Effectiveness of Mindfulness Based Cognitive Therapy Compared to Physical Exercise as a Follow-up Treatment to Prevent Depressive Relapse and Maintain Recovery

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Foreword

Submitted in partial fulfillment of the requirements of the BSc psychology degree, Reykjavik University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.
Abstract

Mindfulness based cognitive therapy (MBCT) and physical exercise (PE) are different treatment alternatives that both have been associated with depression risk-reduction. However, there is a lack of evidence whether MBCT has greater efficacy in terms of recovery maintenance and relapse prevention than PE does. A total of 26 participants that previously had undergone cognitive behavior therapy (CBT) at Reykjalandur Rehabilitation Centre were randomly allocated in two different follow-up treatment conditions receiving either MBCT or PE once a week, two hours each time for eight week period. Results showed no changes in depression scores for either MBCT or PE following treatment. However, patients with moderate/severe depression did show symptom reduction as a result of follow-up treatment, especially those receiving MBCT. Finally, individuals that received MBCT did not have greater improvements in attentional control compared to those receiving PE. In conclusion, this comparison research found that both MBCT and PE follow-up treatments are equally effective in maintaining recovery and preventing relapse. This preliminary evidence supports the potential value of examining possible individual differences in follow-up treatment preference, where different alternatives might have different beneficial effects between persons.

Keywords: depression, relapse prevention, attention, mindfulness based cognitive therapy, physical exercise

Útdráttur


Lykilorð: þunglyndi, bakslagsvörn, athygli, hugræn atferlismeðferð byggð á núvitund, líkamleg hreyfing
Effectiveness of Mindfulness Based Cognitive Therapy Compared to Physical Exercise as a Follow-up Treatment to Prevent Depressive Relapse and Maintain Recovery

Depression is a common mental disorder (World Health Organization, 2013). People suffering from depression experience disproportionately higher rates of disability and mortality and have 40-60% greater risk of premature death compared to the general population. Depression alone accounts for 43% of the global burden of diseases and is one of the largest single causes of disability worldwide, especially for women (World Health Organization, 2013). Due to the detrimental effects depression has on the individual and society it is vital for the mental care system to respond and find effective solutions to minimize the damage (Piet & Hougaard, 2011).

Depression is characterized by a collection of behaviors and symptoms that emerge as psychological and physical manifestations and impair functionality in many ways (Gellman & Turner, 2013). To meet the diagnostic criteria for depression the individual has to experience constant depressed mood along with decreased motivation to engage in previously enjoyed activities, most days for at least two weeks (American Psychiatric Association, 2013). A minimum four of the additional symptoms are also required: problems with sleep, feelings of worthlessness or excessive guilt, changes with appetite or weight, problems with concentration, reduced energy, psychomotor retardation or agitation, and thoughts of suicide.

A common symptom of major depressive disorder (MDD) is impaired concentration (Chamberlain & Sahakian, 2006) especially in terms of selective attention (Raoux, Everett, Dantchev, & Widlöcher, 1996). Selective attention is the cognitive process that allows people to select certain stimuli in the environment to concentrate on while ignoring others (Stolerman & Price, 2015). It is well-established that the key vulnerability factor in the development of depression is the tendency to ruminate in response to negative mood (Hawley et al., 2014;
Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Michalak and colleagues (2011) also demonstrated rumination as an important risk-factor in the process of depressive relapse. According to the response style theory, ruminating people respond to distress by repetitively focusing attention on the symptoms of one's distress, its possible causes and consequences, without actively solving the problem (Nolen-Hoeksema et al., 2008).

A variety of approaches have been used to treat depression, such as antidepressant medication treatment (m-ADM) (Kuyken et al., 2015) and cognitive behavior therapy (CBT) (Beck & Beck, 2011). However, both of these therapies have only been prescribed to people when facing a depressive episode and not in remission (Williams, 2007).

Recent discoveries have revealed that depression often returns although it has been treated successfully, and becomes more likely to recur the more often it is experienced (Williams, 2007). Judd (1997) estimated the risk of recurrence between 50-80% and after a second or third depressive episode it rises up to 80-90%. It is believed that patients will go through an average of four lifetime major depressive episodes that last about 20 weeks each (Williams, 2007). People who first experience depression before the age of twenty are at a particularly high risk for becoming depressed again.

The fact that depression is a serious recurring condition (Judd, 1997), it fuels the need for alternative non-medicaiton follow-up strategies that do not focus less on the maintenance and prevention of relapse than the acute depressive episode (Mulder, 2015).

Today, mindfulness based cognitive therapy (MBCT) has gained increased interest as a preventive follow-up treatment (Segal, Williams, and Teasdale, 2002). Mindfulness focuses on attending to the present moment experience in a non-judgmental and accepting way (Kabat-Zinn, 1994). However, there is a lack of studies that specifically compare the effectiveness of MBCT
to other follow-up treatments that might have lower cost, availability and require less clinician training to deliver (Parikh et al., 2012). Physical exercise (PE) is a treatment alternative that is worth comparing to MBCT, as it has been shown to be effective relapse prevention, cost-efficient and most people are able to adopt physical exercise (Sundberg, 2010).

MBCT is an entirely new approach that teaches individuals with recurrent depression effective methods to maintain recovery in the long run and prevent relapse/recurrence (Segal, Williams, and Teasdale, 2002). The theory underlying MBCT is that each time depression recurs the connections in the brain between mood, thoughts, body and behavior strengthens, making it easier to trigger the depression again and making the downfall more intensive each time (Williams, 2007). To break this vicious cycle, it is vital to combine mindfulness meditation and the critical ingredient in CBT and teach those skills to people when they are well.

Participants learn mindfulness practices and cognitive behavioral skills systematically for eight weeks, in weekly two hours group sessions and through homework assignments (Kuyken et al., 2015; Teasdale et al., 2000; Piet & Hougaard, 2011). Therapists provide support to patients by teaching them how to become more aware of their bodily sensations and relate differently to thoughts, feelings, and experiences that otherwise might have provoked depressive relapse.

The clinical efficacy of MBCT has been well established and meta-analysis indicate that successful MBCT treatment is associated with symptom reduction (Hofmann, Sawyer, Witt, & Oh, 2010) and can cut the risk of relapse by 50% for patients that have experienced at least three depressive episodes (Williams, 2007). Studies have indicated that MBCT may be limited to those at greater risk of relapse (Piet & Hougaard, 2011) and supported MBCT as a low-cost follow-up treatment for the most vulnerable patients currently in remission from major depression (Williams et al., 2014).
More importantly, MBCT functions as a successful treatment alternative for patients wishing to discontinue antidepressant treatment (Kuyken et al., 2015; Mulder, 2015). Those that prefer MBCT have the opportunity to maintain good quality of life and stay well without medications and their unpleasant side-effects.

Because different follow-up treatments vary in effectiveness between individuals (Fava et al., 2003), therapists have developed alternative therapies for major depressive disorder (MDD) such as PE (Brosse, Sheets, Lett, & Blumenthal, 2002). Numerous studies have supported the use of aerobic and resistance training as a treatment for MDD and risk reduction for further relapses (Singh, Clements, & Singh, 2001; Sundberg, 2010).

Based on scientific findings, the book *Physical Activity in the Prevention and Treatment of Disease* by Sundberg (2010) proposes a recommended dose prescription for people suffering from depression. A combination of moderate to high intensity aerobic exercises and strength training, two or three times a week for 30-60 minutes each time, for minimum of nine week period is recommended. PE has been shown to promote positive thoughts and emotions, increased self-confidence and the capacity for self-control as well as effective coping styles (Sundberg, 2010).

Shallcross and colleagues (2015) evaluated the effect and specificity of MBCT compared to active control condition (ACC) consisting physical activity, nutrition and music therapy. Over the 60 week follow-up period there were no indicators that MBCT was superior to the active components in ACC in terms of depression relapse rates or time to relapse. Both groups experienced improvements in life satisfaction and reduced depressive symptoms. This research demonstrates the importance of comparing MBCT intervention to other ACC to rule out non-specific effects and know if other psychoeducational interventions may have similar benefits.
The main objective of this thesis is to evaluate the efficacy of MBCT compared to PE as a follow-up treatment to prevent depressive relapse and maintain recovery.

The primary hypothesis suggests that MBCT does not deliver greater efficacy than PE in terms of preventing depressive relapse and maintaining recovery. Although MBCT and PE have not been compared specifically as follow-up treatments, separately, they have both been associated with depression risk-reduction (Segal, Williams, and Teasdale, 2002; Singh, Clements, & Singh, 2001; Sundberg, 2010). Therefore, it is assumed that depression scores will stay the same for both groups as a result of the interventions, indicating a successful follow-up.

The second hypothesis suggests that follow-up treatment maintains recovery for patients with mild symptoms (i.e. depression scores stay the same), but for patients with moderate/severe symptoms follow-up treatment also reduces depressive scores. That is, for patients with moderate/severe depression follow-up treatment not only serves as a relapse prevention and recovery maintenance but also as a cure for depression, if recipients have been actively involved in the follow-up treatment.

Finally, the third hypothesis suggests that individuals that receive MBCT have greater improvements in attentional control (i.e. sustained and selective attention) compared to those receiving PE. MBCT teaches formerly depressed patients to control their attentional focus as they are especially vulnerable to adopt negative and ruminative thinking (Segal et al., 2002; Michalak et al., 2011). Therefore patients engaged in MBCT should make a progress in attentional control beyond those receiving PE.
Method

Participants

A total of 182 patients that had received CBT treatment for depression or low self-esteem at Reykjalundur Rehabilitation Centre in Iceland during the years 2014 - 2015 received invitation to participate in the research by a letter or an e-mail. Of these, 49 patients accepted to participate and were randomly allocated into two different intervention groups receiving either MBCT (experimental group) or PE (control group). Randomization was carried out with a random sequence generator at the website RANDOM.ORG. Eight participants did not show up for the pre-administration, leaving a total of 41 participants engaged in the research. During the course of an eight-week intervention period 15 participants dropped out of follow-up treatment, leaving 26 participants for the pre- to post-treatment analysis. Of those, 16 participants were in the experimental group and 10 participants in the control group. The main reasons for dropout were due to personal conditions, but only one person fell out of follow-up treatment because of poor mental state.

Instruments and Measures

In this research broad measurements were used to evaluate participant’s background, depression, anxiety and stress, hopelessness, mindful attention, attentional control, health and physical fitness. However, as listed below only part of these measurements were observed in this thesis.

Background information. Participant’s background information were assessed using demographic questionnaire (i.e. gender, age, education, marital status) (Appendix C). Furthermore, several questions concerning mental history were assessed (i.e. type of CBT, m-ADM, number of depressive episodes, self-help strategies during treatment) (Appendix F).
Beck depression inventory second edition (BDI-II). Severity of depression was measured at baseline using the BDI-II questionnaire (Appendix D). BDI-II is a self-report questionnaire indicating the severity of 21 depressive symptoms (using 4-point scales) during the past two weeks. The BDI-II inventory has been shown to be valid and reliable (Beck, Steer, & Brown, 1996). The Icelandic translation of BDI-II has coefficient alpha of 0.93 (Arnarson, Ólason, Smári, & Sigurðsson, 2008) and in the current research it also had excellent internal consistency ($\alpha = 0.93$).

Depression anxiety stress scale (DASS). Depression was measured using the depressive dimension of the DASS questionnaire (Appendix E). DASS is a self-report questionnaire that consists of 42 questions about the respondents emotional experiences during the past week (Lovibond & Lovibond, 1995). The response options were on a four point Likert scale ranging from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). The DASS inventory has been shown to be valid and reliable (Lovibond & Lovibond, 1995). The Icelandic translation of DASS-depression has a coefficient alpha of 0.92 (Björgvin Ingimarsson, 2010) and in the current research it also had excellent internal consistency ($\alpha = 0.95$).

Conners’ continous performance test (CPT II). Attention was measured with the CPT II which is a 15 minute computerized cognitive test that measures attentional control (Conners, 2000). The participants were delivered written and verbal instructions about the examination procedure which includes responding appropriately to letters that appear on a computer screen (Appendix G). The CPT II instrument has been shown to have adequate consistency in terms of split-half reliability. Standard Error measurement values indicate that scores from the instrument are a reasonable match to the true performance of individuals (Conners, 2000).
Interventions

Mindfulness based cognitive therapy. The MBCT was an eight-week course held once a week, for two hours each time at Reykjalundur Rehabilitation Centre. The course was based on education, mindfulness exercises and discussions. Two nurses with an expertise knowledge on mindfulness training led the mindfulness course. The MBCT participants received a mindfulness workbook and CD containing mindfulness education and exercises which they were asked to perform daily outside the weekly course. The workbook and CD, *Mindfulness: Maintaining Recovery with Alert Attention* was written in Icelandic by Anna Kristín Þorsteinsdóttir, Jóhanna Kr. Steingrímsdóttir and Inga Hrefna Jónsdóttir (Þorsteinsdóttir, Steingrímsdóttir, & Jónsdóttir, 2015), based on the books *The Mindful Way Through Depression: Freeing Yourself from Chronic Unhappiness* by Williams and colleagues (2007) and *The Mindful Way Workbook: An 8-Week Program to Free Yourself from Depression and Emotional Distress* by Teasdale and colleagues (2014). Every week the participants were allocated a diary that contained questions regarding their homework and wellbeing, answered each day and returned to therapists next time to encourage participants to engage in recommended exercises (Appendix H).

Physical exercise. The PE course was an eight-week course held once a week for two hours each time at Reykjalundur Rehabilitation Centre. The course was based on education, physical exercises and discussions. The physical exercises were divided into 30 minutes endurance training on stationary bikes and 30 minutes strength training using own body weight and thera-band. Physiotherapist, sports scientist and a student in sports science led the PE course. The PE participants received homework in the form of physical exercises performed at least two times a week outside the weekly courses (Appendix I). The PE program was based on a recommended dose of exercises for individuals that suffer from depression and anxiety according
to the book: *Physical Activity in the Prevention and Treatment of Disease* (Sundberg, 2010) which can be downloaded at fyss.se. The participants received thera-band for training outside of classes. Every week participants were allocated a diary that contained questions regarding their homework and wellbeing, answered each day and returned to trainers next time to encourage participants to engage in recommended exercises (Appendix H).

**Procedure**

This research received full approval from the Icelandic National Bioethics Committee (clinical study registration number: VSNb2012060018/03.01). The research was conducted over the course of ten weeks from the middle of January 2016 at Reykjalundur Rehabilitation Centre in Iceland.

Patients that had undergone CBT therapy at Reykjalundur in the years 2014 - 2015 were invited to participate in the research. Those who were willing to take part were randomly divided into two intervention groups, receiving either MBCT or PE follow-up. Participants were contacted by telephone and invited to the pre-administration. Each participant was allocated a research number to make sure that he could not be identified.

In the pre-administration, the two different intervention groups attended the administration on two separate days. Participants were gathered in a conference room where they received instructions about the administration procedure. Participants signed a written consent after reading a thorough description of the research (Appendix A and B).

The administration was threefold: 1) questionnaires, 2) computerized attentional test and 3) walking test. A total of eight questionnaires were administered and were estimated to take about 60 minutes to complete. Participants received written instructions that came with each questionnaire and were encouraged to ask if they were confused. The computerized attentional
test took 15 minutes to complete, and was introduced with written and verbal instructions. The six-minute walking test was instructed by PE specialists.

The eight week intervention period began in the week following the administration. The interventions were conducted once a week for two hours each time. The intervention groups were divided in four subgroups each containing 10-12 participants. Two groups received MBCT course and two groups received PE course.

The post-administration was submitted the last day of the intervention period. The procedure was the same as the pre-administration, except background information was not admitted.

Statistical analysis was processed with the computerized program Statistical Package for the Social Sciences (SPSS).

**Design and Data Analysis**

This was a comparative research with the intention to examine the effects of two different follow-up treatments in preventing relapse and maintaining recovery. The research design was independent group experimental design, divided into two different conditions and measured at two time-points (2x2). An attempt was made to make sure that the two conditions were at the most similar in structure and effort. The participants were asked to return weekly record sheets in order to motivate exercises and keep track of whether participants did their homework.

The assumptions of mixed-ANOVA statistical analysis were tested in appropriate ways; the assumption of outliers was assessed by inspection of a boxplot and Shapiro-Wilk’s test assessed the assumption for normality. Studentized residuals were used to assess the assumption of outliers based on residuals. Levene’s test was used to assess the assumption for homogeneity of variances and Box's M test for equality of covariance matrices. The assumptions were met in
most instances. However, there were few deviations which can be attributed to the fact that the sample size was small and there were disproportionate partitions in groups.

**First hypothesis.** A two-way mixed ANOVA was run to determine if there were differences in depression scores over time depending on whether participants received MBCT or PE intervention. The between-subjects factor, “type of intervention”, had two levels; MBCT and PE. The within-subjects factor, “time”, had two levels; pre-intervention and post-intervention. The dependent variable, “depression” was continuous and measured with the depressive dimension of the DASS questionnaire.

**Second hypothesis.** A three-way mixed ANOVA was run to determine if there were differences in depression scores over time depending on whether participants received MBCT or PE intervention and severity of depressive symptoms at baseline. The between subjects factor, “type of intervention”, had two levels; MBCT and PE. There were two within-subjects factors; 1) “time”, had two categories; pre-intervention and post-intervention and 2) “severity of depressive symptoms at baseline”, had two levels; mild depressive symptoms and moderate/severe depressive symptoms. The mild- and moderate/severe depressive symptoms variable was formed by recoding the BDI-II pre-measurement scores in two different variables. Mild depressive symptoms represents scores ranging from 0-19 and moderate/severe symptoms represents scores ranging from 20-63. The dependent variable, “depression” was continuous and measured with the depressive dimension of the DASS questionnaire.

**Third hypothesis.** A two-way mixed ANOVA was run to determine if there were differences in clinical profile confidence index over time depending on whether participants received MBCT or PE intervention. The between-subjects factor, “type of intervention”, had two levels; MBCT and PE. The within-subjects factor, “time”, had two levels; pre-intervention and
post-intervention. The dependent variable, “clinical profile confidence index” was continuous and measured with CPT II.

Results

The majority of participants in this research were women, but they were 89% and only 11% men. The mean age was 48 years, ranging from 22 years to 62 years. All of the 26 participants had gone through CBT therapy at Reykjalundur Rehabilitation Centre, where 37.25% received individual CBT and 62.5% group CBT. A total of 66.7% were either cohabiting or married and 45.8% had finished university education.

The vast majority of participants (78%) reported having experienced depression, and 89% of them had gone through three or more depressive episodes through the life-course. During the eight-week intervention period 62% of participants used anti-depressant and/or anxiety medication. The mean number of weeks on medication was 243 (appr. 5 years) and ranged from two weeks to fifteen years.

At baseline, 67% of participants had mild depressive symptoms and 33% had moderate/severe depressive symptoms. During the intervention period 41.7% used some kind of self-help strategies to improve their wellbeing that was not part of their treatment intervention.

Different Treatment Effects on Maintaining Recovery and Preventing Relapse

A total of 26 participants that either received MBCT ($n = 16$) or PE ($n = 10$) answered the depressive dimension of the DASS questionnaire, pre- and post- treatment.

A two-way mixed ANOVA was run to determine if there were differences between recoveries of participants depending on whether they engaged in MBCT or PE. The main effect of time did not show significant difference in mean depression scores at the different time points, $F(1, 24) = 0.31, p = .862$. The main effect of group showed that there was no statistically
significant difference in mean depression scores between intervention groups $F(1, 24) = .592$, $p = .449$. There was no statistically significant interaction between the intervention and time on depression scores, $F(1, 24) = .011$, $p = .917$.

Figure 1 below exhibits depression scores for MBCT and PE, pre- and post- intervention.

![Depression scores (DASS) for pre- and post- measurements](image)

*Figure 1. Differences between MBCT and PE mean depression scores (DASS) for pre- and post- measurements*

There were no changes in depression scores as a result of follow-up treatment for either MBCT ($M_{pre} = 10.50, SD = 5.29; M_{post} = 10.38, SD = 8.80$) or PE ($M_{pre} = 13.30, SD = 13.00; M_{post} = 12.80, SD = 11.80$).

**Different Treatment Effects on Maintaining Recovery, Preventing Relapse and Reducing Depression depending on Severity of Depression**

For the second hypothesis, a three-way mixed ANOVA was run to determine if there were differences between recoveries of participants depending on type of follow-up treatment, severity of depressive symptoms and time on depression scores. As can be seen in table 1 below,
all of the participants were divided into four different subgroups replicating severity of depressive symptoms at baseline. Patients engaging in MBCT with mild symptoms had slightly higher mean depression scores than patients engaging in PE with mild depression, for pre- and post-measurements. However, patients engaging in MBCT with moderate/severe symptoms had lower mean depression scores than patients engaging in PE with moderate/severe symptoms, for pre- and post-measurements.

Table 1

*Participants depression scores based on type of follow-up treatment and severity of depressive symptoms at baseline, measured pre- and post-intervention*

<table>
<thead>
<tr>
<th></th>
<th>Depression</th>
<th>Time</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBCT Mild</td>
<td>Pre-</td>
<td>9.08</td>
<td>3.19</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-</td>
<td>11.00</td>
<td>9.30</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>PE Mild</td>
<td>Pre-</td>
<td>4.0</td>
<td>4.0</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-</td>
<td>5.50</td>
<td>5.82</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>MBCT Moderate/severe</td>
<td>Pre-</td>
<td>14.75</td>
<td>7.18</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-</td>
<td>8.50</td>
<td>7.72</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PE Moderate/severe</td>
<td>Pre-</td>
<td>27.25</td>
<td>6.90</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-</td>
<td>23.75</td>
<td>9.71</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

The main effect on severity of depressive symptoms was statistically significant, $F(1, 22) = 22.075, p < .001$. Also, the main effect on type of intervention was marginally significant, $F(1, 22) = 3.261, p = .085$. There was a statistically significant two-way interaction between type of intervention and severity of depressive symptoms, $F(1, 22) = 16.258, p = .001$. Also, two-way
interaction between time and severity of depressive symptoms were marginally significant $F(1, 22) = 3.162, p = .089$. There was no statistically significant two-way interaction between time and type of intervention, $F(1, 22) = 0.99, p = .756$. Three-way interaction between time, type of intervention and severity of depressive symptoms was not statistically significant $F(1, 22) = 0.183, p = .673$.

As can be seen in figures 3 and 4, main effects indicated that severity of depressive symptoms and most likely type of follow-up intervention, independently, affected depression scores following treatment.

![Figure 3](image-url)

*Figure 3.* Depression scores of participants with mild and moderate/severe depressive symptoms at baseline and receiving MBCT, measured pre- and post-intervention

Interaction effects indicated that depression scores differs based on some combination of type of follow-up treatment and severity of depressive symptoms at baseline. Also, there were indications that depression scores differs based on some combination of time and severity of depressive symptoms at baseline.
That is, only patients with moderate/severe depressive symptoms did show symptom reduction from receiving follow-up treatment. Of those, MBCT did result in slightly greater symptom reduction than PE. In fact, depressive symptoms increased a little for patients with mild depressive symptoms, both for MBCT and PE.

**Different Treatment Effects on Improvements in Attentional Control**

All of the participants performed Continuous Performance Test (CPT II), a neuropsychological test measuring sustained and selective attention (Conners, 2000). Mixed ANOVA was run to decide if there were any mean differences between pre- and post-measurements of both groups. Table 2 below exhibits the mean confidence index for the clinical profile, which gives information about the overall results of the CPT II test.
Table 2

*Mean confidence index for participant's clinical profile for MBCT and PE, measured pre- and post-intervention*

<table>
<thead>
<tr>
<th>Time</th>
<th>MBCT</th>
<th>PE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Clinical profile Pre-</td>
<td>51.63%</td>
<td>19.52</td>
</tr>
<tr>
<td></td>
<td>48.32%</td>
<td>13.64</td>
</tr>
</tbody>
</table>

The main effect of time showed no statistically significant difference in mean clinical profile confidence index at the different time points, $F(1, 19) = .003, p = .955$. The main effect of group showed that there was no statistically significant difference in mean clinical profile confidence index between intervention groups $F(1, 19) = 0.277, p = .605$. There was no statistically significant interaction between the intervention and time on clinical profile confidence index, $F(1, 19) = 1.358, p = .258$.

Although not significantly, table 2 above exhibits that the mean confidence index decreased for MBCT group and increased a little for PE group as a result of follow-up treatment.

**Discussion**

The main objective of the current research was to evaluate the efficacy of MBCT compared to PE as a follow-up treatment to prevent depressive relapse and maintain recovery. The sample consisted primarily of vulnerable patients as vast majority reported having experienced depression and gone through three or more depressive episodes. Thus, high proportion of participants were on m-ADM and many for a long time. However, when the research was conducted the participants seemed to be in good recovery as 67% of participants had mild depressive symptoms at the start of the follow-up treatment.
Previous studies have supported MBCT as a successful preventative method, at least for patients at greater risk of relapse (i.e. those that have experienced at least one depressive episode) (Piet & Hougaard, 2011; Hofmann et al., 2010; Williams, 2007) and should be used when patients are in recovery (Williams, 2007). Similarly, PE has been supported as a relapse prevention but also as a treatment for MDD (Singh et al., 2001; Sundberg, 2010). According to the sample description, it can be inferred that participants in the current research reflect a patient population that, theoretically, should benefit from follow-up treatment at Reykjalundur Rehabilitation Centre.

The results did support the primary hypothesis which stated that MBCT does not deliver greater efficacy than PE in terms of preventing depressive relapse and maintaining recovery. As assumed, there were no changes in depression scores for either MBCT or PE following treatment, indicating that both treatments are equally effective in maintaining recovery and preventing relapse.

To authors’ knowledge, this is the first research that compares MBCT to a structurally equivalent PE. Therefore there is no theoretical background providing evidence on which follow-up treatment alternative is more effective than the other, with one exception. Shallcross and colleagues (2015) compared MBCT to active control condition (ACC) consisting physical activity, nutrition and music therapy. In that research, there were no indicators that MBCT was superior to the active components in ACC in terms of depression relapse. Also, consistent with the current results, previous studies have demonstrated that both MBCT and PE are independently efficient treatments to maintain recovery and prevent relapse (Segal, Williams, and Teasdale, 2002; Singh et al., 2001; Sundberg, 2010)

The second hypothesis stating that follow-up treatment maintains recovery for patients
with mild symptoms (i.e. depression scores stay the same), but for patients with moderate/severe symptoms follow-up treatment also reduces depressive scores. Two-way interaction between type of intervention and severity of depressive symptoms were significant, indicating that type of follow-up treatment and severity of depressive symptoms affect depression scores following treatment. Also, two way interaction between time and severity of depressive symptoms were marginally significant. Due to a small sample size, it can be inferred that symptom severity does most likely affect benefits from engaging in follow-up treatment. In fact, following treatment depression scores increased a little for patients with mild symptoms. This trend did not come as a surprise as mood fluctuations from day to day are quite normal. However, for patients with moderate/severe symptoms both MBCT and PE reduced depressive scores. MBCT delivered even greater effectivity when both follow-up treatments were compared.

The current findings may be explained by the fact that patients with moderate/severe depression have greater opportunity to decrease depressive symptoms as their depressive scores are greater than normal at the start of the treatment. However, patients with mild depression have less opportunity to decrease depressive symptoms as they already are in good recovery.

Consistent with these implications, Hofmann, Sawyer, Witt, & Oh (2010) also speculated about possible floor effects that explains different improvements depending on severity of depressive symptoms at baseline, as a result of meta-analysis. Therefore, it can be concluded that follow-up treatment does serve as a recovery maintenance and relapse prevention for patients with mild symptoms. But for patients with moderate/severe symptoms, follow-up treatment brings an additional value as it also reduces depression.

The implications that MBCT leads to greater symptom reduction than PE for patients with moderate/severe depression suggests that MBCT follow-up might potentially be the most
beneficial follow-up treatment alternative for the patient group experiencing more severe symptoms. This conclusion was drawn from the fact that at the start of the treatment PE group experienced more severe depressive symptoms than MBCT, and according to Hofmann, Sawyer, Witt, & Oh (2010) depression scores should have decreased more for PE group following treatment (floor effect). However, results demonstrated exactly the opposite as depression scores decreased more for MBCT group although the symptoms were less severe.

Finally, the third hypothesis stating that individuals receiving MBCT have greater improvements in attentional control (i.e. sustained and selective attention) compared to those receiving PE was not supported. However, there was an interesting trend in the data showing that the clinical profile confidence index decreased a little for MBCT group but increased a little for PE group. Therefore, MBCT might be effective tool to improve selective attention as the aim of the treatment is to pay attention intentionally to the present moment experience in a non-judgmental and accepting way in order to improve the quality of one’s consciousness or awareness in daily life (Kabat-Zinn, 1994).

These findings should promote future researches in that field with a larger sample size. MBCT is a preventative method that teaches formerly depressed patients to control their attentional focus as they are especially vulnerable to adopt negative and ruminative thinking (Segal et al., 2002; Michalak et al., 2011). Given that, patients engaging in MBCT should make a progress in attentional control beyond those receiving PE.

**Limitations.** There were no exclusion criteria except that participants needed to have completed CBT therapy at Reykjalundur. Although most of the participants attended the CBT course mainly for depression some encountered on other grounds (i.e. for low self-esteem and might not have been diagnosed with clinical depression). History of clinical depression and a
specific timeframe since CBT treatment was completed would have been a desirable qualification criteria. Also, there was a group of participants that struggled with physical diseases (i.e. asthma arthritis, cardiovascular diseases) and were not fit enough for the intensity the PE intervention entailed. Thereby, exclusion criteria for physical condition might be necessary as many participants receiving PE did not reach the recommended dose of intensity or dropped out of treatment.

Although the research was introduced with a comprehensive letter some participants were not aware that they were participating in a research. A short introductory meeting with thorough explanations of requirements would have been desirable (i.e. attendance, homework, notifications of absence and diary records).

The sample size was small and there was almost 50% dropout rate, leaving only 26 participants. More participants dropped out of PE group, and therefore the two intervention groups varied in size. To prevent dropout, facilitators called the participants, but not until fourth week. It would have been desirable if every participant would have received phone call if not attending from the start of the treatment. Also, the fact that almost 42% of participants used some kind of self-help during the intervention period independent from the follow-up treatment makes it difficult to predict that the interventions were truly effective.

**Strengths.** As mentioned earlier, Shallcross and colleagues (2015) demonstrated the importance of comparing MBCT to other active control conditions to know if other psychoeducational interventions may have similar benefits. The current research was the first we know of that compares MBCT with a structurally equivalent control group consisting PE. It is of great benefit for society and individuals suffering from depression to find the most efficient solutions in order to prevent relapse and maintain recovery in the long run.
**Conclusion and future directions.** This comparison research found that both MBCT and PE are equally effective follow-up treatments in maintaining recovery and preventing relapse. This preliminary evidence supports the potential value of examining possible individual differences in follow-up treatment preference, where different treatment alternatives might have different beneficial effects between persons (Fava et al., 2003). Future researches should enlarge the sample size and add a control group that receives no-therapy to rule out non-specific factors affecting the outcome (i.e. interaction with a facilitator and other patients). A long-term follow-up is desirable to explain the persistence of the therapies in the long run.
References


Comparison of the depression anxiety stress scales (DASS) with the Beck depression and
http://doi.org/10.1016/0005-7967(94)00075-U

Michalak, J., Hölz, A., & Teismann, T. (2011). Rumination as a predictor of relapse in
http://doi.org/10.1348/147608310X520166


*Perspectives on Psychological Science, 3*(5), 400–424.

http://doi.org/10.4088/JCP.11m07343

prevention of relapse in recurrent major depressive disorder: a systematic review and
http://doi.org/10.1016/j.cpr.2011.05.002


Kynningarblað um viðindarannsóknina:

Árangur eftirfylgardar hugrænnar atferlismeðferðar sem byggð er á núvitund

Kæri viðtakandi

Vinsamlega íhugaðu neðangreindar upplýsingar áður en þú ákveður hvort þú viljir taka þátt í þessari rannsókn.

Árangur eftirfylgdar hugrænnar atferlismeðferðar sem byggð er á núvitund. Einnig er að skoða hvort aðrir þættir séu að bera sambærilegan árangur og eftirfylgd hugrænnar atferlismeðferðar sem byggð er á núvitund. Hópurinn er samanburðurhópur á Reykjalundur og fengið hugræna atferlismeðferð.


Stefnt er að því að höparinn hittist einu sinni í víkum í átta víkur á Reykjalandi, svo þú ákveður þessari rannsóknin.


Að meta árangur eftirfylgardar hugrænnar atferlismeðferðar er mikilvægt til að kanna hvort þessi nálgun henti fyrir þennan sjúklingahóp. Fyrirhugað er að safna gögn sem falla í sálfræðiprófum sem æfða við þunglyndi og kviða.
Einnig verður lagt fyrir próf sem metur athygli til að kanna hvort hún sé áhrifaþáttur á framgang meðferðar og göngupróf og brekpróf verða lögð fyrir. Í lok meðferðar verða þátttakendur beðnir um að meta hvernig þeim likaði eftirfylgðarúrræðið.

Þátttakendur samanburðarhóps byðist að lokinni rannsókn að taka þátt í núvitundarnámskeiði.

Rannsakendur telja enga áhættu stafa af því að taka þátt í rannsókninni. Þátttakendur eru beðnir um að laða þann er leggur fyrir sálfræðiprófin vita ef þeim bykir þátttakán óþægileg. Þátttakendum er frjálst að hætta þátttöku hvænær sem er og geta þeir neitað að svara einstökum spurningum eða spurningalístum. Hins vegar er mikilvægt rannsóknarinnar vegna að öllum atriðum sé svarað.

Þátttakendum er frjálst að hafna þátttöku eða hætta í rannsókninni á hvaða stigi sem er, án útskýringa og án áhrifa á þá þjónustu sem þeir eiga rétt á. Það hefur heldur ekki áhrif á þá geðheilbrigðisþjónustu sem þú færð á Reykjalund. Svör þátttakenda verða á rannsóknarnúmerum og ekki persónugreinanleg og verða órekjanleg.


Appendix B
Informed Consent

Upplýst samþykki fyrir þátttöku í vísendarannsókninni:

Árangur eftirfylgðar hugrænnar atferlismeðferðar sem byggð er á núvitund

Ég undirrituð/aður hef lesið kynningarblað um árangur eftirfylgðar hugrænnar atferlismeðferðar sem byggð er á núvitund og samþykki að taka þátt í henni af fúsum og frjálsum vilja. Ég geri mér grein fyrir að þátttaka í rannsókninni felst í því að svara spurningarlistum í viðtölum hjá rannsakendum eins og lýst er á kynningarblaðinu sem ég hef lesið. Ég geri mér grein fyrir því að ég geti dregið samþykki mitt til baka hvenær sem er og að ég get neitað að svara einstökum spurningum og spurningalistum í rannsókninni þó að það sé mikilvægt fyrir niðurstöður rannsóknarinnar að öllum atriðum sé svarað.

Ég heimila að niðurstöður rannsóknarinnar birtist í fagtímaritum og skýrt verði frá þeim á vísendalegum ráðstefnum, þó með þeim hætti að algjörri nafnleynd og trúnaði sé haldið.

Mér hefur verið kynnt umfang og eðli þessarar vísendarannsóknar á sérstöku kynningarblaði og er samþykkr/ur þátttöku.

Staður ____________________________ Dagssetning ____________________________

Undirskrift ____________________________ Sími ____________________________

Undirskrift umsjónarmanns rannsóknarinnar ____________________________
Appendix C

Questions on Background Information

**Bakgrunnsupplysningar**

<table>
<thead>
<tr>
<th>Kyn:</th>
<th>karl</th>
<th>kona</th>
<th>Aldur: ______ára</th>
</tr>
</thead>
</table>

**Menntun sem þú hefur lokið:**

- Skyldunám (t.d. grunskólapróf, landspróf, gagnfræðapróf)
- Starfsnám (t.d. íðskólapróf, sveinspróf, vélstjórnar-eða skipstjórnarréttindi, meirapróf, vinnumálapróf, sjúkræði, lögregla)
- Stúdentspróf
- Háskólapróf
- Annað nám. Hvað?

**Starf/tekjur:**

- Heimavinnandi
- Námshaður
- Fæðingarorlof
- Veikindaorlof
- Endurhæfingarlífeyrir
- Atvinnulaus. Hve margar vikur verið atvinnulaus? _____ vikur
- Örorka
- Útvinnandi. Hvert er starfshlutfall þitt? ______%  
  - Ósérhæft starf, verkamannavinna (t.d. ræstingar, fískvínsla)
  - Afgreiðslu-, þjómsu- eða umónunnarstarf (ófanglærður)
  - Tónaðarmaður
  - Skrifstofustarf (t.d. gjaldkeri, innheima, sínavörður)
  - Sérhæft starf eða tæknistarf (t.d. lögrelumaður, sjúkræði)
  - Sérfræðingsstarf (t.d. lögfræðingur, læknir, hjúkrunarfr.)
  - Stjónumunarstarf (t.d. frankvændastjóri, deildarstjóri)
  - Annað, hvað? __________________________
**Bakrunnsupplysingar**

<table>
<thead>
<tr>
<th>Hjúskaparstaða:</th>
<th>Börn:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gift/kvæntur eða í sambúð</td>
<td>Ekkert</td>
</tr>
<tr>
<td>Einhleyp(ur)</td>
<td>Eitt</td>
</tr>
<tr>
<td>Fráskilin(n)</td>
<td>Tvö</td>
</tr>
<tr>
<td>Ekkja/Ekkill</td>
<td>Þryý</td>
</tr>
<tr>
<td></td>
<td>Fjögur eða fleiri</td>
</tr>
</tbody>
</table>

**Innlagur á geoðeild:**

- Aldrei
- Einu sinni
- Tvisvar
- Þrisvar eða oftar

**Lyfjameðferð við þunglyndi eða kvíða:**

- Aldrei
- Einu sinni
- Tvisvar
- Þrisvar eða oftar
- Er á lyfjameðferð í dag við þunglyndi eða kvíða og hef verið það í samfellt ______ vikur

**Reynsla af hugrænni atferlismeðferð:**

- Hef farið í HAM-einstaklingsmeðferð hjá _______________________
- Hef farið í HAM-hópmeðferð hjá _______________________
- Hef nýtt mér HAM á netinu: _______________________

**Hvernig gekk?**

________________________________________________________________________
Appendix D

Questionnaire assessing depression

---

**BDI II**


1. Depuró
   0 Mér finnst ég ekki vera dýpur/dapur.
   1 Mér finnst ég oft vera dýpur/dapur.
   2 Ég er alltaf dýpur/dapur.
   3 Ég er svo dýpur/dapur og áhmingjusöm/ðáhmingjusömur að ég held það ekki út.

2. Svartsýni
   0 Ég er ekki vannmálgúr varandi framfóðina.
   1 Mér finnst ég vera vannmálgívar varandi framfóðina en ég var áður.
   2 Ég er ekki von að hlutíðin gangi upp hjá mig.
   3 Mér finnst framfóðin mér vera vonlaus og hún mun einungis verða.

3. Fyri mistök
   0 Ég soppli mig ekki sem mistök.
   1 Mér hefur mistekist meira en ég heftið átti að að gera.
   2 Hangið ég lítið fyrir samfélagið sem ég morg mistök.
   3 Mér finnst ég hefði mistekist æglega sem mænmedjan.

4. Ánargjöngasinn
   0 Ég fæ jafn mikla átægja og áður út úr hlutum sem ég hef gamin af.
   1 Ég nyt ekki hlutanna eins mikil og ég gerði áður.
   2 Ég fæ mg lítið átægja út úr hlutum sem ég heftið áður gaman af.
   3 Ég fæ ekki átægja út úr hlutum sem ég heftið áður gaman af.

5. Sektarkend
   0 Ég finn enga sértæka sektarkend.
   1 Ég finn til sektarkennardar yfir þörfum hlutum sem ég hef gert efti hefði áður.
   2 Ég finn oft lítið fyrir sektarkend.
   3 Ég finn nöldug fyrir sektarkend.

6. Refting
   0 Mér líður ekki eins og verði sé að refna mjör.
   1 Mér líður eins og mér verði karðið refsað.
   2 Ég á von á því að mér verði refsað.
   3 Mér líður eins og verði sé að refna mjör.

7. Sjálfstýrisvétning
   0 Ég sé sjálfan/mig í sama ljósi og áður.
   1 Ég hef mistið sjálfstætt mið.
   2 Ég er vorvasíkin n í mið sjálfan/mig.
   3 Mig líkar ekki við sjálfan/mig.

8. Sjálfvígugurinn
   0 Ég gagnfrön ekki sjálfan/mig n á kvennt sjálfrúum mjör um miða en veini lega.
   1 Ég er gagnfrön á sjálfan/mig en ég var.
   2 Ég gagnfrön sjálfan/mig fyrr af alla galla miða.
   3 Ég kvennt sjálfrúum mjör um allt slænt sem gerir.

9. Sjálfvígugurinn
   0 Ég hugga ekki um að fyrrífarar mjör.
   1 Ég hugga um að fyrrífarar mjör er ég myndi ekki framkvæma það.
   2 Mig langar til að fyrrífarar mjör.
   3 Ég myndi fyrrífarar mjör er ég heftið tækt áður til þess.

10. Grætur
    0 Ég greit ekki meira en ég gerði áður.
    1 Ég vill greit meira en ég gerði áður.
    2 Ég greit út á hverju sem er.
    3 Mig langar til að greita en ég greit það ekki.

---

Heilildsstig af síðan 1

---

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“Beck Depression Inventory” og “BDI” eru skrásett vörumerki The Psychological Corporation í Bandaríkjum. 0154018392
Appendix E

Questionnaire assessing depression, anxiety and stress

DASS

Lástu hverju fullyrðingu og dragðu hring um tölu 0, 1, 2 eða 3 sem segir til um hve vel hver fullyrðing áttu við í þinu tilvik. *ðúst víkuna,* það eru engin rétt eða röng svör. Eyda ekki of miklum tíma í að velta fyrir þér hverri fullyrðingu.

0 = Att í alls ekki við mig
1 = Att við mig að einhverju leyti eða stundum
2 = Att töluvert vel við mig eða drjúgan hjuta víkunar
3 = Att mjög vel við mig eða mest allan tíman

1. Óg komst í uppnám yfir hreinum smámunum.
2. Óg fann fyrir munburki.
3. Óg viðst alls ekki geta fundið fyrir hreinum göðum tilfinningum.
4. Óg atti í erföðeikum með að anda (t.d. æit of hröð óndun, mætání ánikamlegar áreynslu).
5. Óg gat ekki byrjar á neinu.
6. Óg halði tilheiningi til að breygast of harkaðlega við aðstæðum.
7. Mér fannst og vera òstykð(ur) (t.d. að fæturnir veru að geta sig).
8. Mér fannst erflit að slappa af.
9. Óg lenti í aðstæðum sem gerði mig svo kvöða/kvöðinn að mér léttí störum þegar þeim lauk.
10. Mér fannst og ekki geta hlakkað til neins.
11. Óg komst auðveidlega í uppnám.
12. Mér fannst og eyða mikill andlegri orku.
13. Óg var hrygg/hryggur og bunglynd(ur).
14. Óg varð óþöllumð(ur) ef eittheð létt a sést standa (t.d. lyftur, umferðarjöf, og látin(n) bíla).
15. Mér fannst það æftaði að líða yfir mig.
17. Mér fannst og ekki vera mikil virði sem manneskj.
18. Mér fannst og frekar hörundas.
19. Óg svátóiði ölluvert (t.d. svít í lófum) það væri ekki heitt og það hafi ekki reynið mikil á mig.
20. Óg fann fyrir öttu án nokkurra skýnislegra ástæðu.
21. Mér fannst lífði varia þess virði að líf því.
**Mundu stigajöfna:**

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>22</td>
<td>Mér fannst erfitt að ná mér niður.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>23</td>
<td>Eg átti erfitt með að kyngia.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>24</td>
<td>Eg vistið ekki geta haft neina ánægju af því sem ég var að gera.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>25</td>
<td>Eg varði við hjartsáttinni í mér þó ég hefði ekki reynt á mig (t.d. hraðandi hjartsáttur, hjarta sleppi úr slagi).</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>26</td>
<td>Eg var dapur/dúpur og niðurdrégin(n).</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>27</td>
<td>Mér fannst ég vera mið marg pírmúppírméður.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>28</td>
<td>Mér fannst ég nánast gripin(n) skéifingu.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>29</td>
<td>Mér fannst erfitt að rõa mig eftir að elttvað kom mér í uppnám.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>30</td>
<td>Eg var hraðður um að jikikka á smávægilegu verki sem ég var ekki kunnug(ur).</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>31</td>
<td>Eg gat ekki féngið brennandi aðuga á neiðu.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>32</td>
<td>Eg átti erfitt með að umbera trúflanir á því sem ég var að gera.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>33</td>
<td>Eg var spennt(ur) á taugum.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>34</td>
<td>Mér fannst ég nánast einskás víðil.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>35</td>
<td>Eg boldi ekki þegar elttvað kom í veg fyrir að ég héldi áfram við það sem ég var að gera.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>36</td>
<td>Eg var þástlegin(n).</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>37</td>
<td>Eg sá ekki í framtíðinni sem gaf mér von.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>38</td>
<td>Mér fannst lífð vera tilgangslust.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>39</td>
<td>Eg var ergileg(ur).</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>40</td>
<td>Eg halði átvágður af aðstæðum þar sem ég féngi hraðslukast (panik) og gerdi mig að fiði.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>41</td>
<td>Eg fenn fyrir skjalfta (t.d. í hóðum).</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>42</td>
<td>Mér fannst erfitt að hlæypti í mig krafa til að gera hluti.</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Appendix F

Questions concerning mental history and self-help

Rannsóknarnúmer: ________________

Vinsamlegast merktu með X í viðeigandi reiti og svaraðu eftirfarandi spurningum ef þær eiga við þig.

Hefur þú upplifað þunglyndi? Já _____ Nei _____

Ef já, hversu margar þunglyndislotur hefur þú upplifað um ævina?

_____Eina

_____Tvær

_____Þrjár eða fleiri

Hefur þú á undanföönum átta vikum sótt þér einhverskonar sjálfshjálp/meðferð/námskeið til að bæta líðan þína (aðra en þátttaka þín í rannsókninni fól í sér)? Já _____ Nei ______

Ef já, hverskonar sjálfshjálp/meðferð/námskeið?

__________________________________________
Appendix G

Instructions for the CPT-II attentional test

Leiðbeiningar

Þetta er tölvustýrt verkefni sem metur athygli og tekur um 15 mínútur að ljúka.

Á skjánum munu birtast bókstafir sem brugðist er við á mismunandi hátt eftir því hvaða stafur
birtist.

Ýttu á ENTER þegar bókstafur birtist, nema þegar stafurinn X birtist.

Þegar bókstafurinn X birtist á ekki að ýta á ENTER.

Þú færð um eina mínútu til að æfa þig áður en verkefnið hefst.

Vinsamlegast reyndu að bregðast við eins hratt og nákvæmlega og þú getur 😊
**Appendix H**

Homework diaries for MBCT and PE groups

### Dagbók þátttakenda

<table>
<thead>
<tr>
<th>MAN</th>
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*Beðir þú nústundarefræfinu í dag* (d/n)?

*Hversu lengi sérst bleiting yfir?*

*Hversu mergar tikkuðustundar ásvefnu í nítu?*

*Hversu gólðum sverfr fannast þar þó ná í nítu á skalanum 1-10? (sl. mjög gólður, sl. smá gólður)*

*Hversu miðla en eru fannast þar þó hafa í dag á skalanum 1-10? (sl. mjög miðla, sl. smá miðla)*

*Hversu miðlaði fannast yfir einkennum þunglindi í dag á skalanum 1-10? (sl. mjög hag, sl. smá mjölk)*

*Hversu miðlaði sverfr fannast yfir í dag á skalanum 1-10? (sl. mjög hag, sl. smá mjölk)*

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### Dagbók þátttakenda

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*Stundaðir þú heyringu í dag? (d/n)*

*Hvort heyringu stundaðir þó í dag? (kl. sunn, gaga, skokk, lyftinge, cafínu, ...)*

*Hversu lengi stundaðir þú heyringu í dag?*

*Hversu mergar tikkasundaðir svæfuni í nítu?*

*Hversu gólðum svefini fannast þar þó ná í nítu á skalanum 1-10? (sl. mjög gólður, sl. smá gólður)*

*Hversu miðla þannig fannast þar þó hafa í dag á skalanum 1-10? (sl. mjög miðla, sl. smá miðla)*

*Hversu miðlaði fannast yfir einkennum þunglindi í dag á skalanum 1-10? (sl. mjög hag, sl. smá mjölk)*

*Hversu miðlaði sverfr fannast yfir í dag á skalanum 1-10? (sl. mjög hag, sl. smá mjölk)*
Appendix I

Physical exercises for PE group

Styrkarbjalfun – Heimaæfingar

Framkvæmda eftirfarandi æfingar tvevar sinnun í viku meðan að rannsókn stendur. Munu að hita upp að er það byrjja að framkvæma æfingarnar og teygja í lokin. Gangi ykkur vel.

1. Hnébeygja


- 2-3 sett af 10-20 endurtekningum

2. Röður


- 2-3 sett af 10-20 endurtekningum

3. Upphandleggir

Standið með axlarbreidd milli fótlengja og staðsetjðið teigjuna eins og sést á myndinni. Beygði hendur um ölnboga, passið að hafa hendur með hliðum.

- 2-3 sett af 10-20 endurtekningum

4. Axlaraefing - útsnúningur

Standið og haldið á teygjunní eins og sést á myndinni. Ölnbogar eru í 90 gráðum. Færið hendur út til hliðanna og haldið ölnbogum við síður.

- 2-3 sett af 10-20 endurtekningum
5. Axlapressa

Stendið með fætur aðeins í sundur eða sitjið og staðsettjið teygjuna aftur fyrir bek og undir handarkrikum. Yndi höndum fram og rólega til baka, passa að hálta göfri líkamsstöðu á meðan.

- 2-3 sett af 10-20 endurtekningum

6. Fótlyftur í hliðareggi

Liggði á hliðinni með neðri fótinni borginn. Lyftið efið fætinum upp hægt og rólega hafið hann aðeins innnaðan og halðið líkama þeimum (œld, mjöðum og ákkili). Halðið upp í smá stund og farði svo aftur rólega niður.

- 2-3 sett af 10-20 endurtekningum á hvorn fót

7. Bakæfing


- 2-3 sett af 10-20 endurtekningum

8. Kviðaæfing

Liggði á bakinu með hnið beygd og fætur í gólfi. Lyftið höfði og herðabliðum frá dynu, passið að hálta halsi í göfri stöðu og reigja höfuðu ekki fram. Haig að hafa hndur niður með hliðum, í kross á brjóst eða undir hnaðka.

- 2-3 sett af 10-20 endurtekningum