**Evaluation of Outcomes from Sussex Partnership MBCT Service User Groups**

Report June 2017

Abbigail Fryer & Clara Strauss

**Background**

Mindfulness-Based Cognitive Therapy (MBCT) is an eight week course where participants are guided through mindfulness practices in each session and at home and experiences of mindfulness are discussed in course sessions with the mindfulness teacher. MBCT can reduce the risk of relapse for people who are currently well but who have experienced multiple episodes of major depression in the past in comparison to anti-depressant medication (Kuyken et al., 2016) and MBCT can also reduce the severity of depression for people who are currently clinically depressed (Strauss et al., 2014). There is also evidence that MBCT can reduce the severity of anxiety symptoms in mental/physical health populations (Hofmann et al., 2010), although MBCT may not be effective for people meeting diagnostic criteria for an anxiety disorder (OCD, PTSD, social anxiety etc.) where depression is not a primary problem (Strauss et al., 2014). Sussex Partnership have been offering MBCT groups to service users for over 10 years. This report presents outcomes from MBCT groups for Sussex Partnership service users from adult primary and secondary care services between 2012 and 2016.

**Method**

Participants

Data was collected from 257 adult service users (169 females) with a range of mental difficulties between 12th October 2012 and 19th December 2016. Participants’ ages ranged from 20 to 88 years (*M*= 48.8, *SD*= 13.66). 149 participants (58% of those with at least some data) completed measures both before and after their MBCT group. 108 (42%) of the remaining participants either completed only the baseline or only the post-MBCT measures.

Of the 149 people with complete baseline and post-MBCT data, 84 (56.4%) participants scored in the clinical range on the measure of depression (PHQ-9 score of 10 and above) at baseline and 65 scored in the non-clinical range at baseline (43.6%).

Measures

*The Five-Facet Mindfulness Questionnaire Short-Form (*FFMQ; Bohlmeijer, Klooster, Fledderus, Veehof, & Baer, 2011). The FFMQ is designed to measure levels of mindfulness. It contains 24 items within five facets; non-reactivity to inner experience, observing, acting with awareness, describing, and non-judging of inner experience. Participants are asked to respond on a rating scale from 1 (never or very rarely true) to 5 (very often or always true) how frequently they had experienced the statements in the last month.

*Self-compassion Scale Short-form (*SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011). The SCS-SF is a 12-item measure of self-compassion. On a sub-scale level the it measures Self-Kindness, self-Judgment, common humanity, over identification, isolation, and mindfulness. Participants were asked to indicate how often they behave according to the statements ranging from 1- (almost never) to 5- (almost always).

*Patient Health Questionnaire for Depression (*PHQ-9; Kroenke, Spitzer, & Williams, 2001). The PHQ-9 is a valid and reliable measure of depression severity. This 9-item measure requires participants to rate from 0 (not at all) to 3 (nearly every day) how often they have been affected by the stated problems in the past two weeks.

*Generalised Anxiety Disorder Scale* (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006). The GAD-7 is an established item to identify anxiety and its severity with good reliability, criterion and construct validity. This 7-item measure requires participants to rate from 0 (not at all) to 3 (nearly every day) how often they have been affected by the stated problems in the past two weeks.

*Short Warwick-Edinburgh Mental Wellbeing Scale* (SWEMWBS; Stewart-Brown et al., 2009). The SWEMWBS is a 7-item scale measuring psychological and eudemonic well-being. Respondents were required to rate themselves from 1 (none of the time) to 5 (all of the time) to how that item best described their experience over the last 2 weeks.

Procedure

Service users were referred by a member of their primary care or secondary care adult mental health team and were allocated to MBCT groups in various locations around Sussex. MBCT groups were facilitated by two trust-accredited MBCT teachers, closely adhering to the MBCT manual (Segal et al., 2002) and receiving regular supervision from trust-accredited MBCT supervisors. Participants self-completed the pack of measures in the first and final session of their MBCT group with the facilitator present.

Data analysis

*Missing Data*

Reasons for missing data were largely for logistical reasons as measures were handed out by group facilitators and there was no additional resource for data collection (e.g. research assistants). There were a number of instances where data were missing because measures were not handed out in the first or final session, or where participants missed the first or final session, but attended the remaining sessions. It was decided therefore not to conduct intention-to-treat (ITT) analysis by carrying forward baseline data or by using another method of imputation as this would lead to an underestimate of effect, given the reasons for missing data. Instead, we chose to conduct analysis on complete data sets, exploring potential bias with this approach by comparing baseline and demographic variables between data completers and non-completers. The rationale for this was to identify any systematic reason for missing data that may suggest data completers were different from non-completers.

An independent *t*-test was used to compare baseline scores on each of the measures for those who completed both baseline and post-MBCT measures and those who did not complete both. A Chi-Square test was then carried out to see if there was a relationship between gender and whether participants completed both baseline and post-MBCT measures or not (completers or non-completers) and a t-test was used to see if completers and non-completers differed in age.

*Outcome analysis*

Paired *t-*tests were used to compare participants’ baseline and post-MBCT scores - a total of 149 service users were included in the data analysis, who had completed both baseline and post-MBCT measures.

Given that the strongest evidence for MBCT is in relapse prevention (rather than symptom reduction) for people currently well but with a history of recurrent depression, we chose to examine the effects of MBCT for people experiencing clinical levels of depression. Participants were sub-divided into those who scored below 10 on the PHQ-9 at baseline and those who scored 10 or more. Scores at 10 or above would suggest they were experiencing symptoms of clinical depression at the time of completing the baseline questionnaires (Kroenke, Spitzer, & Williams, 2001). Whereas scores below 10 would suggest they were not experiencing clinical depressive symptoms (Kroenke, Spitzer, & Williams, 2001).

To explore effects on anxiety further, participants were sub-divided into those who scored below 8 on the GAD-7 at baseline and those who scored 8 or more. Scores at 8 or above would suggest they were experiencing symptoms of clinical anxiety at the time of completing the questionnaire (Spitzer, Kroenke, Williams, & Lowe, 2006). Whereas scores below 8 would suggest they were not experiencing clinical anxiety symptoms (Spitzer, Kroenke, Williams, & Lowe, 2006).

**Results**

*Depression*:

Overall, scores of depression at baseline (*M*=11.61, *SD*=6.60) decreased significantly with a medium effect size compared to post-MBCT (*M*=8.53, *SD*=5.96); *t* (148) = 7.546 *p*<.001, d= 0.49, 95% CI [2.27, 3.88].

Severity of depressive symptoms, for those with clinical scores of depression at baseline (PHQ-9>9), significantly decreased with a large effect size at post-MBCT (*M* =11.34, *SD* = 5.88) compared to baseline (*M* =16.34, *SD* = 4.32); *t* (84) =9.093, *p* < .001, *d* =0.97, 95% CI [3.90, 6.09]. However, severity of depression symptoms for those with non-clinical scores of depression at baseline (PHQ-9>10) decreased non­-significantly and there was a small effect size in at post-MBCT (*M* = 4.76, *SD* = 3.55) compared to baseline (*M* =5.26, *SD* = 2.63); *t* (62) =1.115, *p* =.269, *d* =0.16, 95% CI [-0.39, 1.39]

*Anxiety*:

Overall, scores of anxiety at baseline (*M*=10.06, *SD*=5.58) decreased significantly with a medium effect size compared to post-MBCT (*M*=7.28, *SD*=5.08); *t* (136) = 7.087, *p*<.001, d=0.52, 95% CI [2.00, 3.56].

Severity of anxiety symptoms for those with clinical scores on the GAD-7 at baseline (GAD-7>7) decreased significantly at post-MBCT (*M* = 9.27, *SD* = 5.22) compared to the baseline (*M* = 13.68, *SD* = 3.72) with a large effect size; *t* (83) = 8.357, *p* <.001, *d* = 1.32, 95% CI [3.36, 5.46]. Severity of anxiety symptoms for those with non-clinical scores on the GAD-7 at baseline (GAD-7<8) decreased from post-MBCT (*M*= 4.12, *SD* = 2.76) compared to the baseline (*M* = 4.32, *SD* =2.11) with a non-significant small effect size; *t* (52) = 0.548, *p*=.59, *d* = 0.40, 95% CI [-0.52, 0.91].

*Wellbeing*:

Overall, scores of wellbeing at baseline (*M*=19.64, *SD*=4.56) increased significantly with a medium-large effect size compared to post-MBCT (*M*=22.74, *SD*=4.91); *t* (146) = -8.608, *p*<.001, d=-0.65, 95% CI [-3.81, -2.39].

For those with clinical scores of depression at baseline (PHQ-9>9), well-being significantly increased at post-MBCT (M=21.23, SD =4.65) compared to the baseline (M=17.26, SD=3.42) with a medium effect size; *t* (77) = -7.617, *p*<.001, *d*=-0.44, 95% CI [-5.00, -2.93]. Additionally, for those with non-clinical scores of depression at baseline (PHQ-9<10), well-being significantly increased at post-MBCT (M=25.12, SD =4.42) compared to the baseline (M=23.19, SD=3.76) with a medium effect size; *t* (56) = -3.705, *p*<.001, *d*=-0.47, 95% CI [-2.98, -0.89].

*Mindfulness*:

Overall, scores of mindfulness at baseline (*M*=65.16, *SD*=11.82) increased significantly with a large effect size compared to post-MBCT (*M*=77.47, *SD*=14.39); *t* (145) = -11.904, *p*<.001, d= -0.93, 95% CI [-14.35, -10.26].

For those with clinical scores of depression at baseline (PHQ-9>9), there was a significant increase in levels of mindfulness at post-MBCT (*M*= 72.92, *SD* = 14.17) compared to baseline (*M*= 59.94, *SD* = 8.55); with a large effect size, *t* (75) = 8.855, *p* < .001, *d* = -1.37, 95% CI [-15.90, -10.06]. For those with non-clinical scores of depression at baseline (PHQ-9<10), there was a significant increase in levels of mindfulness post-MBCT (*M*= 83.54, *SD* = 12.94) compared to baseline (*M*= 72.88, *SD* = 11.37); with a large effect size, *t* (57) = 6.829, *p* < .001, *d* = -0.88, 95% CI [-13.79, -7.54].

*Self-Compassion:*

Overall, scores of self-compassion at baseline (*M*=26.81, *SD*=8.52) increased significantly with a large effect size compared to post-MBCT (*M*=34.145, *SD*=9.90); *t* (145) = -10.02, *p*<.001, d=-0.79, 95% CI [-8.78, -5.89].

For those with clinical scores of depression at baseline (PHQ-9>9), self-compassion scores, also significantly increased in at post-MBCT (*M* = 30.68, *SD* = 8.81) compared to the baseline (*M* = 23.06, *SD* = 6.23) with a large effect size; *t* (75) =-7.946, *p* < .001, *d* = -1.00, 95% CI [-9.55, -5.71]. For those with non-clinical scores of depression at baseline (PHQ-9<10), self-compassion scores, also significantly increased post-MBCT (*M* = 38.85, *SD* = 10.19) compared to the baseline (*M* = 31.81, *SD* = 9.27) with a large effect size; *t* (59) =5.963, *p* < .001, *d* = -0.79, 95% CI [-9.40, -4.68].

*Table 1: Baseline scores for participants completing and not completing measures at baseline and post-MBCT (as a proxy for intervention completion)*:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **N** | **Mean** | **Std. Deviation** | ***t*** | ***p*** |  |
| **FFMQ** | **non-completer** | 66 | 62.061 | 13.11 | -1.597 | .112 |  |
|  | **completer** | 137 | 65.153 | 12.84 |  |  |  |
| **SCS** | **non-completer** | 71 | 25.803 | 8.47 | -0.979 | .329 |  |
|  | **completer** | 138 | 27.016 | 8.50 |  |  |  |
| **PHQ-9** | **non-completer** | 74 | 13.365 | 7.25 | 1.813 | .071 |  |
|  | **completer** | 149 | 11.607 | 6.60 |  |  |  |
| **GAD-7** | **non-completer** | 49 | 11.622 | 6.18 | 1.638 | .103 |  |
|  | **completer** | 137 | 10.057 | 5.58 |  |  |  |
| **SWEMWBS** | **non-completer** | 69 | 18.812 | 4.80 | -1.407 | .161 |  |
|  | **completer** | 137 | 19.784 | 4.62 |  |  |  |

Table 1 shows when looking at the means of measure completers vs. non-completers, there were no significant differences between completers and non-completers on any of the outcome measures. Also, measure completers and non-completers did not differ in relation to gender (*χ*2=2.401, p=.301) or age (t=-.275, p=.783). This shows that individuals who failed to complete post-MBCT measures were not experiencing greater levels of depression or anxiety or lower levels of mindfulness, wellbeing or compassion at baseline, than individuals completing baseline and post-MBCT measures, and that the two groups did not differ in terms of age or gender.

**Discussion**

The aim of this report is to evaluate outcomes from MBCT groups for NHS mental health adult service users. Findings were that overall there were significant pre-post MBCT improvements on all measures (depression, anxiety, wellbeing, mindfulness and self-compassion), with effect sizes being medium or large. On further examination, effects on depression and anxiety symptom severity were only significant for service users scoring in the clinical range on these measures at baseline, and pre-post effects on depression and anxiety for these service users were in the large range. Those with non-clinical scores of depression (below 10 on the PHQ-9) or anxiety (below 8 on the GAD-7) at baseline did not show significant improvement in depression and anxiety symptom severity respectively. An explanation for this may be that their scores were low at baseline with limited room for improvement (i.e. floor effects). This therefore does not indicate that the groups were not helpful for these people, and benefits were shown for this group on other measures. For example, wellbeing, mindfulness and self-compassion all increased significantly regardless of whether participants were experiencing clinical or non-clinical depressive symptoms at baseline.

This study adds to the findings of Kuyken et al. (2016) and Strauss et al. (2014), by showing that MBCT can be beneficial outside of research trials and in a real-world healthcare setting for those people currently experiencing clinical symptoms of depression and anxiety. In comparison with a meta-analysis of research trials by Hofmann et al., (2010) the current evaluation’s findings are very similar for anxiety and depression symptoms. In the Hofmann et al., (2010) meta-analysis participants diagnosed with anxiety or mood disorders showed pre-post improvements with a large effect size in anxiety and depression symptom severity (g=.97, 95% CI [72, 1.22] and g=.95, 95% CI [.71, 1.18], respectively) (compared to d=.97 and d=.99 in the present evaluation[[1]](#footnote-1)).

*Limitations*

A note of caution is that a direct comparison between the present findings and those of Hofmann et al. (2010) is not possible as we analysed complete data sets only and Hofmann et al. report effects on intention-to-treat data. However, no significant differences were found in the present study between data completers and non-completers on baseline variables, age or gender. This is important as it suggests that failing to return a complete set of data was not related to severity of difficulty at baseline – e.g. experiencing more severe mental health symptoms or lower mindfulness, wellbeing or compassion. This supports our experience that data were often missing for logistical reasons, including facilitators forgetting to hand out measures in the first or final session, or participants missing the first or final session. In future we should find ways to improve rates of measure completion (e.g. by asking participants who do not attend the final session to complete the measures online). Another limitation is that participants completed the measures in the MBCT group which could increase demand characteristics and inflate effect sizes. Having an independent researcher administer the measures could be a solution to this limitation. Details of service user diagnosis, condition onset, and previous treatment undertaken could be useful information to include in future evaluations in order to identify groups for whom MBCT is more/less effective.

*Conclusion*

Overall, this evaluation shows that adult service users attending Sussex Partnership MBCT courses show significant improvements in depression, anxiety (where scores for depression and anxiety were in the clinical range at baseline) and for wellbeing along with significant improvement in mindfulness and self-compassion, established mechanisms of change for MBCT (Gu et al., 2015). The degree of improvement in depression and anxiety symptoms for service users scoring in the clinical range at baseline is comparable to that found in research studies of MBCT in mental health populations, although direct comparisons are not possible. This suggests that the Sussex Partnership MBCT courses are beneficial and should continue to be offered.

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1. Cohen’s d and Hedge’s g are roughly comparable, with Hedge’s g being a variant of Cohen’s d taking into account small sample sizes. [↑](#footnote-ref-1)