of disease (months)	n=22	n=16	
6 months – 1 year	11 (50.0%)	3 (18.8%)	
>1 year-3years	3 (13.6 %)	9 (56.3%)	
>3 years- 5 years	6 (27.3%)	4(25.0%)	
Not sure	2 (9.1 %)	0 (0%)	
Cancer stage	n=22	n=16	0.089
Very advanced (Stage 4)	2 (9.1 %)	7 (43.8%)	
Slightly advanced (Stage 3)	4 (54.5 %)	1 (6.3 %)	
Not advanced at all (Stage 2)	12 (29.0%)	5 (31.3 %)	
Undetermined (Stage 1)	4 (18.2 %)	3 (18.8 %)	
Treatment Freq	n=22	n=16	0.200
One time	0 (0 %)	3 (18.8 %)	
Twice	1 (4.5 %)	0 (0 %)	
More than twice	16 (72.7 %)	13 (81.3%)	
Not treated	5 (22.7 %)	0(0 %)	
Therapies received since cancer diagnosis	22	16	*0.017
Surgery-Chemo-Radio (SCR)	7 (31.8 %)	2(12.5 %)	
Surgery-Chemo (SC)	2 (9.1 %)	1 (6.3 %)	
Chemo-Radio (CR)	1 (4.5 %)	0(0%)	
Surgery Only (S)	5 (22.7 %)	1 (6.3 %)	
Targeted Therapy (T)	0(0%)	1 (6.3%)	
SCR-T	6 (27.3 %)	4 (25.0 %)	
SC-T	0(0 %)	6 (37.5 %)	
S-T	1(4.5 %)	0 (0%)	
C-T	0(0 %)	1 (6.3 %)	
History of side effects	n=20	n=16	*0.053
Yes	13 (65%)	15 (93.8 %)	
No	7 (35%)	1(6.3%)	

The Between Group mean Comparison of Pre and Post MBSR Intervention of HAD and EORTC QLC-C30 of MBSR Intervention group and Waitlist

There was a significant reduction in the anxiety and depression in the MBSR intervention group compared to the waitlist group after the five weeks of MBSR intervention. However, no significant improvement in EORTQLC-C30 was observed. (Table iv).

Table 4

The Between Group Comparison of Pre and Post MBSR Intervention of HAD, CAMS-R and EORTC QLC-C30 of MBSR Intervention group and Waitlist group

Variables	MBSR GROUP	INTERVENTION WAITLIST GROUP	P value	
Age (years old) Mean +/- SD	Age (Mean = 49.2+/-7.08 SD) min =36 , max= 63 n=22 Median (*IQR)	Age (Mean Age =51.2+/-10.8 SD) min =25 , max= 67 n=16	0.532	
			z values	P value
Pre Anxiety	7.5 (IQR 6.25)	8.5 (IQR 8.50)	-0.712	0.477
Post Anxiety	6.5 (IQR 4.25)	11.0 (IQR 6.00)	-2.484	*0.013
Pre Depression	4.0 (IQR 2.25)	5.0 (IQR 3.00)	-0.619	0.536
Post Depression	3.0 (IQR 2.50)	7.5 (IQR 3.25)	-3.144	*0.002
Pre EORTC QLC-C30	65.0 (IQR 18.50)	58.5 (IQR 23.75)	-0.148	0.882
Post EORTC QLC-C30	55.0 (IQR 14.00)	60.0 (IQR 19.00)	-2.310	*0.021

Discussion

It has been commonly seen that cancer patients frequently experience pain, fatigue, high levels of psychological stress, anxiety, depression, fear of recurrence and metastasis. The event can occur during, before and after the treatment of cancer. In particular, psychological distress can adversely affect health-related quality of life, which induces the onset or recurrence of chronic diseases. Effective interventions that target these psychological symptoms and their physiological consequences are crucial, especially for economically disadvantaged patients. The shreds of evidence that MBSR can adequately treat patients' mental and physical symptoms made this program popular in a clinical setting (Huang & Shi, 2016). The Hospital Anxiety and Depression Scale (HADS)

Using HADS as a measurement method, we did not find any significant differences in the pre-values of anxiety and depression between the Intervention and Wait-list groups ($p = 0.477$, $z = -0.712$) and ($p=0.536$, $z=-0.619$), respectively. Post-intervention anxiety and depression values, on the other hand, were significantly different between the two groups ($p=0.013$, $z=-2.484$) and ($p = 0.002$, $z = -3.217$), respectively.

This finding indicates that the five-week MBSR Intervention has a significant impact on anxiety and depression. This data is consistent with Zhang et al., 2015, who found that anxiety and depression are widespread among cancer patients, and that MBSR was the most common intervention study for anxiety and depression scores (Zhang et al., 2015). This remark backs up the study's findings that 5 weeks of MBSR is enough to help patients.

The European Organization for Research and Treatment of Cancer (EORTC) QLC-C30 (EORTC QLC-C30)

The EORTC QLQ-C30 is a cancer-specific questionnaire that is frequently used to assess health-related quality of life, which consist of 30 items in the EORTC QLQ-C30 (Bisseling et al., 2017)

which include five function scales, three symptom scales and one global health status/quality of life scale are used to determine the rankings. The six single-item questions address particular symptoms such as dyspnoea, appetite loss, sleeplessness, constipation, and diarrhoea, with one question focusing on the disease's financial effect. There are negative and positive scores expected with each item needed individual assessment after the overall sum.

We discovered that MBSR had no impact on overall HRQOL. This conclusion conflicts with Bisseling (2017), who observed an increase in all EORTC QLQ-C30 item scores after eight weeks of MBSR intervention. Patients' participation in different cancer treatment phases correlates with changes in mindfulness, according to Bisseling (Bisseling et al., 2017). The statements by Bisseling back with our findings that our patients were in diverse stages of cancer treatment, which could explain the mixed results.

Conclusion and Suggestion

The five-week MBSR intervention has reduced patients' anxiety and depression and lessened general psychological distress. The findings of this research suggest that MBSR has a positive impact on cancer patients' health in general. On the other hand, we must take several circumstances into account on a case-by-case basis in order to conclude the result of HRQOL. On the other hand, this research will contribute to the creation of a low-cost, self-care psychological intervention protocol to help cancer patients improve their quality of life and establish economical illness management techniques.

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