



SHORT COMMUNICATION

Exploring direct experience as a core element behind mindfulness-based cognitive therapy

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Abstract Currently, there is a growing interest in exploring the underlying processes that explain how and why therapeutic approaches work. This study aims to investigate whether Mindfulness-Based Cognitive Therapy (MBCT) can enhance direct experience compared to a control intervention. 72 women diagnosed with eating disorders were assigned to either MBCT or a control treatment. Pre- and post-intervention, participants were asked to eat an orange slice and write down thoughts about the eating experience, classifying the focus of each experience as either experiential or analytical. Compared with the control group, participants who underwent MBCT showed a statistically significant increase in direct experience.

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Introduction

In recent years, the focus of psychotherapy research has transitioned from merely establishing the effectiveness of disorder-focused treatments to a deeper exploration of the underlying how and why effective approaches work. Psychotherapeutic programs have evolved, and there is a growing

interest in process-based therapies. These therapies address psychological processes associated with human suffering, regardless of specific diagnostic criteria.

Evidence-based approaches have theoretically proposed different mechanisms of action. For instance, it has been suggested that the efficacy of cognitive-behavior therapy (CBT) derives from altering negative thinking patterns and dysfunctional attitudes.¹ In contrast, behavioral treatment's effectiveness has been related to overt behavior modification and associative learning. Interestingly, empirical investigations have contradicted certain hypotheses, revealing, for instance, that the effectiveness of CBT cannot solely account for changes in negative thoughts.^{2,3}

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Derived from CBT, mindfulness-based cognitive therapy (MBCT) was initially developed to prevent depression relapse.³ MBCT's effectiveness in reducing subsequent depressive episodes in people with recurrent depression has been studied in several clinical trials.⁴ Through combining CBT-based psychoeducation and mindfulness practice, it is theorized that its efficacy relies on improving the participant's direct experience mode (EM). A focus on direct, present-moment processing of sensations, thoughts, and feelings characterizes EM.⁵ It encourages adopting a non-judgmental and accepting attitude toward one's experiences, allowing the curious exploration of one's internal states. The EM differs from the analytical mode (AM), a processing style characterized by deliberate and systematic information analysis and involves a focused approach to problem-solving through logical reasoning, critical thinking, and evidence-based analysis. This mode is typically associated with conscious and controlled cognitive processes, including planning, decision-making, and evaluating alternatives.⁶ MBCT promotes the awareness of both modes and the posterior disengagement from goal-directed analytical processing.⁶ To date, research investigating the mechanisms of MBCT has connected its effectiveness to changes in decentering, mindfulness, rumination, self-compassion, and negative self-referential memory bias.^{7,8} However, increases in direct experience mode is an unmeasured mechanism in MBCT studies.

In this study, the aim is to investigate the effect of MBCT on direct experience, a central feature of EM, in participants with an eating disorder (ED) diagnosis. We intend to employ a laboratory task involving the subjective reporting of the experience of eating an orange. This task was used in previous studies showing that how participants engaged in the act of eating was related to the severity of the ED and can properly differentiate individuals with ED diagnosis from those without, as well as a group of participants with obesity.^{9,10} Patients with an ED diagnosis participated in an MBCT group or a control intervention and performed the laboratory tasks pre- and post-treatments. We hypothesize that participants who undergo MBCT, as opposed to those in the control group, will exhibit a significant increase in direct experience after the training.

Material and methods

Participants

A total of 72 women were recruited from a partial hospitalization Eating Disorder Unit: 50 with Anorexia Nervosa (AN) diagnosis, 15 with Bulimia Nervosa (BN), and 7 participants with eating disorders not otherwise specified (EDNOs). Diagnoses were established based on the criteria of the MINI International Neuropsychiatric Interview (MINI¹¹) and DSM-5 diagnostic criteria for eating disorders. Inclusion criteria were: 1) age ≥ 18 years and 2) written consent to participate in the study. Exclusion criteria were: 1) comorbid psychotic symptoms, substance abuse disorder, or intellectual disability, and 2) a previous experience in mindfulness, meditation, or yoga practices.

An experienced psychiatrist conducted diagnostic interviews. Participants meeting inclusion criteria were assigned to one of the two treatments, according to a sequential admission process in a non-randomized controlled trial.

Forty-one participants received MBCT, and 31 received the control intervention. Patients were assessed before and after eight weeks of treatment.

The study adhered to the principles outlined in the Declaration of Helsinki and was approved by the Clinical Research Ethics Committee at the Hospital de la Santa Creu i Sant Pau.

Assessments

Screening and diagnosis. Psychiatric diagnosis was made using the MINI International Neuropsychiatric Interview (MINI¹¹) and the DSM-5 diagnostic criteria for eating disorders. Based on the clinical interview, the following data was obtained at baseline: body mass index (BMI), socio-demographic variables, and clinical features.

Direct experience task. Participants were instructed to peel and eat an orange slice and to write down ten aspects of their experience. Participants were then given a brief written explanation of the differences between the two processing modes and instructed to classify each of their thoughts as analytical or experiential modes. Two external researchers (masked to the participant's treatment group) also coded the participant's ten thoughts. The detailed procedure is described elsewhere.^{9,10}

Psychotherapeutic intervention

Mindfulness-based cognitive therapy (MBCT³). MBCT was provided in eight weekly sessions of 2.5 h by a MBCT certified therapist. Through the regular practice of different mindfulness exercises and cognitive behavioral skills, patients become more aware of bodily sensations, thoughts, and feelings associated with low mood, consequently being able to relate in a non-attached manner to the inner and outer experience.

Emotion Regulation skills training from Dialectical Behavioral Therapy (ER-DBT¹²). ER-DBT was used as a control intervention. It was chosen as a comparative intervention due to the similarities in terms of group format, skills-based orientation, duration (8-week duration, 2.5-hour sessions), and use of homework assignments. A DBT-certified therapist also delivered ER-DBT.

Data analysis

Data were analyzed with the IBM-SPSS Statistics for Windows v. 25.0. All data were screened for skewness and kurtosis to test assumptions of normality. All hypotheses were tested to a two-sided significance level of 0.05. Chi-square tests (or Fisher's exact test if expected frequencies were < 5) were used for categorical variables and ANOVAs for independent samples for continuous variables to compare between-group differences in baseline demographic and clinical characteristics.

Analyses were conducted on the per-protocol (PP) sample, comprising participants who completed at least 80 % of the intervention (MBCT: $n = 19$, Control group: $n = 23$), and in the intention-to-treat (ITT) sample, including all enrolled participants, regardless of whether they completed the intervention or not (MBCT: $n = 38$, Control group: $n = 31$). Missing data were treated with the last observation carried forward method.

Table 1 Baseline demographic and clinical characteristics of the full sample with differences between groups.

Variables	Total (<i>n</i> = 72)	MBCT (<i>n</i> = 41)	Control (<i>n</i> = 31)	<i>p</i>
Age, mean (SD)	32.4 (9.9)	31.2 (8.5)	33.8 (11.4)	< 0.001
Marital Status,% single	73.3	68.3	87.1	n. s
Education,% University degree	72.2	71.1	67.4	n. s
Clinical Variables,%				n. s
Anorexia Nervosa	70.0	81.3	54.2	.002
Bulimia Nervosa	19.6	9.4	33.8	.08
EDNOS	10.4	9.4	8.3	< 0.001
BMI, mean (SD)	19.1 (3.7)	19.0 (4.3)	19.3 (3.1)	
Years from ED onset, mean (SD)	9.9 (8.3)	8.8 (7.4)	11.5 (9.3)	0.01
Age first treatment, mean (SD)	21.1 (7.8)	21.4 (8.3)	20.3 (9.2)	n. s

Note. BMI, body mass index; EDNOS, eating disorders not otherwise specified; MBCT, mindfulness-based cognitive therapy; n. s., not significant; SD, standard deviation.

To study the impact of treatment on pre-post differences in direct experience, we conducted repeated-measures ANOVAs. A participant's total number of direct experience observations after eating the orange was compared pre-and-post interventions. The number of direct observations was the dependent variable, the treatment arm was the between-subject factor, and time (pre-and-post intervention) was entered as the within-subject factor. The effect size measured using Cohen's *d* is reported. Post-hoc analyses (i.e., paired-sample-*t*-test) were conducted to determine the potential impact of a specific treatment on direct experience.

Results

Descriptive demographic and clinical characteristics of the entire sample with differences between the two intervention arms are presented in Table 1. All subjects were female, and most were single and with a university degree. The mean duration of illness was around 10.05 years (*SD* = 8.37), and the mean BMI was 19.14 (*SD* = 3.75).

In the PP sample, a significant main effect of time was not found ($F(1,40) = 3.10, p = .08, f = 0.37$). However, a significant effect of Time \times Treatment group interaction was observed ($F(1,40) = 7.60, p = .009, f = 0.53$). Direct experience increased from pre-to-post treatment only in the MBCT group (Mean Pre-MBCT = 3.17, *SD* = 2.08; Mean post-MBCT = 4.61, *SD* = 1.61, $t = -1.43, p = .001, r = 0.31$).

Regarding changes in direct experience in the ITT sample, a main effect of time was also not found ($F(1, 67) = 2.78, p = .10, f = 0.20$). The Time \times Treatment group interaction was significant ($F(1, 67) = 6.89, p = .01, f = 0.29$). As reported for the PP sample, direct experience increased significantly for MBCT participants only (Mean Pre-MBCT = 3.34, *SD* = 2.38; Mean Post-MBCT = 4.21, *SD* = 2.20, $t = -3.50, p = .001, r = 0.49$).

Discussion

The present study examined whether MBCT intervention improves direct experience using a laboratory task. Our

results show that, in comparison with a control intervention, MBCT enhances the direct experience in participants with eating disorders, showing that cultivating mindfulness and acceptance results in an increased capacity of directly engaging with the experience of eating.

Recent meta-analytic findings indicate that mindfulness is inversely associated with ED psychopathology, showing a lower capacity for acceptance and acting with awareness in individuals with ED.¹³ Our previous studies have reported a significant reduction in the ability to engage the experiential mode (EM) in those diagnosed with an ED, and this diminished capacity has been linked to the severity of eating disorder psychopathology. However, it is essential to note that, for the first time, we are reporting that a mindfulness-based intervention, compared to a closely matched active comparator, shows promise in enhancing EM. This outcome has significant implications for MBCT as it supports one of its theoretical underpinnings. The current findings should be taken as preliminary, as the study was intended to be exploratory and has some limitations that need to be considered. First, the small sample size limited the statistical power due to difficulties in recruitment in real-world clinical practice of individuals with eating disorders. Second, the lack of randomization due to the study's exploratory nature. Finally, the absence of intermediate measurement points and other outcomes necessary to explore whether the changes in the EM mediate the clinical effectiveness.

Additionally, future studies should explore whether the improved capacity in direct experience influences maladaptive eating behaviors, such as binge eating or restrictive intake. The present study did not assess the impact of an increased capacity to activate the EM on eating behaviors. This question holds particular relevance for individuals with an ED diagnosis. Moreover, this finding could potentially explain why mindful eating training works.¹⁴ Moreover, it would be interesting to investigate whether the observed increases in direct experiences persist over an extended period after mindfulness training and whether these changes are associated with reductions in ED symptoms, as well as improvements in body image and quality of life.

Conclusions

Previous research has primarily focused on establishing connections between MBCT's effectiveness and self-compassion, mindfulness, rumination, or decentering. Our exploratory study, albeit with limitations such as the small sample or non-randomized design, underscores the importance of studying whether changes in EM could be linked to MBCT's particular features. The relationship between direct experience and other mindfulness-related processes and potential clinical improvements is yet to be investigated. These findings should be interpreted cautiously, and future studies are needed to confirm these results and allow a better understanding of how and why MBCT works.

Conflicts of interest

The authors declare that they have no competing financial interests.

Ethical considerations

The study adhered to the principles outlined in the Declaration of Helsinki and was approved by the Clinical Research Ethics Committee at the Hospital de la Santa Creu i Sant Pau.

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