J Child Fam Stud
DOI 10.1007/s10826-012-9571-7

ORIGINAL PAPER

Cognitive-Based Compassion Training: A Promising Prevention Strategy for At-Risk Adolescents

Sheethal D. Reddy · Lobsang Tenzin Negi · Brooke Dodson-Lavelle · Brendan Ozawa-de Silva · Thaddeus W. W. Pace · Steve P. Cole · Charles L. Raison · Linda W. Craighead

Abstract Compared to the general population, youth in foster care experience multiple psychosocial difficulties due to exceptionally high rates of maltreatment. Many youth in care receive psychological and/or psychotropic treatment but not all require or are willing to accept that level of intervention. For many, a "mental health" approach feels pathologizing. Nevertheless, these youth have suffered maltreatment and interventions to improve their ability to cope with past trauma and their often uncertain present are clearly needed. Cognitively-Based Compassion Training (CBCT) provides an alternative perspective on suffering and can be framed as a wellness intervention that is appropriate for all humans. The present study examined whether a 6-week CBCT intervention would improve psychosocial functioning among adolescents in foster care. Seventy adolescents were randomized to CBCT (twice weekly) or a wait-list condition. Youth were assessed at baseline and after 6 weeks. Groups did not differ on measures of psychosocial functioning following training; however practice frequency was associated with increased hopefulness and a trend for a decrease in generalized anxiety. Qualitative results indicated that participants found CBCT useful for dealing with daily life stressors. Adolescents in care were willing to engage in CBCT. The majority reported CBCT was very helpful and almost all reported they would recommend CBCT to a friend. Participants reported specific instances of using CBCT strategies to regulate emotion, manage stress, or to respond more compassionately towards others. Standardized self-report measures were not sensitive to qualitative reports of improved functioning, suggesting the need for measures more sensitive to the positive changes noted or longer training periods to demonstrate effects. Practical issues surrounding implementation of such programs in high-risk youth populations are identified. Recommendations are provided for further development.

Keywords Foster care · Meditation · Maltreatment · Anxiety · Adolescents

S. D. Reddy
Health4Life Program, Children's Healthcare of Atlanta, Atlanta, GA, USA

L. T. Negi · B. Dodson-Lavelle · B. Ozawa-de Silva
Department of Religion, Emory University, Atlanta, GA, USA

T. W. W. Pace
School of Medicine, Emory University, Atlanta, GA, USA

S. P. Cole · L. W. Craighead
Department of Psychology, Emory University, Atlanta, GA, USA

C. L. Raison (✉)
Department of Psychiatry, College of Medicine, University of Arizona, Tucson, AZ 85724, USA
e-mail: craison@emory.edu

Introduction

Although sitting meditation practices have been shown to be effective in helping adults cope with a variety of psychological and physiological problems (Chiesa and Serretti 2009; Zeidan et al. (2010), empirical studies of meditation practices in children are few and far between. Nevertheless, a recent meta-analysis (Black et al. 2009) identified 16 quantitative studies conducted since 1982 and concluded that sitting meditation has positive effects on physiological and psychosocial concerns in children as young as 6 years of age. Types of meditation used in these studies included

Published online: 21 February 2012

Transcendental Meditation©, mindfulness meditation, Mindfulness-Based Stress Reduction, and Mindfulness-Based Cognitive Therapy. For the most part, the samples in these studies were predominantly African American. Physiological issues like high blood pressure or psychosocial problems like attention deficit hyperactivity disorder, conduct disorder, and learning disabilities were the primary reasons for recruitment. Given these promising results, meditation practices may serve as a useful primary prevention tool for children without a history of early adversity and a secondary prevention tool for children who do have a history of maltreatment.

In addition to a rather small number of efficacy studies, the literature on adapting meditation practices for use with children is scant. Given the cognitive abilities demanded for more advanced meditation practices, substantial modifications are needed to instruct children. Expectations for sustained attention, concentration, participation, and practice need to be calibrated to a child's developmental stage and yet there is little practical guidance on how to do this. Given that many of these programs have been developed for children with learning disabilities and psychiatric problems, it is surprising that the literature has not discussed the impact of psychiatric comorbidities on group dynamics and meditation instruction.

Cognitively-Based Compassion Training (CBCT) is a type of contemplative practice that teaches active contemplation of loving-kindness, empathy and compassion towards loved ones, strangers, and enemies (Ozawa-de Silva and Dodson-Lavelle 2011; Ozawa-de Silva et al. in press). Building on basic mindfulness practice, CBCT employs a variety of cognitive restructuring and affect generating practices with the long-term goal of developing an equanimity of mind that fosters acceptance and understanding of others (Salzberg 2002). While the mindfulness components incorporated into CBCT may provide an immediate and effective stress management and coping technique, the physiological benefits associated with practices specific to CBCT may confer additional health-relevant benefits (Pace et al. 2009; Pace et al. 2010). In a randomized clinical trial young adult participants who were trained in and who also practiced compassion meditation showed reduced physiological (i.e., plasma interleukin (IL)-6 and heart rate) as well as subjective stress responses when challenged with a standardized laboratory psychosocial stress task (Pace, et al. 2009). Given that chronic elevations of inflammatory markers such as IL-6 and CRP are associated with the development of cardiovascular disease, diabetes, and other modern-day illnesses in later life (Kuo et al. 2005; Pradhan et al. 2001; Ridker 2007), CBCT may be a promising prevention program for children and adults with histories of maltreatment who are at increased risk for many of the same medical illnesses (Felitti et al. 1998).

Children in foster care experience higher rates of adverse life experiences than do children in the general population, resulting in a host of psychosocial problems that extend well beyond their years in foster care. Indeed, studies demonstrate that children in foster care have high rates of developmental disability, chronic illness, and birth defects (American Academy of Pediatrics 2002). These obstacles, in turn, contribute to poorer outcomes in adulthood. Recent estimates (Casey Family Programs 1999) indicate that only 74% of children placed in foster care will graduate from high school and less than 11% will receive a bachelors degree (compared to 84% and 28%, respectively, in the general population). Lack of access, poor coordination of medical and mental healthcare services, and unreliable social support networks are some reasons that youth in care demonstrate poorer psychosocial and health outcomes (American Academy of Pediatrics 2002). Twenty-two percent of foster care "alumni" report becoming homeless between the ages of 18-24 compared to 6.8% of the general population of that age. Given widespread exposure to these multiple adversities, it is not perhaps surprising that children in foster care report lifetime prevalence rates of post-traumatic stress disorder similar to that of US war veterans (Casey Family Programs 1999).

The purpose of the present paper is two-fold. First, we describe the effects of a 6-week CBCT pilot intervention on the psychosocial well-being of adolescents in a metropolitan area foster care system. The second objective is to highlight the practical and logistical issues of implementing such a program within the foster care setting and ways to modify the program to address psychiatric and developmental issues unique to this population. Indeed, it appears that little has been written regarding the changes that are required to introduce meditation practice to special populations, particularly teens.

Method

Participants

Children aged 13–17 residing in the foster care system in a multi-county metropolitan area were identified as appropriate for a prevention intervention and were approached by their case managers to request their participation in a 6-week CBCT intervention. Participants were free of active suicidality, psychotic disorders, bipolar I disorder, eating disorders, and chronic illness (cancer, cardiovascular disease, diabetes, and autoimmune disorders). Seventy-one adolescents (78.8% African American, 56% female) were recruited and consented (see Table 1 for sample characteristics). All procedures were approved by the Georgia Department of Human Services Internal Review Board.

Table 1 Sample Characteristics (N = 71)

Characteristic	Mean(SD)/percentage
Age	14.7 (1.14)
Female	56%
Ethnicity	78.8% African American
BMI	20% Overweight (BMI = 25–29.9)
	11.4% Obese (BMI = 30 or >)
One axis I disorder	37%
More than 1 axis I disorder	51%
Anxiety disorders	6%
Depression/dysthymia	36%
Attention-deficit hyperactivity disorder	40%
Oppositional defiant/conduct disorder	43%
Adjustment disorder	10%
Bipolar disorder	7%
Post-traumatic stress disorder	10%
One psychiatric medication	13%
Two or more psychiatric medications	29%

Participants may have carried more than one diagnosis; hence percentages will not sum to 100%

Measures

Height and weight were measured to calculate body mass index (BMI), and saliva was collected to assess cortisol and c-reactive protein levels pre- and post-training. Physiological results are reported elsewhere (Pace et al. submitted). Participants and caregivers also completed a battery of psychosocial measures including the following described below.

The Child Behavior Checklist—Parent Version (CBCL). (Achenbach and Rescorla 2001)

The CBCL is a standardized form completed by a parent or legal guardian that describes a child's behavioral and emotional problems. The CBCL assesses a child's school performance and contains 113 behavioral, emotional, and social problems that are rated from 0 ("Not True") to 2 ("Very True or Often True"). Scores on the CBCL are based on the child's age and gender and yield information on competency in a variety of areas. Scores also reflect the problems and levels of adaptive functioning that the respondent has observed (Achenbach et al. 2003). Achenbach and Rescorla (2004) reported reliability of $r = 0.90$ ($p < .01$) for the parent version. The CBCL produces multiple scales including six profiles that align with disorders listed in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV): Affective, Anxiety, Somatic, Attention Deficit Hyperactivity, Oppositional Defiant, and Conduct Disorder. For the purposes of this study, we report on these six profiles.

The Quick Inventory of Depressive Symptomatology–Self-Report (QIDS-SR). (Rush et al. 2003)

The QIDS-SR is a 16-item measure of the severity of depressive symptoms based on the DSM-IV nine-symptom criteria for depression. Total scores range from 0 to 27, with higher scores indicating greater severity of symptoms. The QIDS-SR demonstrated adequate internal consistency in this sample (Cronbach's alpha = 0.60) and has correlated highly with the Hamilton Rating Scale for Depression (Rush et al. 2006).

The State-Trait Anxiety Inventory-Trait Subscale (STAI-T). (Spielberger et al. 1983)

The State-Trait Anxiety inventory is a widely accepted measure of anxiety comprised of two 20-item scales that assess current anxiety (state) and general anxiety (trait). Because we were interested in the change in general anxiety over time, participants only completed the trait anxiety portion of the measure. Scores for the trait scale range from 0 to 60 with higher scores indicating greater anxiety. The measure has been used with adolescents previously (Hishinuma et al. 2001; Vera-Villarroel et al. 2007) and reliability of the measure in the current sample was high (Cronbach's alpha = 0.84).

Functional Assessment of Self-Mutilation. (FASM). (Lloyd et al. 1997)

The FASM assesses the type, frequency, intensity, and reasons for non-suicidal self-injurious behavior, or self-harm. The measure has been used among adolescent samples with high reliability and demonstrates concurrent validity with measures of suicidality, hopelessness, and behavioral problems (Guertin et al. 2001; Lloyd-Richardson et al. 2007). Our primary interest was the presence of self-harm in this sample; hence we report on the percentage of youth who reported engaging in self-harm behaviors.

Self-Other Four Immeasurables Scale (SOFI). (Kraus and Sears 2009)

The SOFI is a self-administered, 16-item scale that measures four qualities at the core of Buddhist teachings: loving kindness, compassion, joy, and acceptance toward self and others. The scale assesses how little ("not at all") or how much ("extremely") the respondent experiences positive and negative emotions about themselves and about others. The measure yields two positive subscale scores, positive

towards self and positive towards others, and two similar negative subscale scores. Scores on all subscales range from 0 to 16 with higher scores indicating greater positive or negative feelings. Although the measure has not been used, to our knowledge, with adolescents, the reliability for our sample was adequate (Cronbach's alpha = 0.63).

Children's Hope Scale (CHS) (Snyder et al. 1991)

The CHS is a six-item Likert scale self-report measures for use with children ages 8–16. The measure assesses agency (i.e., beliefs about initiating and moving towards goals) and pathways (i.e., belief in one's ability to develop successful goal planning) with scores ranging from 0 to 84. Higher scores indicate hopefulness and confidence. The measure has demonstrated adequate internal consistency as well as convergent, discriminant, and incremental validity (Snyder, et al. 1991). Sample reliability was high (Cronbach's alpha = 0.77).

Difficulties with Emotion Regulation Scale (DERS) (Gratz and Roemer 2004)

The DERS consists of 36 items that assess awareness and understanding of emotional experience, acceptance of emotions, ability to modulate emotional arousal, and effective action in the presence of intense emotions. Six distinct factors have been identified and include non-acceptance of emotions, impulse control difficulties, difficulty engaging in goal-directed behavior, lack of emotional awareness, limited access to effective emotion regulation coping strategies, and lack of emotional clarity. Scores on all subscales were recoded to ensure that higher scores indicated higher dysregulation. The DERS has demonstrated good psychometric properties in college-aged samples and preliminary examinations of its factor structure and reliability among adolescents supports its use in this population (Neumann et al. 2010). The reliability in our sample was high (Cronbach's alpha = 0.78).

Inventory of Callous and Unemotional Traits—Youth Self-Report (ICU-y) (Essau et al. 2006)

The ICU-y is a 24-item measure of three traits—Callousness, Unemotionality, and Uncaring. Scores range from 0 to 72 with higher scores indicating greater callousness and unemotionality. The measure has demonstrated convergent validity with measures of negativity and aggression and is inversely correlated with measures of positive affect (Kimonis et al. 2008; Roose et al. 2010). The measure has demonstrated convergent validity with measures of psychopathy and antisocial personality traits (Roose, et al. 2010) and reliability in our sample was good (Cronbach's alpha = 0.79).

Inventory of Callous and Unemotional Traits–Parent Report (ICU-p). (Essau, et al. 2006)

The ICU-p contains the same 24 items as the ICU-y and requests the parent or legal guardian to rate their child in three specific trait domains—Callousness, Unemotionality, and Uncaring. Scoring for the measure is the same as that for the youth version. The measure has demonstrated convergent validity with the ICU-y (White et al. 2009) and our sample reliability was high (Cronbach's alpha = 0.87).

Childhood Trauma Questionnaire (CTQ) (Fink et al. 1995)

The CTQ is a 28-item measure that assesses abuse in five domains—physical, sexual, and emotional abuse, emotional neglect, and denial/minimization of trauma severity. Scores on the first four subscales range from 0 to 20 and from 0 to 12 on the denial/minimization subscale, with higher scores indicating more abuse. The measure demonstrated high convergent validity with therapist ratings (Bernstein et al. 1997) and our sample's reliability was high (Cronbach's alpha = 0.89).

Practice Diaries

Participants were provided with an mp3 player containing 6 meditation tracks corresponding to each week of training and completed a daily 9-item questionnaire that assessed whether or not they practiced CBCT, how many minutes they practiced, and their mood before and after practice. These were collected at every training session. Participants who forgot their forms or had not completed them were provided with a calendar for the days missed and asked to respond "yes" or "no" if they had practiced on those days and how many times they had practiced each day.

Qualitative Post-Treatment Feedback

Post-treatment, CBCT participants completed a 5-item feedback form assessing, 1) the helpfulness of the program, 2) frequency of thinking about CBCT principles or lessons outside of class, 3) whether they would recommend the program to a friend, 4) if they would like to have this program offered in their schools, and 5) how they felt about the length of the program. All questions were answered using a 3-point Likert scale, with the exception of item 3 which was a yes/no question. A 10-point Likert scale was used to assess student's feeling of connection to their classmates and teacher, with higher scores indicating a stronger connection. Several open-ended questions assessed lessons

learned in class, use of CBCT in daily life, and how the program could be improved.

Procedure

Following consent, participants were randomized to CBCT or a waitlist condition. Block randomization was used in order to equalize numbers in each group. Height and weight were measured and all psychosocial measures were completed during one session 1 week prior to the start of classes. Males and females were assigned to separate classes that met twice a week for 1 h for 6 weeks for a total of 12 classes. After Study Week 6, height and weight were measured again, post-treatment feedback interviews were conducted, and the STAI-T, CHS, SOFI, QIDS-SR, DERS, and ICU-y were re-administered. Legal guardians completed the ICU-p. Due to a research staff error, caregivers of wait-list participants were only given the ICU-p at baseline but not Study Week 6. Participants were compensated for completing assessments and attending class.

Statistical Analyses

Pearson bivariate correlations were used to examine the relationships among variables at baseline. Within-group changes were examined with paired sample t-tests. We examined group differences at Week 6 using analyses of covariance (ANCOVA) controlling for age, ethnicity, gender, and baseline scores.

Results

Descriptives

Independent samples t tests confirmed there were no demographic differences by group nor differences on measures of mood, behavior, and emotion regulation at baseline (See Table 2). On the CBCL, there were no differences in DSM profile scores by group. Means for five of the six DSM-Oriented profiles (see Table 3) were higher than an adolescent normative sample but lower than adolescent psychiatric norms (Achenbach and Rescorla 2001). The exception to this trend was the Attention Deficit Hyperactivity profile score, which was highest among our sample compared to normative and psychiatric samples.

Baseline Bivariate Correlations in Total Sample

Baseline Pearson correlations revealed that BMI was positively associated with emotional ($r = 0.34$, $p < .01$) and sexual abuse ($r = 0.36$, $p < .01$). There were significant

Table 2 Means (SD) at baseline and post-treatment

	Baseline		Post-treatment	
	CBCT	Wait-list	CBCT	Wait-list
CTQ: Emotional abuse	5.92 (6.0)	5.56 (5.12)	–	–
CTQ: Physical abuse	6.83 (6.81)	4.29 (5.23)	–	–
CTQ: Sexual abuse	2.72 (5.20)	3.26 (5.91)	–	–
CTQ: Emotional neglect	6.69 (5.11)	7.50 (5.80)	–	–
CTQ: Physical neglect	4.03 (3.97)	3.74 (3.25)	–	–
CTQ: Minimization/denial	8.42 (3.04)	8.59 (3.28)	–	–
CBCL: Affective disorder	3.69 (3.78)	2.97 (3.37)	–	–
CBCL: Anxiety disorder	3.25 (3.04)	2.19 (2.39)	–	–
CBCL: Somatic disorder	1.16 (2.18)	1.22 (2.47)	–	–
CBCL: ADHD	8.94 (5.36)	7.72 (4.78)	–	–
CBCL: Oppositional defiant disorder	4.34 (2.22)	4.00 (2.17)	–	–
CBCL: Conduct disorder	8.22 (6.32)	7.56 (5.84)	–	–
Children's hope scale	57.58 (11.24)	52.76 (13.34)	60.54 (13.29)	55.24 (12.57)
Trait anxiety inventory	17.17 (7.85)	20.59 (9.43)	16.03 (8.97)	19.44 (8.84)
SOFI: Positive self	16.17 (3.39)	15.85 (4.02)	16.78 (3.67)	16.71 (3.50)
SOFI: Negative self	5.14 (1.90)	5.79 (2.20)	5.53 (2.18)	5.79 (3.14)
SOFI: Positive others	14.53 (3.27)	14.29 (4.04)	15.11 (3.46)	15.65 (3.36)
SOFI: Negative others	7.03 (2.41)	7.88 (3.77)	7.06 (3.11)	6.82 (2.63)
Difficulties with emotion regulation	48.79 (12.49)	44.19 (15.61)	47.90 (22.19)	49.72 (18.66)
QIDS—SR	10.61 (5.37)	10.41 (6.83)	8.14 (7.33)	8.09 (6.52)
ICU—Parent	31.81 (10.50)	30.03 (9.89)	33.05 (13.29)	–[a]
ICU—Youth	23.11 (7.32)	25.06 (9.73)	23.75 (7.81)	24.68 (9.87)

CTQ Childhood Trauma Questionnaire, *CBCL* Child Behavior Checklist, *SOFI* Self Others Four Immeasurables; *QIDS-SR* Quick Inventory of Depressive Symptoms—Self-Report, *ICU* Inventory of Callous/Unemotional Traits

[a] Wait-list participants' caregivers did not complete the ICU at Week 6

Table 3 CBCL DSM-oriented profile means (SD): current sample, matched psychiatric and non-psychiatric samples

DSM-oriented profile	Current sample		Psychiatric sample		Non-psychiatric sample	
	Boys	Girls	Boys	Girls	Boys	Girls
Affective	3.1 (3.4)	3.7 (3.8)	6.0 (4.2)	7.8 (4.9)	2.1 (2.2)	2.3 (2.3)
Anxiety	2.6 (2.6)	2.9 (3.0)	3.2 (2.6)	3.9 (2.8)	1.2 (1.5)	1.4 (1.6)
Somatic	0.7 (2.0)	1.9 (2.6)	1.8 (2.3)	2.7 (2.8)	0.8 (1.4)	0.9 (1.4)
Attention deficit hyperactivity	8.4 (4.9)	8.2 (5.4)	5.5 (2.9)	5.8 (3.8)	3.6 (2.6)	2.4 (2.2)
Oppositional defiant	4.1 (2.2)	4.3 (2.2)	5.5 (2.9)	4.9 (3.0)	2.4 (2.0)	2.2 (2.0)
Conduct	8.0 (5.8)	7.8 (6.5)	9.8 (6.7)	8.2 (6.4)	2.7 (3.3)	2.1 (2.8)

Means (SD) are reported by gender in order to make comparisons with normative samples (Rescorla and Achenbach, 2001)

associations between types of maltreatment and psychopathology. Notably, reports of sexual abuse were associated with greater frequency of self-harm ($r = 0.56$, $p < .001$), anxiety ($r = 0.40$, $p < .01$), and less positive views of self ($r = -0.35$, $p < .01$). Sexual abuse was also correlated with the DERS subscale Lack of Effective Coping Strategies ($r = 0.35$, $p < .01$). There were also significant associations between anxiety (STAI-T) and hopefulness (CHS) and several aspects of emotion regulation. STAI-T scores were positively correlated with two lower-order DERS subscales including Non-acceptance of Emotional Experiences ($r = 0.36$) and Lack of Effective Coping Strategies ($r = 0.53$). In contrast, CHS scores were inversely associated with the DERS Lack of Emotional Awareness subscale ($r = -0.46$). All correlations were significant at the $p < .01$ level.

Within-Group and Between-Group Effects of CBCT on Measures of Psychosocial Outcomes

Within-group pre-post changes were examined using paired sample t-tests. Depressive symptoms as measured by the QIDS were significantly lower after 6 weeks in both CBCT (mean difference = 2.47, SD = 5.00, $p < .01$) and wait-list (mean difference = 2.32, SD = 5.50, $p < .05$). Between-group comparisons were made using ANCOVAs controlling for age, ethnicity, gender, and baseline scores. There were no main effects for time 2 scores on the QIDS, STAI-T, CHS, and the DERS indicating no differences between groups on psychosocial status at post-treatment.

CBCT Practice Diaries

Participant use of practice diaries was highly variable. A significant number of students failed to complete diaries on a daily basis but did report that they had practiced. When a participant came to class without a diary, a research assistant asked the participant how many days they remembered practicing and how many times they had practiced since the last session (but not how many minutes) and recorded this information. For this reason, information on actual minutes of practice and pre- post- mood assessments was missing for many participants; hence we report only on the number of times practiced over the course of the program. Participants practiced, on average, 17.09 (SD = 20.69) times over the course of 6 weeks. Total practice frequency was uncorrelated with changes in any psychosocial variables. Practice frequency increased in the last 3 weeks (mean = 11.59, SD = 16.37) compared to the first 3 weeks (mean = 7.8, SD = 8.33). For this reason, we also examined the correlations between practice during the last 3 weeks and change in psychosocial variables. This post hoc analysis revealed a significant correlation between practice frequency in the last 3 weeks of the training and increased hopefulness ($r = 0.38$, $p < .05$) and a trend association with lower anxiety ($r = -0.35$, $p = .059$).

Qualitative Analyses

Treatment Acceptance

Participants completed the 5-item feedback questionnaire and responded to several open-ended questions about the use of CBCT in their daily lives. Sixty-two percent reported the program was "very helpful", and another 30% reported finding it "a little helpful". When asked how often they thought about CBCT concepts outside of training, 41% reported "a lot" and 46% reported "once in a while". Eighty-seven percent reported that they would recommend the program to a friend. The sample was roughly split with 40% of participants saying they would like an opportunity to have CBCT training at their school, 14% saying they would definitely not want training at school, and 46% were unsure. A majority (60%) reported the number of classes as being "just the right amount", while 27% percent thought the number of classes were too many, and 11% thought there were not enough. Participants reported feeling moderately connected to their classmates (mean = 6.86, SD = 2.49) and somewhat more strongly connected to their instructors (mean = 7.14, SD = 2.07).

Using CBCT Outside the Classroom

CBCT participants were asked to give an example of using CBCT principles in their daily lives (see Table 4). Sixty-nine percent (n = 25) were able to provide an example. Of the 25 respondents, 56% (n = 14) of examples related to improved psychosocial functioning at school and 38% (n = 7) related to conflict at home. Fifty-six percent of the examples (n = 15) described using CBCT to deal with anger when interacting with others (see Table 4). In those situations, the most commonly mentioned alternative behaviors participants described were meditating, diaphragmatic breathing, or removing themselves from the heated situation. Of the remaining 10 examples provided, four described using compassion mediation and diaphragmatic breathing for stress management, three reported the contemplation of empathy during a specific interaction at school, and three reported unspecified CBCT use during school or home conflicts.

Lessons Learned

Participants were asked what specific lesson(s) they would take from CBCT. Responses ranged from perspective taking ("I learned how to listen and think about other people's situations."), non-judgment ("I am not as judgmental as I used to be."), and compassion ([I learned about] "having compassion for [myself] and others."). One male participant stated he had learned that "your enemies can become your friends," and another reported "forgiving people." Another student reported that CBCT had helped him in "managing [my] anger towards people…[not] judging people by where they're from [or] just by their actions…[not to] judge people as bad or good," and that meditation had helped him in "being focused, paying attention". A female participant stated having learned that "having love for others can lower stress".

Discussion

Despite the fact that significant improvement on self-report measures of psychosocial outcomes was not demonstrated following 6 weeks of intervention when compared to a wait-list control condition, CBCT was positively evaluated by the majority of this population of at risk adolescents and most reported they would recommend it to a friend. The most typical situations in which the adolescents reported using the strategies from CBCT were to deal with angry feelings and stress, and to remember to act with compassion. Thus, CBCT appears to be an acceptable intervention for this population with the potential to improve interpersonal functioning and, thereby, perhaps to reduce the long-term biological consequences of chronic stress. As has been reported with varied forms of meditation, results suggest that individuals benefited more the more they practiced outside of training sessions. Frequency of practice showed some association with self-reported hopefulness, and lowered anxiety. Previously reported analyses of health-relevant physiological and behavioral responses

Table 4 Reports of using CBCT strategies in daily life (n = 25)

Situation (Percentage) [n]	Reported strategy (n)	Sample Responses
Anger management (56%) [15]	Compassion meditation (2)	My brother got me mad at home. He spilled oxide powder on my shoes and my mom's shoes and blamed it on me. I went and did meditation and it calmed me down.
	Ignore/walk away (2)	At school, someone threw m & m's at me and I ignored him. Normally I would have thrown things back and been negative.
	Perspective taking (3)	When at school and girls trying to start an altercation, tried to think about what they're really going through. Should I do what I really want to do or think about [the girls] more first.
	Deep breathing (1)	Someone was messing with me at the group home. I tried to not get mad, just sat and breathed.
	Not specified (7)	Meditation helped not get into a fight at school
Stress management (16%) [4]	Perspective taking (1)	At school when changing classes and kids are running into you—[CBCT] taught me not to worry about small stuff
	Not Specified (3)	Helped me calm down in situations at home
Concentration (8%) [2]	Deep breathing (2)	The breathing is excellent. I use when test taking.
Compassion/empathy (12%) [3]	Perspective taking (3)	Empathy—everybody [was] being mean to new girl at school [so] I talked to her and showed her empathy
Unspecified school/home conflict (12%) [3]	None specified	Different situation at school, CBCT has helped.

Percentages do not sum to 100% as participants could endorse multiple categories

showed that participants who practiced more frequently demonstrated greater decreases in levels of circulating inflammatory markers and behavioral distress following CBCT training (Pace et al. 2009). The discrepancy between participant feedback and psychosocial quantitative outcomes suggests that our measures did not adequately capture the behavioral and psychological changes that occurred within our treatment group or that longer periods of intervention may be needed. Participants' verbal reports indicated that most were able to grasp the important CBCT concepts and were able to apply them in their daily lives; but effects may have been stronger if the program had been longer and better tailored to this population with a greater focus on basic mindfulness during the initial phases.

A major limitation of the present study was the shortcomings of our self-report measures in capturing change in psychosocial functioning. Validated and reliable measures of mindfulness and meditation practice are few in number and the majority have been developed for adult practitioners (Brown and Ryan 2003; Lau et al. 2006). Currently, the SOFI, developed for an adult population, is the only published measure assessing emotions that are specifically targeted by compassion meditation. While the SOFI's reliability in this sample was adequate, other developmentally-appropriate measures may be needed to capture the changes that participants reported. Recently, modifications were made to the Mindful Attention Awareness Scale to make it developmentally appropriate for adolescents ages 14–18 (Brown et al. 2011) and other researchers have been testing a new measure, the Child and Adolescent Mindfulness Measure (Greco et al. 2011). While mindfulness measures may have face validity, it is not clear what constructs they may be assessing. Validity is also questionable since participants' responses can be affected by social desirability, level of emotional awareness, and self-perception.

To address the shortcomings of self-report measures, one group of researchers has developed an innovative approach using electronically-activated recorders (Mehl et al. 2001) that inconspicuously monitor speech and behavior for very brief pre-programmed intervals. Although brief (typically only 30s), the frequency of recording intervals conveys enough information to objectively rate speech content and level and types of social interactions while not revealing sensitive personal information. As described by Mehl, the device acts as "an unobtrusive bystander" in the day-to-day lives of participants. These devices have been used to monitor non-verbal depressive behaviors (e.g., sighing) and the level and frequency of social interactions among adults (Mehl and Pennebaker 2003; Robbins et al. 2011). The device has even been used effectively with young children (Slatcher and Trentacosta 2011). Such an approach might be a useful and/or more valid measure of the outcomes of CBCT. Such a measure might be able to capture the frequency of compassionate or empathic behavior or changes in response to conflict and stress. Furthermore, this assessment methodology might well be acceptable to adolescents, in part, due to their comfort with novel technology.

Beyond the challenges of assessing compassion among adolescents, it is possible that we saw little change in self-reports because 6 weeks was too brief a time period to elicit significant or sustained changes in mood that the adolescents would notice. When CBCT has been taught to adults, training typically lasts 8 weeks; however the current training was shortened by 2 weeks due to logistical constraints. Anecdotally, many students initially were skeptical of meditation; hence there is the likelihood of a lag time between the introduction of CBCT to the participants and their adoption of regular practice. We noted that practice frequency did increase over the course of the program. One could argue that given the complexity of certain CBCT concepts, training for adolescents needs to be at least 8 weeks, possibly longer, although the ideal time period remains to be determined. The correlations found between the frequency of practice during the last 3 weeks and anxiety and hopefulness scores, while not definitive, do support the argument for a longer training period.

Besides methodological limitations, logistical issues related to working with children in foster care may have created some limitations in our findings as well. Working with children in care poses distinct logistical challenges to the implementation of long-term intervention programs (Ozawa-de Silva and Dodson-Lavelle 2011). Our pilot program recruited youth from five different counties, living in both group homes and single family foster homes. Students were transported to classes by their foster parents or via transportation arranged by the Department of Family and Child Services. The benefits of providing care to 70 youth at once were balanced by the significant resources needed to provide transportation, food, and supervision during classes. Administering training in group homes may be one way to possibly circumvent these three specific challenges. Training in a group home offers additional benefits of being able to train care providers and encourage meditation practice by everyone in the home environment. Previous meditation programs with children (Saltzman and Goldin 2008), have demonstrated that the inclusion of a parent or legal guardian increases the likelihood that children will have greater opportunities to explore meditative practice beyond the classroom. Given the benefits of intervening within the whole social environment, providing CBCT within a group home setting may be one adaptation that enhances at-home practice and resolves certain logistical issues (e.g., transportation). Resources to provide interventions for children living in single family foster

homes where there are often few resources for transportation may continue to prove a significant challenge.

A particularly unique challenge that emerged from our pilot program was the presence of sibling pairs living separately within the foster care system. Our sample included one female sibling pair enrolled in the same class, a male–female sibling pair that attended separate classes at the same time, and one male sibling pair with one teen attending the first class and his sibling attending the class immediately after (hence seeing each other in the hallway between classes). Given the fact that some siblings may have had little contact with one another and that the focus of CBCT is to increase empathy, compassion, and loving-kindness, it is tempting to place siblings in the same class in hopes that the increased contact will foster more positive interactions. These decisions need to be based on the effects that this placement will have on the overall class dynamic. In the one instance in which siblings enrolled in the same class, they became disruptive and hostile towards one another, resulting in increased class tension. After separation, both girls responded positively to the program. They reported an improved relationship with one another and both continued attending CBCT classes. Thus, at least initially, there may be negative consequences on class dynamics when estranged siblings are placed in the same class. The likelihood of such occurrences may be high given that, by some estimates, approximately 70% of children in care have at least one sibling in the system (Shlonsky et al. 2005).

Despite these limitations, the current program provided the opportunity to better understand the effects of psychopathology on the group dynamic and teaching approach. Given the high rates of psychopathology in children with maltreatment histories, externalizing and other problematic behaviors during class needed to be attended to with care and sensitivity. During class, a therapist or counselor was either on site or, quite often, would attend training classes in order to provide therapeutic support as needed. Discussions of empathy and trust often elicited stories from students about experiences of broken trust (i.e., abuse and neglect). More often than not, students were supportive of one another. Nevertheless, CBCT requires a fine balance between allowing students to share this information, as it pertains to certain concepts, while preventing detailed discussions, which in some cases, may trigger negative thoughts and feelings among other participants. Because of the presence of a counselor or therapist, instructors were able to continue their lessons, while individual attention could be given to students in distress. Of note, therapist intervention was most often required during outbursts of anger.

Certain psychological problems also made it difficult to convey specific principles of CBCT; hence explanations of equanimity, for example, must be given with an appreciation for this population's history of maltreatment. Equanimity refers to learning to care equally about strangers, as well as one's friends and is a fundamental CBCT concept. For individuals with symptoms of post-traumatic stress, equanimity, described as unbiased affection and impartial appreciation for others, could be potentially misconstrued as becoming less attached or more distant from others. Child victims of abuse and neglect often exhibit difficulties with interpersonal boundaries and have greater difficulty establishing social connections. Blunted or restricted affect is a common post-traumatic stress reaction (Riggs 2010). A clear distinction needs to be made between a general lack of affection or inability to connect with others and what is meant by equanimity. To minimize this confusion, the CBCT program emphasizes increasing mindfulness of one's emotions and cognitions (e.g., how does anger feel in your body? what are you thinking when you feel so angry?) prior to introducing the concept of equanimity towards others. The principles of non-judgment towards self and the importance of self-respect and self-care are discussed early on in training.

Given the positive feedback from adolescents, we believe that CBCT is a promising intervention program for adolescents with multiple comorbidities and social difficulties. The results of the pilot program suggest that the CBCT intervention could be strengthened through some minor modifications that take into account adolescents' cognitive and social development. We describe these modifications below and also provide a rationale for the incorporation of physically active meditation practices into the CBCT adolescent program. The recommendations described below are not specific to CBCT alone; hence they may be applicable to almost any mindfulness program targeting children and adolescent populations, especially those with psychological comorbidities.

With regard to cognitive development, several studies have demonstrated that various types of mindfulness practices, with modifications, can be taught to children as young as 6 years old (Napoli et al. 2005; Semple et al. 2005). In a recent school-based Mindfulness-Based Stress Reduction program for 8–12 year olds, Saltzman and Goldin (2008) recommend that meditation practice, initially, should last as many minutes as a child's age (i.e., a 7-year old may meditate for 7 min). By this theory, meditation practice among adolescents could last, on average, 15–16 min at a time once students grow comfortable with the meditation posture and instructor's guidance. In our pilot program, meditation exercises initially lasted 5–6 min and gradually lengthened to as long as 20 min and were guided by the instructor. This finding is encouraging in that, with proper guidance, even youth with sociobehavioral difficulties have the potential to maintain a sense of calmness and focus for an extended period of time.

CBCT emphasizes observing and challenging of one's thoughts and feelings towards others. The protocol originally developed for adults assumes fully developed cognitive abilities including contemplation of abstract concepts and metaphorical situations, a focus on others' well-being, and the capacity to empathize with others. Given that abstract reasoning develops gradually in adolescence, the importance of concrete, tangible examples is crucial for conveying certain CBCT concepts (Ozawa-de Silva and Dodson-Lavelle 2011). The need for concrete metaphors was particularly important given the high rates of attention deficit symptoms in our sample. For example, an oft-recurring discussion was the ability to feel emotions, often simultaneously, towards another person. Because emotions can change depending on the context, person, and perception, CBCT encourages equanimity towards all. One active engagement exercise that portrays this concept in an easily understandable form involves the instructor placing a piece of tape about 7 or 8 feet in length with "full empathy" and "no empathy at all" on opposite ends. Teens are then read a hypothetical situation about a friend (or stranger) and asked to move along the continuum of empathy as the situation changes or they learn more about the person. In this manner, teens can visually grasp the concept of multiple shifting emotions towards others. A common narrative example used in CBCT describes all the resources required to make a sweater. This helps students grasp the concept of interconnectedness. Children are asked to contemplate the animals, farmers, factory workers, distributors, and retail employees that make it possible to wear a sweater that keeps one warm and protected from the cold. These exercises provide concrete explanations of CBCT principles in everyday life (Ozawa-de Silva and Dodson-Lavelle 2011).

Besides cognitive development, mindfulness programs need to take into account adolescents' social development. Conventional morality (Kohlberg 1976), common among adults and adolescents, is characterized by social conformity and adherence to social norms. Consistent with this theory, the adolescence phase is typically characterized by the heightened importance of peer opinion, acceptance and influence. Within the classroom setting, these influences may translate into externalizing behaviors that garner respect from peers that may be distracting or problematic for the instructor. For this reason, getting adolescents to "buy in" to mindfulness theory and practice may rely on identifying students that are particularly influential among their peers. During the pilot program, CBCT instructors and observers identified 1–2 students in each class that had garnered the respect of other classmates and actively participated in class. These students were asked to lead meditation sessions or would often discuss how they had used CBCT in school or at home and were key in maintaining a cohesive and supportive group dynamic.

Finally, teaching CBCT to adolescents may be enhanced by incorporating a physically active meditation practice. As a result of attending school for an average of 8 h and being seated for the majority of this time, students may be loathe to engage in a mindfulness class if it consists solely of seated meditation and discussion. Brief stretching or walking can provide much-needed physical relief and boost concentration and attention. Second, learning a moving meditation practice provides students with another stress management tool. Third, given the lack of physical activity among most adolescents, adding a physically active meditation practice, albeit minimal, to sitting mindfulness emphasizes the complementary nature of physical and mental health.

Mindful physical activities promote greater awareness and respect for the body's abilities. Anecdotally, many students in our sample reported low levels of physical activity. While yoga or tai chi do not necessarily effect weight loss, the introduction of stretching, balance, and posture may increase the likelihood of physical activity among these youth; hence from a broader perspective, including physical activity serves not only to maintain attention while in class but to encourage physical activity in general.

Since the conclusion of the program we have offered continued training to interested students (approximately 30 of the original 70 participants). After a discussion amongst the study team, a moderate amount of physical activity (yoga) was introduced in each class. Participants responded positively to this addition, reporting that the activity helped maintain interest during training. In one class, participants spontaneously volunteered to lead their group in yoga. Consistent with national statistics on youth obesity (Ogden et al. 2006), 20% of our sample was overweight (BMI between 24.9 and 29.9%) and 11.4% were obese (BMI $>$ 29.9%). The inclusion of a physical component serves to encourage healthier habits in children at risk for weight-related co-morbidities like cardiovascular disease and diabetes.

The positive feedback from participants and our preliminary results suggest that CBCT is a promising program for youth with histories of maltreatment who are currently experiencing psychological problems and social instability. CBCT's emphasis on striving for interpersonal harmony is particularly salient for this population, whose social difficulties often follow them well into adulthood. Ideally, longitudinal studies would be able to demonstrate the effects of the intervention as adolescents transition into adulthood, a time period when these problems typically worsen. Future studies should address the current methodological issues by experimenting with more novel and inconspicuous methods of measuring practice frequency and behavior changes.

References

Achenbach, T. M., Dumenci, L., & Rescorla, L. A. (2003). DSM-oriented and empirically based approaches to constructing scales from the same item pools. *Journal of Clinical Child and Adolescent Psychology, 32*(3), 328–340.

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms & profiles*. Burlington: University of Vermong, Research Center for Children, Youth, and Families.

American Academy of Pediatrics. Committee on Early Childhood, Adoption, and Dependent Care. (2002). Health Care of Young Children in Foster Care. *Pediatrics, 109*, 536–541.

Bernstein, D. P., Ahluvalia, T., Pogge, D., & Handelsman, L. (1997). Validity of the Childhood Trauma Questionnaire in an adolescent psychiatric population. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*(3), 340–348.

Black, D. S., Milam, J., & Sussman, S. (2009). Sitting-meditation interventions among youth: A review of treatment efficacy. *Pediatrics, 124*(3), e532–e541.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822–848.

Brown, K. W., West, A. M., Loverich, T. M., and Biegel, G. M. (2011). Assessing adolescent mindfulness: Validation of an adapted mindful attention awareness scale in adolescent normative and psychiatric populations. *Psychological Assessment*.

Chiesa, A., & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: A review and meta-analysis. *The Journal of Alternative and Complementary Medicine, 15*(5), 593–600.

Essau, C. A., Sasagawa, S., & Frick, P. J. (2006). Callous-unemotional traits in a community sample of adolescents. *Assessment, 13*(4), 454–469.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine, 14*(4), 245–258.

Fink, L. A., Bernstein, D., Handelsman, L., & Foote, J. (1995). Initial reliability and validity of the childhood trauma interview: A new multidimensional measure of childhood interpersonal trauma. *The American Journal of Psychiatry, 152*(9), 1329–1335.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41–54.

Greco, L. A., Baer, R. A., and Smith, G. T. (2011). Assessing mindfulness in children and adolescents: Development and validation of the child and adolescent mindfulness measure (camm). *Psychological Assessment*.

Guertin, T., Lloyd-Richardson, E., Spirito, A., Donaldson, D., & Boergers, J. (2001). Self-mutilative behavior in adolescents who attempt suicide by overdose. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(9), 1062–1069.

Hishinuma, E. S., Miyamoto, R. H., Nishimura, S. T., Goebert, D. A., Yuen, N. Y. C., Makini, G. K., et al. (2001). Prediction of anxiety disorders using the state-trait anxiety inventory for multiethnic adolescents. *Journal of Anxiety Disorders, 15*(6), 511–533. doi:10.1016/S0887-6185(01)00079-2.

Kimonis, E. R., Frick, P. J., Skeem, J. L., Marsee, M. A., Cruise, K., Munoz, L. C., et al. (2008). Assessing callous-unemotional traits in adolescent offenders: Validation of the inventory of callous-unemotional traits. *International Journal of Law and Psychiatry, 31*(3), 241–252.

Kohlberg, L. (1976). Moral stages and moralization: The cognitive-developmental approach. In T. Lickona (Ed.), *Moral development and behavior: Theory, research, and social issues*. Holt: Rinehart and Winston.

Kraus, S., & Sears, S. (2009). Measuring the immeasurables: Development and initial validation of the Self-other four immeasurables (SOFI) scale based on buddhist teachings on loving kindness, compassion, joy, and equanimity. *Social Indicators Research, 92*(1), 169–181.

Kuo, H.-K., Yen, C.-J., Chang, C.-H., Kuo, C.-K., Chen, J.-H., & Sorond, F. (2005). Relation of C-reactive protein to stroke, cognitive disorders, and depression in the general population: systematic review and meta-analysis. *Lancet Neurology, 4*(6), 371–380.

Lau, M. A., Bishop, S. R., Segal, Z. V., Buis, T., Anderson, N. D., Carlson, L., et al. (2006). The toronto mindfulness scale: development and validation. *Journal of Clinical Psychology, 62*(12), 1445–1467.

Lloyd, E. E., Kelley, M. L., and Hope, T. (1997). *Self-mutilation in a community sample of adolescents: Descriptive characteristics and provisional prevalence rates.* Paper presented at the Society for Behavioral Medicine.

Lloyd-Richardson, E. E., Perrine, N., Dierker, L., & Kelley, M. L. (2007). Characteristic and functions on non-suicidal self-injury in a community sample of adolescents. *Psychological Medicine: A Journal of Research in Psychiatry and the Allied Sciences, 37*(8), 1183–1192.

Mehl, M. R., & Pennebaker, J. W. (2003). The sounds of social life: A psychometric analysis of students' daily social environments and natural conversations. *Journal of Personality and Social Psychology, 84*(4), 857–870.

Mehl, M. R., Pennebaker, J. W., Crow, D. M., Dabbs, J., & Price, J. H. (2001). The Electronically Activated Recorded (EAR): A device for sampling naturalistic daily activities and conversations. *Behavior Research Methods. Instruments & Computers, 33*(4), 517–523.

Napoli, M., Krech, P. R., & Holley, L. C. (2005). Mindfulness training for elementary school students: The attention academy. *Journal of Applied School Psychology, 21*(1), 99–125.

Neumann, A., van Lier, P. A. C., Gratz, K. L., & Koot, H. M. (2010). Multidimensional assessment of emotion regulation difficulties in adolescents using the difficulties in emotion regulation scale. *Assessment, 17*(1), 138–149.

Ogden, C. L., Carroll, M. D., Curtin, L. R., McDowell, M. A., Tabak, C. J., & Flegal, K. M. (2006). Prevalence of overweight and obesity in the United States, 1999–2004. *JAMA: Journal of the American Medical Association, 295*(13), 1549–1555.

Ozawa-de Silva, B., Dodson-Lavelle, B., Raison, C. L., and Negi, L. T. Compassion and ethics: Scientific and practical approaches to the cultivation fo compassion as a foundation for ethical subjectivity and well-being. *The Journal of Healthcare, Sciences, and the Humanities* (in press).

Ozawa-de Silva, B., & Dodson-Lavelle, B. (2011). An education of heart and mind: Practical and theoretical issues in teaching cognitive-based compassion training to children. *Practical Matters, 1*(4), 1–28.

Pace, T. W. W., Negi, L. T., Adame, D. D., Cole, S. P., Sivilli, T. I., Brown, T. D., et al. (2009). Effect of compassion meditation on neuroendocrine, innate immune and behavioral responses to psychosocial stress. *Psychoneuroendocrinology, 34*(1), 87–98.

Pace, T. W. W., Negi, L. T., Sivilli, T. I., Issa, M. J., Cole, S. P., Adame, D. D., et al. (2010). Innate immune, neuroendocrine and behavioral responses to psychosocial stress do not predict subsequent compassion meditation practice time. *Psychoneuroendocrinology, 35*(2), 310–315.

Pradhan, A. D., Manson, J. E., Rifai, N., Buring, J. E., & Ridker, P. M. (2001). C-reactive protein, interleukin 6, and risk of developing type 2 diabetes mellitus. *JAMA: The Journal Of The American Medical Association, 286*(3), 327–334.

Ridker, P. M. (2007). Inflammatory biomarkers and risks of myocardial infarction, stroke, diabetes, and total mortality: implications for longevity. *Nutrition Reviews, 65*(12 Pt 2), S253–S259.

Riggs, S. A. (2010). Childhood emotional abuse and the attachment system across the life cycle: What theory and research tell us. *Journal of Aggression Maltreatment & Trauma, 19*(1), 5–51.

Robbins, M. L., Mehl, M. R., Holleran, S. E., & Kasle, S. (2011). Naturalistically observed sighing and depression in rheumatoid arthritis patients: A preliminary study. *Health Psychology, 30*(1), 129–133.

Roose, A., Bijttebier, P., Decoene, S., Claes, L., & Frick, P. J. (2010). Assessing the affective features of psychopathy in adolescence: A further validation of the inventory of callous and unemotional traits. *Assessment, 17*(1), 44–57.

Rush, A. J., Bernstein, I. H., Trivedi, M. H., Carmody, T. J., Wisniewski, S., Mundt, J. C., et al. (2006). An evaluation of the quick inventory of depressive symptomatology and the hamilton rating scale for depression: a sequenced treatment alternatives to relieve depression trial report. *Biological Psychiatry, 59*(6), 493–501.

Rush, A. J., Trivedi, M. H., Ibrahim, H. M., Carmody, T. J., Arnow, B., Klein, D. N., et al. (2003). The 16-Item quick inventory of depressive symptomatology (QIDS), clinician rating (QIDS-C), self-report (QIDS-SR): a psychometric evaluation in patients with chronic major depression. [erratum appears in Biol Psychiatry. (2003) Sep 1;54(5):585]. *Biological Psychiatry, 54*(5), 573–583.

Saltzman, A., & Goldin, P. (2008). Mindfulness-based stress reduction for school-age children. In L. A. Greco & S. C. Hayes (Eds.), *Acceptance and mindfulness treatments for children and adolescents: A practitioner's guide* (pp. 139–161). Oakland, CA USA: New Harbinger Publications.

Salzberg, S. (2002). *Lovingkindness: The revolutionary art of happiness*. Boston: Shambhala Publications.

Semple, R. J., Reid, E. F. G., & Miller, L. (2005). Treating anxiety with mindfulness: An open trial of mindfulness training for anxious children. *Journal of Cognitive Psychotherapy, 19*(4), 379–392.

Shlonsky, A., Bellamy, J., Elkins, J., & Ashare, C. J. (2005). The other kin: Setting the course for research, policy, and practice with siblings in foster care. *Children and Youth Services Review, 27*(7), 697–716.

Slatcher, R. B., & Trentacosta, C. J. (2011). A naturalistic observation study of the links between parental depressive symptoms and preschoolers' behaviors in everyday life. *Journal of Family Psychology, 25*(3), 444–448.

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., et al. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology, 60*(4), 570–585.

Spielberger, C. D., Gorsuch, R. L., Lushene, P. R., Vagg, P. R., & Jacobs, G. (1983). *Manual for the State-Trait Anxiety Inventory: STAI (Form Y)*. Palo Alto, CA: Consulting Psychologists Press Inc.

Vera-Villarroel, P., Buela-Casal, G., & Spielberger, C. D. (2007). Preliminary analysis and normative data of the state-trait anxiety inventory (STAI) in adolescent and adults of Santiago. *Chile. Terapia Psicologica, 25*(2), 155–162.

White, S. F., Cruise, K. R., & Frick, P. J. (2009). Differential correlates to self-report and parent-report of callous-unemotional traits in a sample of juvenile sexual offenders. *Behavioral Sciences & the Law, 27*(6), 910–928.

Zeidan, F., Johnson, S. K., Gordon, N. S., & Goolkasian, P. (2010). Effects of brief and sham mindfulness meditation on mood and cardiovascular variables. *The Journal of Alternative and Complementary Medicine, 16*(8), 867–873.