

Effectiveness of Mindfulness Integrated Cognitive Therapy in Children and Adolescents with Obsessive Compulsive Disorder: a Preliminary Study

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ABSTRACT

Background: Obsessive compulsive disorder (OCD) in children and adolescents is an impairing condition consisting of repetitive, intrusive thoughts (obsessions) and distressing repetitive acts (compulsions). Cognitive therapy has been found to be an effective treatment for OCD in the pediatric population. **Objectives:** The study aimed to examine the effectiveness of Mindfulness Integrated Cognitive Therapy (MICT) on obsessive-compulsive symptoms, obsessive-compulsive beliefs and thought-action-fusion, mindfulness skills and quality of life in children and adolescents with OCD. **Methods:** 27 children and adolescents with OCD were assessed on the Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS), Thought-Action Fusion Questionnaire for Adolescents (TAFQ-A), Child and Adolescent Mindfulness Measure (CAMM), Avoidance and Fusion Questionnaire for Youth (AFQY) and Pediatric Quality of Life Inventory (PedsQL 4.0). Subsequently, they underwent 14 sessions of MICT, each lasting approximately 45 minutes. A single group open trial with pre and post assessment was adopted to evaluate the changes in the participants in response to the intervention. **Results:** Statistically significant reduction in mean score of C-YBOCS from 12.7 to 3.4 after the intervention (t score=8.99). Similarly, there was a statistically significant reduction in total mean TAF-Q scores ($t = 11.83$), AYQ-Y scores ($t = 7.52$) and PedsQL4.0 score ($t = 6.89$). Mean CAMM score increased significantly from 11.29 to 21.03 ($t = -4.13$). p value was <0.001 for all tests. **Conclusion:** The findings of the study suggest that MICT is efficacious in reducing the severity of obsessive-compulsive symptoms, obsessive-compulsive beliefs and thought-action-fusion, while improving mindfulness skills and quality of life in children and adolescents with OCD.

Keywords: Mindfulness, OCD, Children and adolescents, Cognitive therapy

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The Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5, APA, 2013) defines obsessive-compulsive disorder (OCD) as presence of obsessions, compulsions or both. Obsessions are defined as recurrent and persistent thoughts, urges, or images that are experienced as intrusive and unwanted, and that in most individuals cause significant anxiety or distress (DSM-5, APA, 2013). Most individuals try to suppress, ignore or neutralise such thoughts, images or urges. Compulsions are defined as repetitive behaviours or mental acts which are performed in response to obsessions and which are aimed at preventing or reducing anxiety or distress (DSM-5, APA, 2013). Obsessions and compulsions are time consuming and cause clinically significant anxiety and distress. Around one-third to one-half of the patients with OCD develop symptoms before the onset of puberty (Kessler et al., 2005). OCD is a cause of significant disability in children and adolescents with prevalence of 0.25-4% (Krebs & Heyman, 2015).

Like OCD in adults, the symptomatic presentation in children and adolescents is heterogeneous, with some experiencing both obsessions and compulsions, and others describing obsessions or compulsions only (Piacentini et al., 2003; Swedo et al., 1992). Compulsions can be both overt, such as hand washing, and covert such as counting, repeating “magical” words or spelling words backwards. For children, the repetitive behaviours may or may not be experienced as anxiety-provoking.

Similar to the treatment recommendations for adults, treatment of OCD in children and adolescents relies on behavioural therapy (BT), cognitive behavioural therapy (CBT), medications and psychoeducation. Both selective serotonin reuptake inhibitors (SSRIs) and CBT have been systematically studied and empirically shown to be useful in the treatment of children and adolescents with OCD. A common and arguably essential component of BT or CBT for OCD involves exposure to the situational and internal triggers to the anxiety which motivates the compulsive behaviors, while at the same time preventing the compulsive activities. This exposure with response prevention (ERP) technique is a core aspect of contemporary BT or CBT treatment. The reasons for the expert consensus recommendation in favor of BT or CBT with ERP for children and adolescents with OCD are the demonstrated efficacy of these therapies for OCD in adults (Kobak et al., 1998), together with the belief that OCD in childhood is “virtually identical to the adult form” (Shafran & Somers, 1998). There are a number of issues, however, which indicate that the downward extension of BT or CBT to pediatric forms of OCD may face unique problems. While equally prevalent and similar in its clinical characteristics to adult OCD, the childhood onset disorder has a number of distinctive features that have implications for clinical management, including possible responsiveness to psychotherapeutic interventions. In particular, it is more predominant in boys and more strongly co-morbid with disruptive behavioural problems, developmental disorders including autistic disorder, depression and other anxiety disorders (Geller et al., 1996). These comorbidities may impact on the rationale for BT or CBT, in so far as they indicate differing mechanisms for symptom onset and maintenance, for example, the observation that children with tic related OCD have less well-developed cognitions triggering their compulsions (Geller, 2003). Alternatively, comorbidities may reduce the capacity of child and adolescent OCD patients to tolerate the discomfort involved in the exposure and response prevention component of these psychotherapies.

Due to the anxiety-provoking nature of ERP, patients often perceive the therapy as demanding. An alternative form of intervention could be Mindfulness Integrated Cognitive therapy (MICT), a product of the so-called third wave of CBT. In MICT, in contrast to ERP,

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patients are encouraged to observe unpleasant experiences as they arise and label them as thoughts, feelings or bodily experiences, but unpleasant experiences are not provoked intentionally. In contrast to traditional cognitive therapy that aims to identify and restructure maladaptive thoughts, MICT rather targets the attitude towards thoughts, not their content. That is, in MICT, they are not instructed to voluntarily bring thoughts but are taught to carefully observe every arising thought, label it as a thought, try not to judge it as positive or negative and refrain from acting on it compulsively (Diddona F, 2009).

MICT is based on the psychological construct *mindfulness*, which has received a great deal of attention in the last few decades. Mindfulness has its roots in Eastern contemplative traditions and has been called the “heart” of Buddhist meditation (Kabat-Zinn, 2003; Thera, 1962). Mindfulness is “inherently a state of consciousness” which involves consciously attending to one’s moment-to-moment experience (Brown & Ryan, 2003).

Mindfulness might also help decrease the degree of Thought Action Fusion (TAF), which plays a significant causal and maintaining role in OCD (Rachman et al., 1995). TAF refers to the belief that thoughts are linked to actions and assumes an erroneous causal association between an individual’s thoughts and their external reality (Rachman et al, 1995). Moral TAF is the belief that unacceptable thoughts are morally equivalent to overt unacceptable actions, while likelihood TAF refers to the belief that certain thoughts cause particular events, or increase the likelihood of such events occurring (Berley et al., 2005). Mindfulness can theoretically reduce experiential avoidance, as it encourages accepting the present moment non-judgmentally. Experiential avoidance is defined as an unwillingness to experience unpleasant experiences through attempts to avoid or escape from these experiences and is significantly related to OCD severity (Wetterneck et al., 2014).

Studies have shown the efficacy of mindfulness-based intervention in adults with OCD (Fairfax 2008; Hanstede et al., 2008; Hertenstein et al., 2012; Kumar et al., 2016; Patel et al., 2007; Singh et al, 2004; Wahl et al., 2013; Wilkinson-Tough et al., 2010;). However, the review of available literature did not indicate any studies carried out to test the efficacy of mindfulness-based intervention on children and adolescents with OCD. The current study was conducted to examine the effectiveness of MICT in children & adolescents with OCD.

METHODOLOGY

Participants

Ethical clearance was taken from Institute’s Ethical Committee (IEC). A total of 36 children and adolescents who were clinically diagnosed to have OCD by psychiatrists were initially included in the study. The inclusion criteria were the following: age 8-17 years, primary OCD according to ICD-10 criteria, clinically relevant OCD symptoms (defined as a score of 16 or higher in CY-BOCS) and more than 2 weeks duration of symptoms. Those having pervasive developmental disorder(s), moderate to severe level of depression, undertaking concurrent psychotherapy, having acute suicidal ideations were excluded from the study. Nine participants dropped out due to various reasons. The final sample consisted of 10 children (8-11 years) and 17 adolescents (12-17 years). Informed consent from parents and assent from the participants were obtained prior to recruitment in the study.

Study Design

A single group pre and post intervention design was adopted to evaluate the changes in the participants in response to the intervention. Pre-treatment data were collected before the first

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session and outcome data were collected following the completion of all 14 sessions of the interventions.

Measures

Socio-Demographic and Clinical Data Sheet (SDCDS): The SDCDS was used to collect socio-demographic and clinical data like age, gender, education, family type (nuclear/joint), residence (rural/urban), medical and psychiatric co-morbidity.

The Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS): It is composed of a detailed symptom checklist that assesses for specific obsessions and compulsions, as well as ten items that assess various aspects of OCD severity using a 5-point scale. An obsessions (items 1–5), compulsions (items 6–10) and total severity (items 1–10) score is yielded. (Gallant et al., 2008, Lewin et al., 2010).

The Child and Adolescent Mindfulness Measure (CAMM-10): It was used to measure mindfulness (Greco et al., 2011). The 10-item measure uses a 5-point Likert scale (0 = Never true, 4 = Always true), with higher scores indicating greater mindfulness. Example items include: "It's hard for me to pay attention to only one thing at a time" and "I get upset with myself for having certain thoughts" (Greco et al., 2011).

Thought Action Fusion Questionnaire for Adolescents (TAFQ-A): It is a self-report, 15 item instrument that assesses Thought-Action Fusion (TAF) in adolescents. Eight items measure TAF Morality thinking and seven measure TAF Likelihood. (An example item includes, "suddenly without any reason you have the thought that your mother is dying. Having this thought increases the risk that your mother really is going to die sometime soon"). Items have to be scored on a 5-point Likert scale with 0=never, 4=always (Shafran et al., 1996).

The Avoidance and Fusion Questionnaire: Youth (AFQ-Y): It is used to measure experiential avoidance (Greco, Murrell & Coyne, 2005). The 17-item instrument is designed for youth, and higher scores indicate greater avoidance. An example item is "I try hard to erase hurtful memories from my mind." Items use a 5-point Likert scale (0 = *Not at all true*, 4 = *Very true*). The AFQ-Y has good internal consistency and convergent and construct validity (Greco et al., 2008).

Quality of life: Pediatric Quality of Life Inventory (PedsQL 4.0): It has 23 items, assesses four dimensions health related, feelings, interpersonal relationship and school functioning (Varni, 1998).

Procedure

1) Pre-intervention assessment: An assessment session was taken pre-intervention, which included, the Socio-Demographic and Clinical Data Sheet (SDCDS), the Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS), Thought–Action Fusion Questionnaire for Adolescents (TAFQ–A), Child and Adolescent Mindfulness Measure (CAMM), Avoidance and Fusion Questionnaire for Youth (AFQY) and Pediatric Quality of Life Inventory (PedsQL 4.0).

2) Intervention: The intervention (MICT) consisted of 14 sessions which were delivered to participants individually by licensed clinical psychologists, who were trained to deliver the intervention in a standardized manner. There were 1-2 sessions per week and the intervention spanned from 8-12 weeks.

The sessions were structured and the fundamental concepts and specific techniques of MICT were adapted from two adult programs: Mindfulness-Based Stress Reduction (Kabat-Zinn,

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1990) and Mindfulness-Based Cognitive Therapy (Segal et al., 2002). Psycho-education regarding OCD and the basic model of CBT was explained. Viewing OCD like a medical problem was discussed. Art was used to engage them into conceptualizing OCD, drawing an OCD monster, the thoughts that trouble them, what OCD makes them do and how OCD makes them feel. What works and does not work in OCD, for e.g., thought suppression was discussed using metaphors like ‘tennis ball metaphor.’ Mindfulness was integrated in simple breathing, walking, visual, gustatory, olfactory and tactile exercises, to introduce the concept of mindfulness and facilitate understanding of potential benefits of mindfulness in everyday life. Participants were given instructions, in-session opportunities to practice and home practise exercises. The usefulness of describing rather than labeling was emphasized (eg: rough, soft or blue versus nice or pretty or bad). Breathing exercises were kept brief, as appropriate to the capabilities of the participants. Participants were encouraged to discover their own ways to practice mindfulness at home, which supports the generalization of mindfulness to daily life. To facilitate this, home practice exercises were assigned. Discussions of their daily experiences of mindfulness were invited.

3) Post intervention assessment: At the end of the session, assessment of all participants was done using CY-BOCS, TAFQ–A, CAMM, AFQY, PedsQL 4.0.

Statistical Analysis

The data was quantitatively analyzed using SPSS 22. Descriptive statistics was used to describe the socio-demographic details of the participants and content of their obsessions and compulsions. Paired t-test was used to determine the difference between pre – post intervention scores in the group.

RESULTS

The participants were a group of 10 children (8-11 years) and 17 adolescents (12-17 years). There were 8 (30%) females and 19 (70%) were male participants. With respect to education, 15% were in primary school, 44% were in high school, 41% were in senior secondary. Majority of the participants (78%) belonged to nuclear family and 85 % were from urban set up. None of the participants had any comorbid medical condition. Three children had a psychiatric comorbidity; one had learning disability, and two participants had social anxiety. Only four children had seen a psychologist before but had discontinued after 2 or 3 sessions. All children were referred by psychiatrists and none of them had been prescribed any medications for OCD.

Table 1: Content of obsessions and compulsion amongst the participants based on CY-BOCS symptom checklist (n=27)

Type of Obsession	No. of participants	Percentage	Type of Compulsion	No. of participants	Percentage
Contamination	14	51.9 %	Washing	7	25.9%
Aggressive	7	25.9%	Checking	20	74.1%
Sexual	9	33.3%	Repeating	16	59.3%
Hoarding	1	3.7%	Counting	1	63.0%
Magical	22	81.5%	Rituals involving other person	8	29.6%
Somatic	3	11.1%	Miscellaneous	18	66.7%
Religious	5	18.5%			
Miscellaneous	10	37%			

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Table 1 shows that 52% of the participants had obsessions of contamination, while 33% had sexual obsessions and 26% had aggressive obsessions. 82% of the study participants had magical thoughts / superstitious obsessions. Among compulsions, checking (74 %) was the most common followed by miscellaneous (67%) compulsions and counting (63%).

Table 2: pre-intervention and post-intervention assessments of the participants

Scale	Sub-scale	Pre-assessment Mean (SD)	Post-assessment Mean (SD)	t value	p value
C-YBOCS	Obsessions	12.70 (5.35)	3.40 (2.63)	9.00	.00
	Compulsions	8.15 (4.38)	1.07 (1.30)	7.70	.00
	Total score	20.48 (6.08)	4.48 (3.53)	14.21	.00
CAMM	CAMM	11.29 (5.80)	21.04 (12.57)	-4.14	.00
TAF-Q	TAF-M	14.52 (9.42)	6.41 (5.00)	6.86	.00
	TAF-L	20.22 (7.43)	6.30 (3.79)	10.56	.00
	Total	34.96 (11.30)	12.59 (6.52)	11.83	.00
AYQ-Y	AYQ-Y	18.04 (9.16)	4.07 (4.03)	7.53	.00
PedsQL 4.0	QOL	52.85 (23.76)	22.18 (10.12)	6.89	.00

Table 2 shows reduction in mean score of C-YBOCS (as a measure of severity of OCD) from 12.7 to 3.4 after the intervention (T score=8.99, p value < 0.001). Similarly, there was statistically significant reduction in total mean TAF-Q scores (from 34.96 to 12.59), as well as individually in both TAF-morality and TAF-likelihood scores (p value < 0.001). There was also a statistically significant reduction in AYQ-Y and PedsQL4.0 score with T scores 7.52 and 6.89 respectively (p value <0.001). Mean CAMM score increased significantly from 11.29 to 21.03, with T score of -4.13 and p value <0.001.

DISCUSSION

The aim of our study was to examine the effectiveness of MICT in children and adolescents with OCD. In this study, we found that, subsequent to the 14 session intervention program of MICT, children and adolescents, who were primarily diagnosed with OCD, had significant reductions in severity of obsessive-compulsive symptoms (measured by C-YBOCS). The improvement in obsessive symptoms (t score- 9.0) is higher than that of compulsive behaviors (t score-7.7).

TAF-Q score, which measures thought action fusion in the participants also reduced significantly. Reduction in TAF-likelihood (t score- 10.56) was higher than TAF-morality (t score- 6.86).

Experiential avoidance, as measured by AFQ-Y score also reduced significantly in the participants (from mean score of 18.04 to 4.07). Patients also had significant improvement in mindfulness skills (measured by CAMM) and quality of life (measured by PedsQL4.0).

The improvement in obsessive compulsive symptoms is perhaps a testimony to mindfulness programs being adaptable to a range of psychological problems (Baer, 2006). The evident improvement in mindfulness skills (as demonstrated by the CAMM score) among the adolescents in the study goes to show that mindfulness is both a feasible and effective strategy in the pediatric population. Because mindfulness advocates non-judgmental awareness and acceptance of every thought, feeling, or sensation (Bishop et al., 2004), the attached significance to intrusions can be reduced by mindfulness (Baer et al., 2006).

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Evidence for effectiveness of CBT as a first line therapeutic approach in children and adolescents has been well established (Freeman et al., 2018). However, there are a few studies which investigate mindfulness-based cognitive therapy in children and adolescents with OCD. The results of the present study indicate that MICT is a promising strategy for the treatment of OCD in this population. The results show improvement in symptoms, obsessive compulsive beliefs, mindfulness skills and quality of life. The study indicates that MICT could be an alternative to Exposure Response Prevention (ERP) and other forms of cognitive behavioural therapy.

This study has potential limitations and it has to be considered as preliminary. First, small sample size, open label design and absence of a control group are the major limitations of the study. Secondly, the effects of other factors like pharmacological treatment, parent's perceptions, beliefs and biases were not taken into account. Further, due to the lack of follow-up data it is difficult to infer whether the therapeutic gains are sustained in the long-term or not.

CONCLUSION

The clinical implications of this study highlight the use of this MICT model as the first-line choice for young children with OCD primarily with obsessions and mental compulsions. Well controlled randomized controlled trials with larger sample size should be done to establish the effectiveness of MICT in children and adolescents with OCD. This may be particularly helpful in clarifying the role of other factors like age of onset, duration of symptoms, use of psychotropic medication and other potential variables, which may predict response to MICT.

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Conflict of Interest

The author declared no conflict of interest.

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