Efficacy of mindfulness-integrated cognitive behavior therapy in patients with predominant obsessions

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ABSTRACT

Background: Cognitive behavior therapy (CBT) involving exposure and response prevention is the gold standard psychotherapeutic intervention for obsessive-compulsive disorder (OCD). However, applying traditional CBT techniques to treat patients with predominant obsessions (POs) without covert compulsions is fraught with problems because of inaccessibility of mental compulsions. In this context, we examined the efficacy of mindfulness-integrated CBT (MICBT) in patients with POs without prominent overt compulsions.

Materials and Methods: Twenty-seven patients with Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition diagnosis of OCD were recruited from the specialty OCD clinic and the behavior therapy services of a tertiary care psychiatric hospital over 14 months. Patients had few or no overt compulsions and were free of medication or on a stable medication regimen for at least 2 months prior to baseline assessment. All patients received 12–16 sessions of MICBT on an outpatient basis. An independent rater (psychiatrist) administered the Yale–Brown Obsessive-Compulsive Scale (YBOCS) and the Clinical Global Impression Scale at baseline, mid- and post-treatment, and at 3-month follow-up.

Results: Of the 27 patients, 18 (67%) achieved remission (55% reduction in the YBOCS severity score) at 3-month follow-up. The average mean percentage reduction of obsessive severity at postintervention and 3-month follow-up was 56 (standard deviation [SD] = 23) and 63 (SD = 21), respectively.

Conclusions: Our study demonstrates that MICBT is efficacious in treating patients with POs without prominent overt compulsions. The results of this open-label study are encouraging and suggest that a larger randomized controlled trial examining the effects of MICBT may now be warranted.

Key words: Cognitive behavior therapy, mindfulness-integrated cognitive behavior therapy, mindfulness meditation, obsessions, obsessive-compulsive disorder

INTRODUCTION

Cognitive behavior therapy (CBT) along with serotonin reuptake inhibitors (SRIs) is the first-line treatment option for obsessive-compulsive disorder (OCD). About more than a half of patients with OCD respond to CBT. All CBT programs essentially involve exposure and response prevention (ERP) and/or belief modification-based ERP. However, using traditional CBT strategies in treating patients with predominant obsessions (POs) without overt compulsions is fraught with problems because of inaccessibility of mental compulsions. This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

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fraught with problems because mental compulsions are not easily amenable for intervention.\(^3\)

Pure obsessions have been defined as “obsessional thoughts, images, or impulses that are not accompanied by motor compulsions or very few, if any, but can be associated with cognitive compulsions or other forms of neutralization.”\(^4\)

A variety of cognitive neutralization strategies (i.e., thought stopping, rationalization, distraction, thought replacement, self-punishment, mental list making, substituting neutral images, mentally rehearsing a particular sequence of numbers, staring at an object or forming its exact mental representation, ritualistic prayer, mental review of conversations/sequence of events, mentally checking and patterning objects, etc.) are utilized by patients with OCD.\(^5,6\) Mental compulsions have been impending in the way of successful treatment through ERP.\(^7\) In addition, there is limited literature on the treatment of POs.\(^5,8,9\)

Several strategies have been employed to treat obsessions, one of them being mindfulness-based approach. Mindfulness-based approach seems to be a promising intervention that may improve some of the fundamental mindfulness deficits such as experiential avoidance,\(^10\) thought–action fusion,\(^11\) attentional bias for threat,\(^12\) secondary elaborative processing,\(^13\) rumination\(^14\) and self-invalidation of private experience\(^15\) that are involved in the phenomenology of obsessions. In addition, preliminary research suggests that mindfulness may be an effective component of a holistic intervention for patients with POs if integrated with other empirically supported treatments.\(^16\) Hence, this open-label study examines the effect of integration of mindfulness training with CBT in the treatment of POs.

**MATERIALS AND METHODS**

The aim of the present study was to examine the efficacy of mindfulness-integrated CBT (MICBT) in reducing symptom severity and in improving socio-occupational functioning and quality of life in patients with PO without prominent overt compulsions.

**Participants and procedure**

Forty-nine English/Hindi-speaking patients (with Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition [DSM-IV] Text Revision diagnosis of OCD) with POs attending the OCD clinic and the Behavioral Medicine Unit of the National Institute of Mental Health and Neurosciences, Bengaluru, Karnataka, India, between July 2010 and September 2011 were approached for participation in the study. Out of this, 11 patients did not fulfill the specified inclusion/exclusion criteria of the study and eight patients did not give consent for various reasons. Of the thirty patients who agreed to participate in the study, three dropped out after the baseline assessment and psycho-education sessions. Of the remaining 27 patients, one patient completed ten sessions but was not available for postassessment and 3-month follow-up assessment and another patient’s follow-up could not be completed due to migration abroad.

Patients were assessed at baseline, mid- and post-treatment, and at 3-month follow-up on measures of obsessive-compulsive severity, insight, global severity of illness, depression, anxiety, socio-occupational functioning, and quality of life. An independent trained rater (psychiatrist) administered the primary outcome measures, the 10-item severity measure of the Yale–Brown Obsessive-Compulsive Scale (YBOCS),\(^17,18\) and the Clinical Global Impression (CGI) Scale\(^19\) at baseline, mid- and post-treatment, and at 3-month follow-up. All the other assessments (described under measures) were performed by the first author. The diagnoses and comorbid conditions were confirmed by one of the consultant psychiatrists of the OCD clinic.

Inclusion criteria included adult patients with a primary diagnosis of DSM-IV OCD\(^20\) with few or no overt compulsions and free of medication or on a stable medication regimen for at least 2 months prior to baseline assessment. Exclusion criteria included presence of prominent motor compulsions (motor compulsions which consume more than 1 h/day [YBOCS item 6, score >1], cause more than mild interference in functioning [YBOCS item 7, score >1], causing more than mild distress [YBOCS item 8, score >1]), and a history of having received CBT in the previous year. None of the patients suffered from comorbid psychosis, bipolar disorder, and alcohol/substance abuse or dependence.

**Measures**

A diagnosis of OCD was confirmed by administering the MINI International Neuropsychiatry Interview.\(^21\) Personality disorders were assessed using the Structured Clinical Interview for DSM-IV Axis-II Personality Disorders.\(^22\) Symptom profile and severity of OCD was determined using the YBOCS. The CGI scale measured the overall severity of illness (severity subscale, the CGI severity [CGI-S]) and the improvement (improvement subscale, the CGI-I). The Montgomery and Asberg Depression Rating Scale (MADRS), a 10-item clinician-administered scale, measured severity of depression,\(^23\) and the State Trait Anxiety Inventory consisting of 2 forms, namely X1 (i.e., state anxiety) and X2 (i.e., trait anxiety) each comprising twenty items measured anxiety.\(^24\)

The disability and the quality of life were measured using the Sheehan Disability Scale (SDS)\(^25\) and the World Health Organization Quality of Life-BREF (WHOQOL-BREF).\(^26\) The SDS, a 10-item visual analog scale, assesses functional impairment in three interrelated domains: Work/school, social, and family life. The WHOQOL-BREF provides a
measure of an individual’s perception of QOL in the
domains of physical health, psychological health, social
relationships, and environment.

We measured the attainment of mindfulness using the
Toronto Mindfulness Scale (TMS). It is a 2-dimensional 2-factor
instrument measuring attainment of mindfulness
state during or immediately preceding meditation exercise. Participants
first completed a meditation exercise and then
rated the extent to which they were aware and accepting of
their inner experiences during the exercise.

The Homework Compliance Scale, administered
postintervention, is a 2-item scale used to assess the
homework compliance in CBT programs. The two
items are degree of homework compliance and quality of
homework compliance. Degree of homework compliance
is rated on a 6-point scale (1 = patient did not attempt
assigned homework to 6 = patient did more of the assigned
homework than was requested) and quality of homework
compliance is also rated on a 6-point scale (1 = patient just
recorded thought diary and rating of anxiety to 6 = patient
was able to dispute irrational beliefs in a logical manner). Higher scores indicate greater homework compliance. Inter-rater reliability for degree and quality of homework
compliance was found to be good in a previous study from this center (r = 0.83 and r = 0.91, respectively).

Treatment

A qualified clinical psychologist (A. K.) under the supervision
of an experienced mindfulness practitioner and cognitive
behavioral therapist (M.P.S.) provided MICBT. Psychotherapy
was supervised on a fortnightly basis and each patient
received 12–16 sessions of 90 min duration each, delivered
twice a week over a period of 1.5–2 months. Training in
truthfulness was integrated in the intervention
program from the first contact onward and introduced to
all patients for approximately 40 min at the end of each
therapeutic session and advised to practice it every day as
a homework assignment. Initial 4–6 sessions were devoted
to detailed information about mindfulness perspective of
cognitive intrusions and its application in various situations.
Subsequent sessions focused on cognitive restructuring
of obsessive beliefs, cognitive appraisals, and negative
automatic thoughts.

Psycho-education began with the aim of developing
understanding about obsessive-compulsive phenomenon
from cognitive, behavioral, and mindfulness perspectives
with special emphasis on “what works” and “what does not
work” in handling obsessions. Each patient was educated
about the following aspects of obsessions: (a) Most people
get unwanted thoughts, (b) occurrence of thoughts is not
necessarily under one’s control, but the way one responds
or relates to them can be modified, (c) obsessions can be
understood as false brain messages, (d) obsessions do not
reflect reality or the intention of the individual, (e) thought
suppression is ineffective in controlling obsessions, and (e) compulsions and neutralizing strategies contribute to the maintenance of obsessions.

Patients were also helped to understand that (a) experience
of distress caused by the obsessions is an essential part
of MICBT, (b) compulsions are “self-discovered remedies”
to reduce the distress but they “do not work” and rather
result in more obsessive-compulsive behavior or distress,
and (c) experiential avoidance maintain obsessive-compulsive
phenomenon.

The following techniques were employed to help patient
develop mindfulness perspective toward obsessions: (a)
be in the state of mindfulness about sensations, thoughts,
and feelings, (b) pay attention and bring nonjudgmental
awareness to immediate experience of thoughts, sensations,
and feelings, (c) emphasis on developing an accepting,
noninvolving, and nonelaborative attitude (i.e., “let go”) toward
thoughts, sensations, and emotional states, for example, by
using specific phrases (e.g., “thoughts are just mental events,
not facts,” “thoughts and distress are impermanent mental
events”) and metaphors (e.g., “consider thoughts such as
passing clouds in the sky”), (d) and encourage and help the
patient in preventing any overt or covert neutralization or
compulsion. These techniques were taught in the session by
asking patient on a regular basis what he/she was thinking
or doing that particular moment to deal with distress or
obsessions. To ensure mindfulness state, various prompt
questions were utilized (e.g., Are you able to become aware
of these thoughts? Are you able to realize that these are false
messages? Do they reflect your intention? Do they reflect
reality? Is it wise to believe in messages delivered by thoughts?
Is there any need to give importance to this thought? Are you
aware that these thoughts are delusional? Is it help for
this center (r = 0.83 and r = 0.91, respectively).
RESULTS

Sociodemographic and clinical characteristics of the sample are shown in Table 1. Majority of the patients were having sexual/aggressive/religious obsessions, intrusive meaningless obsessions (i.e., thoughts, images, sounds, words, or music), pathological doubts, and superstitious fears. Eleven (37%) patients did not have any psychiatric comorbidity. Twenty-six patients (87%) were receiving SRIs during the course of therapy.

Intent-to-treat analysis

Results of intent-to-treat analysis (n = 27) are shown in Table 2. There was a significant reduction in the severity of YBOCS obsessions and total score at posttreatment, which was maintained at 3-month follow-up. There was also a significant reduction in the severity of the illness as measured by the CGI-S. Severity of depressive and anxiety symptoms also decreased. Disability also decreased, and the quality of life improved to an extent.

Of the 27 participants, 18 (67%) achieved remission at 3-month follow-up. The mean percentage reduction in the severity of obsessions at postintervention and at 3-month follow-up was 56 (standard deviation [SD] = 23) and 63 (SD = 21), respectively. In the binary logistic regression analysis, none of the variables (number of axis I and II comorbid disorders, the baseline score on YBOCS obsessions, the state and trait anxiety, and MADRS and the homework compliance) predicted remission.

DISCUSSION

Our findings show that MICBT is effective in treating OCD with POs. With MICBT, there was a significant reduction in the severity of obsessions, global severity of illness, and in the severity of anxiety and depression [Table 2]. Eighteen (67%) participants achieved remission. There was no worsening of obsessive symptoms from postassessment to 3-month follow-up after discontinuation of intervention. A significant reduction in the severity of obsessions at postintervention is consistent with the published literature on the efficacy of CBT in pure obsessions. Reduction in the severity of obsessions may be attributed to the practice of sitting mindfulness meditation, mindfully handling obsessions, and/or cognitive restructuring of obsessive beliefs and appraisals.

The mean posttreatment YBOCS total score for treatment completers (mean = 4.92; SD = 2.54) in the present study is substantially lower than in other studies. Freeston and Ladouceur reported a posttreatment mean YBOCS total score of 7.2 (SD = 5.2) for treatment completers and 9.8 (SD = 8.2) for the total sample. O’Connor et al. reported a posttreatment mean YBOCS total score of 8.0 (SD = 2.8) for 17 participants who completed individual treatment.

As neither of these two treatment studies reported separate scores for obsessions and compulsions, a comparison of subscales is not possible. However, Whittal et al. reported separate scores for obsessions (posttreatment mean = 4.62;
SD = 2.88) and total YBOCS severity (posttreatment mean = 6.43; SD = 4.77) for treatment completers in their randomized controlled trial.[9] In the present study, postintervention obsession severity is very similar to that reported by Whittal et al. in their study.

Those with POs were considered difficult to treat with the conventional CBT as compulsions and other neutralizing behaviors are not observable or accessible and difficult to prevent during exposure.[8] In the present study, mindfulness was integrated with traditional CBT to handle obsessions and neutralizations. Mindfulness might have facilitated habituation by creating understanding in patients that intrusive thoughts are benign and do not reflect reality. Hansstedt et al. demonstrated that mindfulness intervention reduces OCD symptoms by increasing “let go” attitude in the patients.[10] In addition, Abbas and Hossein have shown “detached mindfulness” as an effective component of mindfulness meditation to improve obsessive-compulsive symptoms.[11] Therapeutic program of the present study emphasized on just observing intrusive thoughts nonjudgmentally without interference or elaboration and cultivating “let go” attitude. In our study, score on TMS increased along with reduction in scores on YBOCS obsessions.

MICBT had a significant treatment effect on state and trait anxiety and depression [Table 2]. Reduction in state and trait anxiety is in accordance with the findings of other interventional studies in OCD.[37–39] There was a significant reduction in the severity of depression too, which is consistent with the earlier efficacy studies of CBT on pure obsessions.[8,9] Mindfulness training has been found to be effective in improving depression.[40] Our findings suggest that integration of mindfulness may have a significant treatment effect on co-existing depression and anxiety in patients with POs. There was a significant treatment effect on family and socio-occupational functioning and quality of life [Table 2]. These findings are also consistent with the previous studies involving CBT in OCD.[9,41]

An open-label design and lack of a control group limit the degree to which symptom improvement can be attributed to direct effect of the therapeutic program rather than nonspecific effect of treatment. Although mindfulness was an important component of the program, outcome cannot be attributed to “mindfulness” alone since other active components were part of the therapeutic program. In our study, we could not identify any predictor of remission, possibly because of small sample size. In addition, the variables associated with therapeutic process such as therapeutic alliance, treatment motivation, treatment expectancy, and treatment integrity were also not assessed and therefore could not be utilized for analysis of predictors of treatment outcome. The present study’s 3-month follow-up period may not be sufficient to assess the long-term maintenance of treatment gains.

Table 2: Repeated-measures analysis of variance for outcome measures for intent-to-treat sample (n=27)

| Variable      | Baseline Mean (SD) | Mid Mean (SD) | Post Mean (SD) | Follow up Mean (SD) | F     | P     | Partial η² |
|---------------|--------------------|---------------|---------------|---------------------|-------|-------|------------|
| YBOCS         |                    |               |               |                     |       |       |            |
| Obsession     | 11.00 (2.42)       | 7.44 (2.99)   | 4.96 (2.83)   | 4.48 (2.99)         | 28.84 | <0.001| 0.56       |
| Compulsion    | 1.40 (3.72)        | 0.74 (1.87)   | 0.15 (0.53)   | 0.19 (0.96)         | 2.00  | 0.17  | 0.08       |
| Total         | 12.41 (4.85)       | 8.19 (3.50)   | 5.11 (2.81)   | 4.67 (3.35)         | 15.84 | 0.001 | 0.41       |
| Insight       | 0.70 (0.47)        | 0.56 (0.51)   | 0.37 (0.49)   | 0.30 (0.47)         | 2.05  | 0.17  | 0.08       |
| CGI-severity  | 4.30 (0.91)        | 3.19 (1.11)   | 2.19 (1.08)   | 2.25 (1.20)         | 4.92  | 0.04  | 0.18       |
| Trait anxiety | 53.37 (12.02)      | 44.59 (11.24) | 36.96 (12.34) | 34.93 (10.91)       | 16.15 | 0.001 | 0.41       |
| State anxiety | 56.44 (8.57)       | 50.89 (9.39)  | 47.00 (9.66)  | 46.70 (8.35)        | 19.02 | <0.001| 0.45       |
| MADRS         | 19.26 (8.00)       | 11.93 (7.01)  | 7.33 (5.57)   | 6.15 (5.14)         | 27.09 | <0.001| 0.54       |
| SDS           | 20.52 (6.70)       | 15.37 (6.83)  | 10.85 (6.87)  | 10.59 (6.31)        | 10.02 | 0.004 | 0.30       |
| WHOQOL-total  | 45.26 (8.73)       | 49.78 (9.19)  | 56.11 (8.45)  | 57.15 (10.42)       | 4.20  | 0.05  | 0.15       |
| TMS           | 20.59 (10.44)      | 26.89 (8.30)  | 31.93 (7.35)  | 33.62 (6.64)        | 0.99  | 0.33  | 0.04       |

Classification of effect size (partial η²) is as follows: small=0.14; medium=0.36; large=0.51; and very large=0.70 and above. SD – Standard deviation; YBOCS – Yale–Brown Obsessive-Compulsive Scale; CGI – Clinical Global Impression; STAI – State Trait Anxiety Inventory; MADRS – The Montgomery and Asberg Depression Rating Scale; SDS – The Sheehan Disability Scale; WHOQOL – The World Health Organization Quality of Life; TMS – Toronto Mindfulness Scale.
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Conflicts of interest
There are no conflicts of interest.

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