



BRIEF CLINICAL REPORT

Rumination-focused cognitive behaviour therapy for non-responsive chronic depression: an uncontrolled group study

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Abstract

Background: One-third of patients with depression do not respond satisfactorily to treatment, and approximately 20% of all patients treated for depression develop a chronic depression. One approach to more effective treatment of chronic and treatment-resistant depression is to target rumination – an underlying mechanism implicated in the development and maintenance of depression.

Aim: The purpose of this uncontrolled group study was to investigate the feasibility of individual rumination-focused cognitive behavioural therapy (RfCBT) for patients with chronic and treatment-resistant depression.

Method: A total of 10 patients with chronic and treatment-resistant depression were offered 12–16 individual sessions of RfCBT. The primary outcome was depressive symptoms as measured by Hamilton Depression Scale at pre-, post- and 3-month follow-up. Secondary symptoms measured included self-reported rumination and worry.

Results: There was a significant reduction in depressive symptoms ($p < 0.05$), rumination ($p < 0.01$) and worry ($p < 0.5$) from pre- to post-treatment. Half of the participants ($n = 5$) showed significant reliable change on levels of depressive symptoms post-treatment. The reduction in depressive symptoms, rumination and worry were maintained at follow-up.

Conclusions: RfCBT was associated with significant reductions in depressive symptoms in a small sample with chronic and treatment-resistant depression. Despite limitations of being a small uncontrolled study with limited follow-up, these results are promising in a difficult to treat population. RfCBT warrants further systematic evaluation.

Keywords: chronic treatment-resistant depression; rumination; rumination-focused cognitive behaviour therapy; uncontrolled group study; worry

Introduction

One-third of patients with depression do not respond satisfactorily to treatment and relapse rates of around 30% have been reported from several studies. It is estimated that about 20% of all patients treated for depression develop a chronic depression, where depressive symptoms are present for a minimum of 2 years. Treatment-resistant depression (TRD) is defined as poor

response to two adequate trials of different classes of anti-depressants (Souery *et al.*, 1999) and is associated with poorer clinical outcomes, particularly among those who require multiple anti-depressant medications.

As psychological treatment of chronic major depression has been shown to have a relatively small effect size [$d = 0.23$; Cuijpers *et al.*, 2010] and ($g = 0.34$; Negt *et al.*, 2016)], there is a need to develop more efficient treatments. Clinically, rumination has been robustly implicated in the onset and maintenance of depression. One potential way to make treatments more effective is to target core mechanisms associated with the development and maintenance of the depressive disorder such as rumination. Unconstructive rumination is characterized as an abstract, verbal-analytical, evaluative thinking style focused on causes, meanings and consequences of symptoms and feelings (Watkins *et al.*, 2008). Watkins and Nolen-Hoeksema (2014) conceptualized rumination as a mental habit similar to a behavioural stimulus-response (S-R) habit learned when situational cues have become established through repeated reinforcement. Such habitual behaviours become resistant to change because of their automatic, involuntary and unconscious nature and because the behaviour becomes contingent on the triggering stimuli rather than the individual's goals or intentions.

Rumination-focused cognitive behaviour therapy (RfCBT) was designed to teach patients how to interrupt the mental habit of rumination, and to shift into a more constructive style of thinking, characterized by more concrete and experiential processing. In clinical trials, RfCBT has been shown to reduce depression and prevent relapse in medication-refractory residual depression (Watkins *et al.*, 2011) when added to anti-depressant medication, and in depressed patients relative to CBT (Hvenegaard *et al.*, 2019). However, to date, RfCBT has not been investigated in patients who are currently experiencing a chronic episode of major depression, lasting longer than 1 year that has not responded to at least two trials of anti-depressant medication. Thus, the purpose of this case series was to investigate the feasibility of individual RfCBT for patients with chronic treatment-resistant depression (lasting >1 year).

Method

Participants

Inclusion criteria were people aged between 18 and 60 years, with a diagnosis of major depression (F32-33) (HAM-D ≥ 12), who had received adequate type and dosage of pharmacological treatment for a minimum of 12 months but were still displaying significant depressive symptoms. All included patients had completed at least two trials of adequate dosage of anti-depressive pharmacotherapy. Exclusion criteria were a history of bipolar disorder, schizoaffective disorder, drug or alcohol dependence, repeated self-harm, or learning disability (estimated IQ < 70).

Patients were held stable in medication type and dose (for a minimum of 4 weeks) prior to the start of the RfCBT treatment, and throughout the trial.

Design and procedure

This was an uncontrolled group study with pre-, post- and 3-month follow-up evaluations. Two baseline evaluations were carried out (roughly a month apart) prior to commencement of treatment to determine stability in symptomology. The study was carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki) and approved by the Danish Data Protection Agency (j.nr.: 2012-58-0004, RHP-2016-018, I-Suite nr: 04806).

Measures

The primary outcome was the 17-item Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) pre- and post-treatment. The HRSD is a standardized clinical interview developed to assess severity of depression that includes scoring the test person's answers as well as direct observation of the test person. Higher scores suggest higher levels of symptoms of depression (range 0 to 52). Secondary outcomes included rumination using the Ruminative Response Style Questionnaire (RRQ; Nolen-Hoeksema and Morrow, 1991) and worry using the Penn State Worry Questionnaire (PSWQ; Meyer *et al.*, 1990). A measurement of worry was included due to high levels of co-morbidity between anxiety and depression. Self-reported depressive symptoms were measured using the Hamilton self-report questionnaire (HAM-D6; Bech *et al.*, 1975).

Treatment

RfCBT was offered individually in 12–16 sessions over a period of 4 months by three clinical psychologists. Treatment was videotaped to facilitate supervision. Supervision was provided by Professor Ed Watkins, who developed the treatment. RfCBT uses standard CBT components such as a structured format, here-and-now focus, collaborative empiricism, agenda setting, use of feedback and summaries, homework, guided discovery, and behavioural experiments in addition to adjustments and alterations from the standard CBT protocol. Functional analyses of rumination examined the context and variability of rumination within the individual's experience, and were used to identify the idiosyncratic functions of rumination for each patient, which then guides the selection of alternative responses to replace rumination when counter-conditioning the ruminative response. Rather than learning to challenge individual negative thoughts, patients learn to identify antecedent cues to rumination, control exposure to these cues, and repeatedly practise alternative helpful responses to these cues. Alternative responses include applied progressive relaxation, activity scheduling, contingency plans (If-Then plans), imagery and visualization exercises, recreating experiences of being absorbed ('flow') or of increased compassion to self or others, and/or shifting into a more concrete and specific thinking style [see Watkins (2016) for a detailed description].

Data analysis

To measure difference in depression levels, an analysis of mean differences using *t*-test and 95% confidence intervals pre- and post-intervention was undertaken. To evaluate how many participants showed significant change in their depressive symptoms, the reliable change index (RC; Jacobson and Truax, 1991) was calculated for the HRSD change scores using the alpha coefficient ($\alpha = .789$) from a meta-analysis on the reliability of the HRSD scale (Trajković *et al.*, 2011). The RC was calculated by dividing the difference of the pre-treatment HRSD score and the post-treatment HRSD scores with the standard error of difference. The standard error of difference describes the spread of the distribution of change scores that would be expected if no actual change had occurred. An RC larger than 1.96 would be unlikely to occur ($p < .05$) without actual change (Jacobson and Truax, 1991).

Results

The study sample consisted of 10 patients with chronic and treatment-resistant depression recruited from and treated at an outpatient setting service in Denmark with a mean age of 45.5 years (range 19–62, $SD = 15.8$), a mean HRSD (Hamilton, 1960) score of 19 (range 12–27, $SD = 4.9$), and a mean length of depression of 19 months (range 14–72, $SD = 18.1$).

Table 1. Scores at baseline, post-treatment ($n = 10$), and follow-up ($n = 6$)

Measure ^a	RfCBT			Mean difference in change scores (pre to post) (95% CI)	p -value
	Treatment start	Post-treatment	Follow-up ($n = 6$)		
HRSD17	19.0 (4.9)	12.8 (5.9)	11.2 (6.1)	6.2 (0.7 to 11.7)	.032
Rumination	13.4 (3.5)	9.8 (3.4)	10.6 (3.9)	3.6 (1.1 to 6.2)	.010
Worry	21.2 (3.3)	18.8 (4.1)	18.1 (4.7)	2.4 (0.1 to 4.6)	.037

^aHRSD17, 17-item Hamilton Rating Scale for Depression; Rumination, Brooding scale of Ruminative Response Style Questionnaire; Worry, short version of Penn State Worry Questionnaire.

Nine patients (90%) had at least one co-morbid psychiatric disorder, and six patients (60%) had experienced two or more depressive episodes. Eleven patients were recruited, but one patient dropped out after five sessions because he wanted a change in medication, and did not want to participate in assessment. This patient is not included in the analyses.

Results from the two baseline assessments 1 month apart were non-significant, indicating stability of depressive symptoms prior to commencement of treatment. Analysis of pre- and post-treatment revealed that participants showed a statistically significant reduction in depressive symptoms, worry and rumination from pre- to post-evaluation. Patients completed on average 13 sessions of therapy ($SD = 2.1$; range 11–16). A summary of the main results is provided in Table 1.

Applying the criterion for RC (Jacobson and Truax, 1991) revealed that 50% of the patients met this criterion and showed a significant drop in their depressive symptoms of six or more points on the HRSD.

Results from 3-month follow-up in this study revealed that the reduction in depressive symptoms, rumination and worry were maintained, although only six participants completed the 3-month assessment (HRSD = 11.2, $SD = 6.1$), rumination (RSS = 10.6, $SD = 3.9$), and worry (PSWQ = 18.1, $SD = 4.7$). Only one participant out of the 10 that completed assessment measures deteriorated during treatment.

Discussion

The following uncontrolled group study examined the effect of RfCBT in a small group of people with chronic and treatment-resistant depression. Results indicated that half of the group displayed significant clinical improvements in the levels of depressive symptoms. Whilst treatment improvement could be considered modest, it is important to place these results in context with the chronic nature of the illness being treated. The maintained effect from the 3-month follow-up in this study in depressive symptoms, rumination and worry were encouraging. It is also noteworthy that decreases in depression corresponded to reductions in worry and rumination, which is consistent with underlying principles of the RfCBT model that ruminative processes may be involved in the maintenance of depressive symptoms.

It is noteworthy that the participants in the current study completed on average 13 sessions of therapy, while other studies have shown that higher dosages of the intervention (16–25 sessions) can produce better outcome as opposed to a lower number of sessions (12 sessions) in chronic depression (Negt *et al.*, 2016). It is possible that the number of sessions provided in this study was insufficient to maximize treatment effect within this chronically depressed population. Cuijpers *et al.* (2010) demonstrated that at least 18 sessions are needed to achieve satisfying treatment effects in chronically depressed patients.

The study has a number of strengths, as it recruited difficult to treat patients with chronic and treatment-resistant depression and successfully engaged them in treatment for up to 4 months.

Furthermore, 50% of participants showed a reliable change in depressive symptoms in a group with chronic and treatment-resistant depression. Finally, the study employed a good design to ensure treatment fidelity, with therapists receiving regular supervision based on recorded sessions from an expert and developer of RfCBT, Professor Ed Watkins. There were also a number of study limitations as it was an open clinical trial with a small number of participants, so it was not possible to determine what factors contributed to the observed improvement in symptoms. Additionally, only 60% of participants ($n=6$) completed follow-up assessments, making it difficult to determine if treatment gains were maintained.

In conclusion, the following uncontrolled group study examined the feasibility of individual RfCBT in a group of people with chronic and treatment-resistant depression. Preliminary results revealed significant reductions in depressive symptoms, rumination and worry, and 50% of the participants met the criteria for reliable change in their depressive symptoms. Whilst this open clinical study has a number of limitations, preliminary results highlight the potential advantage of targeting rumination in people with chronic depression and treatment-resistant depression. Further systematic evaluation of RfCBT within this population is warranted, and future studies could consider increasing the number of sessions provided in the RfCBT intervention to optimize treatment effects.

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Conflicts of interest. Stine Bjerrum Moeller, Stephen F. Austin, Morten Hvenegaard, Morten Kistrup, Stine Gran and Ed Watkins have no conflicts of interest with respect to this publication.

Ethical statements. The authors have abided by the Ethical Principles of Psychologists and Code of Conduct as set out by the APA. The study was carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki) and approved by the Danish Data Protection Agency (j.nr.: 2012-58-0004, RHP-2016-018, I-Suite nr: 04806).

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