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Efficacy of Mindfulness Based Cognitive Therapy on Children With Anxiety

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This study examined the efficacy of mindfulness based cognitive therapy on children (MBCT-C) with anxiety. Two hundred and forty children were screened, of which 52 (25 boys and 27 girls) with anxiety were randomly allocated to either MBCT-C or group therapy (GT including cognitive behavioral principles). Both groups were rated on the Spence Children's Anxiety Scale and Emotion Regulation Questionnaire–Child and Adolescent, pre- and 12 weeks post-interventions. MBCT-C was found to be more effective than GT in improving anxiety among children (between-group effect size Cohen's *d* 1.05) and as effective as GT in reducing emotion suppression for effective emotion regulation. This study provides support for MBCT-C as an effective group intervention for children with anxiety.

Keywords: mindfulness; anxiety; emotion regulation; school children, MBCT-C

Anxiety spectrum disorders are the most common mental health problems among children (Semple, 2005). The lifetime estimates of anxiety disorders among children can range from 14% to 25% (Chorpita, 2002) and is more common among girls (64.7%) than in boys (35.3%) (Joshi et al., 2013). Without treatment children with anxiety can develop learning difficulties, social skills deficits, and substance abuse in adulthood (Semple, 2005). Emotion regulation is the ability to be aware of emotional experience, appraise the situation, and modify the expression of emotions appropriate to the social demands (Jacob et al., 2011). Children with anxiety disorders have difficulties in emotion regulation and also the lack of emotion regulation skills contribute to the onset and maintenance of anxiety (Amstadter, 2008; Eisenberg & Spinrad, 2004; Suveg & Zeman, 2004; Thompson, 2001). Less anxious children challenge the anxiety by cognitively reappraising the belief about the threatening situation. Cognitive reappraisal is an antecedent focused emotion regulation strategy that helps the individual in regulating their experience and expression of emotions (Gross & Thompson, 2007). On the other hand, highly anxious children use thought suppression as a regulatory mechanism to control their anxiety (Campbell-Sills et al., 2006; Suveg et al., 2008). Thought suppression is a response focused emotion regulation strategy which occurs

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when an individual has already experienced intense emotion and helps only in controlling the expression of emotion temporarily (Gross & John, 2003).

In the last two decades, there has been a wide use of mindfulness based interventions among adults for a range of psychological conditions and recently mindfulness has been adapted and trialed in children and young persons (Burke, 2009).

Mindfulness works through three core components: intention, attention, and attitude (Shapiro et al., 2006). Mindfulness is "paying heed (attention) in a particular way (attitude) on purpose (intention), in the present moment nonjudgmentally" (Kabat-Zinn, 1994). Intention reflects the possibility of change. Attention is observing and experiencing things in each moment without interpreting, which provides a route to suspend the possibility of being in "automatic pilot" mode and become more vigilant to the content of conscious. Self-regulation of attention enables to focus on the task in hand and to inhibit scrutiny of negative thoughts and feelings. In anxiety disorders, mindfulness works by regulating attention which is overly focused on the past or the future. (Semple et al., 2006). Attention should be compassionate rather than critical. When the attitude towards thoughts is intentional it becomes obvious part of the thought process and "with intentional training, one becomes increasingly able to take interest in each experience as it arises and also allow what is being experienced to pass away (i.e., not be held on to)" termed reperceiving (Shapiro et al., 2006). This may help children avoid indulging in thought suppression, a maladaptive emotion regulation strategy.

The core mechanism of change in mindfulness is decentering and disidentifying from one's thoughts, bringing in more clarity and objectivity to the thought process (Safran & Segal, 1990). This process of reperceiving helps the individual to see anxiety as a thought or emotional state which will pass away (Teper et al., 2013). Overall, decentering may help the children in developing cognitive reappraisal skills, one of the emotion regulation strategies.

The efficacy and feasibility of mindfulness based therapies among children has been well studied in attention deficit hyperactivity disorder (Napoli et al., 2005), aggression and oppositional behavior (Schonert-Reichl & Lawlor, 2010), emotional reactivity (Saltzman & Goldin, 2008), depression (Joyce et al., 2010), and other psychological problems (Yoo et al., 2016).

Semple and Lee (2011) have adapted and manualized the mindfulness based cognitive therapy for children as MBCT-C. MBCT-C was adapted directly from mindfulness based stress reduction developed by Jon Kabat Jinn (1994) and is based on the premise that thoughts and emotions are not facts and by enhancing mindful attention, it becomes easier to observe anxious thoughts and feelings which enhance the ability to consciously respond to the events (Segal et al., 2012). Engagement in mindfulness practices may interrupt habituated reactions, increase the opportunity to respond with greater awareness and foster appropriate choices about how to respond (or not respond) to events (Semple & Lee, 2011). Enhanced awareness can thus strengthen the child's capacity to tolerate difficult thoughts, accept strong emotions, and manage the situation at hand more skillfully.

Considering their early developmental stage, mindfulness interventions required modifications from their adult versions before being used with children. To accommodate their short attention span, the sessions were made shorter and frequent (Semple et al., 2006) and to compensate for the difficulty in abstract reasoning multisensory exercises which include experiencing the world with touch, smell, sound, and taste were employed via activities, stories, and games. Since no intervention with children can be successful without the involvement of parents, parental sessions were made an integral part of MBCT-C.

MBCT-C is well adapted and a developmentally appropriate intervention for children, however it has not been studied in comparison to cognitive therapies when administered in a group at schools. The aim of this study was to conduct an Randomized Controlled Trial (RCT) to evaluate the efficacy of the therapist delivered MBCT-C compared to group therapy (GT) for children with anxiety. We hypothesized that children in the MBCT-C group would have lower anxiety scores compared to children receiving GT after the interventions. Our secondary hypothesis was that the MBCT-C group will have better emotion regulation compared to GT group.

METHODOLOGY

Study Design

This study is a 12-week single-blinded clinical RCT with subjects allocated to either MBCT-C or GT.

Participants

The sample consisted of 52 children (25 boys and 27 girls) who scored 25 and above on the Screen for Child Anxiety Related Emotional Disorder (SCARED) on both the child and parent versions. All children aged 8–10 years and had clinically normal cognitive functioning. Children who had ever consulted a mental health professional were excluded from the study. This was done to ensure that the child hadn't gone through any similar Psychological intervention in the past.

Measurements

A semi-structured proforma was designed by the investigators to collect the socio-demographic and clinical details.

Screen for Child Anxiety Related Emotional Disorder (SCARED) (Parent and Child Version). The SCARED scale parent and child version was administered to screen for anxiety symptoms in children. It is a 41 items scale rated on 3 points (0 = not true/ hardly ever true, 1 = somewhat true/sometimes true, and 2 = very true/often true). A score of ≥ 25 indicates the presence of an anxiety disorder. Cronbach α values were approximately 0.90 for both the child and the parent versions (Birmaher et al., 1997).

Spence Children's Anxiety Scale (SCAS) (Parent and Child Version). The SCAS parent and child version was administered to assess the severity of anxiety symptoms broadly in line with the dimensions of anxiety disorder proposed by the DSM-IV-TR (American Psychiatric Association, 2000). The degree of experienced symptom is marked on a 4-point frequency scale (never = 0, sometimes = 1, often = 2, always = 3). The internal consistency of the total scale is high (Cronbach alpha = 0.93) (Spence et al., 2003).

Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA). ERQ-CA comprises 10 items assessing the emotion regulation strategies of cognitive reappraisal (six items) and emotion suppression (four items). Cognitive reappraisal is reevaluating the emotion loaded situation to reduce its impact (e.g., When I am worried about something, I make myself think about it in a way that helps me feel better). It helps in reducing anxiety by reinterpreting the situation more positively (Gross, 1998; Gross & John, 2003). Emotion suppression is a form of response modulation which impede the expression of emotion (e.g., I control my feelings by not showing them). Emotion suppression is not considered to be a healthy strategy as it maintains the anxiety. Children rated their responses along a 5 point Likert-type response scale (1 = strongly disagree, 2 = disagree, 3 = half and half, 4 = agree, 5 = strongly agree). Scores ranged from 6 to 30 for cognitive reappraisal and 4 to 20 for emotion suppression. Higher scores indicated greater use of the corresponding emotion regulation strategy. The ERQ-CA has been reported to have high internal consistency (0.79 for reappraisal, 0.73 for suppression) and 3-month test–retest reliability (r = 0.69) for both scales (Gullone & Taffe, 2012; John & Gross, 2004).

The child rated scales were administered in English as all the children were proficient in the language. The parent rated scales were translated into the vernacular (Kannada) by a language expert and then back translated by a different person. This was compared with the original scale and required changes were made before administration.

Intervention

The subjects in the intervention group underwent the MBCT-C for 12 weeks. MBCT-C is a manualized mindfulness-based therapy for children with anxiety developed by Semple and Lee (2011). It can be used to treat anxious children in group or individual therapy. The group format was used in this study. The therapy sessions are supplemented with games, poems, stories, session summaries, and homework practices. Along with this, to enhance participation, parental involvement was made an integral part of the program. Permission to use the MBCT-C manual was obtained from the authors and the manual was reviewed by two independent psychologists for cultural appropriateness. The subjects in the control group underwent GT. This module was developed by the researcher, including the components of treatment as usual at the clinic. It incorporated the cognitive and behavioral principles in the GT format. Mindfulness, relaxation, or meditation was not included. The module was manualized and was reviewed by two independent psychologists for appropriateness. The first author (final year trainee clinical psychologist) was the therapist for both groups. The corresponding author (academic psychologist) supervised the first author to ensure that the sessions are conducted according to the manual. Each session was discussed the previous day with the supervisor. Few sessions in both groups were supervised on the site. The interventions were provided to the children at the school during their free time. The session wise details of the intervention are described in Tables 1 and 2.

Procedure

The study was carried out between August 2014 and April 2015, after obtaining the Institution Ethics Committee clearance (IEC 472/2014) and was registered on the Social Science Registry (REF/2014/12/008155). Based on the logistic convenience, an English medium school from Udupi district, Karnataka, South India was approached for recruiting subjects for the study. Signed consent from primary caregivers and assent from children was taken before both phases of the study that is screening phase and the intervention phase. Permission from school authorities was obtained. Participants were given verbal and written information relevant to the phase of the study. All children in the school who had consented were screened for anxiety disorders using SCARED (parent and child version). The children who had a score of 25 or more on both versions of the tool and who met the inclusion and exclusion criteria were recruited into the intervention phase of the study and randomized to either for MBCT-C or GT using the fishbowl method. Subjects were randomized at a 1:1 ratio into the two groups. The allocation was not revealed to the child or the parent. All subjects were assessed at baseline (week 0) and immediately post-intervention after 12 weeks with child rated and parent rated scales that is SCAS and EPQ-CA. Figure 1 presents an overview of the study flow.

Statistical Analysis

There were no dropouts and all the subjects were followed up post-intervention. Data obtained were analyzed using Statistical Software for Social Sciences (SPSS) version 16.0 for Windows. Chi-square test and independent "t" test were used to compare the group differences for categorical and continuous variables, between MBCT-C and GT group. The General linear model (GLM) repeated measures analysis of variance (ANOVA) analyzes groups of related dependent variables that represent different measurements of the same attribute. The GLM Repeated Measures procedure provides an analysis of variance when the same measurement is made several times on each subject or case. It was used to assess the difference between the two groups in the total scores of anxiety and emotion regulation. Effect sizes on primary and secondary outcomes were calculated and are reported as Cohen's d.

TABLE 1. Session Wise Contents for Mindfulness based Cognitive Therapy on Children

Session 1	Developing community; defining expectations; emphasizing the importance of homework; orientation to mindfulness; mindful smiling while waking up exercise.
Session 2	Dealing with barriers to practice; introduction to mindfulness of the breath; eating a raisin exercise.
Session 3	Practice differentiating thoughts, feelings, and body sensations; introduction to mindful body movements (yoga postures).
Session 4	Mindful hearing; receptive listening exercise to identify thoughts, feelings, and body sensations; introduction to body scan exercise.
Session 5	Mindful hearing (continued); creating expressive sounds exercise; introduction to 3-minute breathing space exercise
Session 6	Mindful seeing; learning what we don't see; practice differentiation of judging from describing; guided imagery exercise.
Session 7	Mindful seeing (continued); practice directing attention; seeing optical illusions exercise; mindful movement exercise: be a flower opening, a tall tree, and a butterfly.
Session 8	Mindful touch; learning how to stay present with what is here right now; body scan exercise.
Session 9	Mindful smell; continue the practice of differentiating between judging and describing; mindful body movements (yoga postures).
Session 10	Mindful taste; thoughts are not facts exercise; mindful body movements (yoga postures).
Session 11	Mindfulness in everyday life; review of previous sessions; integrating acceptance of experiences through mindfulness. Parents were asked to join the session and their doubts were clarified.
Session 12	Generalizing mindfulness to everyday life; exploring and sharing personal experiences of the program; brief graduation ceremony.

RESULTS

Sample Characteristics

Fifty-two children were recruited from the school after screening them for anxiety disorder. These children were randomly allocated to the MBCT-C and GT interventions. The interventions were provided in the school during their free time and subjects were considered dropouts if they had attended less than 80% of the sessions. None of the subjects dropped out of this study. Tables 3 and 4 describe the baseline characteristics of the population. The two groups did not differ significantly on any demographic or clinical variables in terms of gender (11 boys and 15 girls in MBCT-C group, 14 boys and 12 girls in GT group, $p = .29$), mean age (MBCT-C 9(0.98) years vs. GT 9 (0.93) years; $p = 1.0$), mean years of education (MBCT-C 4(0.89) vs. GT 4(0.93); $p = 1.0$), mean anxiety score- parent (MBCT-C group 57.80 (15.89) vs. GT group 52.11 (16.92); $p = .21$), mean anxiety score—child (MBCT-C group 70.25 (15.95) vs. GT group 64.12 (13.97); $p = .15$), mean cognitive reappraisal score (MBCT-C group 11.50(3.96) vs. GT group 12.23(4.68); $p = .54$), and mean emotion suppression (MBCT-C group 9.88(3.91) vs. GT group 9.77(3.78); $p = .91$).

TABLE 2. Session Wise Contents for Group Therapy

Session 1	Introducing each other and with the suggestions from children, a name to the group was assigned. The children were invited to describe cues of those situations wherein they felt the most fearful and accompanying emotional, cognitive, and somatic components of those experiences.
Session 2	Discussing the advantages and disadvantages of anxiety (Rational v/s irrational fear). Along with the knowledge about safety behavior.
Session 3	Identifying thoughts and feelings in cartoon characters and labeling them with different levels of intensity. To teach a child to use different feeling terminologies.
Session 4	Information on fight and flight response. Self-monitoring: Identifying automatic self-talk and feelings accompanying anxiety provoking situations and replacing them with coping thoughts.
Session 5	Recognizing avoidant strategies and triggering cues. Conjoined sessions with parents wherein they would be instructed to encourage their children to face their fears, focusing on positives, rewarding a child's brave behavior, encouraging good sleep hygiene, allowing the child to express his/her anxiety freely, and to embed never give up attitude.
Session 6	To enhance problem-solving skills in the children, they were divided into groups wherein they played doctor-doctor help-help. One child would be made a doctor while the rest would entangle themselves in a complicated manner. The child who stood outside would then segregate these children. Each child would get the opportunity to apply his coping strategies to help the members of the group.
Session 7	Learning graded exposure to anxiety provoking situations, teaching how to turn anxious arousal into a cue for eliciting coping strategies, modifying anxious self-talk into coping self-talk, building realistic self-evaluation, and developing self-reward strategies.
Session 8	Children were taught using scripting how to approach an anxiety provoking situation wherein initially their usual response was obtained in a step by step manner. Later the children were explained about how their actions contribute to them having more anxiety in each step. Using role-playing, they were then taught how to approach the same situations that will not lead to anxiety build up.
Session 9	Children were taught cognitive coping skills such as counting backward, to deal with anxiety.
Session 10	Social skills: To teach developmentally appropriate social skills and noting positive social behaviors used by the peers and making it a part of one's repertoire.
Session 11	Anger management skills, discussing achievements. Parents were asked to join the session and the doubts were clarified.
Session 12	Evaluating group work, and overcoming hurdles and implementing these in real life situations generalizing the techniques learned to everyday situations and brief graduation ceremony.

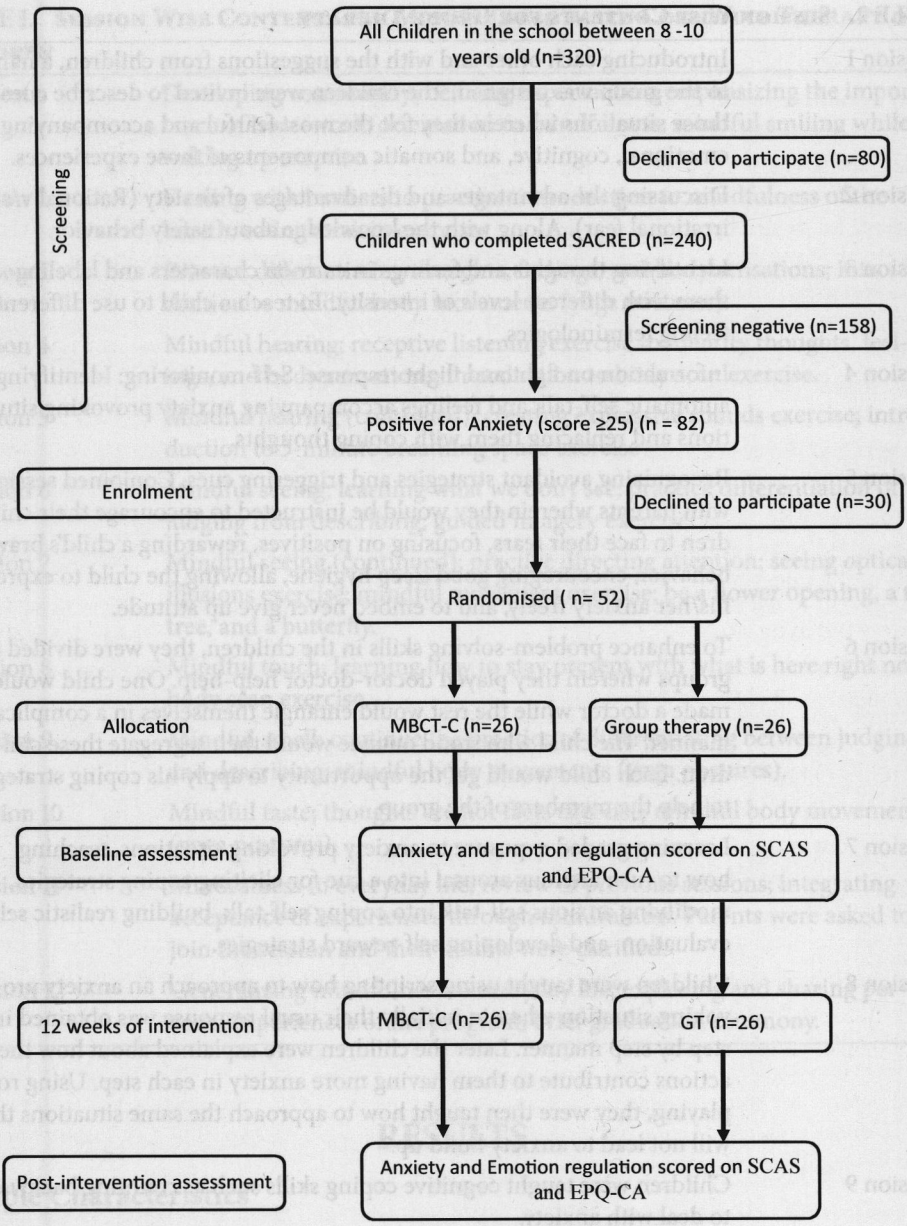

FIGURE 1. Study flow.

Outcomes

Anxiety

The pre- and post-intervention parent rated SCAS scores showed a significant difference between (32.84 and 44.6; $p < .001$) as well as within (57.80 vs. 32.84 in MBCT-C and 52.11 vs. 44.46 in GT; $p < .001$) two groups. The same was noted for child rated scores (between group 41.84 vs. 48.44 and within group 70.25 vs. 41.84 in MBCT- C and 52.11 vs. 44.46 in GT; $p < .001$) (Table 5, Figures 2 and 3). The anxiety scores reduced in both the groups after their respective interventions, however at

TABLE 3. Chi-square Test to Assess the Gender Difference Between the Two Groups

	MBCT-C group	GT therapy	*df*	χ^2	*p*
	N = 26	*N* = 26			
Boys *n* (%)	11(42.3)	14 (53.8)	1	0.693	.29
Girls *n* (%)	15 (57.7)	12 (46.2)			

Note. *$p < .05$; GT = group therapy; MBCT-C = mindfulness based cognitive therapy on children.

TABLE 4. Independent *t* Test to Assess the Difference in Sociodemographic and Clinical Characteristics Between the Two Groups

Variable	MBCT-C group (*N* = 26)	GT group (*N* = 26)	*t*	*p*
	M(*SD*)	*M*(*SD*)		
Age	9(0.89)	9(0.93)	0.0	1.0
Years of education	4(0.89)	4(0.93)	0.0	1.0
Anxiety (rated by a parent)	57.80(15.89)	52.11(16.92)	1.24	.21
Anxiety (rated by children)	70.25(15.95)	64.12(13.97)	1.46	.15
Cognitive reappraisal	11.50(3.96)	12.23(4.68)	−0.60	.54
Emotion suppression	9.88(3.91)	9.77(3.78)	−0.10	.91

Note. *$p < .05$; GT = group therapy; IQR = Interquartile range; MBCT-C = mindfulness based cognitive therapy on children.

the end of the intervention MBCT-C group had better improvement than GT, corresponding to a large between-group effect size (Cohen's d) equal to 1.05 on parent's scores and medium effect size of 0.59 on children's scores.

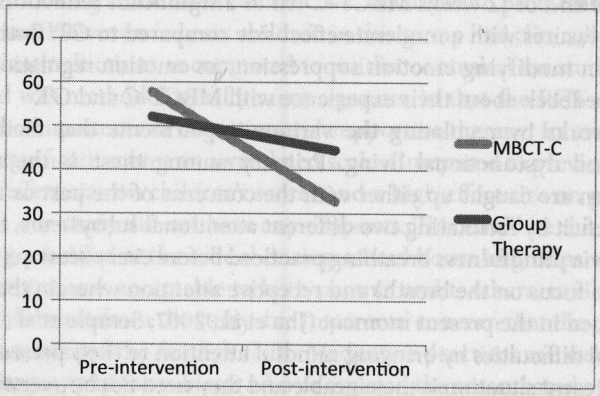

Figure 2. Mean score on SCAS-P between and within the MBCT-C group and group therapy.

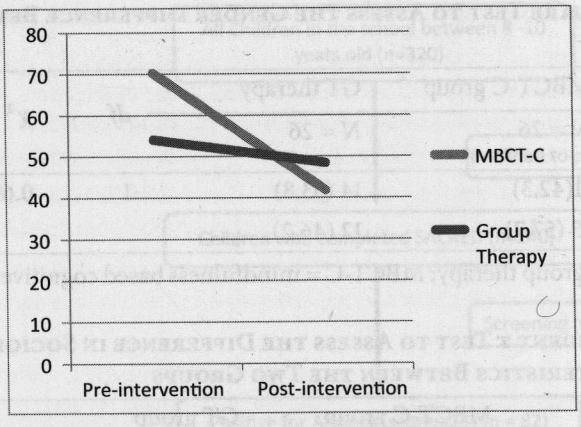

FIGURE 3. Mean score on SCAS-C between and within the MBCT-C group and group therapy.

Emotion Regulation

The pre- and post-intervention scores of cognitive reappraisal and emotion suppression (subdomains of emotion regulation) showed significant differences (p <.001) within two groups (emotion suppression 9.88 vs. 8.46 in MBCT-C and 9.77 vs. 8.50 in GT; p < .001, cognitive reappraisal 11.50 vs. 10.07 in MBCT-C and 12.23 vs. 11.03 in GT; p < .001) but not between groups (emotion suppression 8.46 vs. 88.50; p = .82 and cognitive reappraisal 10.07 vs. 11.03; p = .64). This indicates that cognitive reappraisal and emotion suppression score have reduced within two groups after their respective interventions. Both MBCT-C and GT lead to similar changes in emotional regulation (Table 5).

DISCUSSION

MBCT-C has been evaluated in the past among children in an open label trial (Lee et al., 2008) and RCT with waitlist controls (Semple et al., 2010) and was found to be effective. We conducted an RCT to evaluate the efficacy of MBCT-C with an active control group in reducing anxiety and improving emotional regulation. The children in our study were younger (8–10 years) compared to previous studies (9–13 years) and were followed up for a shorter duration (12 weeks vs. 3 months). The scales were rated by both the children and their parents who were blind to the group they were in. At the end of 12 weeks MBCT-C led to a significant reduction in anxiety on child and parent rated measures with a moderate effect size compared to GT. Both interventions were equally efficacious in modifying emotion suppression, an emotion regulation strategy. Children reported positive feedback about their experience with MBCT-C and GT.

Mindfulness works by regulating the various impairments that facilitate as a mediator between anxiety and dysfunctional living. Primary among these is the attentional problem wherein the children are caught up either with the concerns of the past or the future. Mindfulness taps on this deficit by facilitating two different attentional subsystems, that is, concentrative attention achieved via mindfulness breathing practiced before every session (if necessary wherein the child is asked to focus on the breath) and receptive attention wherein the focus is to keep the attention fully readied in the present moment (Jha et al., 2007; Semple et al., 2010). The MBCT-C counters attentional difficulties by bringing mindful attention to their present, and thus the child realizing that the present situation is manageable and they need not be overwhelmed. This further increases self-awareness facilitated by enhanced self-understanding of their own experience.

TABLE 5. Repeated Measures ANOVA to Assess the Difference Between Pre- and Post-intervention Scores of Anxiety, Cognitive Reappraisal, and Emotion Suppression for Two Groups, MBCT-C and GT Group

Variable	Condition	MBCT-C group	GT group	F	p
		Mean (*SD*)	Mean (*SD*)		
Total anxiety (rated by a parent)	Pre-intervention	57.80 (15.89)	52.11 (16.92)	42.19	.001
	Post-intervention	32.84 (8.14)	44.46 (13.34)	149.72	
	p (within)	.001			
Total anxiety (rated by children)	Pre-intervention	70.25 (15.95)	64.12 (13.97)	43.52	.001
	Post-intervention	41.84 (8.47)	48.44 (13.20)	521.38	
	p (within)	.001			
Cognitive Reappraisal	Pre-intervention	11.50 (3.96)	12.23 (4.68)	0.21	.64
	Post-intervention	10.07 (2.85)	11.03 (4.24)	27.04	
	p (within)	.001			
Emotion Suppression	Pre-intervention	9.88 (3.91)	9.77 (3.78)	0.51	.82
	Post-intervention	8.46 (2.98)	8.50 (3.38)	15.52	
	p (within)	.001			

Note. $^*p < .05$. ANOVA = analysis of variance; GT = group therapy; MBCT-C = mindfulness based cognitive therapy on children; *SD* = standard deviation.

The initial pilot study (John & Gross, 2004) did not show any changes in the child's reported scores of anxiety. The baseline anxiety scores were not clinically elevated. Semple et al. (2010) conducted another study looking at the effects of MBCT-C on attention problems, anxiety symptoms, and behavior problems. However, only six children in this group had clinically significant anxiety who showed significant reductions as compared to waitlist controls. Our study had a bigger sample size ($n = 52$) and was methodologically more rigorous, in that the RCT compared MBCT-C to GT that included components of cognitive and supportive therapy. In our study, all the children had clinically significant scores on a validated scale. Compared to previous studies our study showed a moderate effect size on children's scores and a high effect size on parents rated scores. Unlike these studies, our study did not have any dropouts. This could be due to the convenience of intervention being provided at the school during school hours in groups with a child friendly content. The intervention was acceptable to both parents and teachers, unlike in the pilot study where a child was withdrawn from the study due to parents' concern that the program would promote beliefs that contradicted the family's faith. Meditative practices are well accepted in South Asian cultures. The majority of the subjects who completed the second study (Semple et al., 2010) were low-income, inner-city households and ethnic minorities (African American and Latino). Mindfulness is a well-accepted practice among different communities all over the world. Semple (2005) concluded that mindfulness-based techniques could be taught to children as young as

7 years old. We used a lower age range of subjects in our study demonstrating that mindfulness could be taught to young children and is accepted among them.

The findings of the present study thus suggest that MBCT-C is more effective than GT in treating anxiety among children. Along with this MBCT-C and GT, both interventions are effective in reducing emotion suppression. However, cognitive reappraisal also reduced in both the groups after their respective intervention which was contrary to expected outcome. One possible explanation of this could be that the pre-intervention scores of cognitive reappraisal were too less which can be attributed to very young age of the participants in our sample. Considering the age and very low score, more number of sessions may be required to improve cognitive reappraisal.

The feasibility of MBCT-C lies in its ease of administration in a group or individual format and its limited use of resources. This makes it an economically viable intervention that can easily be incorporated into the school based mental health program even among low and middle Income countries. The content that interests the child, its less demanding nature (only 1 hour during school time) and the joys of being in a group could have been the reason all the children continued in this study. This was true for both groups, the session for GT was designed to make it interesting for children. The feedback on activities from both parents and children were positive.

The present results are limited by the small sample size and a short duration of follow up. The children could not be followed up further as they had left for holidays just after the sessions got over and could not come for follow ups. Changes in symptoms after MBCT-C could be maintained up to 3 months post-intervention (Semple et al., 2010).

Secondly, when therapies are administered in a group format, the individual subject will be influenced by the group clinically and statistically, the state of one individual subject may influence statistical measures of another one in the group however, this does not change the overall results of the study (Williams et al., 2008). MBCT-C will need to be further studied against treatment as usual to assess if it is superior when administered individually.

Thirdly, all of the children were recruited from a semi-urban Indian population. There is further need to study the efficacy and feasibility of this intervention in other cultures. Also, the acceptability of this format outside schools would have to be evaluated as children may not be keen to participate in sessions outside the school hours or parents may find transportation difficult.

Fourthly, no measures were used to check the fidelity of implementation by the therapist. The therapist who was a trainee was supervised before a session and few times on the site during a session, but it was logistically not feasible for every session to be supervised or assessed. The authors consider it a strength of the study that same therapist conducted the intervention in both groups. This removed the therapist factors causing a bias and also prevented the subjects from guessing their groups. It is possible that this could have caused a therapist bias towards the intended group, however supervision would have reduced this.

Finally, the SCARED-Parent and Child version used in the study has not been validated in the Indian population. However, an earlier study (Joshi et al., 2013) used the same tool in children from a similar cultural background, and the results were similar to that of our study.

To summarize, MBCT-C is an efficacious and feasible intervention for children with clinically significant anxiety. Mindfulness based cognitive therapies are superior to cognitive therapy in reducing anxiety. It is well accepted by children and their parents and can be conveniently delivered at school by a single therapist in a group format. Further studies should evaluate the efficacy of MBCT-C in specific anxiety disorders among children.

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