

Emotion Regulation Treatment of Disruptive Behavior: A Preliminary Investigation

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## ABSTRACT

Children with oppositional defiant disorder (ODD) can have heterogeneous presentations due to varying combinations of the eight criterion A symptoms. Researchers have identified a subtype of ODD for children with primarily angry/irritable mood symptoms and who are at risk for developing mood and anxiety disorders. Despite the prevalence of anger and mood issues in children with ODD, established treatments for disruptive behavior disorders typically focus primarily on teaching caregivers more effective parenting strategies to address oppositional and defiant behaviors, rather than directly targeting children's difficulties with emotions. To address the dearth of emotion-focused treatments for ODD, a novel emotion regulation intervention was developed based on a framework offered by Southam-Gerow (2013). The purpose of the current study was to evaluate the initial feasibility of this intervention and to explore its efficacy for reducing ODD and associated emotion regulation problems in middle childhood. Following a non-concurrent multiple baseline design, children ages 8-12 were assessed with semi-structured diagnostic interviews to determine study eligibility, and subsequently enrolled in a 13-week intervention with their caregivers. Treatment feasibility was supported by participant satisfaction ratings as well as treatment fidelity results. Treatment protocol adherence in terms of delivery by the therapist was high, but caregiver symptom reporting was less consistent. Nevertheless, multiple metrics support the efficacy of the intervention in reducing symptoms of ODD as well as some efficacy in improving child emotion regulation abilities. Overall, results support further research into emotion regulation-focused intervention for ODD.

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## PUBLIC ABSTRACT

Children with oppositional defiant disorder (ODD) can appear quite different due to varying combinations of the eight primary ODD symptoms. Researchers have identified a subtype of ODD for children with predominately angry/irritable mood symptoms and who are at risk for developing mood and anxiety disorders. Despite the prevalence of anger and mood issues in children with ODD, established treatments for disruptive behavior disorders typically focus primarily on teaching caregivers more effective parenting strategies to address oppositional and defiant behaviors, rather than directly targeting children's difficulties with emotions. To address the dearth of emotion-focused treatments for ODD, a novel emotion regulation intervention was developed based on a framework offered by Southam-Gerow (2013). The purpose of the current study was to evaluate the initial feasibility of this intervention and to explore its efficacy for reducing ODD and associated emotion regulation problems in middle childhood. Children ages 8-12 were assessed to determine study eligibility, and subsequently enrolled in a baseline phase of 2, 3, or 4 weeks followed by a 13-week intervention with their caregivers. Treatment feasibility and acceptability was supported by the results. Treatment protocol adherence in terms of delivery by the therapist was high, but caregiver symptom reporting was less consistent. Nevertheless, multiple metrics support the efficacy of the intervention in reducing symptoms of ODD as well as some evidence for improvement in child emotion regulation abilities. Overall, results support further research into emotion regulation-focused intervention for ODD.

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## **Chapter 1: Introduction**

### **Mood and Disruptive Behavior Issues**

Irritability is a common symptom among disruptive behavior disorders as well as other common mental disorders seen in youth such as mood disorders, and reflects proneness to anger, temper outbursts, and sullen mood (Leibenluft, 2017). While externalizing behavior problems are more often noticed by caregivers and teachers and more often lead to clinical referrals than internalizing problems (e.g., Percy, Clopton, & Pope, 1993), disruptive behavior problems often co-occur with mood disturbances in youth (Angold, Costello, & Erkanli, 1999), and depressed children tend to present with more behavioral problems than adults (Carlson & Kashani, 1988; Kolvin et al., 1991). Children struggling with mood difficulties may demonstrate increased irritability and frustration through tantrums and other oppositional behaviors (Birmaher et al., 1996). There is also evidence that genetic and environmental influences contribute to overlap between mood and irritability symptoms (Savage et al., 2015).

The frequent overlap between irritability, disruptive behavior, and mood problems has received increased attention in the diagnostic nomenclature. Indeed, the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) offers a new mood disorder diagnosis, Disruptive Mood Dysregulation Disorder (DMDD), which consists of severe temper outbursts in combination with chronic irritability, offering one explicit bridge between the depressive and disruptive behaviors. Irritability and angry mood are also among the key diagnostic criteria for Oppositional Defiant Disorder (ODD), in addition to argumentative and defiant behaviors, as well as vindictiveness. Notably, DMDD shows substantial overlap with ODD (e.g., Axelson et al., 2012), and rather than adding a separate disorder category as in the DSM-5, the forthcoming edition of the

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International Classification of Diseases and Related Health Problems (ICD-11; World Health Organization, 2017) includes an ODD specifier denoting chronic irritability. ODD is itself notably heterogeneous, with a diagnosis resulting from any sufficient combination of symptoms.

Some researchers have parsed this heterogeneity by identifying distinct subtypes of ODD consisting of particular symptom clusters (e.g., Drabick & Gadow, 2012). This work has identified an ODD subtype in which all three anger/irritability symptoms are met: often loses temper, often touchy or easily annoyed by others, and often angry and resentful (APA, 2013). These anger/irritability symptoms tend to be associated with the development of mood and anxiety disorders later in life, in contrast with argumentative/defiant and vindictiveness symptoms, which are more likely to predict the development of Conduct Disorder and Antisocial Personality Disorder than internalizing problems (Burke & Loeber, 2010). This research indicates that for many children, difficulty regulating mood symptoms may underlie the disruptive behavior that results in a diagnosis of ODD, and, if unaddressed, these children may still struggle with mood symptoms even if the disruptive behavior has been treated.

### **ODD Intervention**

Typically, treatment for ODD is generally focused on teaching parents to manage children's disruptive behaviors more effectively (e.g., Parent Management Training; Bernal, Durgee, Pruett, & Burns, 1968; Feldman & Kazdin, 1995; Hanf, 1969; Patterson & Brodsky, 1966; Wahler, Winkel, Peterson, & Morrison, 1965). While such behavioral treatment has been identified as well-established and empirically-supported by the American Psychological Association (APA, 1993), research indicates that approximately 40-50% of children do not substantially improve when treated with behavioral interventions (Murrihy, Kidman, & Ollendick, 2010; Ollendick et al., 2016). One potential explanation for this lack of improvement

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may be the emotional difficulties exhibited by children within the anger/irritability subtype of ODD, as behavioral interventions typically do not target emotion-related symptoms. Treatments that are instead focused on improving emotion regulation (ER) abilities may be needed in order to address that missing piece. ER can be defined as processes for identifying, influencing, and selectively expressing emotions (Gross, 1998), often in order to successfully pursue one's goals. ER can involve making a wide range of adaptive changes in an activated emotion, including modifications of emotion valence, intensity, or time course (Thompson, 1994).

Currently there are no established treatments for ODD which focus on improving ER abilities as the main method of treatment. The current study addresses this dearth in the literature by developing an ER intervention designed for children with disruptive behaviors and prominent irritability symptoms. For children who struggle with both of these problems, broad deficits in ER skills may be the source of their difficulties, rather than only a lack of ability to manage anger (e.g., Eisenberg et al., 2001). Evidence from studies of child temperament supports the idea that better regulatory abilities may be a protective factor for children with high levels of negative affect (Rothbart & Bates, 1996). Thus, it may be beneficial for an intervention aimed at improving anger/irritability symptoms of ODD to teach a broad range of ER tools, rather than focusing only on regulating anger.

The current study attempts to test this premise using a novel ER training intervention to treat disruptive behavior problems in middle childhood. This age range is a time of rapid expansion in children's ER strategies, and typically includes a shift from exclusively behaviorally-oriented strategies to using more cognitive approaches to ER (Terwogt & Stegge, 1995). These factors, as well as the increasing importance of ER in developing and maintaining

peer relationships in middle and late childhood (Parker & Gottman, 1989), highlight the potential benefit of ER-focused interventions during this developmental period.

### **Treatment Development**

The current study is designed to address this lack of ER-focused interventions for youth with ODD and predominant anger/irritability symptoms by piloting a novel treatment designed to improve ER as a means of addressing comorbid emotional and disruptive behavior issues. The intervention was developed based on material from the book *Emotion Regulation in Children and Adolescents: A Practitioner's Guide* (ERCA; Southam-Gerow, 2013). A number of alternative candidate interventions were considered as the basis for an ER-focused intervention due to their relative emphasis on ER in children. In particular, Contextual Emotion Regulation Therapy (CERT; Kovacs et al., 2006) and Emotion Detectives Treatment Protocol (EDTP; Ehrenreich-May & Bilek, 2009), shared some of these qualities with ERCA. However, due to these interventions' requirements for a high number of sessions, targeting of a different age group, or emphasis on other issues such as anxiety, these alternative interventions would potentially require substantial adaptations to address emotion regulation deficits in youth with ODD and predominant anger/irritable mood symptoms in the context of brief, individual therapy. Notably, other interventions previously developed to address child behavior problems may improve child ER skills (e.g., Collaborative & Proactive Solutions, Ollendick et al., 2016; Tuning into Kids, Havighurst et al., 2013). However, these interventions do not focus on the therapist working directly with the child to build ER skills. ERCA was selected in part to specifically target ER skill-building with the child client in session. The components of ERCA's treatment modules are based on the research literature and derived from empirically-supported interventions for youth (see Southam-Gerow, 2013 for an extensive list of references). Although

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designed around evidence-based cognitive-behavioral principles, ERCA has not yet been empirically validated as a stand-alone intervention. Therefore, the proposed study offers an important preliminary evaluation of a novel application of ERCA.

Southam-Gerow's (2013) ERCA manual offers an introductory section with comprehensive background information on ER and how it can be incorporated into case conceptualization and treatment. Following this section is an in-depth description of the eight modules designed by Southam-Gerow (2013) to address ER difficulties. Modular treatments have been found to have steeper improvement trajectories and better outcomes than standard evidence-based interventions (Weisz et al., 2012), particularly complex and comorbid cases. The modules described in ERCA are presented by Southam-Gerow (2013) in a standard developmental sequence, but they were designed to be ordered and implemented flexibly as needed according to the case conceptualization. To maintain consistency across child participants, in the current study, each of the modules was implemented in the order presented in the manual.

Activities and explanations in the ERCA (Southam-Gerow, 2013) modules are designed to be adaptable to children from elementary school-age to teenagers, and typically contain several games to choose from in order to practice skills introduced in each module. This organization makes it convenient to tailor to the target age group and adjust the number of activities for time available. Additionally, ERCA's largely experiential, game-based approach to teaching and practicing ER concepts may increase appeal to children over traditional didactic session designs, facilitating engagement for younger children and promoting learning and retention of the concepts.

Since the treatment modules were intended to promote ER abilities in general rather than to treat certain disorders, explanations and examples feature a range of difficult-to-regulate emotions that extend beyond the diagnostic criteria for ODD. This broad emotional content was maintained in the pilot intervention, giving the treatment a focus on broadly improving ER, rather being limited to one or two specific emotions. However, examples involving anger were highlighted, since it was expected to be particularly problematic for child participants in the current study. Accordingly, some material focusing on fear and worry was reduced or modified.

The material in the modules is typically written for a therapist and one child, often with suggestions for incorporating additional participants, an arrangement that was ideal for the current study. This pilot intervention was carried out in an individual format, but with each child's caregiver(s) participating in each session. Caregivers were also urged to help children practice the skills they learn outside of the session, and encouraged to reinforce such skill practice. This approach was intended to aid generalization by facilitating the use of new skills in the home environment. No training was provided to caregivers on behavioral management strategies, such as the use of reinforcement contingencies to improve child compliance, in order to minimize overlap between the current intervention approach and key ingredients of previously established parent management training-based interventions (e.g., Murrihy et al., 2010; Ollendick et al., 2016).

### **Current Study**

The primary aim of the current study was to evaluate whether the pilot intervention is both feasible and acceptable for treating children with the anger/irritability subtype of ODD. The second aim was to reduce symptoms of ODD, including mood and behavioral symptoms, diagnosis, and clinical impairment. The final aim was to explore whether the intervention

improves children's ER abilities. A non-concurrent multiple baseline single-case design (Watson & Workman, 1981) was used to pursue these aims.

## **Chapter 2: Method**

### **Participants**

Participants for this study were 7 children (3 male, 4 female) between the ages of 8 and 12 from the mid-Atlantic region of the United States who met anger/irritability subtype criteria for ODD. Specifically, participants were required to meet all three ODD symptoms within the "Angry/Irritable Mood" category, in addition to at least one more symptom to meet the minimum of four DSM-5 (APA, 2013) criterion A symptoms (argumentative and defiant behavior, vindictiveness) for ODD. Children were excluded from the study if: a) they had changed medication for mood or behavior issues within 3 months prior to beginning the study, b) they were experiencing acute psychotic symptoms, c) they met diagnostic criteria for bipolar disorder or an autism spectrum disorder, d) their estimated IQ was less than 80 on a standard scale, or e) there was evidence of current suicidal or homicidal ideation.

Children and their caregivers were recruited by contacting local mental health professionals and community services, as well as by distributing flyers (see Appendix A) in community locations where parents are likely to frequent. Caregivers of potential participants underwent a phone interview as the first stage of the screening process. The interview (Appendix B) inquired about ODD symptoms as well as exclusion criteria. Upon meeting eligibility criteria based on the initial screening, caregivers were informed more about the nature of the study and scheduled for an assessment session at the clinic to conduct consent procedures and verify assent from the child, to confirm the presence of anger/irritability subtype ODD, and to determine suitability for the treatment protocol. Sixteen caregivers completed the phone screen, 9 of those



caregivers attended an in-lab eligibility session with their child, and 7 children were subsequently enrolled in the study.

The final sample ( $n = 7$ ) was fairly evenly split between genders (4 females, 3 males) with ages ranging from 8 to 11 years ( $M = 9.2$  years). All participating families identified as Non-Hispanic White. In accordance with eligibility requirements, all 7 child participants met criteria for ODD, including all 3 angry/irritable mood symptoms and at least one additional symptom. Each child was also screened for DMDD and Major Depressive Disorder (MDD). At eligibility, no participants met criteria for MDD, and 1 (14.2%) met criteria for DMDD. One participant reported previous diagnoses (Tourette syndrome and attention-deficit/hyperactivity disorder), and no participants reported using psychiatric medications during the study.

### Measures

#### Caregiver-report.

*Strengths and Difficulties Questionnaire* (SDQ; Goodman & Goodman, 2009). The SDQ is a 25-item measure of child behaviors that consists of 5 scales: Emotional problems, Conduct problems, Hyperactivity, Peer problems, and Prosocial. The Conduct problems and Hyperactivity scales combine to form an externalizing score, while Emotional and Peer problems combine to create an internalizing score. The Total difficulties score is calculated by summing all scales except for Prosocial. The SDQ's scales have been found to be reliable in prior studies on similar samples (Emotional problems  $\alpha = .67$ , Conduct problems  $\alpha = .63$ , Hyperactivity  $\alpha = .77$ , Peer problems  $\alpha = .57$ , Prosocial  $\alpha = .65$ , and Total difficulties  $\alpha = .82$ ) and valid for parent samples (Goodman, 2001), with test-retest reliability  $\geq .73$  over a two week time period except for the Conduct problems scale (.52; Mellor, 2004). The parent-report SDQ has been found to predict child levels of psychopathology, with the likelihood of disorder increasing at a constant rate across the range of low to high scores (Goodman & Goodman, 2009). The SDQ was

administered at each major time point (eligibility, pre-treatment, midpoint, post-treatment, and one-month follow-up).

***Emotion Regulation Checklist*** (ERC; Shields & Cicchetti, 1997). The ERC is a 24-item measure that is comprised of two subscales: Emotion Regulation, which assesses usage of adaptive ER strategies, and Lability-Negativity, which measures negative emotionality and maladaptive ER. The subscales of the ERC have been found to be reliable ( $\alpha > .80$ ) in child samples (e.g., Shields & Cicchetti, 1997), with test-retest reliability of .87 (Fujiki, Brinton, & Clarke, 2002). The ERC was administered at each major time point (eligibility, pre-treatment, midpoint, post-treatment, and one-month follow-up).

***Client Satisfaction Questionnaire*** (CSQ; Attkisson & Greenfield, 1994). The CSQ is an 8-item measure of treatment satisfaction that has been validated for use with child clients and their caregivers, with parent reports found to be significantly but only moderately related to child reports (Copeland, Koeske, & Greeno, 2004). The CSQ has been found to be reliable ( $\alpha = .96$ ) in mothers of children ages 8-17 (Copeland, Koeske, & Greeno, 2004). The CSQ was administered to caregivers at midpoint and post-treatment time points to assess their satisfaction with the treatment program. Ratings of the neutral value (20) or above for the total CSQ score were considered to indicate adequate satisfaction.

***Session-by-Session Parent Report*** (SxS-P; adapted from Hall et al., 2014). The SxS is a qualitative outcome measure designed to be administered every session to monitor the child's functioning in different domains on a weekly basis, including a measure of change since the previous session. The original SxS was created by Hall and colleagues based on the impact supplement items for the SDQ, and includes four items: one asking about change in difficulties since the previous session, the second assessing distress, the third evaluating impairment in four

domains, and the fourth asking about predicted improvement in one month's time. The SxS was slightly altered for the current study to specify changes in irritable and angry mood rather than in general difficulties (i.e., from "Since coming last time, are your child's difficulties: Much worse, A bit worse, About the same, A bit better, Much better" to "Since coming last time, are your child's difficulties with irritable and angry mood: Much worse, A bit worse, About the same, A bit better, Much better"), and to omit the item about expectations regarding future functioning. The SxS was administered to caregivers before each session following eligibility, and via phone each week during the baseline stage.

***Temper outburst measure.*** A behavioral measure of tantrum behaviors was created for the current study. This measure (see Appendix C) consists of four questions evaluating the frequency, intensity, and duration of outbursts for the day, as well as how much of the day the caregiver was aware of their child's behavior. This measure was administered to one caregiver for each participant each night by reminder email containing a link to the measure in the OwlOutcomes system ([owloutcomes.com](http://owloutcomes.com)). The OwlOutcomes system was developed at the University of Washington for clinicians to use as an online tool to monitor progress and outcomes in clients, and has been approved as a secure website for use in research by Virginia Tech's Institutional Review Board (IRB).

**Child-report.**

***Difficulties in Emotion Regulation Scale*** (DERS; Gratz & Roemer, 2004). The DERS is a 36-item self-report questionnaire that evaluates difficulties with ER on a 5-point Likert scale ranging from "Almost never" to "Almost always." It consists of six subscales (nonacceptance of emotional responses, difficulties engaging in goal-directed behaviors, impulse control difficulties, lack of emotional awareness, limited access to ER strategies, and lack of emotional

clarity), which are combined for a total score. Higher scores on the DERS indicate more regulatory difficulties. The DERS has been found to be valid and reliable ( $\alpha = .93$  overall and  $\alpha \geq .72$  for all subscales) in child samples (Vasilev et al., 2009), with test-retest reliability over a 4-8 week period ranging from .69-.89 for the subscales in an adult sample (Gratz & Roemer, 2004). The DERS was administered at each major time point (eligibility, pre-treatment, midpoint, post-treatment, and one-month follow-up).

***Therapeutic Alliance Scale for Children – Revised*** (TASC-R; Creed & Kendall, 2005).

The TASC-R is a 12-item measure of children's perception of therapeutic alliance on a 4-point Likert scale. Higher scores on the TASC-R indicate a better therapeutic relationship. The TASC-R has been found to have good internal consistency in child samples ( $\alpha$  range .88 to .92; Creed & Kendall, 2005). The TASC-R was administered at corresponding time points to the CSQ: at midpoint and post-treatment. Ratings of the neutral value (30) or above for the total TASC-R score were considered to indicate adequate satisfaction with the therapeutic relationship.

***Session-by-Session Child Report*** (SxS-C; adapted from Hall et al., 2014). The child-report version of the SxS contains the same items as the caregiver-report described previously, with wording changed to ask the child about their own behavior (i.e., "Since coming last time, are your difficulties with anger and irritable mood: Much worse, A bit worse, About the same, A bit better, Much better"). The SxS was administered to child participants before each session following eligibility, but was not administered during the baseline stage.

**Clinician-report.**

***Schedule for Affective Disorders and Schizophrenia for School-age Children – Present and Lifetime Version*** (KSADS-PL; Kaufman et al., 2016). The KSADS-PL is a semi-structured diagnostic interview for ages 6-18. The version of the KSADS used for the study was updated

for DSM-5 criteria. The KSADS-PL has been validated for use with children, and has high interrater agreement and test-retest reliability for the most frequent disorders of childhood and adolescence (Kaufman et al., 1997). KSADS-PL modules for ODD, MDD, and DMDD were administered by the study clinician at eligibility, post-treatment, and one-month follow-up to determine whether participants met criteria for these three disorders.

*Clinical Global Impressions Scale - Severity and -Improvement* (CGI-S & CGI-I; Guy, 1976). The CGI-Severity (CGI-S) is a one-item global rating of functioning with scores ranging from 1 (“normal - no illness”) to 7 (“among the most extremely ill”). Similarly, the CGI-Improvement (CGI-I) is a one-item rating of clinical improvement in functioning from 1 (“very much improved”) to 7 (“very much worse”). In the current study, the CGI-S and CGI-I ratings were determined by three master’s level graduate students who were not otherwise involved in the study and therefore served as independent evaluators of global functioning. For each child participant, the same rater that completed the CGI-S at the initial eligibility appointment was the evaluator for the CGI-I at endpoint. In order to be considered reliable as a rater in this study, master's-level clinicians reviewed three vignettes and were required to have assigned CGI ratings within 1 point of the score assigned by the study therapist. All independent evaluators met this requirement for the first three vignettes reviewed.

**Treatment fidelity.** Session fidelity was coded by a trained research assistant that independently observed previously recorded sessions and coded adherence to the session objectives for three randomly selected child participants for each session in the treatment sequence, for a total of approximately 50% of each participant's sessions coded. In order to be considered reliable, this coder had to match at least 80% of the investigator’s codes for three consecutive session tapes. The independent coder exceeded this requirement for the first three

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session tapes coded. Treatment fidelity was then calculated following Pavuluri and colleagues (2004) as a percentage from the research assistant's codes [(number of objectives met/ total number of objectives) x 100]. Session duration was also recorded to determine whether sessions lasted the target time range of 60-90 minutes.

### **Procedure**

The current study was conducted using a non-concurrent multiple baseline single-case pre-post design (Watson & Workman, 1981). The single-subject design entails a series of A-B replications with baseline periods randomized. This approach is useful in exploratory phases of intervention development to provide information about a treatment (Johnston & Smith, 2010), and supported as a means of assessing the evidence base for interventions (Task Force on Promotion and Dissemination, 1995). While group designs like randomized controlled trials compare experimental groups to controls, a single-subject design involves each participant serving as their own control, with data collected and compared across baseline, treatment, and post-treatment phases (Bloom, Fischer, & Orme, 2006).

Approval from the university's IRB (see Appendix D) was obtained for the study prior to its initiation. Following recruitment and eligibility (as described above), child participants were randomly assigned to a 2-4 week baseline period prior to treatment. After baseline, participants and at least one caregiver attended 13 weekly therapy sessions. Outlines of the therapy sessions based on Southam-Gerow (2013) can be found in Appendix E. The study investigator served as therapist and assessor for all participants, with the exception of CGI measures conducted by independent evaluators. Caregiver- and child-report data was collected at the beginning of each session, in addition to the eligibility, post-treatment, and one-month follow-up assessment sessions. Participating families were reimbursed for attending assessment-only sessions, with

incremental payments for each subsequent assessment. Data was also collected weekly from caregivers via phone during the baseline phase. Caregivers were also asked to submit a brief online daily behavioral record of tantrum behavior. See Table 1 for the complete measure battery by time point.

### **Data Analysis**

**Feasibility.** Feasibility was determined by assessing treatment fidelity, adherence, and satisfaction. *Treatment fidelity* was evaluated via independent coding of the proportion of session objectives met in videotaped treatment sessions and session duration (Appendix F). Session duration was reported as an average as well as percentage falling within the specified 60-90 minute time range. *Treatment adherence* was assessed via session attendance, in percentage format, and by the percentage of days caregivers reported data on their child's temper outbursts. Previous CBT intervention studies on youth samples have defined treatment completion as attending a majority of sessions (e.g., 80% of sessions for anorexia treatment, Krautter & Lock, 2004; 75% of sessions for substance use, Hendriks, van der Schee, & Blanken, 2011). Based on such examples, a minimum of 10 out of 13 sessions (77%) attended was established for participants to be considered treatment completers. In order to administer the full treatment protocol to each participant in a timely manner, families were strongly encouraged to reschedule any missed sessions within the same week to maintain the projected treatment schedule as closely as possible. Endpoint data were actively sought for treatment non-completers, as well as the reason for dropping out of the study. *Treatment satisfaction* was determined by caregiver and child ratings of satisfaction and therapeutic alliance, respectively. Qualitative feedback was also elicited from participants and caregivers on positive and negative aspects of the treatment, as well as suggestions for improving the intervention.

**Efficacy and change across time.** Measure data was analyzed using multiple approaches for evaluating single-case designs to determine the efficacy of the study.

**Temper outbursts.** Caregiver report of child participant's tantrum behavior was analyzed as the primary repeated behavioral measure using non-overlap of all pairs (NAP; Parker and Vannest, 2009) and Simulated Modeling Analysis (SMA; Borckardt et al., 2008). NAP is a method that summarizes the amount of overlap between each baseline phase data point and each treatment phase data point, and tends to outperform similar indices (e.g., percent of nonoverlapping data, percent of all overlapping data, and percentage exceeding median; Scruggs & Mastropieri, 2013). A nonoverlapping pair of data points is comprised of one baseline point and one treatment point and reflects improved symptoms in the treatment phase compared to baseline, in this case with fewer temper outbursts reported in the treatment data point. Since no caregivers reported tantrum behaviors every single day, each data point was calculated from the number of reported temper outbursts averaged across the number of days between sessions. NAP is the number of comparison pairs with no overlap out of the total number of paired comparisons, reported here as a percentage. The formula for NAP is expressed as:

$$NAP = \frac{(N_A \times N_B) - (O + .5[T])}{(N_A \times N_B)}$$

where  $N_A$  = the number of data points in the baseline phase ("A"),  $N_B$  = the number of data points in the treatment phase ("B"),  $O$  = the number of overlapping pairs of data points from "A" and "B" phases, and  $T$  = the number of comparisons in which both data points have the same value. NAP can also be conceptualized as the probability that a randomly selected treatment data point will be improved compared to a randomly chosen baseline data point (Parker & Vannest, 2009). Following the guidelines recommended by Parker and Vannest (2009), NAP values below



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.65 are interpreted as “weak effects,” .66-.92 as “medium effects,” and .92-1.0 as “strong effects.” NAP values were calculated using Microsoft Excel (2010) software.

SMA involves evaluating time-series data using a software package developed by Borckardt and colleagues (version 9.9.28, [www.clinicalresearcher.org](http://www.clinicalresearcher.org)) for testing statistical significance in single-subject designs. SMA enables researchers to assess patterns in symptom change from the baseline phase to endpoint. Unlike more traditional methods to analyze slope and level change, however, SMA utilizes bootstrapping techniques to reduce the autocorrelation effects inherent in using repeated measures across time points. Autocorrelation effects occur across time points because subsequent measures are dependent on the values of previous measure administrations, resulting in a higher rate of Type I errors. Thus, by accounting for autocorrelation, SMA techniques reduce the likelihood of false positive findings.

SMA conducts statistical significant tests comparing the participant’s data to five different slope vectors representing potential patterns in the data: 1) increasing baseline and decreasing treatment [1 | 2 | 3 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -4 | -5]; 2) flat baseline and increasing treatment [0 | 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9]; 3) an increasing baseline and flat treatment [1 | 2 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4]; 4) increasing from baseline throughout treatment [1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12]; and 5) increasing during baseline, return to pre-treatment level at the initiation of treatment, and then increasing throughout treatment [1 | 2 | 3 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9]. SMA also tests for level change as indicated by a statistically significant change between baseline and treatment phases [0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1]. These comparison slope vectors are presented in Figure 1. To assess whether a participant’s data best fits a specific slope vector, SMA calculates the autocorrelation for the data stream, then generates simulated data streams using bootstrapping techniques with the same amount of

autocorrelation but without a difference between conditions, in effect representing the null hypothesis for the data stream. The computed p-value then presents the likelihood that the outcome would occur by chance based on the Pearson correlation between the participant data and the dummy coded level change vector (above; 0 = baseline, 1 = treatment). According to Borckardt and colleagues (2008), a minimum of 5 data points is recommended for each phase when using SMA. Since the present study featured baseline administrations of outcome measures ranging from 2-4 points, SMA results in this study should be interpreted with caution.

***Mood ratings.*** Unlike temper outbursts, mood ratings were assessed weekly using a relative measure, specifically: “Since coming last time, are your/your child’s difficulties with anger and irritable mood: Much worse, A bit worse, About the same, A bit better, or Much better?” In analyzing this mood measure, the neutral rating (“About the same”) was coded as 0, while negative scores were assigned to the “worse” ratings and positive scores to the “better” ratings, resulting in a range from -2 for “Much worse” to 2 for “Much better.” Each participant started with a score of 0 for both the child- and caregiver-report measures at the eligibility session. Caregiver measures were conducted via phone during the baseline phase, while child self-report of mood began in person during the first treatment session. Caregiver and child measures for mood were graphed and analyzed separately as a sum: the rating for each week was added to the total from the previous week, such that a “worse” response caused the overall mood rating to decline, a neutral response resulted in no change for the week, and a “better” response caused the overall mood rating to increase. This method allowed changes in mood symptoms over the course of the study to be tracked using this measure.

***Emotion regulation and behavior ratings.*** Changes in measures of ER and caregiver-reported functioning were calculated using Reliable Change Indices (RCI; Jacobson & Truax,

1991). RCIs provide a measure of change occurring due to the intervention, taking into account the reliability of the measures. RCI can be computed by dividing the difference between initial and endpoint scores by the standard difference ( $(X_{\text{endpt}} - X_{\text{bl}}) / S_{\text{diff}}$ ). The standard difference score accounts for test-retest reliability of the measure. A cutoff of 1.96 in standard error of the difference between the two test scores is used to be able to infer statistically significant change from the RCI. To assess overall RCI for each measure, average scores across participants were computed for each time point, and these averaged scores were then used to calculate the RCI for total DERS, ERC, and SDQ scores as well as the subscales for each measure. RCIs for each measure for each individual participant were then calculated for the end of treatment as well as for follow-up when available. For participants who did not complete all treatment sessions, scores at midpoint were used to calculate the RCI. The reliability and standard deviation (SD) figures used to compute the  $S_{\text{diff}}$  scores were obtained from the literature by finding values for samples as close to the age range of this study as possible (Fujiki, Brinton, & Clarke, 2002; Gratz & Roemer, 2004; Mellor, 2004).

In addition to statistically significant change via RCI, meaningful change via comparison to clinical elevations when available (i.e., DERS and SDQ), and change in SD otherwise (ERC) was also computed. Per Jacobson and Truax (1991), clinically significant change can be evaluated in several ways, one of which is change from scores within the range of the “dysfunctional” population to within the “normal” population range. Their method is consistent with comparisons to clinical elevations, and meaningful change can be said to have occurred for participants whose scores have crossed the clinical cutoff values following treatment. When no clinical cutoffs were available, post-treatment improvement was thus considered a change of 2

SD from the pre-treatment group mean, while change  $\geq 1$  SD was considered possibly meaningful.

**Clinical change.** Finally, diagnostic change and changes in global impairment were evaluated by comparing KSADS diagnosis and CGI rating from the eligibility session to post-treatment. KSADS diagnoses were made by the study therapist and are therefore more vulnerable to experimenter bias as well as social desirability from the participants, despite the semi-structured nature of the KSADS administration. The CGI ratings, however, were conducted by independent evaluators who were unfamiliar with the course of treatment and not invested in the outcome of the study. Independent evaluators established CGI ratings via observation of the study therapist's assessment sessions as well as unstructured interviews with the family without the therapist present. CGI-I ratings of 1-3 were considered as improved following treatment.

## Chapter 3: Results

### Feasibility

**Treatment fidelity.** Fidelity to the treatment protocol was high overall. A total of 111 out of 115 coded objectives were met across all participants and sessions (96.5%). Average session duration was 71.65 minutes ( $SD = 10.76$ ), with a range of 52-97 minutes, mode of 75 minutes, and median of 72 minutes.<sup>1</sup> Four sessions lasted longer than the estimated maximum of 90 minutes (up to 97 minutes), and twelve sessions lasted between 52 and 60 minutes. Notably, several of the twelve shorter sessions occurred on occasions when caregivers requested a condensed session due to scheduling issues, resulting in some of the sessions lasting less than

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<sup>1</sup> Session duration calculations omit one 39 minute session which was ended early due to the caregiver's request (family emergency) and completed in the next appointment.

one hour when the clinician was able to accommodate. Overall session duration data as well as information for each participant can be found in Table 2.

**Treatment adherence.** Five participants attended all 13 sessions, while one participant (B) withdrew after 6 sessions (46.2%), reporting sufficient improvement and no need to continue. The study clinician was unable to regain contact with another participant (C) who did not return after 9 sessions (69.2%). Using a previously established cutoff of 10 out of 13 sessions (76.9%) for treatment completion, only the five participants who attended all sessions qualified as treatment completers, with an overall attendance adherence of 87.9% across participants. Caregivers reported data on their child's temper outbursts an average of 61.41% of days during treatment ( $SD = 20.84$ ), totaled across participants. This aspect of adherence varied notably amongst caregivers, with a range of 34.5-89.66% of days caregivers reported on their child's temper outbursts. All caregivers received the same daily reminder email to complete the measure from the study clinician.

**Client satisfaction.** Caregivers reported an average satisfaction rating of 24.14 on the CSQ at midpoint, which falls above the "neutral" cutoff of 20, and is therefore considered to be acceptable. At the end of treatment, the average satisfaction rating on the CSQ was 23, also falling within the acceptable range. One caregiver (A) rated their satisfaction below the neutral cutoff at midpoint, and they reported even less satisfaction at the end of treatment. A second caregiver (D) rated their treatment satisfaction just below the neutral cutoff at the end of treatment. Caregiver ratings of treatment satisfaction are depicted in Figure 2a.

At midpoint, participants reported an average therapeutic alliance rating of 35.43 on the TASC-R, falling above the "neutral" cutoff of 30 and in the acceptable range. Following treatment, the therapeutic alliance rating averaged across participants increased to 38, still within

the acceptable range. Only one child (B) reported a therapeutic alliance rating below the neutral cutoff, and this participant withdrew prior to giving an endpoint rating at the end of treatment.

Participant ratings of therapeutic alliance are shown in Figure 2b.

### **Efficacy and Change across Time**

#### **Temper outbursts.**

**NAP.** Calculated NAP values ranged from 36-100%, with an average value of 80.47% ( $SD = 22.74$ ). Using Parker and Vannest's (2009) criteria, one participant (E) showed weak effects of treatment on temper outbursts, three showed medium effects (C, D, and F), and three demonstrated large effects (A, B, and G). Table 3 contains the NAP percentage for each participant, and Figure 3 depicts the graphs used to calculate NAP values. Each graph shows the average number of outbursts reported per day between sessions, as weekly sessions were often not conducted exactly 7 days apart. Figure 4 shows the same data for all participants in one graph, with the exception of data points from non-session weeks (i.e., data collected between sessions during weeks when participants did not attend due to holidays or vacations), which are omitted from Figure 4 for ease of visual comparison.

**SMA.** SMA software was utilized to assess changes in tantrum behavior over the course of the baseline and treatment phases of the intervention. Table 4 depicts level and slope change results using SMA software, which compares the data for each participant to a) a vector with a flat baseline and a treatment phase that is also flat but with a significant change in level [0|0|0|0|1|1|1|1|1|1|1], and b) a vector with increasing values during baseline and decreasing values during treatment [1|2|3|3|2|1|0|-1|-2|-3|-4|-5|-6|-7|-8|-9|-10]. SMA results demonstrate that participant B was the only one to show a significant level change in comparison to the SMA level vector ( $r = -0.793$ ,  $p = .04$ ), displaying a decrease in level during the treatment phase. When

compared to the slope change vector, only participant F demonstrated significant change ( $r = 0.874, p = .02$ ), indicating that the participant's behavioral data greatly resembled the "increase then decrease" pattern of the comparison slope vector.

Although few participants demonstrated behavioral data in a trajectory consistent with the level or slope change vectors, several participants showed a data trajectory indicating improvement when compared to the other slope vectors in SMA software. Table 5 presents the highest correlation slopes for each participant. According to the direction of the correlations, all of the closest slope vectors have a clinical interpretation consistent with improvement rather than worsening. Of the significantly correlated results, participant A most closely matched vector 4 with a negative correlation, indicating improvement during baseline and throughout treatment. The data for participants B, F, and G fit vectors 4 and 2 similarly well, each with a negative correlation. The clinical interpretation for a negative correlation with vector 2 is no change during the baseline phase and improvement during the treatment phase. Again, these results should be interpreted with caution, in light of Borckardt and colleagues' (2008) recommendation of 5-15 data points for each phase.

### **Mood ratings.**

**Relative mood.** Figure 5 depicts the weekly participant mood ratings reported by both caregivers and children. All caregivers and participants reported an overall improvement in mood relative to the zero point at the eligibility session. Notably, with the exception of participant B, who reported the same relative mood rating at endpoint as their caregiver, all participants self-reported more improvement in mood than their caregivers. This discrepancy ranged from 2 to 18 points, with an average of 7.7 overall. These findings indicate that compared to their caregivers, participants perceived more decline in anger and irritability over the course of

the study. As depicted in Figure 5, child participants rarely reported a worsening in mood compared to the previous week, whereas their caregivers were more likely to report that their child demonstrated more anger and irritability issues compared to the previous week.

**ER and Behavioral ratings.**

**RCI.** RCIs were calculated for the DERS, ERC, and SDQ scales (See Table 6, 7, and 8). On the DERS, three participants (A, C, and D) demonstrated a statistically significant decrease in self-reported emotion dysregulation via the DERS total score at the end of treatment. Participants A and D (but not C) maintained the improvement in total score at the one-month follow-up, and another participant (F) also demonstrated a significant decrease in total score at follow-up. In addition, several participants exhibited significant improvement on at least one subscale of the DERS. Reliable change in goal-directed behavior emerged for three participants (C at the end of treatment, A and F at follow-up). A significant decrease in difficulties with impulse control was observed for two participants (D at endpoint, A at follow-up). One participant reported significant increase in emotional awareness at the end of treatment (A), while three participants indicated improved access to emotion regulation strategies (A at endpoint and follow-up, C and D at the end of treatment only). Decreased difficulties with emotional clarity were demonstrated for four participants (A at endpoint and follow-up, C at endpoint, D and F at follow-up). No participants exhibited improvement in acceptance of emotions. Average DERS scores across participants were also computed for each time point, which were then used to calculate the RCI for total and subscale scores. No reliable change emerged among scores averaged across participants for the DERS. DERS subscale scores across study time points for each participant are portrayed in Figure 6.



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On the ERC, which has no total score, RCI was computed for the Emotional Lability/Negativity scale and the Emotion Regulation scale. On emotion regulation, one participant demonstrated improvement at the end of treatment (B), and another improved at the one-month follow-up (F). Five participants exhibited statistically significant decreases in emotional lability and negativity (B and C at the end of treatment; D, E, and F at follow-up). Upon averaging scores across participants, reliable improvement emerged at follow-up only for both scales. ERC scale scores for each participant across study time points are depicted in Figure 7.

On the SDQ, two participants improved in total difficulties score at the end of treatment (B and E), and three participants showed statistically significant decrease in total difficulties at follow-up (D, E, and G). On the emotional problems subscale, one participant demonstrated improvement at follow-up (D), while a second participant showed improvement at the endpoint and maintained it at follow-up (G). Two participants exhibited significant improvement in conduct problems at the end of treatment (B and E). On the hyperactivity scale, two participants showed significant improvement at follow-up (E and G), while one participant scored significantly worse at endpoint, though it was not maintained at follow-up (A). One participant exhibited a significant increase in prosocial behaviors at follow-up (D). No participants demonstrated a significant change in peer problems. When scores were averaged across participants, reliable improvement emerged only on the prosocial scale at follow-up. SDQ subscales scores for each participant across study time points are shown in Figure 8.

***Meaningful change.*** Total scores on the DERS (Figure 9), ERC (Figure 7), and SDQ (Figure 10) were calculated at each time point and compared to clinical elevations when available. On the DERS, four (57.1%) of the participants had elevated total scores at eligibility,

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scoring at least 1.5 SD above the non-clinical sample mean. Two of these participants (E, F) remained elevated at endpoint, while the rest were not elevated following treatment. At the one-month follow-up, no participants were elevated on the DERS total score.

As indicated in Table 7, mean scores on the ERC Emotional Lability/Negativity subscale decreased across the course of treatment from 35.86 ( $SD = 5.61$ ) at eligibility to 33.40 ( $SD = 4.83$ ) at endpoint and 28.20 ( $SD = 4.32$ ) at follow-up. Conversely, mean scores on the Emotional Regulation subscale increased during treatment from 24.71 ( $SD = 2.14$ ) at eligibility to 26.40 ( $SD = 2.50$ ) at endpoint and 27.60 ( $SD = 2.30$ ) at follow-up. No clinical cutoffs have been developed for the ERC, but in such instances, change in SD can be useful in assessing meaningful change (Jacobson & Truax, 1991). At endpoint, 2 participants (B and C) improved by at least 1 SD in lability/negativity, and participant C improved by more than 2 SD. At follow-up, 3 participants (D, E, and F) improved by more than 1 SD, and no participants improved by 2 SD. On the ER subscale, participant B improved by more than 1 SD at the end of treatment, and participant F improved by greater than 1 SD at follow-up.

Using the four-band categorization on the SDQ (Goodman & Goodman, 2009), three participants initially fell in the normal range for total difficulties (A, B, C), two were slightly elevated (E, G), and two were elevated (D, F). At endpoint, the three participants who initially scored in the normal range remained in that range, and the two slightly elevated at eligibility fell into the normal range. One of the participants (D) who was elevated at eligibility worsened, falling in the highly elevated range by endpoint, while the other (F) improved to only slightly elevated. At one-month follow-up, one initially elevated participant (F) was still in the slightly elevated range, but all other participants scored in the normal range for total difficulties.

### **Clinical change.**

**Diagnosis.** At eligibility, all 7 participants met diagnostic criteria for the anger/irritability subtype of ODD. One participant (14.3%) also met criteria for DMDD at eligibility. Participants were also assessed for MDD, and no participants met criteria at the beginning of the study. At endpoint, one participant (14.3%) was unavailable for re-evaluation, one (14.3%) still met DSM-5 criteria for ODD, and five (71.4%) no longer met diagnostic criteria for ODD (see Table 9).

**Impairment rating.** On the CGI-S, all participants were rated either “mildly ill” (28.6%) or “moderately ill” (71.4%) during the eligibility session. At endpoint, all six re-evaluated participants were rated as improved, with 1 “minimally improved” (14.3%), 4 “much improved” (57.1%), and 1 “very much improved” (14.3%; see Table 9).

## **Chapter 4: Discussion**

### **Summary**

The current study had 3 primary aims. As a pilot study, the first aim was to evaluate whether the novel ER-based treatment is acceptable and feasible to participants and their caregivers (Leon, Davis, & Kraemer, 2011). The second aim was to determine whether the intervention was effective in reducing symptoms of ODD, at both a symptom and diagnostic level. The third aim was to assess whether ER abilities improved over the course of treatment.

Regarding the first aim, overall, results support the hypothesis that the intervention is generally feasible and acceptable, with high fidelity to the protocol and adequate average levels of satisfaction and therapeutic alliance from caregivers and participants, respectively, at both midpoint and endpoint. Results indicate, however, several issues with treatment adherence. There was notable attrition in the study, with two out of seven qualifying as treatment non-completers. The participant who was willing and able to provide feedback upon withdrawing

cited significant improvement (which was consistent with their CGI-I rating and final diagnosis), but this participant nonetheless missed much ER training material by not attending half the planned sessions. The second family could not be reached to provide feedback on their reasons for withdrawing from the study or their clinical status, but their data trends are discussed below.

The second adherence issue occurred in the daily online measure for caregivers. All participants reported that completing an online measure each day would be feasible; however, adherence to this “caregiver homework assignment” was significantly lower than expected, and inconsistent among caregivers, despite email reminders each evening with a link to the questionnaire and request to reply if technical difficulties were experienced. Although this method still allowed for averaging of behavioral data between sessions for each participant, it may have resulted in missing important information, potentially in a nonrandom pattern. For example, a caregiver who has had to deal with many behavioral outbursts during a day may feel tired at the end of the day and fail to complete the brief measure. Conversely, caregivers may be *more* likely to report on a bad day, potentially skipping the measure when there is nothing to report. The clinician was unable to assess for these potential patterns in reporting for behavioral data.

Considering treatment fidelity, adherence, and satisfaction data, the feasibility and acceptability of this intervention is largely supported, with some concerns regarding treatment adherence which should be addressed in follow-up research. The participant that withdrew early essentially due to completion of treatment goals at midpoint could be considered a point in favor of treatment feasibility and acceptability rather than against it. Uncertainty regarding the reasons for the other participant’s withdrawal makes it difficult to draw conclusions about overall feasibility and acceptability, but their satisfaction and therapeutic alliance data at midpoint

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suggests that as of session 7, both caregiver and child found the treatment acceptable. As for behavioral measure adherence, expectations for daily measure completion may be too high for busy families. Furthermore, requesting caregiver reports each day and subsequently averaging over the week may be a valid and appropriate method of data collection. Alternately, daily contact via phone call or text message may be methods that would allow for more complete data collection. Findings from previous studies, however, suggests these methods have their own issues (e.g., Hoppe et al., 2000), including a higher burden for study personnel.

For the second aim of the study, results indicate that, overall, the intervention showed efficacy in reducing symptoms of ODD. Behavioral data collected from caregivers throughout the baseline and treatment phases suggests that temper outbursts declined by the end of treatment for all participants. Analysis of the number of outbursts using non-overlap of all pairs (NAP) demonstrated a medium effect size overall, with 42.9% of participants showing strong effects of treatment. Simulated Modeling Analysis (SMA) results show that all participants most closely match vectors indicating improvement, with 57.1% of participants showing significant correlations with improvement vectors.

Ratings of angry or irritable mood on the SxS also demonstrated relative improvement in reported mood at the end of treatment, with noticeably large improvement in mood reported by child participants. There are many potential explanations for this discrepancy in reporting, with a likely possibility found within De Los Reyes and Kazdin's Attribution Bias Context (ABC) Model (2005). According to the ABC Model, parents are more likely to recall information related to negative aspects of their child's behavior, while the child may be accessing more positive memories of their mood and behavior over the previous week. This difference in recall is partly due to differences in attribution: parents are likely to attribute negative behaviors to

their child's disposition, while the children tend to blame environmental factors for negative responses, and conversely are likely to give themselves more credit for positive developments.

RCI analysis of caregiver-reported child difficulties on the SDQ indicated that 57.1% of participants showed a statistically reliable decrease in total difficulties at endpoint and/or one-month follow-up. When assessing for meaningful change on the SDQ, 57.1% were either elevated or slightly elevated at eligibility, while 42.9% initially fell within the normal range on total difficulties. At the end of treatment, 71.4% were within the normal range, and at follow-up 85.7% were in the normal range and 14.3% remained slightly elevated. These findings demonstrate that for the majority of participants, caregivers perceived their child's difficulties to be within typical levels by the end of the study.

Diagnostically, 71.4% of participants no longer met criteria for ODD at the end of treatment, which was maintained at follow-up. One participant still met ODD criteria post-treatment, and another was unreachable for endpoint assessment. According to CGI ratings, at eligibility all participants were either mildly or moderately impaired. Re-evaluation at the end of treatment demonstrated that all rated participants improved at least minimally over the course of the study, with the majority rated "much improved." Overall, data collected using multiple methods provides strong evidence for the intervention's efficacy in reducing ODD symptoms, and, in most cases, reducing symptoms and impairment sufficiently to no longer meet diagnostic criteria.

The third aim, which focused on exploring the effects of the proposed treatment on ER abilities, was evaluated using child- (DERS) and caregiver-report (ERC) measures. Child-reported difficulties in ER declined for all participants by the follow-up assessment, with 57.1% endorsing statistically significant improvement in total score at the end of treatment and/or

follow-up. The only DERS scale on which no participants reported reliable improvement was the acceptance of emotions subscale. Considering the experimental intervention's focus on thought challenging rather than mindfulness and acceptance strategies, this is consistent with the design of the protocol and does not detract from the support for its efficacy. Although not featured in ERCA, future research on ER interventions for disruptive behavior could incorporate acceptance-based strategies to address this aspect.

Results from caregiver reports of ER also provide support for positive effects on ER abilities due to treatment. Caregiver-reported emotional lability and negativity declined for all participants by the follow-up assessment, with 71.4% showing statistically significant improvement at the end of treatment and/or follow-up. Caregiver-reported ER demonstrated less notable change, with only 28.6% endorsing statistically significant improvement in ER skills. When averaged across participants, however, both the ER and negativity/lability scales showed reliable improvement at follow-up. In assessing meaningful change per Jacobson and Truax (1991), only one participant improved by at least two SD at endpoint and/or follow-up, and that was only on the lability/negativity scale.

These findings suggest that caregivers noticed decreases in children's negative emotionality and mood swings over the course of treatment, but were less likely to perceive positive improvements in mood or ER abilities. This may indicate that the treatment could use more emphasis on positive emotional aspects such as empathy, which was the focus of one session. Another possibility is that rather than working directly through improving children's ER skills, the treatment may be effective at decreasing symptoms and negative emotionality through some other mechanism, such as parental responses to child distress or environmental factors addressed in the treatment (e.g., sleep, eating habits, activity level). Alternately, since 71.4% of

children endorsed an increase in their ability to use ER strategies on their measure (42.9% to a statistically significant degree), these ER processes may be improving, but could be too internal for caregivers to assess accurately. Future research may be useful in investigating mechanisms of change in order to further evaluate these possibilities.

Although the sample size was limited, an attempt was made to discern potential moderators of observed treatment effects for consideration in future studies. A case-based qualitative analysis of the results, however, revealed little conclusive evidence of specific client factors which might predict greater reduction in symptoms in response to the current intervention. No discernable patterns emerged based on gender, age, initial impairment, or number of symptoms. Similarly, no clear connections could be drawn from either the behavioral temper outburst data or the NAP values derived from that data. Child-report measures failed to correspond consistently to outcomes. However, a more reliable correlation appeared to emerge between parent-report measures and clinical outcomes at the end of treatment. For participant A, the only known participant who maintained an ODD diagnosis at endpoint and follow-up, no significant improvements emerged on the parent-reported ERC or SDQ, whereas the child did report significant improvement on the DERS. A similar pattern occurred on satisfaction measures, with the child reporting greater than average satisfaction, and her mother rating the treatment as unsatisfactory. This pattern in parent measures is perhaps not surprising, since the diagnostic evaluations and impairment ratings largely rely on caregiver reports, and are therefore more likely to be consistent. Investigating additional variables beyond those targeted in the current study, such as those discussed in the Limitations section, may help identify other key factors that potentially moderate outcomes for this intervention model.

### **Limitations**



While the current pilot study provides evidence of feasibility and efficacy of the intervention, the protocol has a number of limitations which should also be addressed in future research on ER treatments for disruptive behavior. First, the size and nature of the sample limits the generalizability of the study. While single-subject methods have allowed for a number of informative analyses, additional participants with complete data would provide more convincing inferential evidence regarding the intervention's feasibility and efficacy. Furthermore, comparisons to a control condition and established treatments for ODD would provide more substantial support for the efficacy of this intervention. The reimbursement structure for attending assessment sessions from eligibility to follow-up was designed to incentivize a low level of attrition, with increasing amounts of money reimbursed throughout the study and the largest sum provided for the final assessment session. This approach may have been useful in encouraging families to attend all assessments including follow-up, but additional emphasis at the beginning of treatment regarding the importance of endpoint data and participant feedback if someone chooses to withdraw may have prevented the loss of contact with one participant who withdrew early with no final data.

Another potential limitation of the current study is the restricted range of clinical impairment and characteristics of the participants. All participants included in the study were rated as either mildly or moderately impaired at eligibility, and seemed to have little comorbidity. A full diagnostic interview was not conducted, but no participants met criteria for major depression, and only one reported prior diagnoses. As noted by Kessler and colleagues (2005), comorbid issues seem to be more the rule than the exception in children, and they tend to make it more difficult to make gains in treatment (e.g., Ezpeleta, Domènech, & Angold, 2006; Harrington, Fudge, Rutter, Pickles, & Hill, 1991). During the current study, there were no

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notable instances of in-session disruptive behaviors, and child clients generally behaved in a compliant and engaged manner during sessions. However, an additional component might be required to increase in-session compliance (e.g., behavioral management strategies) in order for this intervention to be effective with children with more severe disruptive behavior problems. Similarly, the uniform race and restricted range of socioeconomic status for participating families limits the external validity of the study.

Socioeconomic status is a particularly relevant factor when considering the implementation of a daily measure. The online measure utilized for the current study necessitates the ability to check email reliably and access the internet daily in order to report on behavioral symptoms. Such access may be problematic or impossible for families without a home computer or smart phone. While convenient access to technology was not a reported concern for the sample of this study, it does place a potential limit on the generalizability of the current protocol (see Table 9 for estimated gross income for the sample). As previously noted, other methods of daily data collection such as phone calls would address this issue, but not without their own difficulties. Among the added challenges for phone contact is managing daily scheduling of calls for data collection, whereas an email reminder allows caregivers to respond at their convenience. Despite the presumed convenience including the brevity of the measure used in this study, adherence varied widely among caregivers. This variability made it more difficult to make comparisons between participants, and suggests that this data collection method may not have been ideal for all families. As such, a tailored approach in which several options are offered at the beginning of the study and each family chooses a preferred method for reporting daily behavioral data may provide the maximum amount of data, albeit at the cost of adding potential new variability and increased burden on the clinician.

In addition to potentially reflecting a biased response pattern, this average calculation of behavioral data between sessions also restricted the number of data points available for SMA methods below the minimum of five points recommended by Borckardt and colleagues (2008) for the baseline phase, making it necessary to interpret the SMA results with caution. The relatively short baselines (i.e., 2, 3, and 4 weeks) likely contributed to another potential issue with improving trends during the baseline phase emerging in SMA analysis. This pattern may reflect the relatively common decline in symptoms due to assessment without enough time to return to the usual level of behaviors before beginning treatment (Ollendick & Hersen, 1984).

Another limitation of the study related to adherence is the lack of a metric to assess the participant's in-session engagement, as well as their application of the material outside of session. Ratings of engagement via self-report and/or independent observational coding would provide data on participants' level of attention and interest during session. The presence of at least one caregiver during sessions may have increased the likelihood of skills practice and further discussion of psychoeducational material at home, but a weekly written assignment requiring reflection or practice would not only add an opportunity to assess client adherence and practice outside of session, but it would also provide clearer direction for at-home generalization. In the current study, few sessions had a written assignment to complete and bring to the next session. Instead, most sessions involved suggestions to notice or practice something discussed that day, which may be easily disregarded without a tangible reminder and weekly check-in. Adding standardized worksheets to each session for families to take home and complete would account for this missing element and further encourage home practice or discussion of key aspects of each session from the beginning of treatment.

Finally, because diagnostic evaluations were conducted by the study therapist, there is a risk for experimenter bias in identifying whether a change in diagnosis has occurred following treatment. The inclusion of independent evaluators to rate global impairment, which in this study appeared to correspond to the therapist's assessment (i.e., "minimally improved" when still meeting ODD criteria) offers some reassurance that such bias did not impact the findings, but having the independent evaluators conduct diagnostic assessments as well would further establish the validity of diagnostic change assessment.

### **Future Directions**

Observations during the study as well as feedback from participating families provided a number of potential improvements to the protocol that may increase acceptability and efficacy of the treatment. Several caregivers noted that sessions strained the attention spans of the child participants, which could be addressed in several different ways. One option would be to rearrange session material to create more sessions of shorter duration. Another possibility which was suggested by caregivers is to alter the presentation of material by developing games and activities to deliver more of the psychoeducational and therapeutic material. ERCA was chosen as a base for the current intervention partially because of the large number of activities and games included, in order to offer abundant in-session rehearsal with new material and to review concepts. Nevertheless, in the current protocol, these experiential activities typically followed a more didactic introduction to the material. Adjusting the delivery of material as much as possible to take place within activities would make it easier for children to maintain attention without extending the number of sessions. More incorporation of visual aids and media would also assist in maintaining attention.

In addition, including a weekly homework assignment, if combined with a homework check-in at the beginning of the next session and potentially short in-session quizzes to evaluate the child's comprehension, may help address another concern. Some caregivers noted that, because the intervention began with more general discussion about emotions and emotion recognition before moving on in later sessions to emotion regulation skills, the treatment did not seem to promptly address specific issues their child was having or provide tools to address them until several weeks into the intervention. Thus, including assignments in early sessions which require families to notice how psychoeducation about emotions and emotion recognition tie into their child's difficulties might bolster both treatment efficacy and satisfaction. Furthermore, incorporating a more formal, if brief, assessment of the child's comprehension of new material would also inform feasibility by gauging knowledge and skill acquisition.

### **Conclusions**

Overall, the current pilot study of a treatment protocol for children with anger and irritability and disruptive behaviors suggests that the treatment was generally feasible and acceptable, with adequate levels of caregiver satisfaction and therapeutic alliance but some issues with adherence. The intervention also resulted in a reduction in both behavioral and mood symptoms of ODD for all participants by post-treatment, and high levels of global improvement, which compares favorably to findings from other ODD treatment studies (e.g., Ollendick et al., 2016). As such, this study indicates that ER-focused treatment for ODD shows promise. Future studies should investigate potential benefits of adjustments to the protocol as well as the mechanisms through which improvement was achieved.

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Table 1

*Measure Calendar*

<u>Measure</u>	<u>Eligibility</u> (B1)	<u>Weekly</u> (all sessions)	<u>Pre-</u> <u>Treatment</u> (Week 1)	<u>Midpoint</u> (Week 7)	<u>Endpoint</u> (Week 14)	<u>1 Month</u> <u>Follow-up</u>
<u>Caregiver Measures</u>						
KSADS	X				X	X
SDQ	X		X	X	X	X
CSQ				X	X	
SxS-P		X	X	X	X	X
ERC	X		X	X	X	X
<u>Child Measures</u>						
KSADS	X				X	X
SxS-C		X	X	X	X	X
DERS	X		X	X	X	X
TASC-R				X	X	
<u>Clinician Measures</u>						
CGI	CGI-S				CGI-I	

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Table 2

*Session Duration Data*

<u>Participant</u>	<u>Shortest Session</u>	<u>Longest Session</u>	<u>Mean Duration</u>	<u>SD</u>
A	52	97	77.77	11.92
B	56	83	70.67	9.81
C	53	85	68.67	11.38
D	65	91	76.38	8.61
E	52	75	64.23	8.56
F	59	75	65.58	7.09
G	61	95	74.85	10.54
Overall	52	97	71.65	10.76

*Note.* Session duration is measured in minutes. Presented data omits a 39 minute session with participant F which was ended early due to a family emergency.



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Table 3

*NAP Outcomes for Each Participant*

<u>Participant</u>	<u>NAP (%)</u>	<u>Effect</u>
A	97.8	Strong
B	100	Strong
C	68.1	Medium
D	77	Medium
E	36	Weak
F	91.1	Medium
G	93.3	Strong
Average	80.47	Medium

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Table 4

*Slope and Level Changes between Baseline and Treatment Phases for Outbursts*

<u>Participant</u>	<u>Level</u>	<u>Slope</u>
A	-0.591, p=.074	+0.666, p=.084
B	-0.793*, p=.04	+0.805, p=.121
C	-0.240, p=.404	+0.340, p=.242
D	-0.314, p=.193	+0.346, p=.113
E	+0.078, p=.799	+0.441, p=.139
F	-0.563, p=.129	+0.874*, p=.019
G	-0.474, p=.057	+0.457, p=.063

\*  $p < .05$ , \*\*  $p < .01$

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Table 5

*SMA: Best-fitting Slopes for Reported Temper Outbursts*

<u>Participant</u>	<u>Slope Vector</u>	<u>Pearson Correlation</u>	<u>Clinical Interpretation</u>
A	4*	-0.733	Improvement during baseline and throughout treatment
	3*	-0.598	
B	2*	-0.877	Improvement during baseline and no change during treatment
	4*	-0.877	No change during baseline and improvement during treatment
C	1 ( $p = 0.2418$ )	+0.340	Improvement during baseline and throughout treatment
	2 ( $p = 0.2834$ )	-0.313	No change during baseline and improvement during treatment
D	4 ( $p = 0.0806$ )	-0.376	Improvement during baseline and throughout treatment
	2 ( $p = 0.0894$ )	-0.367	
E	5 ( $p = 0.1126$ )	-0.461	No change during baseline and improvement during treatment
			Improvement during baseline, return to pre-treatment level at the initiation of treatment, and then improvement throughout treatment
F	2**	-0.886	Improvement during baseline and throughout treatment
	4**	-0.882	
G	4*	-0.479	Improvement during baseline and throughout treatment
	2*	-0.478	
			No change during baseline and improvement during treatment

\*  $p < .05$ , \*\*  $p < .01$

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

Table 6

*DERS Scores and Reliable Change Indices from Eligibility to Endpoint and Eligibility to Follow-Up*

	<u>Nonacceptance</u>	<u>Goal</u>	<u>Impulse</u>	<u>Awareness</u>	<u>Strategies</u>	<u>Clarity</u>	<u>DERS total</u>
<b>A</b>							
Eligibility	10	20	25	23	31	14	123
Baseline	10	15	23	25	26	14	113
Midpoint	13	18	19	22	27	10	109
Endpoint	11	15	13	14	18	7	78
Follow-up	10	11	12	17	19	8	77
RCI							
Elig-EP	<b>0.18</b>	<b>-1.24</b>	<b>-1.91</b>	<b>-2.78*</b>	<b>-3.55*</b>	<b>-2.42*</b>	<b>-3.46*</b>
Elig-FU	<b>0</b>	<b>-2.24*</b>	<b>-2.07*</b>	<b>-1.85</b>	<b>-3.28*</b>	<b>-2.08*</b>	<b>-3.54*</b>
<b>B</b>							
Eligibility	15	14	21	17	20	10	97
Baseline	19	13	21	14	22	8	97
Midpoint	14	9	13	15	14	8	73
Endpoint	--	--	--	--	--	--	--
Follow-up	--	--	--	--	--	--	--
RCI							
Elig-EP	<b>-0.18</b>	<b>-1.25</b>	<b>-1.27</b>	<b>-0.62</b>	<b>-1.64</b>	<b>-0.69</b>	<b>-1.85</b>
Elig-FU	--	--	--	--	--	--	--
<b>C</b>							
Eligibility	23	13	20	13	21	11	101
Baseline	22	13	18	12	20	8	93
Midpoint	15	5	16	8	13	5	62
Endpoint	--	--	--	--	--	--	--
Follow-up	--	--	--	--	--	--	--
RCI							
Elig-EP	<b>-1.46</b>	<b>-1.99*</b>	<b>-0.64</b>	<b>-1.54</b>	<b>-2.18*</b>	<b>-2.08*</b>	<b>-3.00*</b>
Elig-FU	--	--	--	--	--	--	--
<b>D</b>							
Eligibility	18	19	28	11	28	11	115
Baseline	13	14	25	17	24	13	106
Midpoint	7	14	9	10	20	5	65
Endpoint	9	13	12	16	13	11	74
Follow-up	10	14	22	13	19	9	87
RCI							
Elig-EP	<b>-1.65</b>	<b>-1.50</b>	<b>-2.54*</b>	<b>1.54</b>	<b>-4.09*</b>	<b>0</b>	<b>-3.16*</b>
Elig-FU	<b>-1.46</b>	<b>-1.24</b>	<b>-0.95</b>	<b>0.62</b>	<b>-2.46*</b>	<b>-0.69</b>	<b>-2.15*</b>

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E							
Eligibility	17	20	22	19	23	8	109
Baseline	24	23	23	20	20	8	118
Midpoint	19	19	22	21	19	10	110
Endpoint	21	20	22	19	26	9	117
Follow-up	18	21	17	19	24	7	106
RCI							
Elig-EP	<b>0.73</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.82</b>	<b>0.35</b>	<b>0.62</b>
Elig-FU	<b>0.18</b>	<b>0.25</b>	<b>-0.80</b>	<b>0</b>	<b>0.27</b>	<b>-0.35</b>	<b>-0.23</b>
F							
Eligibility	17	18	24	19	27	20	125
Baseline	30	8	30	17	37	21	143
Midpoint	29	11	27	15	35	21	138
Endpoint	26	11	26	19	30	18	130
Follow-up	14	5	17	16	24	14	90
RCI							
Elig-EP	<b>1.65</b>	<b>-1.74</b>	<b>0.32</b>	<b>0</b>	<b>0.82</b>	<b>-0.69</b>	<b>0.38</b>
Elig-FU	<b>-0.55</b>	<b>-3.24*</b>	<b>-1.11</b>	<b>-0.93</b>	<b>-0.82</b>	<b>-2.08*</b>	<b>-2.69*</b>
G							
Eligibility	7	9	13	19	9	10	67
Baseline	6	8	8	24	8	8	62
Midpoint	6	5	6	19	8	5	49
Endpoint	6	9	6	19	8	6	54
Follow-up	6	7	8	14	9	5	49
RCI							
Elig-EP	<b>-0.18</b>	<b>0</b>	<b>-1.11</b>	<b>0</b>	<b>-0.27</b>	<b>-1.39</b>	<b>-1.00</b>
Elig-FU	<b>-0.18</b>	<b>-0.50</b>	<b>-0.80</b>	<b>-1.54</b>	<b>0</b>	<b>-1.73</b>	<b>-1.39</b>

*Note.* Negative RCI scores indicate improvement. For participants who withdrew prior to the end of treatment, scores at midpoint were used to calculate RCI for the endpoint.

\* = significant change.

EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

Table 7

*ERC Scores and Reliable Change Indices from Eligibility to Endpoint and Eligibility to Follow-Up*

	<u>Emotional Lability/ Negativity</u>	<u>Emotion Regulation</u>
<b>A</b>		
Eligibility	33	26
Baseline	35	25
Midpoint	33	27
Endpoint	34	26
Follow-up	32	27
RCI		
Elig-EP	<b>0.37</b>	<b>0</b>
Elig-FU	<b>-0.37</b>	<b>0.76</b>
<b>B</b>		
Eligibility	37	24
Baseline	41	25
Midpoint	29	28
Endpoint	--	--
Follow-up	--	--
RCI		
Elig-EP	<b>-4.41*</b>	<b>3.06*</b>
Elig-FU	--	--
<b>C</b>		
Eligibility	45	21
Baseline	38	23
Midpoint	30	22
Endpoint	--	--
Follow-up	--	--
RCI		
Elig-EP	<b>-5.51*</b>	<b>0.76</b>
Elig-FU	--	--
<b>D</b>		
Eligibility	41	25
Baseline	44	21
Midpoint	39	27
Endpoint	40	26
Follow-up	33	26
RCI		
Elig-EP	<b>-0.37</b>	<b>0.76</b>
Elig-FU	<b>-2.94*</b>	<b>0.76</b>
<b>E</b>		
Eligibility	30	28
Baseline	30	27
Midpoint	31	28
Endpoint	27	30
Follow-up	23	30
RCI		
Elig-EP	<b>-1.10</b>	<b>1.52</b>
Elig-FU	<b>-2.57*</b>	<b>1.52</b>

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

F		
Eligibility	35	25
Baseline	37	21
Midpoint	32	25
Endpoint	35	27
Follow-up	25	30
RCI		
Elig-EP	<b>0</b>	<b>1.52</b>
Elig-FU	<b>-3.68*</b>	<b>3.82*</b>
G		
Eligibility	30	24
Baseline	30	24
Midpoint	29	22
Endpoint	31	23
Follow-up	28	25
RCI		
Elig-EP	<b>0.37</b>	<b>-0.76</b>
Elig-FU	<b>-0.74</b>	<b>0.76</b>
Mean		
Eligibility	35.86	24.71
Baseline	36.43	23.71
Midpoint	31.86	25.57
Endpoint	33.40	26.40
Follow-up	28.20	27.60
RCI		
Elig-EP	<b>-0.90</b>	<b>1.29</b>
Elig-FU	<b>-2.82*</b>	<b>2.21*</b>

*Note.* Negative RCI scores indicate improvement on the Emotional Lability/ Negativity scale, while positive RCI scores indicate improvement on the Emotion Regulation scale. For participants who withdrew prior to the end of treatment, scores at midpoint were used to calculate RCI for the endpoint.

\* = significant change.

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

Table 8

*SDQ Scores and Reliable Change Indices from Eligibility to Endpoint and Eligibility to Follow-Up*

	<u>Emotion</u>	<u>Conduct</u>	<u>Hyper</u>	<u>Peer Problems</u>	<u>Prosocial</u>	<u>Total Difficulties</u>
<b>A</b>						
Eligibility	1	4	2	2	6	9
Baseline	2	4	3	4	6	13
Midpoint	1	4	4	2	7	11
Endpoint	1	4	5	3	5	13
Follow-up	1	4	4	2	8	11
RCI						
Elig-EP	<b>0</b>	<b>0</b>	<b>2.08*</b>	<b>0.93</b>	<b>-0.91</b>	<b>1.78</b>
Elig-FU	<b>0</b>	<b>0</b>	<b>1.39</b>	<b>0</b>	<b>1.82</b>	<b>0.89</b>
<b>B</b>						
Eligibility	3	4	1	4	7	12
Baseline	5	2	0	3	7	10
Midpoint	1	1	2	2	9	6
Endpoint	--	--	--	--	--	--
Follow-up	--	--	--	--	--	--
RCI						
Elig-EP	<b>-1.40</b>	<b>-2.14*</b>	<b>0.69</b>	<b>-1.85</b>	<b>1.82</b>	<b>-2.68*</b>
Elig-FU	--	--	--	--	--	--
<b>C</b>						
Eligibility	4	5	3	0	5	12
Baseline	3	3	4	1	7	11
Midpoint	2	3	4	0	6	9
Endpoint	--	--	--	--	--	--
Follow-up	--	--	--	--	--	--
RCI						
Elig-EP	<b>-1.40</b>	<b>-1.43</b>	<b>0.69</b>	<b>0</b>	<b>0.91</b>	<b>-1.34</b>
Elig-FU	--	--	--	--	--	--
<b>D</b>						
Eligibility	5	5	5	2	5	17
Baseline	6	5	9	3	5	23
Midpoint	3	4	5	1	7	13
Endpoint	5	7	6	2	6	20
Follow-up	1	3	4	1	8	9
RCI						
Elig-EP	<b>0</b>	<b>1.43</b>	<b>0.69</b>	<b>0</b>	<b>0.91</b>	<b>1.34</b>
Elig-FU	<b>-2.80*</b>	<b>-1.43</b>	<b>-0.69</b>	<b>-0.93</b>	<b>2.73*</b>	<b>-3.57*</b>
<b>E</b>						
Eligibility	1	4	10	0	10	15
Baseline	0	3	10	0	9	13
Midpoint	0	4	9	1	9	14
Endpoint	0	1	8	0	9	9
Follow-up	0	2	7	0	9	9
RCI						
Elig-EP	<b>-0.70</b>	<b>-2.14*</b>	<b>-1.39</b>	<b>0</b>	<b>-0.91</b>	<b>-2.68*</b>



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Elig-FU	<b>-0.70</b>	<b>-1.43</b>	<b>-2.08*</b>	<b>0</b>	<b>-0.91</b>	<b>-2.68*</b>
<b>F</b>						
Eligibility	5	3	6	3	7	18
Baseline	2	4	3	2	6	15
Midpoint	2	2	4	4	8	14
Endpoint	2	2	4	4	8	14
Follow-up	2	1	6	4	8	15
<b>RCI</b>						
Elig-EP	<b>-1.40</b>	<b>-0.71</b>	<b>-1.39</b>	<b>0.93</b>	<b>0.91</b>	<b>-1.78</b>
Elig-FU	<b>-1.40</b>	<b>-1.43</b>	<b>0</b>	<b>0.93</b>	<b>0.91</b>	<b>-1.34</b>
<b>G</b>						
Eligibility	5	2	9	0	7	16
Baseline	2	2	8	0	5	12
Midpoint	2	2	5	0	4	9
Endpoint	2	2	8	0	5	12
Follow-up	2	1	6	0	6	9
<b>RCI</b>						
Elig-EP	<b>-2.10*</b>	<b>0</b>	<b>-0.69</b>	<b>0</b>	<b>-1.82</b>	<b>-1.78</b>
Elig-FU	<b>-2.10*</b>	<b>-0.71</b>	<b>-2.08*</b>	<b>0</b>	<b>-0.91</b>	<b>-3.12*</b>

*Note.* Negative RCI scores indicate improvement on all scales except for the Prosocial scale. For participants who withdrew prior to the end of treatment, scores at midpoint were used to calculate RCI for the endpoint.

\* = significant change

EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

Table 9

*Characteristics and Clinical Status for Each Participant, Pre- and Post-Treatment*

<u>Participant</u>	<u>Gender</u>	<u>Age (years)</u>	<u>Estimated Income</u>	<u>Adherence</u>	<u>Initial Diagnosis</u>	<u>Number of ODD Criterion A Symptoms</u>	<u>Post-treatment Diagnosis</u>	<u>CGI-S Pre-treatment Rating</u>	<u>CGI-I Post-treatment Rating</u>
A	F	10.58	Not reported	Completed	ODD only	4	ODD only	3 (mildly ill)	3 (minimally improved)
B	F	11.17	\$96,000	Withdrew S7	DMDD & ODD	5	None	4 (moderately ill)	1 (very much improved)
C	M	8.83	\$120,000	Withdrew S10	ODD only	4	--	4 (moderately ill)	--
D	F	8.75	\$90,000	Completed	ODD only	6	None	4 (moderately ill)	2 (much improved)
E	M	10.83	\$145,000	Completed	ODD only	4	None	4 (moderately ill)	2 (much improved)
F	F	11.67	\$144,000	Completed	ODD only	6	None	3 (mildly ill)	2 (much improved)
G	M	8.67	Not reported	Completed	ODD only	5	None	4 (moderately ill)	2 (much improved)
Total	4 F, 3 M	<i>M</i> = 10.07	<i>M</i> = \$119,000	5 completed	7 ODD, 1 DMDD	<i>M</i> = 4.86	1 ODD, 5 None	2 participants mildly ill, 5 moderately ill	1 participant minimally improved, 4 much improved, 1 very much improved

*Note:* Total numbers for CGI columns reflect the number of participants with each rating, rather than the ratings themselves.

EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

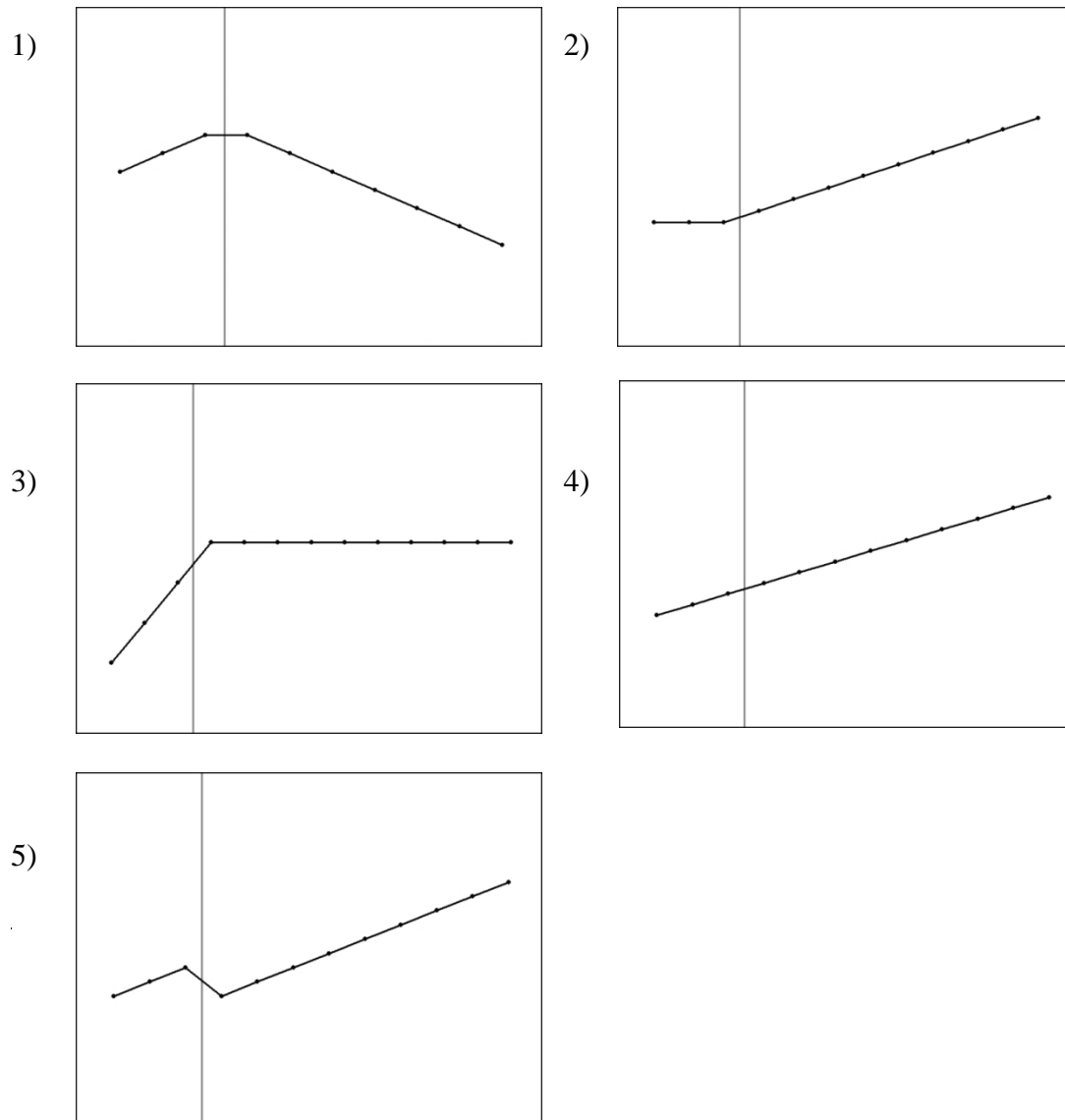


Figure 1. SMA model slope vectors. 1) increasing baseline and decreasing treatment [1 | 2 | 3 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -4 | -5]; 2) flat baseline and increasing treatment [0 | 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9]; 3) an increasing baseline and flat treatment [1 | 2 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4]; 4) increasing from baseline throughout treatment [1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12]; and 5) increasing during baseline, return to pre-treatment level at the initiation of treatment, and then increasing throughout treatment [1 | 2 | 3 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9].

EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

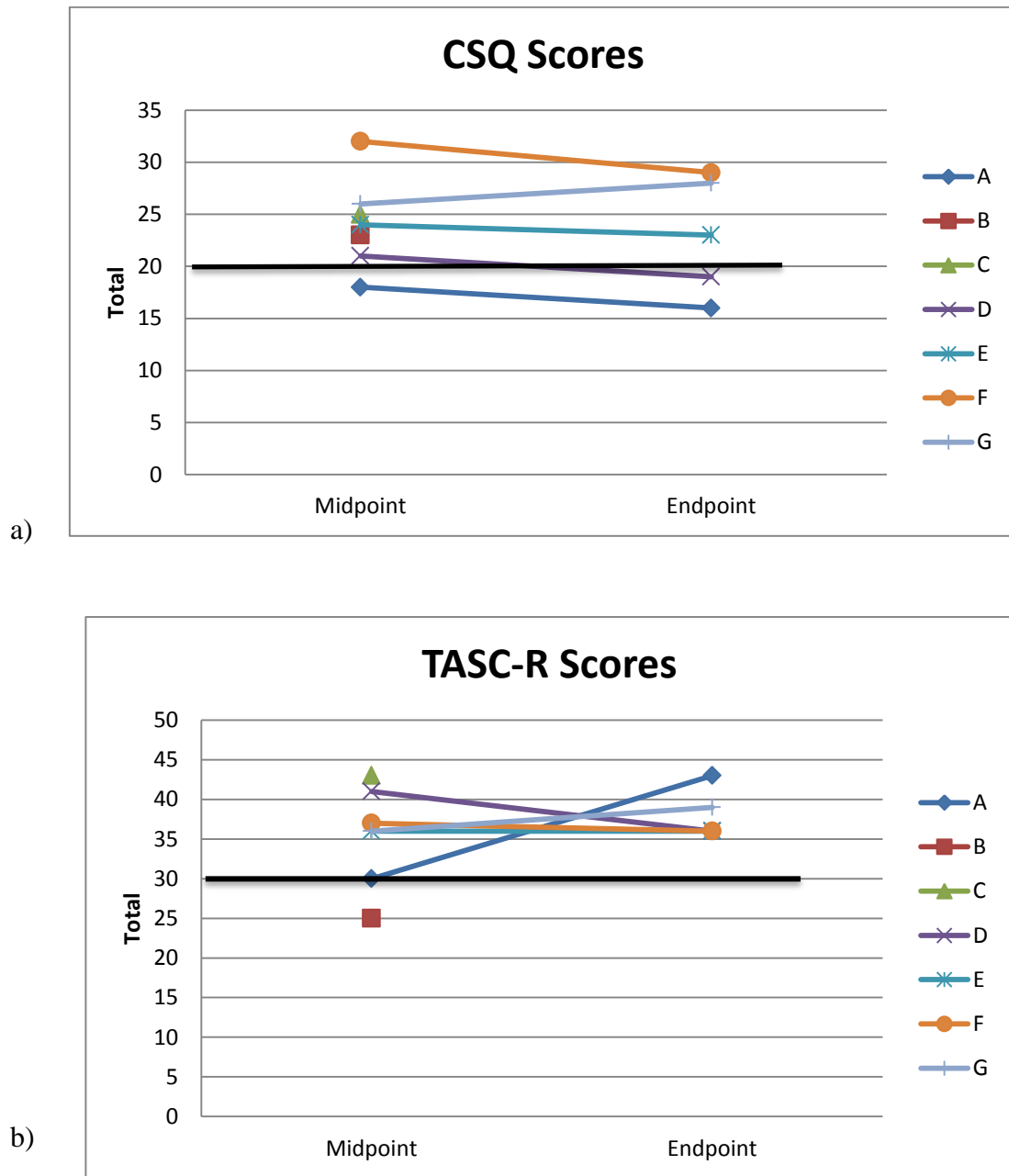
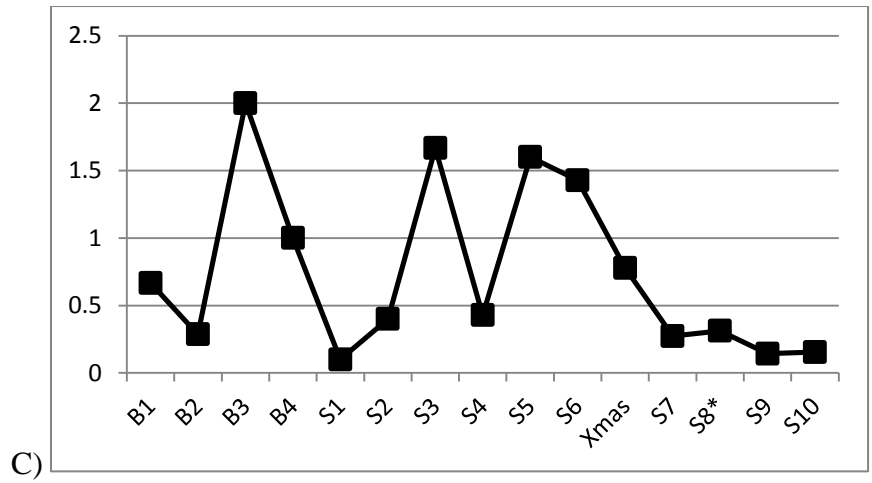
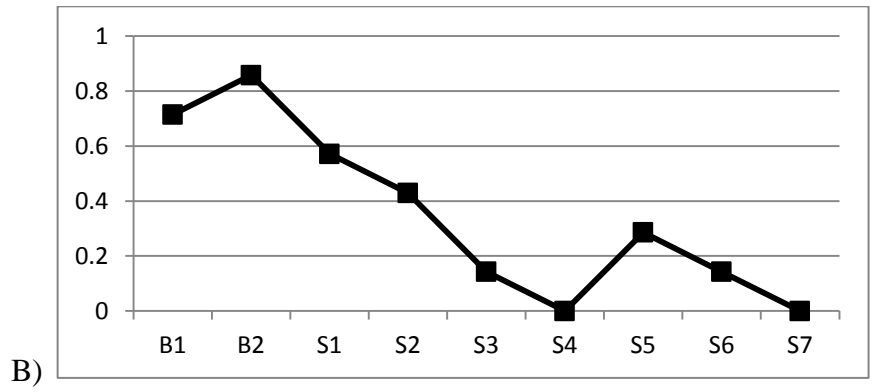
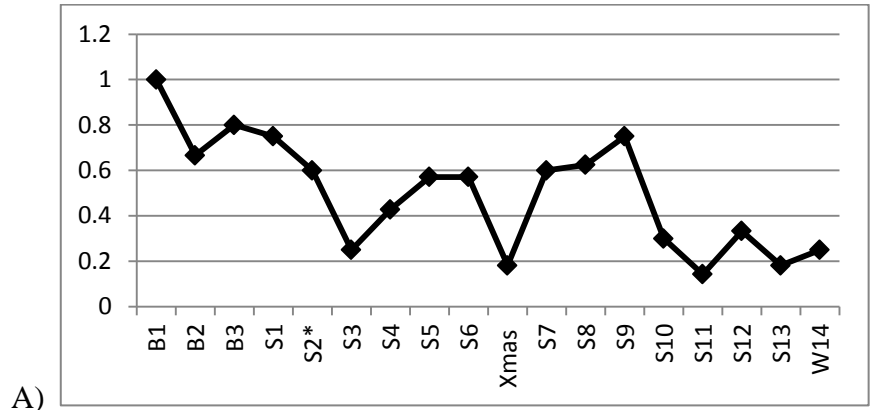
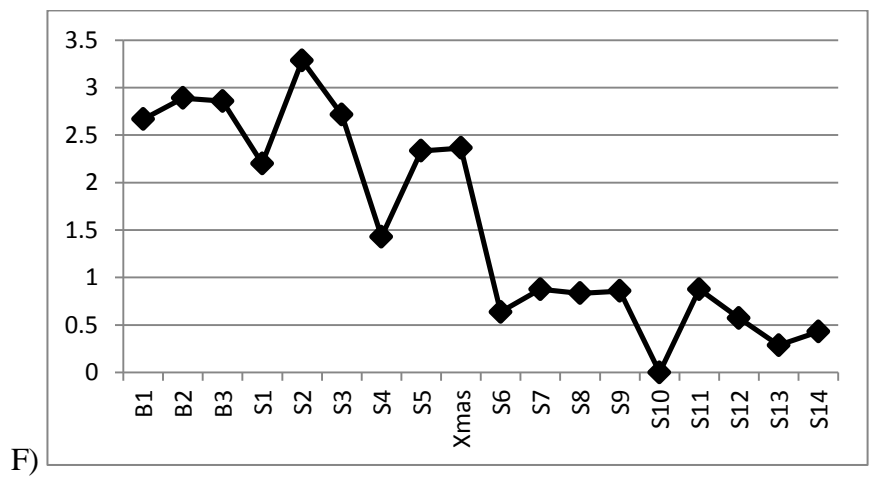
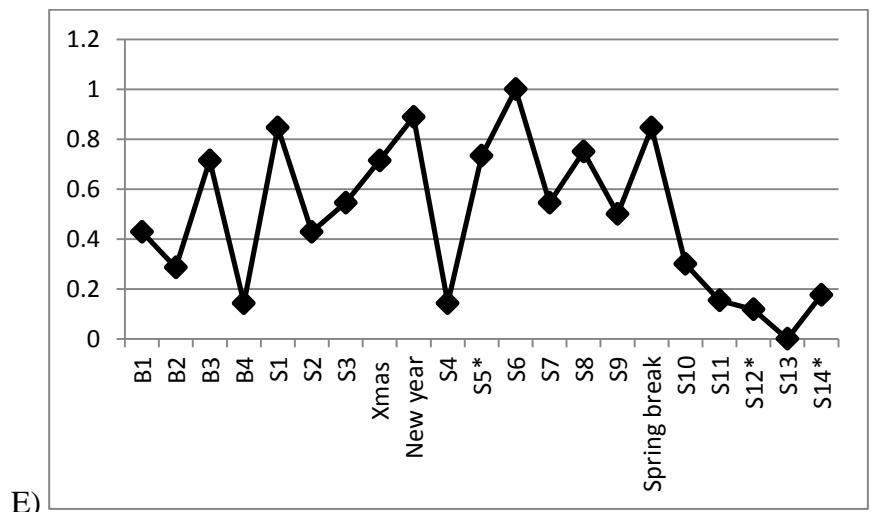
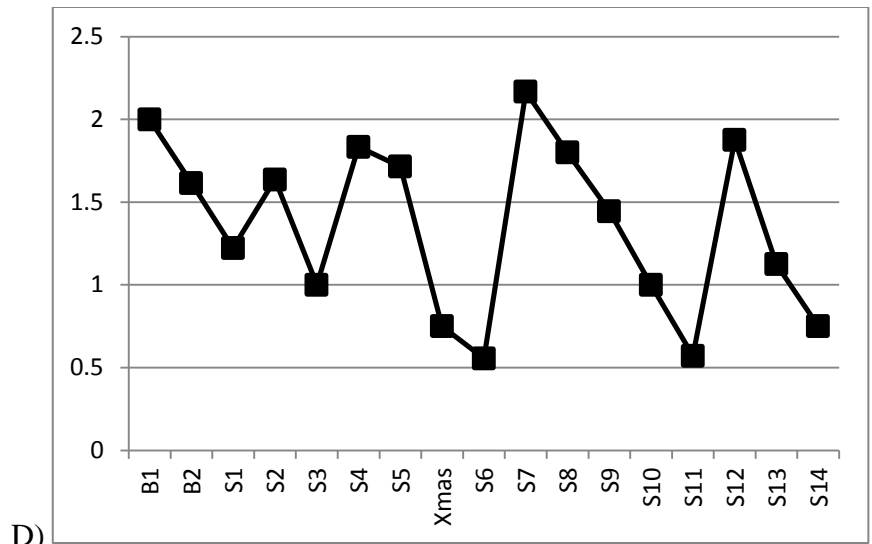


Figure 2. Client satisfaction and therapeutic alliance at midpoint and end of treatment. CSQ scores (a) were reported by caregivers, while TASC-R scores (b) were reported by child participants.

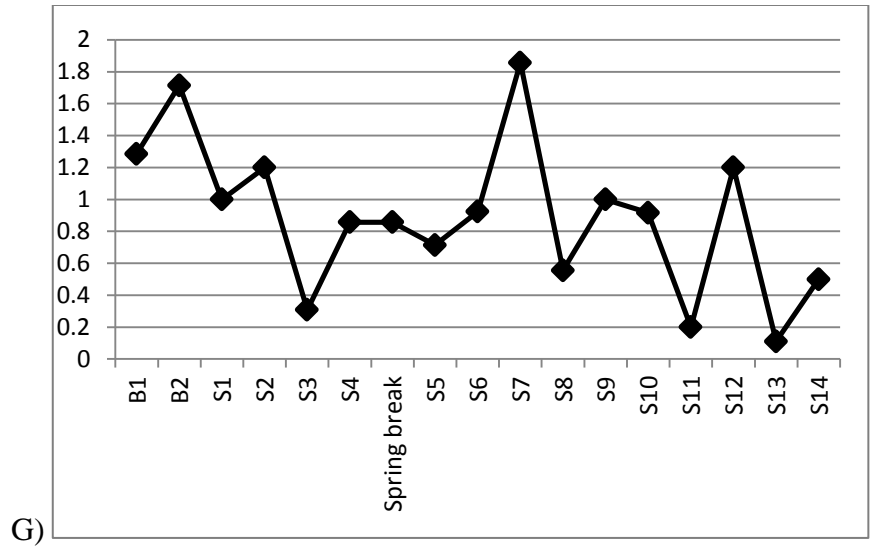
EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR



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# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR



*Figure 3.* Average number of outbursts reported per day between sessions for each participant.

Asterisks indicate a gap of longer than 14 days between sessions.

# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

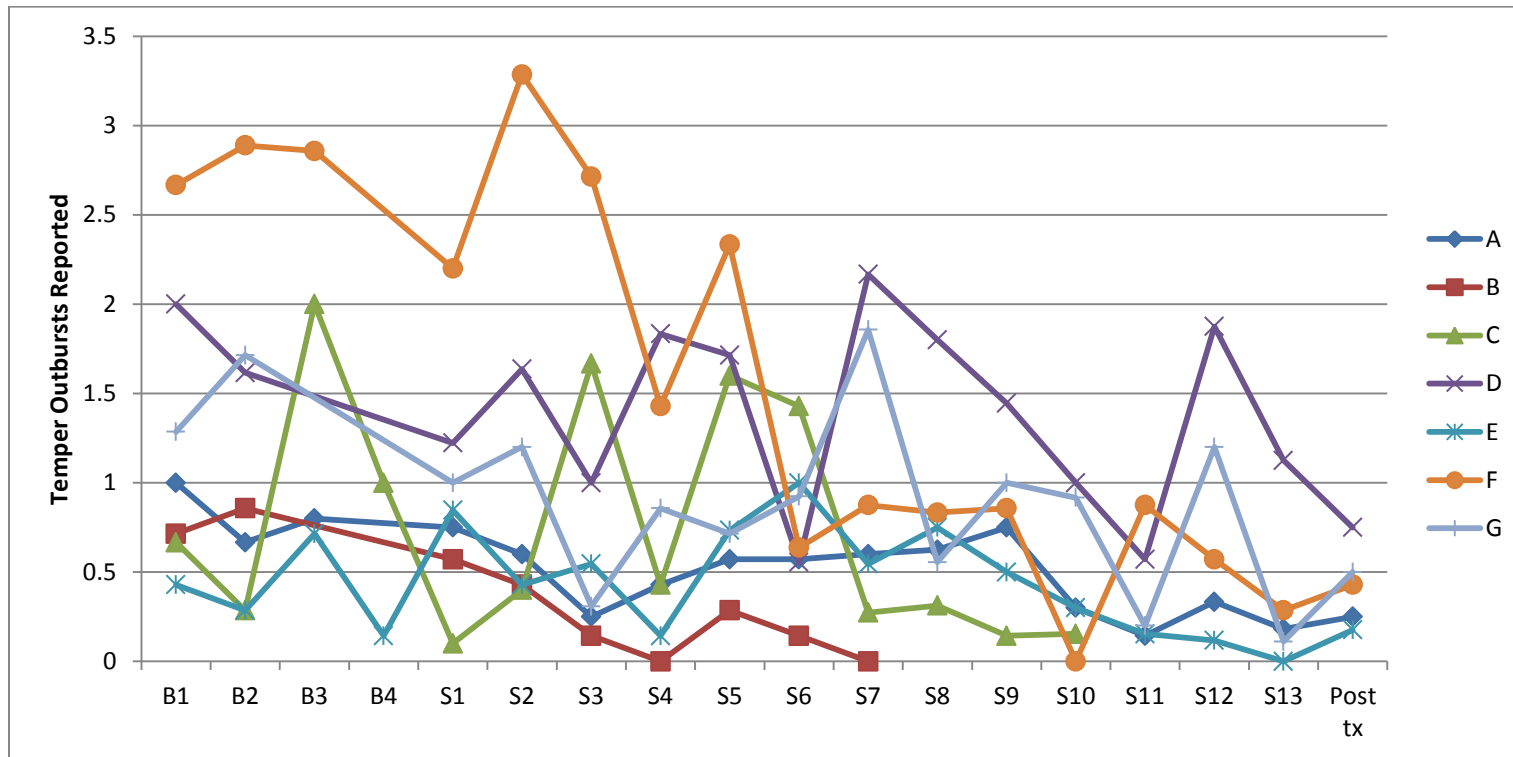
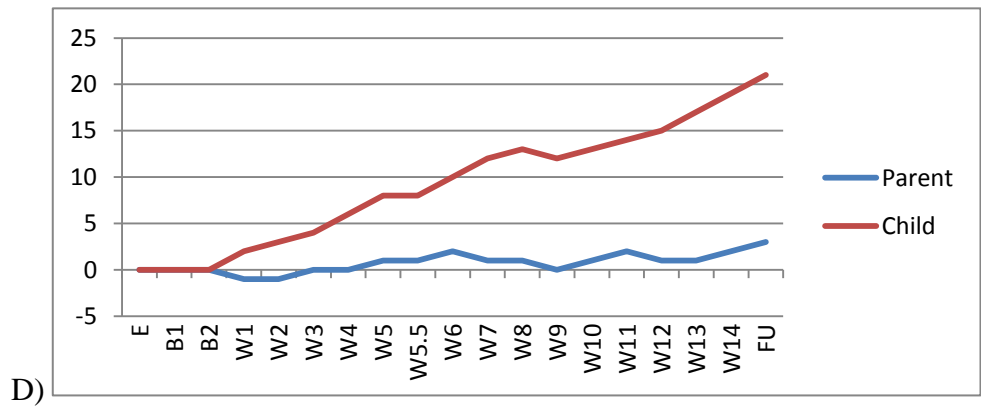
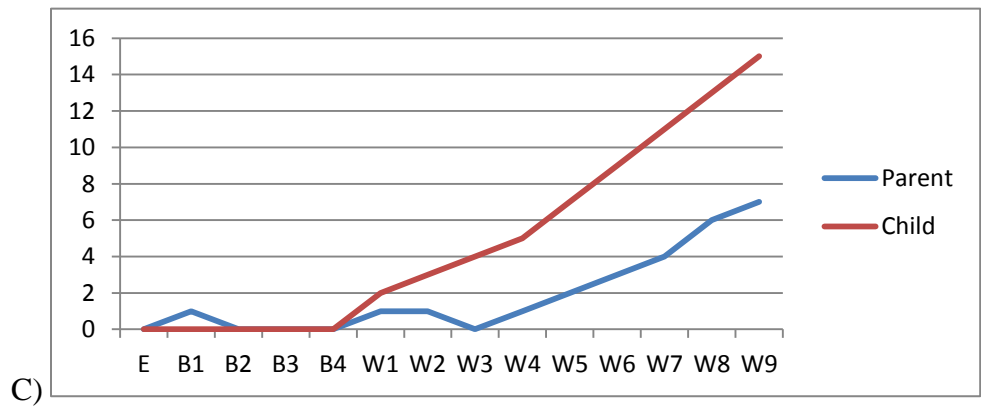
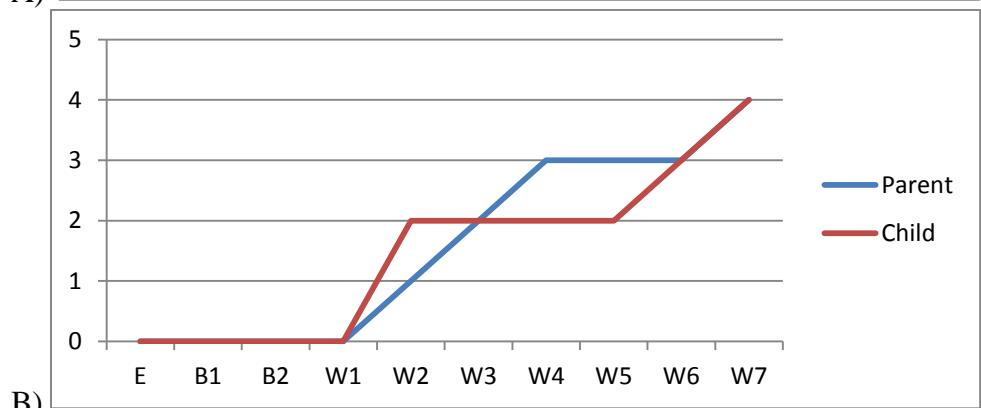
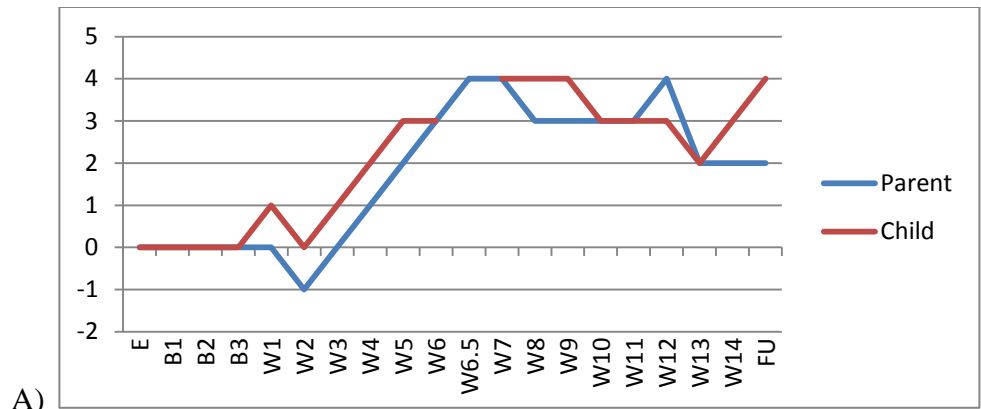


Figure 4. Behavioral data for all participants across treatment sessions. Data points for temper outbursts were computed by averaging the total number of outbursts reported between sessions across the number of days between sessions.



# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR



EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

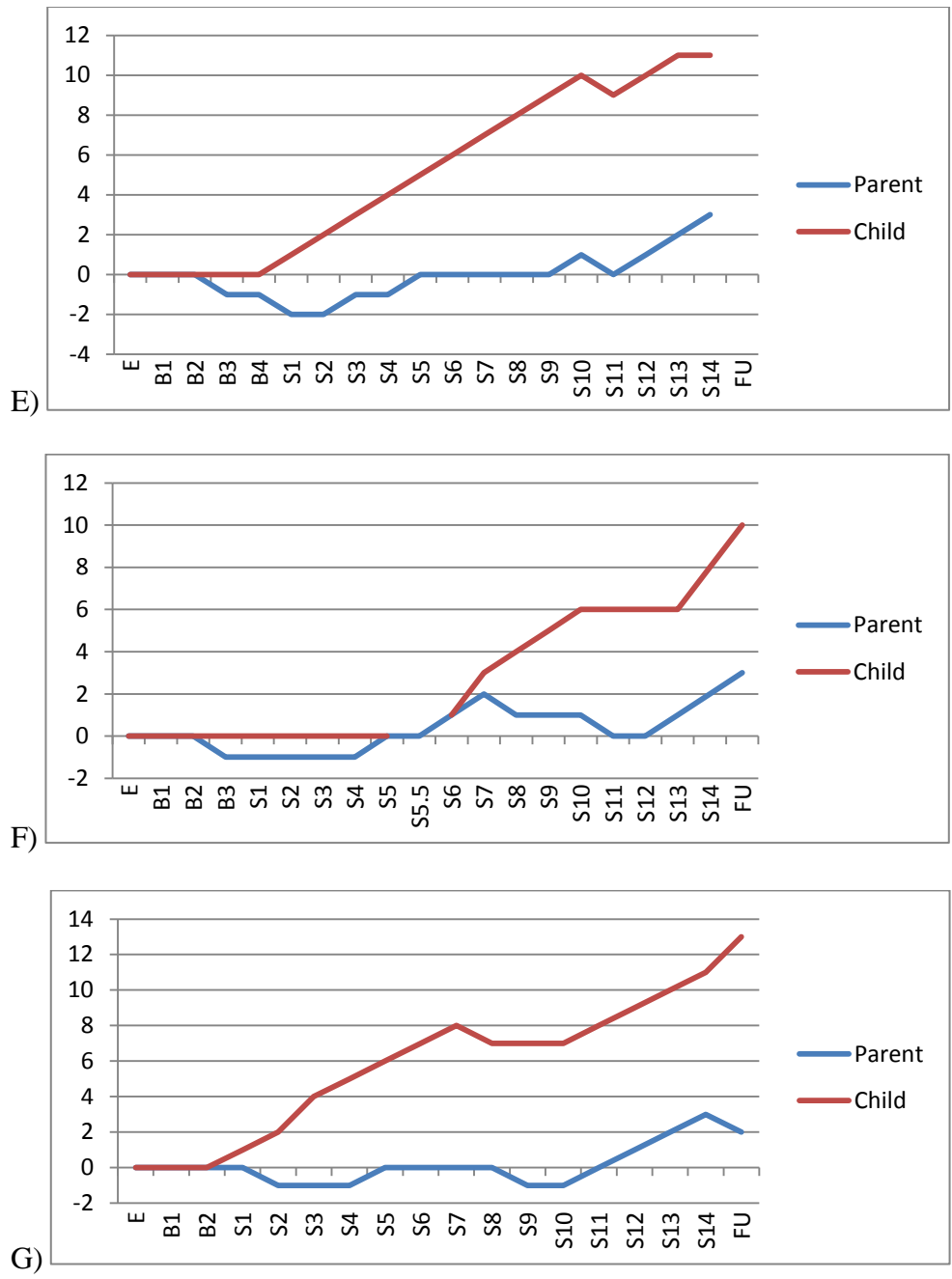
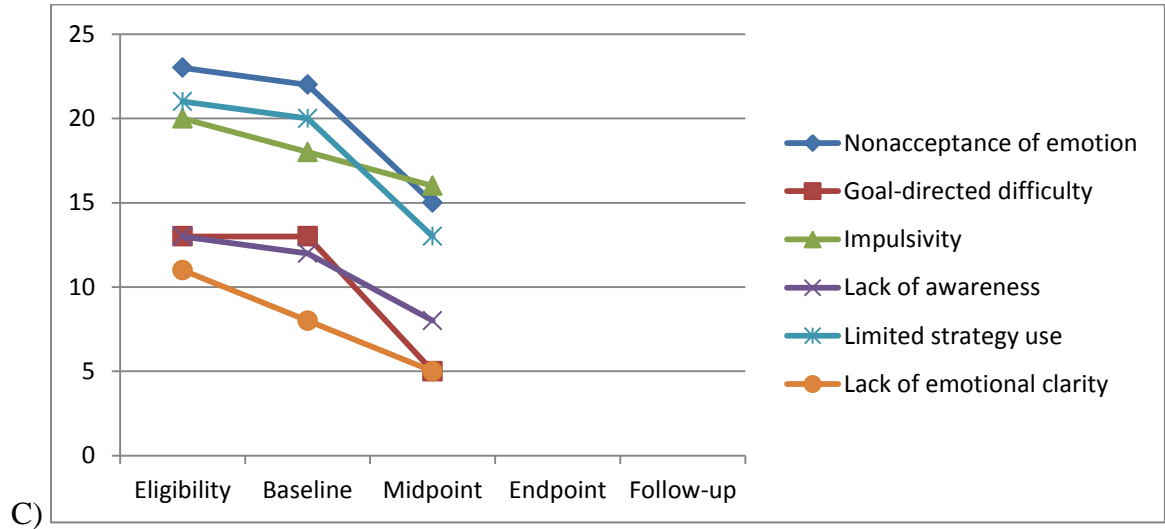
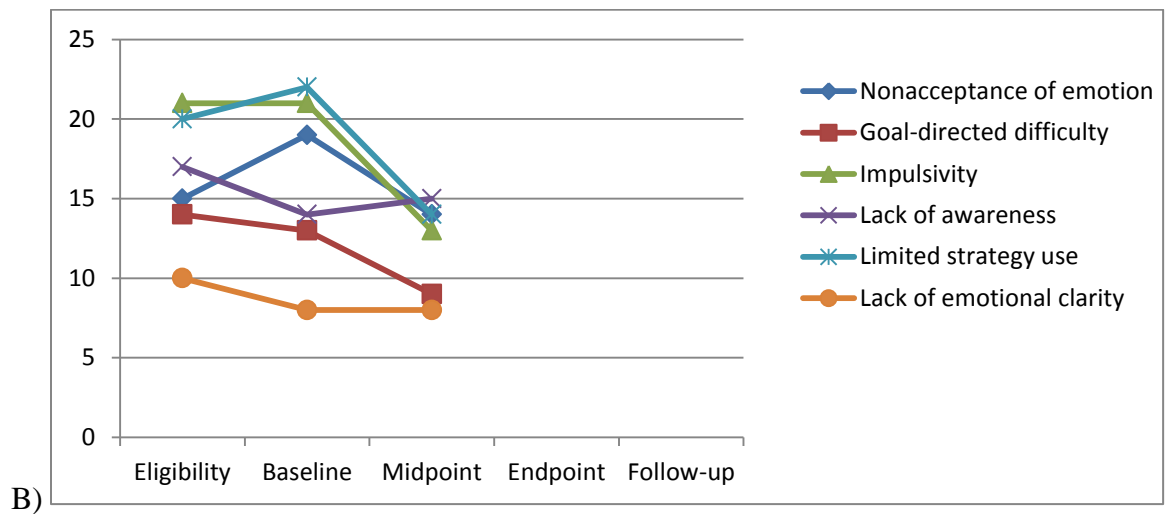
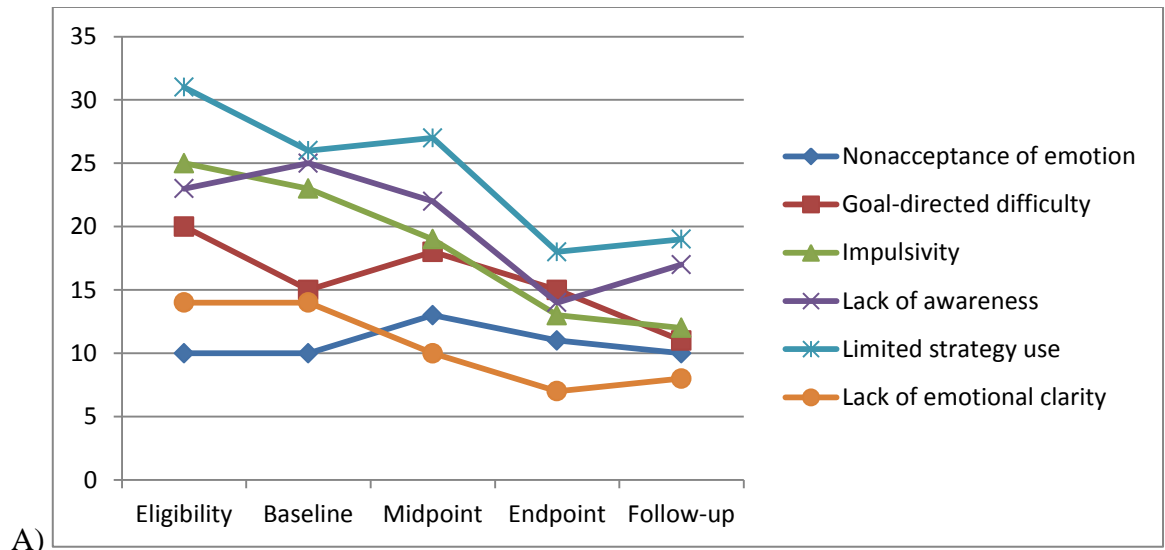
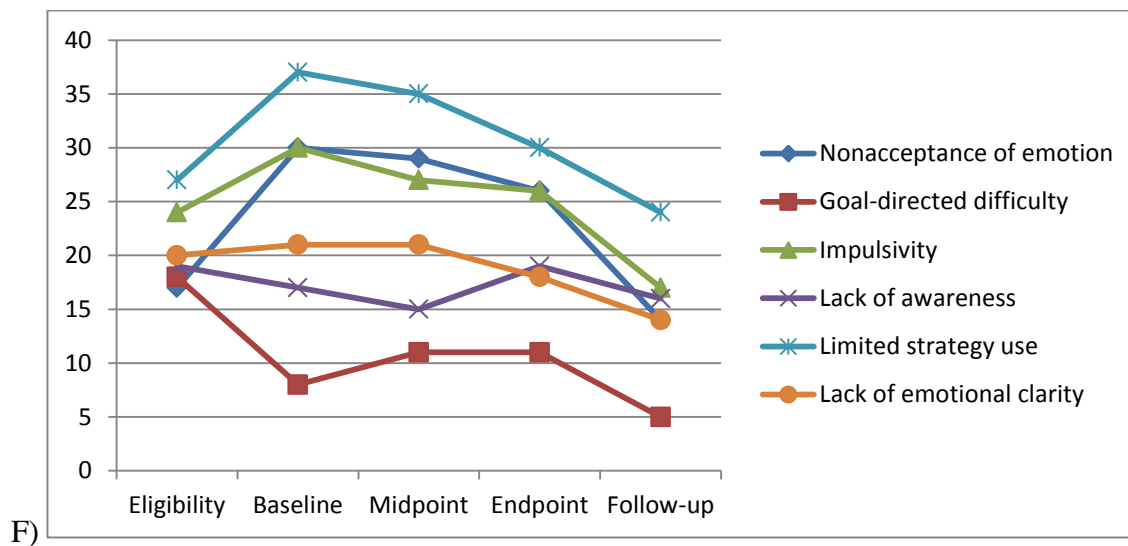
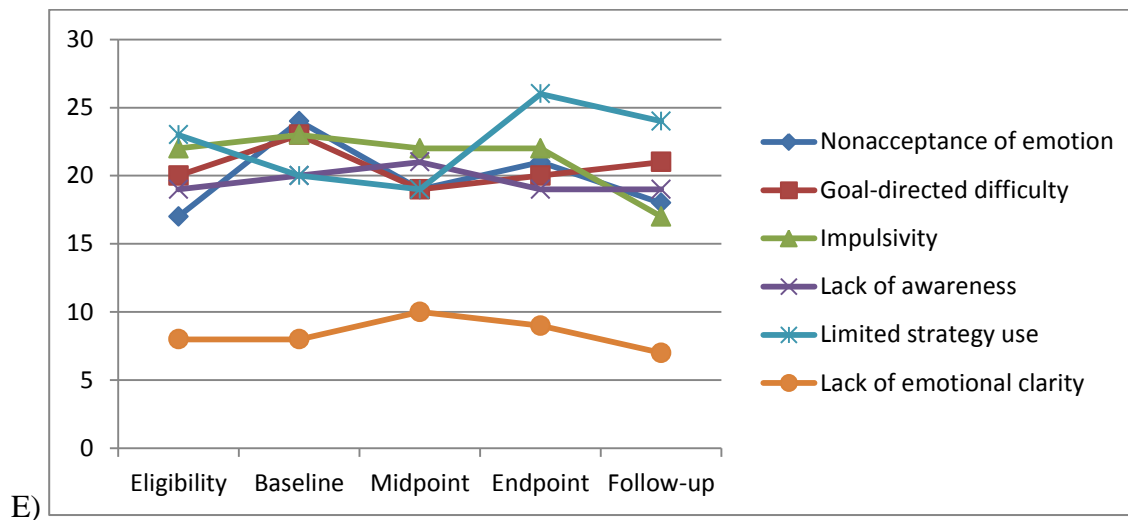
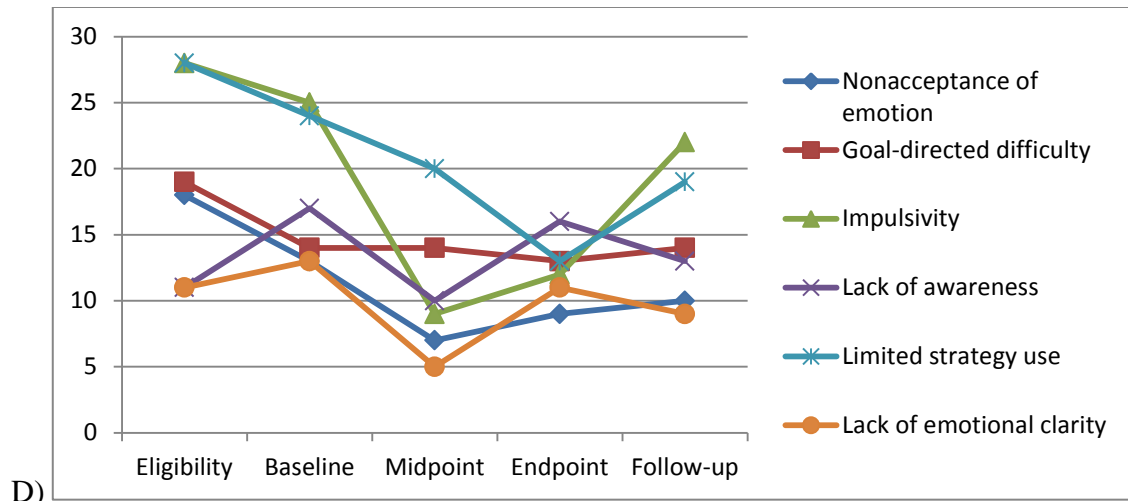


Figure 5. Weekly mood ratings on the SxS for each participant and caregiver. Caregiver report was collected via telephone during the baseline phase, while child report began at session 1 of treatment.

# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR



# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR



# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

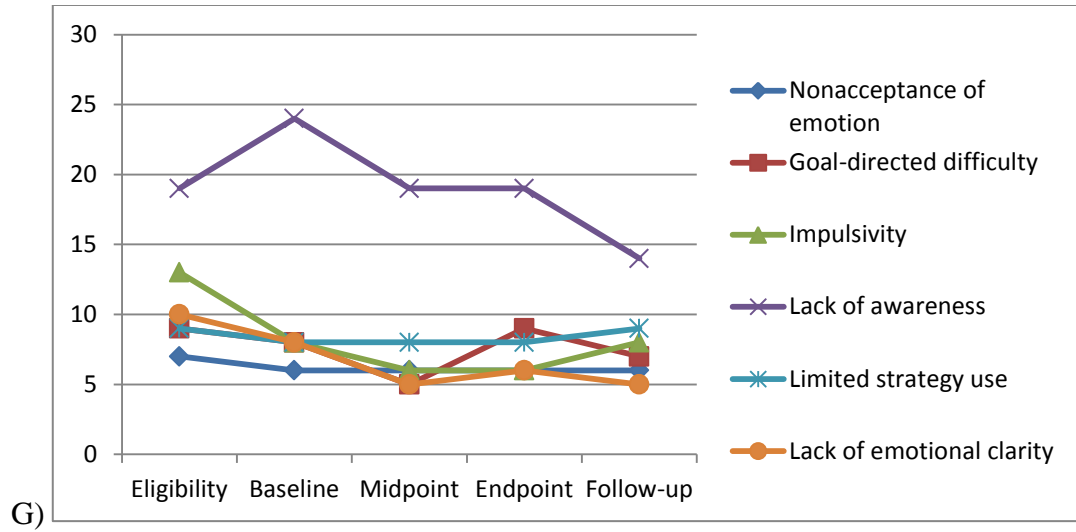


Figure 6. DERS subscales across study time points for each participant.

EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

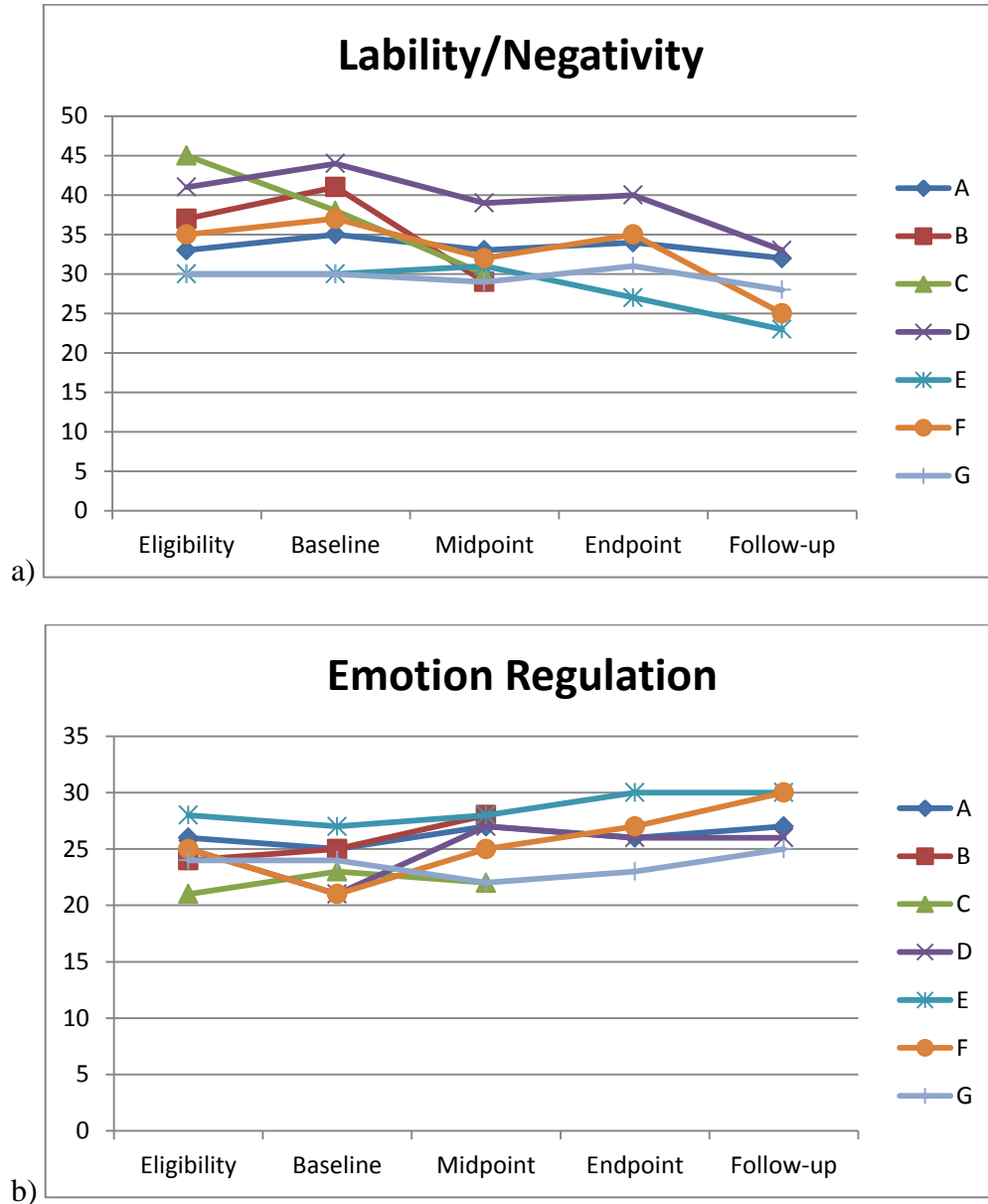
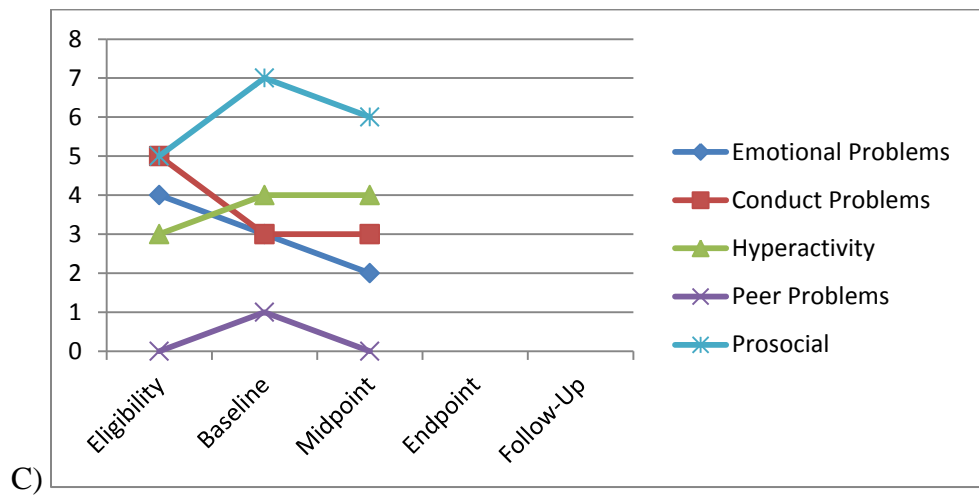
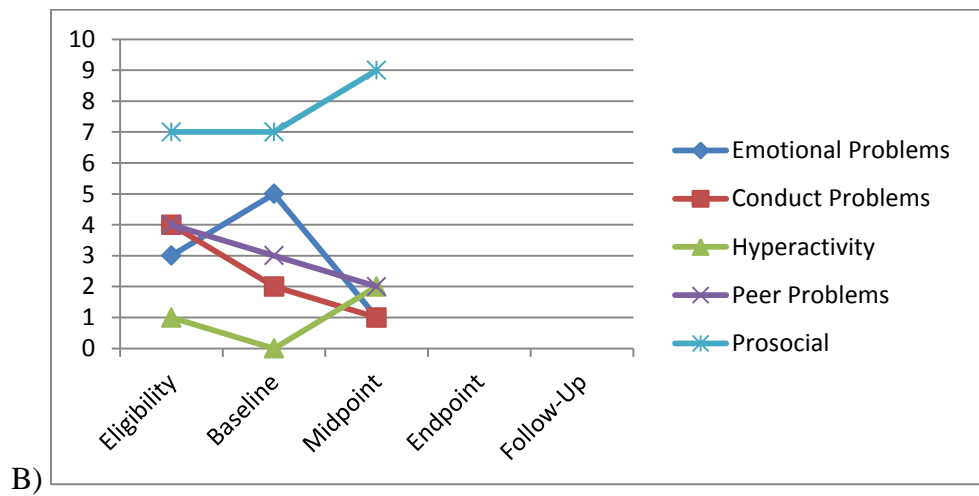
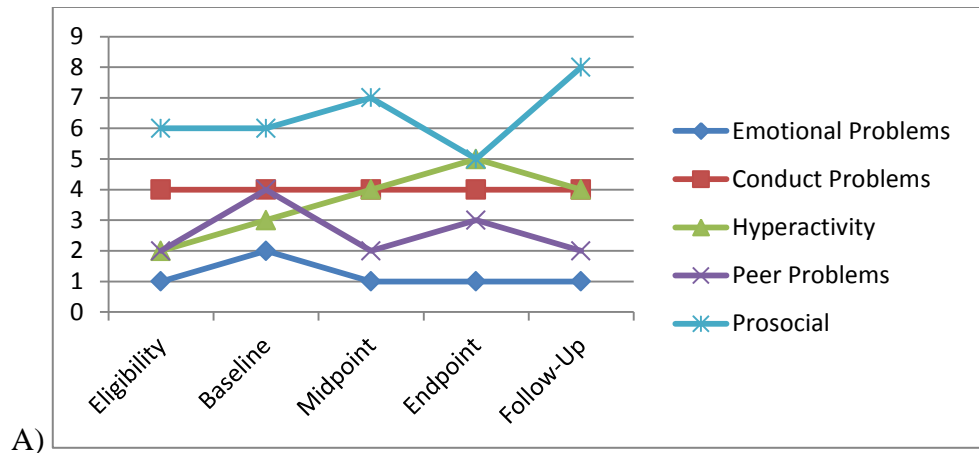
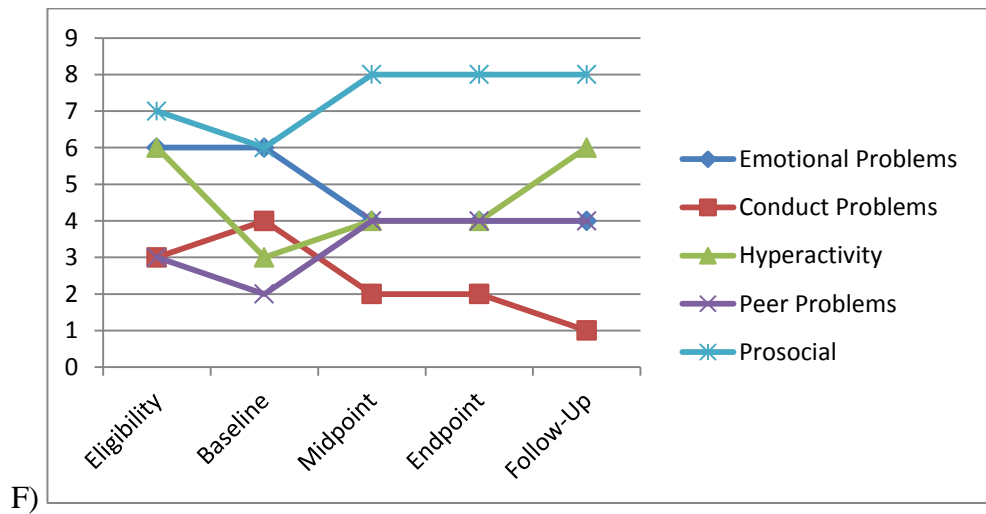
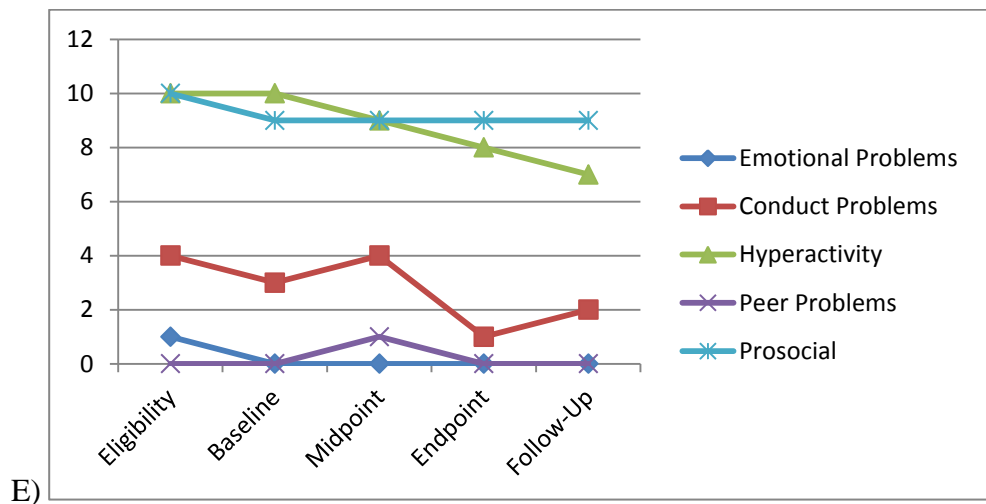
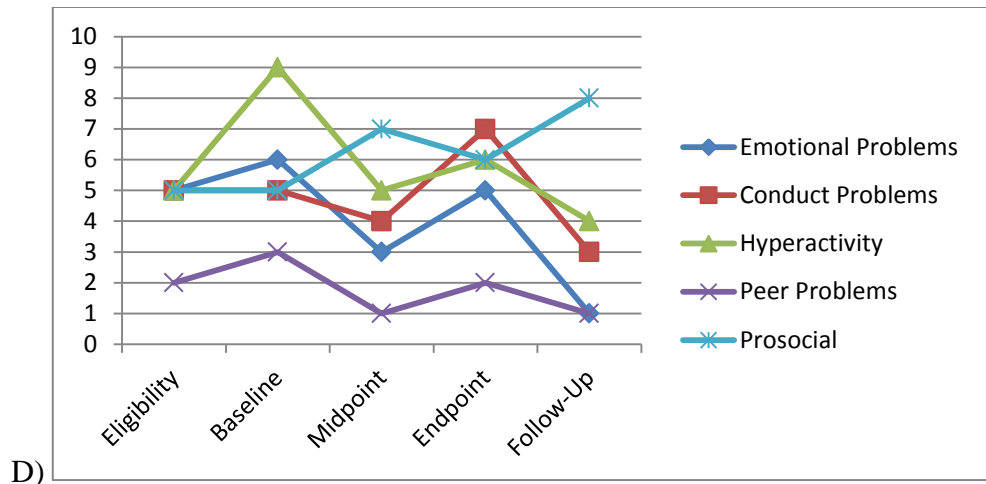


Figure 7. ERC subscale scores across study time points.

# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR



# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR





# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

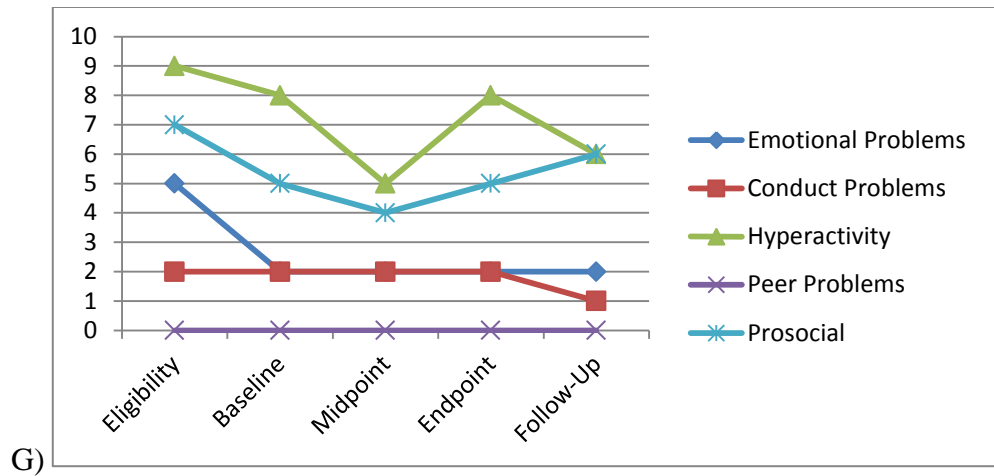


Figure 8. SDQ subscales across study time points for each participant.

# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

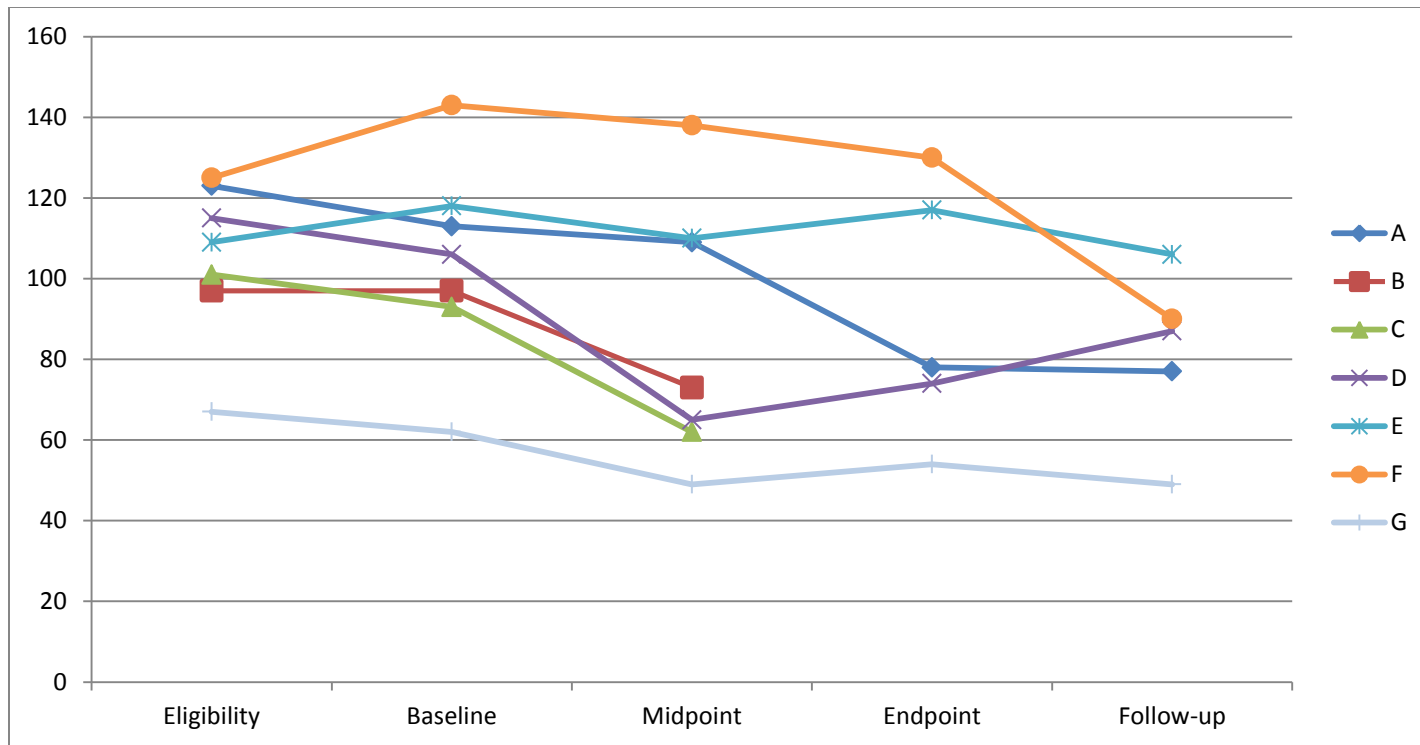


Figure 9. DERS total scores across study time points

# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

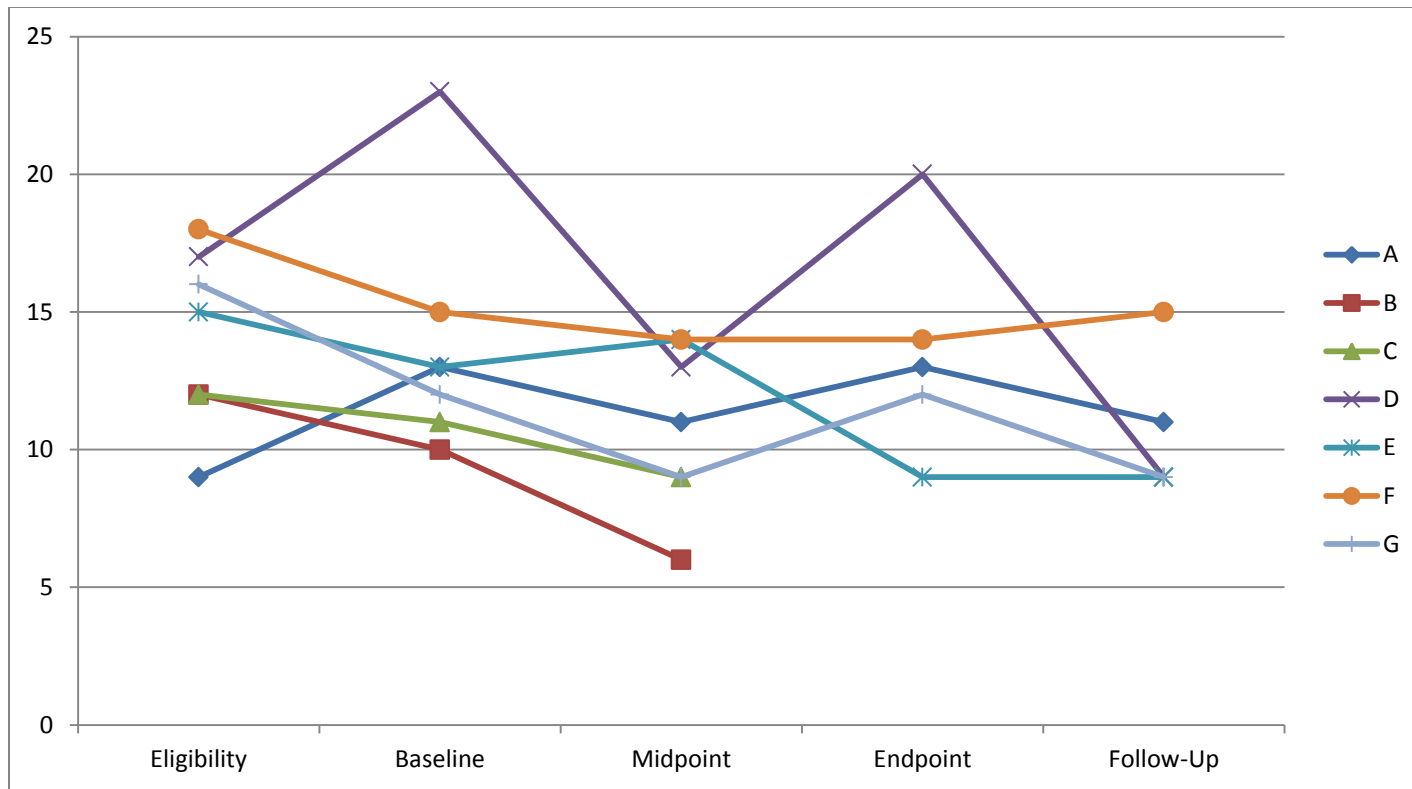


Figure 10. SDQ Total Problems scores across study time points.

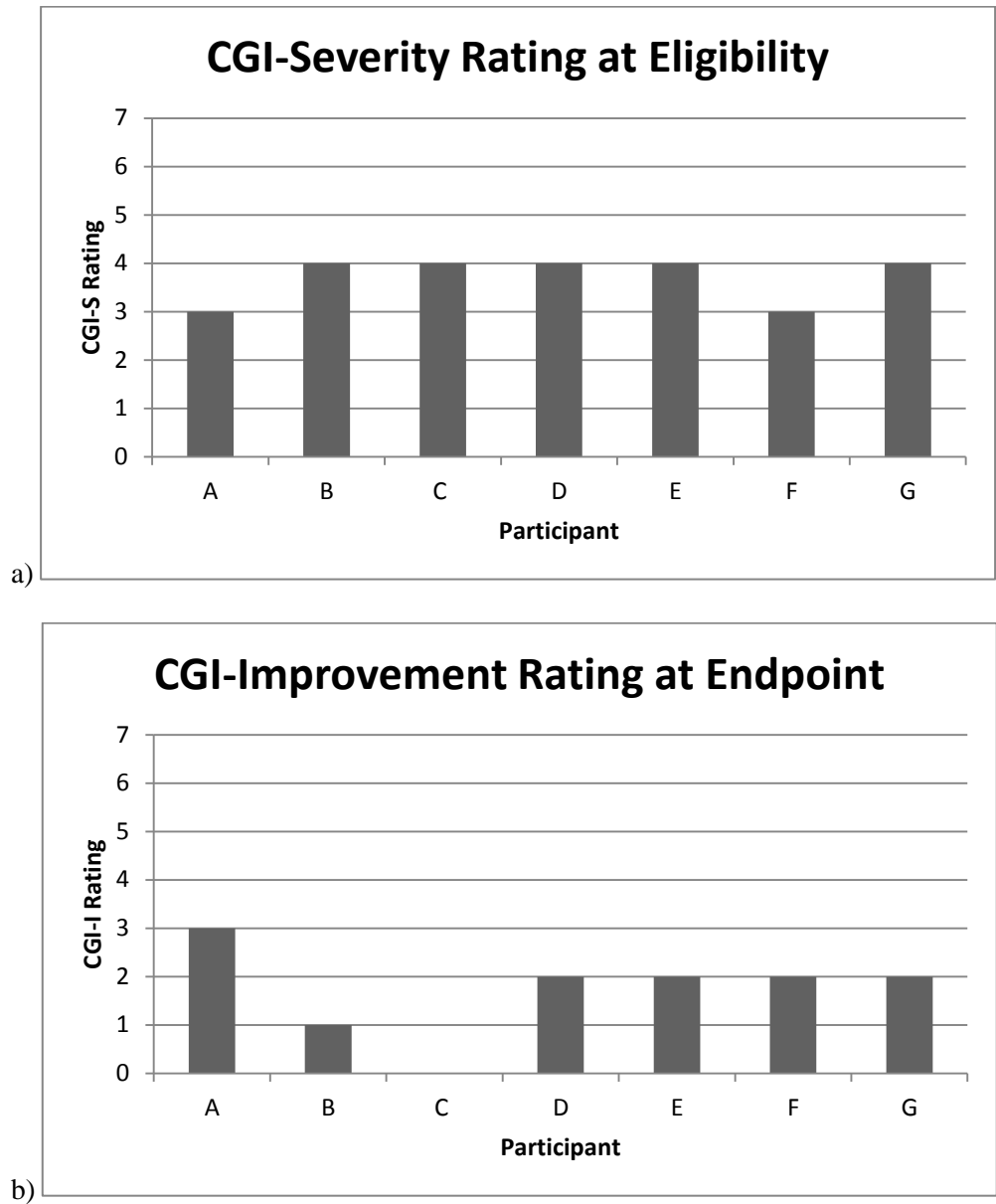


Figure 11. Clinical Global Impressions - Severity and Improvement ratings. Ratings were made on a) the CGI-Severity during the eligibility session, and b) the CGI-Improvement during the endpoint session.

Appendix A: Recruitment Flyer

**Does your child lose their temper?  
Are they often angry & irritable?**

You are invited to participate in a study that will teach your child new ways to deal with these problems.



**If your child is 8-12 years old and has trouble regulating their mood, we can help!**

- This research project is **free** and will utilize a new therapy to teach children to recognize and express emotions more appropriately
- Reimbursement will be provided for attending assessment-only sessions, for a total of \$70 for completing the study
- Sessions will be conducted at clinic locations in Blacksburg or Roanoke, whichever is more convenient for your family

 **VirginiaTech**  
*Invent the Future*

If interested, please contact Amber:  
(540)231-9735 or [MoodReg@gmail.com](mailto:MoodReg@gmail.com)

Mood Project (540) 231-9735 <a href="mailto:MoodReg@gmail.com">MoodReg@gmail.com</a>	Mood Project (540) 231-9735 <a href="mailto:MoodReg@gmail.com">MoodReg@gmail.com</a>	Mood Project (540) 231-9735 <a href="mailto:MoodReg@gmail.com">MoodReg@gmail.com</a>	Mood Project (540) 231-9735 <a href="mailto:MoodReg@gmail.com">MoodReg@gmail.com</a>	Mood Project (540) 231-9735 <a href="mailto:MoodReg@gmail.com">MoodReg@gmail.com</a>	Mood Project (540) 231-9735 <a href="mailto:MoodReg@gmail.com">MoodReg@gmail.com</a>	Mood Project (540) 231-9735 <a href="mailto:MoodReg@gmail.com">MoodReg@gmail.com</a>	Mood Project (540) 231-9735 <a href="mailto:MoodReg@gmail.com">MoodReg@gmail.com</a>
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Appendix B: Telephone Screen Script

(to be completed by study personnel over phone with caregiver)

“Hello, my name is \_\_\_\_\_ from the Psychology Department at Virginia Tech. Thank you for contacting us about our study. Do you have about 10 minutes to chat right now about the project?”

If no: “When would be a better time to talk to you about this study?” Schedule another call, thank them, and hang up.

If yes: “Great! Now I’ll tell you more information about this project. This study is focusing on a new intervention program that is designed to test an intervention to teach kids emotion regulation skills, to see if it is helpful in decreasing temper outbursts and irritability. This study is directed by Dr. Bradley White in our department and will enroll around 9 children, between the ages of 8 and 12.

“Do you have a child between 8 and 12 years old who might participate?” If no, discontinue.

If yes: “If you choose to participate and are eligible to do so, here is what will happen. You (or another caregiver) and your child will attend an initial assessment session taking approximately one hour in order to confirm eligibility and gather more information. Your family will receive \$10 as compensation for attending this assessment session. Your child will then be randomly assigned to a baseline period of 2, 3, or 4 weeks to get a good idea of their typical behavior before treatment. After baseline, your child and a caregiver will be scheduled to attend 13 therapy sessions of around 90 minutes each in either Blacksburg or Roanoke, with assessments conducted throughout to monitor progress. It is important for at least one of the child’s caregivers to be a part of the therapy so that they can know what children are learning in treatment and encourage them to apply new skills outside of the clinic. There will be no charge for treatment sessions, and you will receive an additional \$25 for attending the post-treatment assessment session, as well as \$35 for completing the one month follow-up assessment session.

“There are limited risks associated with participation in this project. Some of the questions about your child’s behavior may cause parents to feel some distress. The intervention portion may improve your child’s emotional and behavioral functioning, but since this is an experimental treatment, results are not guaranteed. On a larger scale your participation will help improve the understanding and treatment of children with temper issues.

“Are you interested in participating in this study if your child qualifies?” If no, discontinue.

If yes: “We have a few additional requirements for the study that we can discuss by phone. Would you like to proceed with providing some initial information about your child to see if they’ll qualify for the in-person eligibility session?” If no, discontinue.

If yes: “Before proceeding further I’d like to ask you a few diagnostic questions about your child’s behavior to see if they would meet criteria for this study. If it sounds like your child might meet criteria, I would be happy to provide you with resources even if you do not wish to participate in this study. In addition, even if you do agree to answer questions, if you become uncomfortable and do not wish to continue at any point, just let me know and we can end the call.” Continue to complete Initial Contact Form.

EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

Initial Contact Form

Person completing form: \_\_\_\_\_ Date: \_\_\_\_\_

Caregiver's name: \_\_\_\_\_ Phone: \_\_\_\_\_

Relationship to child: \_\_\_\_\_

Age of child: \_\_\_\_\_ (if not 8-12, child is ineligible)

Gender of child: \_\_\_\_\_ Name of child: \_\_\_\_\_

Number of tantrums per week: \_\_\_\_\_ [No longer required for eligibility]

Typical severity: \_\_\_\_\_

The following symptoms must be present (at least 1x/wk):

**Angry and irritable mood:**

- Often loses temper
- Is often touchy or easily annoyed by others
- Is often angry and resentful

One of the following 6 symptoms must also be present (to meet ODD criteria):

**Argumentative and defiant behavior:**

- Often argues with adults or people in authority
- Often actively defies or refuses to comply with adults' requests or rules
- Often deliberately annoys people
- Often blames others for his or her mistakes or misbehavior

**Vindictiveness:**

- Is often spiteful or vindictive
- Has shown spiteful or vindictive behavior at least twice in the past six months

How long have symptoms occurred?: \_\_\_\_\_ [Should be at least 6 mo]

Any previously diagnosed disorders? \_\_\_\_\_

Has the child shown symptoms of:

- \_\_\_\_\_ Mania/hypomania
- \_\_\_\_\_ Psychosis
- \_\_\_\_\_ Autism Spectrum Disorder
- \_\_\_\_\_ Intellectual Disability

[if mania, psychosis, ASD, or ID, the child is not eligible]

Last medication change: \_\_\_\_\_

[If change in medication for mood or behavioral issues in last 3 months, plan to recontact later]

Referral source (how parent heard about study): \_\_\_\_\_

Appendix C: OwlOutcomes Temper Outburst Measure

Please answer the following questions to the best of your ability about your child's behavior today, as far as you are aware. If you were not present for a temper outburst but learned about it from a reliable source (e.g., babysitter, teacher, daycare staff), you should also report that information below in number (for #1) and time period (for #4).

1. How many times did your child lose their temper today, as far as you are aware?

(Drop down list 0-9+)

2. On average, how intense was it when your child lost their temper today? Rate intensity on a scale from 1 to 10 where 1 = not intense and 10 = extremely intense, and enter 0 if no outbursts.

(Short free response)

3. On average, about how long did today's temper outbursts last?

(Drop down list: No outbursts; Less than one minute; 1-5 minutes; 6-10 minutes, 11-20 minutes; More than 20 minutes)

4. For how much of the day do you have information about your child's behavior? Please estimate the number of hours.

(Short free response)



# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

## Appendix D: IRB Approval

Initial:



Office of Research Compliance  
Institutional Review Board  
North End Center, Suite 4120, Virginia Tech  
300 Turner Street NW  
Blacksburg, Virginia 24061  
540/231-4606 Fax 540/231-0959  
email irb@vt.edu  
website <http://www.irb.vt.edu>

### MEMORANDUM

**DATE:** June 16, 2015  
**TO:** Bradley A White, Karin A Turner  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)  
**PROTOCOL TITLE:** Emotion Regulation Treatment of DMDD: A Preliminary Investigation  
**IRB NUMBER:** 14-380

Effective June 8, 2015, the Virginia Tech Institutional Review Board (IRB), at a convened meeting, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

### PROTOCOL INFORMATION:

Approved As: **Full Review**  
Protocol Approval Date: **June 8, 2015**  
Protocol Expiration Date: **June 7, 2016**  
Continuing Review Due Date\*: **April 25, 2016**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

### FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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*An equal opportunity, affirmative action institution*

# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

Amended to treat ODD:



Office of Research Compliance  
Institutional Review Board  
North End Center, Suite 4120, Virginia Tech  
300 Turner Street NW  
Blacksburg, Virginia 24061  
540/231-4606 Fax 540/231-0959  
email [irb@vt.edu](mailto:irb@vt.edu)  
website <http://www.irb.vt.edu>

## MEMORANDUM

**DATE:** September 28, 2015  
**TO:** Bradley A White, Karin A Turner, Roberto Carlos Guerra, Amanda E Halliburton, Caitlin Mary Conner, Alison Mai Phuong Kiviat  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires July 29, 2020)  
**PROTOCOL TITLE:** Emotion Regulation Treatment of Disruptive Behavior: A Preliminary Investigation  
**IRB NUMBER:** 14-380

Effective September 28, 2015, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at: <http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

## PROTOCOL INFORMATION:

Approved As: **Full Review**  
Protocol Approval Date: **June 8, 2015**  
Protocol Expiration Date: **June 7, 2016**  
Continuing Review Due Date\*: **April 25, 2016**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

## FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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Appendix E: Treatment Manual: Session Outlines

**TOPIC 1: Emotion Awareness Skills**

**Session 1 - Identifying emotions:** The first step toward getting better at managing your emotions

- Knowing how others feel is part of getting along with others
- Recognizing how you are feeling helps you cope with those feelings
- Feelings vary in intensity, and recognizing how strong your emotions are can help you choose the right tools to cope
- Recognizing how strong someone else's emotions are can help you be a good friend/student/etc
- Using a rating scale: It can be useful to rate emotion strength on a 0-10 scale, with 0 = not at all and 10 = very, very strong
  
- Activity: Ladder Game
  - Pick an emotion and identify a time when you felt that feeling. Assign an intensity rating to that situation. Next, change the scene (like a movie director) to move the feeling up or down the ladder of intensity.
  - Ex: For a public speaking fear example, you might rate it a 7, then move it up the ladder by adding a TV crew, then move it down by just talking in front of friends

**Session 2. Expressing emotions:** Can help you feel better and get along better with others by telling other people what's important to us and what they can do to help

- You can express emotions in many different ways (e.g., face, body language, behavior, verbally, writing, art)
- This session introduces many topics that are expanded in later sessions
  
- Hiding feelings: Choosing not to express emotions
  - People hide feelings sometimes, which makes it harder to identify their emotions
  - Sometimes people choose to hide emotions to not hurt others' feelings
    - Ex: Dad makes dinner and it's terrible; Grandma gives you a present you don't want; You win a prize your friend really wanted
  - If you get good at noticing clues about the situation, you can get better at telling what other people are feeling AND deciding how (much) to express your own emotions
  
- Physical signs: Sometimes people express emotions with their body before they even notice they're feeling them
  - Ex: Tapping your foot when impatient or stomping when angry; sighing, yawning
  - Learning more about your own feelings can make these unintended expressions of emotions happen less often and less strong – and practice helps too
  
- Using Words: Describing and Labeling feelings – often just saying how you feel can help
  - Emotions can be overwhelming sometimes, but being able to identify what you're feeling and just say it (Labeling) can make it easier to deal with
  - Clearly communicating your feelings to others like this can get you help with them, or make you feel better just having someone listen
  
- Activity: Improv Emotions
  - The first player chooses an emotion card and then acts out a scene while the other players try to identify the emotion (and how they knew)
    - Ex: Angry at the messy room

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- The next player then picks a different card and acts out a scene depicting that emotion that is tied to the first while the other players again guess
  - Ex: Worried that mom will be mad about the mess
- Try to have each player build on the scene at least once before starting a new scene
- Activity: Review game - Rate the Characters
  - Watch emotional video clips, then identify the emotion and rate 0-10 how strong
  - Also explain why you give that rating
- Practice: Identify emotions at home this week

### TOPIC 2: Emotion Understanding Skills

#### Session 3 - Emotion Triggers & Multiple Emotions

- We have feelings due to external or internal events
  - External: Events or things other people do (things outside us)
    - Ex: Losing a soccer game
  - Internal: Our beliefs, hopes, and preferences can also affect our emotions (things that come from inside us)
    - Ex: Tina wants to invite a friend over to play, but then thinks, “They haven’t spent much time with me lately...I bet they don’t want to be friends anymore”
  - How we think (internally) about an external event can influence our feelings more than the event itself
    - Ex: What if you see several of your classmates nearby, and you think you see them look over at you before laughing? What are different ways to think about this event, and how would they affect how you feel?
- Activity: Trigger Card game
  - The first player draws an emotion card and puts it face up, then gives an example of a trigger for that feeling. Each player gives a different trigger for that feeling until either each person gives 3 or one player can’t come up with a new trigger. The player with the highest points for that card draws the next one.
  - Points: 1 for external, 2 for internal, 3 for personal (true for you)
- Multiple Emotions:
  - It’s okay (and common) to feel more than one thing at a time
  - At other times, feelings can come quickly one after the other, which can also be overwhelming
  - These mixed feelings are normal, but can be confusing to deal with
- Activity: Emotional Emmy game
  - Shuffle the emotion index cards and place them face down in the center. The first player draws the top two cards, shows everyone, then has to tell a story about Emmy experiencing both emotions at the same time.
  - Points: 1 pt – Emmy experiences at least one of the emotions; 2 pts – Emmy experiences both emotions; 3 pts – Emmy experiences both at the same time; 4 pts – Emmy experiences both emotions at the same time about the same target

#### Session 4 - Emotions affect the body: The physiology and effects of different emotions

- Activity: Draw the body signs for each specific emotion while talking about them

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- Fear:
  - **Anxiety is normal** – The body was designed to feel fear and anxiety to keep us safe, and these feelings are often strong and uncomfortable so we act fast
  - **Body signs** – Common ways to experience anxiety are heart racing, heavy breathing, stomach issues, body tension/headaches, sweating or cold hands, shaking, and dry mouth
  - **Mixed signals** – Some of these body signals can overlap with the signals for other things, like excitement (heart) or even illness. [Ever heard anyone say they're “anxious to” do something?] Sometimes it's hard for us to tell them apart
  - **Anxiety affects thoughts** – When we're feeling anxious or afraid it can make us see threats that aren't there, or make them seem bigger. Anxiety can also make us more likely to see and expect the worst (be negative), and more likely to use avoidance as a solution.
  - **Fight-or-flight system** – A lot of our body's reactions are part of the FFS, which works to get our nervous system going when we're in danger. For example, when the heart is racing, it is pumping blood to your limbs faster, which would let you run faster (flight) or fight harder in a dangerous situation. Same thing with heavy breathing – helps get your body more oxygen to use. When activated in situations that aren't life threatening (false alarms), it can cause problems like avoidance and even panic attacks. Being able to tell a real alarm from a false alarm is really helpful in managing anxiety.
  - **Anxiety doesn't turn off quickly** – It's not a light switch that you can turn off and on at will. Instead, it's more like pushing a toy car: when something triggers anxiety, it keeps rolling for a while before eventually stopping. Anxious feelings usually stop on their own after a while as well – especially when you realize you can handle the situation – unless something keeps giving them a push. Sometimes our thoughts can keep pushing and keep us feeling anxious, unless we do something to change them.
  - **Everybody is different** – Many people just feel uncomfortable with those body signals, but others seek them out by seeing scary movies, jumping out of planes, etc. Other people say that feeling anxiety and stress are necessary for success.
  - **Anxiety is rarely actually harmful** – Unless you've got special medical conditions, anxiety signals are uncomfortable but won't actually harm you.
  - **Noticing anxiety signs helps people cope** – It's the first step to dealing with those feelings appropriately.
- Sadness:
  - **Sadness is normal** – Everyone experiences it especially when something bad happens like a loss
  - **Body signs** – People have lots of different body signals for sadness. Some make a lot of sense, like crying, head down, or curling into a ball. Other people get grouchy and angry when they're sad.
  - **Sadness ≠ depression** – Everyone feels sad sometimes, and may call it “being depressed,” but really depression is a longer lasting and more severe version of sadness that people might need help getting out of.
  - **Sadness goes away over time** – Like anxiety, sadness goes away over time, but usually slower than anxiety. Sometimes it stays for hours, days, or weeks after. Doing “nothing” might be a good strategy for anxiety or anger [like counting to ten], but it doesn't usually help for depression.

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- **Sadness has many symptoms** – They can be behavioral, cognitive, and physiological: Sleep problems, appetite, and energy (too much or too little); concentration issues; and negative thinking (remember and expect the worst).
- Anger:
  - **Anger is normal** – Anger tells us that something important to us is threatened in some way, or something is keeping us from reaching our goals. It can also keep us assertive and persistent in reaching those goals.
  - **Body signs** – A lot of them are similar to anxiety: heart rate, breathing, body tension – because the FFS also involves anger (fight).
  - **Anger makes people want to act quickly** – Like anxiety and unlike sadness.
  - **Acting quickly on anger can lead to poor choices** – Because we want to act quickly and aggressively, anger might prevent us from thinking things through and making the choice that’s best for us. It’s usually a good idea to pause when you notice you’re angry and give ourselves a chance to calm down before acting
  - **There are ways to cope with anger** – Since anger gets our body worked up, we can cope by relaxing it again. Talking can help, and so can doing physical activities like running.
- Happiness:
  - **Happiness ≠ “not feeling bad”** – It’s not just the absent of unwanted feelings like sadness, but instead it’s feelings of pleasure when doing something you like or that will help you reach your goals.
  - **Body signs** – Warm and buoyant feelings, laughter, and being able to ignore unpleasant feelings
  - **Faking happiness can make happiness** – There is scientific evidence that shows people who make themselves smile when not feeling happy actually experience more happiness than if they didn’t. Your brain says, “I’m smiling, I must be happy” and affects your mood.
- Activity: Body signals game
  - The first player reads an emotional scenario and lists as many body signals as they can associated with that scene. For each one, other players vote “agree” or “disagree” for whether they think that signal fits. Score one point for each “agree.” Once the first player can’t think of any more signs, the other player(s) can “steal” by coming up with additional ones.
- Practice: Notice body signs of emotions in self and others

### Session 5 - Hiding & Changing emotions

- Expression ≠ Experience: You don’t have to express every feeling you experience
- People hide their emotions for many different reasons
- People hide emotions with different strategies:
  - Fake it – Simplest way is to fake a different feeling [ex: Acting happy when you get socks for Christmas]
  - Stay quiet – Say and show little to keep feelings hidden
  - Distract others – Verbal or physical distraction can draw attention away from how you’re feeling, even if you’re showing it [Deflect conversation, physically move, etc]
- Feelings should be hidden rarely and strategically

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- Sometimes hiding feelings is socially helpful, but it's not healthy to do all the time
- Since it could be harmful, we shouldn't hide them forever, and should pick the right situations
- When hiding emotions might be a good idea:
  - When expressing feelings might make others uncomfortable or unhappy
    - Ex: Supporting your friend's choice even if you don't agree
  - When the feeling is probably temporary
    - Since some feelings don't stay long (fleeting), expressing every single one may just be confusing to yourself and others
    - Since they don't stick around, it's not so harmful to not express them
    - Ex: If someone steps on my foot accidentally, I might be annoyed and in pain for a second, but if they keep moving or apologize, I might choose to just move on myself
  - When a situation is unsafe
    - Showing your true feelings in some situations may make things more dangerous or difficult for you
    - Ex: Showing fear or hurt feelings to a bully
- Activity: Hiding Feelings card game
  - The first player draws a card from a deck of scenarios where a character might hide their feelings
  - In phase 1, the player reads the card and players discuss the situation and decide whether hiding feelings would be a good idea – if so, how.
  - Phase 2, the person who drew the card acts out the scene (can recruit help), based on the discussion
  - Phase 3, the player then does the opposite of their first choice
  - Scoring: other players rate how well feelings were hidden (1-5)

### TOPIC 3: Empathy Skills

#### Session 6 – Empathy: Recognizing & Sharing others' emotions

- Recognizing emotions in others:
  - Telling how other people are feeling comes from 2 types of clues:
    - External clues: facial and body signs
    - Situational clues: Understanding how a situation might make them feel
      - Remember that everyone is different, so someone might have a different reaction than you would
      - This is why knowing more about that person can help you figure out how they feel
  - Activity: Emotion Jeopardy
- Sharing others' feelings:
  - "Empathy" is not just being able to recognize what someone else is feeling, but to understand why they feel that way and often feel it with them
  - If you have empathy, you can put yourself in another person's shoes, and know what it feels like to walk in those shoes.
- Activity: Emotional Idol game

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- The player reads a scenario involving a particular character going through an emotional experience.
- The player then “tries out” for a part as that character in a movie by acting out scenes based on understanding the characters in the cards.
- Phase 1 – Brainstorming: Make a list of body feelings, thoughts, and actions that the person might be experiencing.
- Phase 2 – Audition: The player then acts out a scene using the card and brainstorming as inspiration, and is encouraged to experience the emotion of the character instead of what he/she would experience.
- Separating from others’ emotions
  - Having empathy for someone can give you a better idea of someone else’s perspective
  - Pros and cons of empathy:
    - Pros: You could figure out how to help someone or make the situation better; Understanding someone else might keep you from getting upset with them
    - Cons: You might be feeling someone else’s negative feelings, which could be a lot to handle.
    - Some people might need more help than we can give on our own – helping them might mean finding someone else to help them
  - While feeling with others can let us understand and help them, it’s important to be able to be able to separate your own emotions from theirs
- Practice: Try using empathy with your family this week

### TOPIC 4: Emotion Regulation Skills I – Prevention Skills

#### Session 7 - Prevention skills

- Introduction: Regulating emotion
  - When it comes to dealing with emotions, it’s important to be flexible and stick with it
  - There are lots of ways to deal with feelings, which is good because there’s not a surefire strategy that works for everyone every time
  - Sometimes more than one strategy is needed, and together they can be helpful – like using a combo in a video game
- Activity: Emotion-Coping Story Building
  - Work together to create a story that involves a child facing a set of emotionally taxing situations (A “no good, very bad day”)
  - Come up with ways to cope with each of the situations to help the child get through the day, using multiple strategies as needed
- Rationale for Prevention Skills
  - So far we’ve been building awareness and understanding of emotions in ourselves and others, because these abilities are useful in regulating emotions
  - You can also make it easier to prevent bad moods just by taking better care of yourself – these are called “prevention skills”
  - If you’re not eating or sleeping right, or getting any exercise, it’s easier to trigger emotional reactions
- Discuss/Activity: Getting active
  - Exercise is good for the body, but can also have mental health benefits



## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- It could help “burn off steam” or decompress after a long day
  - It can make you feel good about yourself by taking care of yourself
  - It helps some people relax and therefore be able to handle stressful things better
  - It may be useful to track what exercise activities you do and how they affect your mood (**Activity Diary**)
  - If activities are limited/none, brainstorm enjoyable activities and try to work some exercise into the weekly schedule
- Discuss: Healthy eating
  - Healthy eating promotes overall health – if your body is in balance, it’s easier to handle stressful things
  - Some people get “hangry”: increased irritability when hungry
  - Eating together as a family can help people get along and often eat more healthy food
  - Tips: Have healthy food and snacks on hand; Have kids invite friends over for dinner; Caregivers should be good eating role models; Kids can help with planning/preparing appropriate food if interested
  - If “hanger” could be a problem, it may be useful to track how eating relates to mood (**Eating Diary**)
- Discuss: Sleeping well
  - Not getting enough sleep tends to make people crankier
  - Discuss sleeping habits – do they ever have trouble sleeping or getting up?
  - It can be helpful to have a routine in place that is predictable – it actually signals the body that it’s time to get sleepy
  - Tips to make the bedroom and bedtime more sleep-friendly (from **Getting Better Sleep** handout):
    - Quiet, dark, comfortable, & safe
    - “Sleep aids” when needed: warm milk, hair brushing, back rub, calm music, relaxation exercises
    - Activity during the day can make sleep easier at night
    - Avoid stimulating or emotional activities before bed
- Practice: Prevention skills – Keep an eye out for problems caused by insufficient exercise, food, and/or sleep; use tracking sheets as needed

### TOPIC 5: Emotion Regulation Skills II – Mastery

#### Session 8 - Mastery – Doing things you’re good at

- Making time to do things you’re good at can work a lot like prevention skills: Helps you feel better which helps you handle triggers better
- It can also help improve mood if you’re feeling bad
- This is particularly helpful for depression, since it often makes you feel bad about yourself and what you can do, and people don’t feel like doing much at all
- Select an activity: Identify a current activity or a new one to try
  - Activities should: Be enjoyable, caregiver approved, feasible, be fun regardless of skill, not get less fun over time, be safe and healthy

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- If they already have an activity that meets criteria, encourage them to use that as an emotion regulation tool, and the other options listed can be future or off-season options
  - Schedule practice
    - May already have a scheduled practice time – if so, are they happy with how it’s going?
    - If not, it’s often good to start small and build up as mastery increases
  - Observe the impact of the activity
    - To see what impact an activity has, it helps to rate its effect on Mood & Mastery
    - **Activity Diary** handout already has a convenient place for mood rating
    - Mastery rating is for gauging how “well” they do the activity
      - When you first start something, your mastery is low because you haven’t mastered it yet, but should increase over time
      - It can help us feel better about ourselves to get good at an activity
      - Can add a Mastery column to Activity Diary
    - If ratings don’t improve over time, should consider why – but note that mastery usually increases slowly
  - Activity: Play online game about exercise and healthy eating - have to play more than once to master: <http://www.fns.usda.gov/multimedia/games/trackandfield/>
- Practice: Continue to monitor prevention skills, and start tracking how mastery activity affects mood

### TOPIC 6: Emotion Regulation Skills III – Expression Skills

#### Session 9 - Expressing Yourself

- Revisit: Why it can be helpful to express emotions
  - Might make the situation better – others can understand how you’re feeling
  - Can make the feelings less intense or troubling
- One reason expressing feelings makes them easier to deal with is because *Feelings tell us what matters*
  - Ex: Feeling sad if your friend has to leave → an important friend, compared to feeling relieved if they leave
  - Remember, no matter what the feeling, emotions themselves are not a bad thing, it’s just your body and mind trying to tell you something → That’s why we want to regulate them, not get rid of them
- Reflect on what matters:
  - Remember from Hiding Emotions, that not all emotions are equal – need to figure out which ones matter and need to be expressed
    - If you expressed every little feeling (“oversharing”), you’d probably hurt a lot of people’s feelings, and maybe lose friends
  - Some things to consider when deciding what matters:
    - Who (or what) is the target of the emotion?
      - Can be hidden or hard to figure out what it’s really about – many times we find it easier to blame someone else than admit your own mistakes
    - What is the “reason” for the feeling? → Why do I feel like this?

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- Often more than one reason, and not all are easy to admit
  - External triggers are usually easier to identify, but internal triggers are important too
  - It's normal to have some emotions for reasons that feel silly or unimportant – everyone does, but not everyone acts on them
  - Often the most hidden reasons are the most important to figure out in order to do better
- Feelings are meant to be shared - strategically
    - Sharing feelings is often good for relationships, but remember that oversharing is not helpful and can hurt → need to know when to share and how to do it
      - To whom can you talk?
        - Brainstorm a list of people they are comfortable or willing to share feelings with
        - You might choose to talk with different people about different things
      - Which Feelings to Share?
        - Consider whether it might be hurtful and not at all helpful
    - **Activity: To Share or Not to Share**
      - Read a scenario involving a person with a choice about whether to tell others about the emotion he is experiencing, then go over Editing Emotion Talk in the **To Share or Not to Share handout** and decide whether to share or not. If sharing, roleplay the scene. If not, identify a strategy to use in the situation.
    - When to Share?
      - Even if you decide what matters, it can be helpful to find the best time to talk about it
      - Ex: Ever had something you really wanted to say to your parents when they're doing something else? How does that go?
- Practice: This week, notice situations when you shared or didn't share emotions and bring an example of each to session next time.

### Session 10 – How sharing can help

- Sharing our emotions can get us two kinds of support: Emotional or Instrumental
- *Emotional support* is when someone listens to you and sympathizes with you
  - Sometimes it feels good to get something off your chest and have someone hear you, even if they don't do anything about the problem
- *Instrumental support* is when the person does something to help fix what's bothering you (ex: helping you study or giving advice)
- Sometimes we may be looking for a particular type of support
  - Ex: Ever felt like you don't want advice, but you just want someone to listen?
- How to share: The formula
  - Expressing yourself = Feeling + Reason
  - It can be even more helpful to add what you think you need – specify the type of support you're looking for: Expressing yourself = Feeling + Reason + Request

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- Activity: Role play expressing feelings
    - Identify Who (talking to), What (talking about), Why (you're sharing), How (you should express your feelings)
  - Activity: Write it down
    - Introduce the strategy of keeping a journal to express your feelings when you don't feel like talking about it or when something still bothers you after expressing it
    - Can be illustrated like a comic
    - Can take any form, but may be most helpful by including:
      - Describe/draw the situation
      - Describe your feelings/draw your body signs
      - List/thought bubble the thoughts you were having
      - Come up with one thought that might help you feel a little better about the situation
        - Finding a silver lining/bright side in the situation
        - Putting yourself in the other person's shoes might help
- Practice: Try expressing yourself using a journal at least twice to see if it helps, and bring in an example to show next week.

### TOPIC 7: Emotion Regulation Skills IV – Basic Cognitive Skills

#### Session 11 - The Cognitive Triangle

- Introduction to the Thoughts→Feelings→Actions triangle
  - How you think influences how you feel and what you do, and vice versa
  - If you can change your thinking, your feelings may change too, and so can how you react
  - Practice: Filling in the triangle
    - Ex: Walking down the hallway and getting bumped by someone.
    - Get two different thoughts and explore how actions and feelings would be affected.
    - Noticing and identifying thoughts is hard work and requires practice
    - Some thoughts are more helpful than others
  - Activity: Cognitive Shuttle
    - Position signs reading “Helpful thought”, “Unhelpful thought”, and “Neutral thought” around the room
    - The player should draw a card with a 1 sentence description of a situation followed by a list of possible helpful and less helpful thoughts, then read any thought on the list and then run over to and touch the appropriate sign for that thought. The card can be passed to another player to identify the next thought, or continue with the same player.
    - Bonus points by identifying an emotion that a thought might make someone feel.
    - Advanced round:
      - Cognitive Targets - Player 1 throws a projectile at a sign and gives a situation, Player 2 has to come up with the designated type of thought
  - Introduce Situation-Thought-Emotion-Action sheet and do an example together
- Practice: Fill in a Situation-Thought-Emotion-Action sheet during the week.

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

### Session 12 - Thinking Traps

- Once you can identify thoughts and come up with different thoughts for the same situation, you can start looking for patterns of thoughts
  - Some of these patterns can be unhelpful, and there are some common ones that we call “thinking traps” because it’s easy for people to get stuck in them
    - Introduce the thinking traps one at a time, and come up with examples:
      - All-or-nothing/Black and white thinking
      - Jumping to conclusions
      - Catastrophizing
      - Emotional reasoning
      - Hostile attribution bias
      - Mind reading
      - Overgeneralization
      - Overpersonalization
      - Looking for the bad news
    - The goal is not so much to avoid them in the first place, but to notice when you’re stepping in them in order to make it easier to get out of these patterns and try different ways of thinking
  - Changing thoughts
    - Thinking traps tend to have us thinking in unrealistic ways, so if you challenge them you may be able to think in ways that are more in line with reality, which often helps us cope better
    - Remember that it’s not really just about “thinking happy thoughts,” but more about thinking helpful vs unhelpful thoughts. You could have positive thoughts that end up being harmful.
      - Ex: What if you felt bad after doing poorly on a test? Thinking “That was bad luck – I’m sure I’ll know more of the questions next time” may be a more positive thought, but is it helpful?
    - When noticing and evaluating thoughts, try to be a detective and look for whether the evidence supports those thoughts or not.
      - Ask questions, including how likely something is, what other possibilities might be
  - Activity: What’s your guess?
    - Read index cards with scenarios including multiple characters. Have player 1 read the scenario and guess what the main character thinks will happen next if they fall into a thinking trap
    - Like a detective, Player 1 must then answer:
      - What is the evidence for that guess/deduction?
      - How will they feel if they make that guess?
      - What if the first deduction is wrong? What else might they guess that would lead them to have a different feeling?
- Practice: Practice coming up with more helpful thoughts when tough situations come up this week, and notice what thinking traps you tend to get stuck in

### TOPIC 8: Emotion-Specific Cognitive Skills

#### Session 13 – Using thoughts to deal with anger

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- Anger is designed to make us act fast without thinking, so one of the goals for dealing with it is to increase the time between when anger starts and action begins
- Perspective taking: Using empathy skills can be very helpful for dealing with anger
  - There are many ways to see a situation
    - Activity: Have everyone stand in a different part of the room and describe what they see
    - A situation can look different to different people
      - Even if you are standing in the same place looking at an object, what you have previously experienced with it may give it a different meaning
    - These different perspectives and internal triggers result in different feelings
- Activity: Simulated anger memory game
  - To win the game, you have to overcome annoyance or anger and do a memory task
  - Discuss and choose what might be good provocations to use
  - Generate thoughts and other strategies to use during challenges to help focus on remembering the cards: “Stay focused,” “I can do it,” “The teasing is not really true”
  - Starting with 2 cards, the player should try to remember the words. Between each word, present an emotional challenge: Calling the child’s name in different voices, poking, teasing names, discouraging words, etc
  - Add another card each time they succeed to make it harder
- Emotion regulation toolbox:
  - Make a list of tools that can help deal with tough situations and emotions
  - Suggestions:
    - Count to ten
    - Stress ball squeeze
    - Deep breaths
    - Get some space
    - Exercise
    - Calming/distracting activities
    - More helpful thoughts
    - Empathy
    - Writing/drawing in a journal
    - Express yourself to someone

# EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

## Appendix F: Treatment Fidelity Coding

### *Fidelity Coding Guidelines – Session #1*

#### **Goal 1** (MET / NOT MET)

Complete pre-treatment measures prior to session.

#### Measures to be completed:

- Child: SxS, DERS
- Parent: SxS, ERC, SDQ

#### **Goal 2** (MET / NOT MET)

Discuss why it's important to be able to identify emotions.

#### Key Points to Be Covered:

- Knowing how others feel is part of getting along with others
- Recognizing how you are feeling helps you cope with those feelings
- Emotions can tell us what is important to us, and lead us to express those things to others

#### **Goal 3** (MET / NOT MET)

Talk about the different emotions we experience.

#### Key Points to Be Covered:

- There are a lot of different feelings
- Feelings can cause different physical changes in the body
- Some signs for emotions are visible, we others require you to know something internal about that person
  
- Complete Handout 1: Feelings, Feelings, Everywhere!

#### **Goal 4** (MET / NOT MET)

Do "Emotions Charades" exercise. [Alternate: Emotion Dictionary]

Come up with a list of emotions with the client [and caregiver] and write each one on an index card. Shuffle the cards and take turn acting out the emotion written on the card while the other(s) guess. After guessing correctly, everyone identifies which clues helped them guess the answer.

#### **Goal 5** (MET / NOT MET)

Discuss rating emotion intensity.

#### Key Points to Be Covered:

- Feelings vary in intensity
- Rating/recognizing how strong your emotions are can help you cope with them
- Recognizing how strong someone else's emotions are can help you be a good friend/student/etc
- Introduce the idea of using a scale

#### **Goal 6** (MET / NOT MET)

Play the "Ladder Game"

Using the cards from Emotions Charades, pick one and have each person take a turn to identify a time when they felt that feeling. Work together to assign an intensity rating to that situation. Next, work together to change the scene (like a movie director) to move the feeling up or down the ladder of intensity.

*If goal(s) not met, coder comments on missing or unclear elements:*

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

### *Fidelity Coding Guidelines – Session #2*

#### **Goal 1** (MET / NOT MET)

Introduce expressing emotions

##### Key Points to Be Covered:

- Expressing emotion can help you feel better and get along with others
- We can express emotions in different ways: with our body, words, behavior, etc

#### **Goal 2** (MET / NOT MET)

Discuss hiding emotions

##### Key Points to Be Covered:

- People hide feelings sometimes, which makes it harder to identify their emotions
- Sometimes people choose to hide emotions so they don't hurt other people's feelings

#### **Goal 3** (MET / NOT MET)

Discuss expressing emotions with physical signs and words

##### Key Points to Be Covered:

- Sometimes people express emotions with their body before they even notice they're feeling them
- Learning more about your own feelings can make these unintended expressions of emotions happen less
- Being able to identify what you're feeling put a name on it (Labeling) can make it easier to deal with
- Communicating your feelings to others can also help you feel better

#### **Goal 4** (MET / NOT MET)

Practice these ideas with an activity:

- Play "Improv Emotions" game and/or Mask game.

*If goal(s) not met, coder comments on missing or unclear elements:*

### *Fidelity Coding Guidelines – Session #3*

#### **Goal 1** (MET / NOT MET)

- Introduce: Emotion Triggers – what causes an emotion

##### Key Points to Be Covered:

- We have feelings due to external or internal events
- How we think (internally) about an external event can influence our feelings as much as the event itself

#### **Goal 2** (MET / NOT MET)

Do an activity to practice identifying triggers

- Activity: Trigger Card game
  - The first player draws a card and puts it face up, then gives an example of a trigger for that feeling.
- AND/OR
- Inside/Outside game (more active)

#### **Goal 3** (MET / NOT MET)

Introduce topic 2: Multiple emotions

##### Key Points to Be Covered:

- It's okay to feel more than one thing at a time
- At other times, feelings can come quickly one after the other
- Feelings can interact to affect each other



## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

### **Goal 4** (MET / NOT MET)

Do an activity to practice with multiple emotions

- Activity: Emotional Emmy game
  - The first player draws the top two cards, shows everyone, then has to tell a story about Emmy experiencing both emotions at the same time.

*If goal(s) not met, coder comments on missing or unclear elements:*

### **Fidelity Coding Guidelines – Session #4**

#### **Goal 1** (MET / NOT MET)

Discuss fear and how it works

##### Key Points to Be Covered:

- Anxiety is normal
- Review common physiological signs of anxiety
- Anxiety can negatively affect our thoughts
- Explain fight-or-flight system and how it relates to anxiety
- Note that anxiety does fade on its own, but not right away

#### **Goal 2** (MET / NOT MET)

Discuss sadness and how it works

##### Key Points to Be Covered:

- Sadness is normal
- Review common physiological signs of sadness
- Explain how typical sadness differs from depression
- Sadness can take even longer than anxiety to go away, and doing nothing is not a good strategy for handling depression

#### **Goal 3** (MET / NOT MET)

Discuss anger and how it works

##### Key Points to Be Covered:

- Anger is normal (and what it's for)
- Review common physiological signs of anger
- Anger makes us want to act quickly, but this can lead to poor choices
- There are ways to cope with anger

#### **Goal 4** (MET / NOT MET)

Discuss happiness and how it works

##### Key Points to Be Covered:

- Happiness is not the same as “not feeling bad”
- Review common physiological signs of happiness
- Faking happiness can make happiness

#### **Goal 5** (MET / NOT MET)

Play the Body signals game to practice with different emotions.

- Create a small deck of emotion-eliciting scenarios (pg 132) on separate index cards. Place face down in the center. The first player turns over the top card and lists as many body signals as they can associated with that scene. For each one, other players vote “agree” or “disagree” for whether they think that signal fits.

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

*If goal(s) not met, coder comments on missing or unclear elements:*

### *Fidelity Coding Guidelines – Session #5*

#### **Goal 1** (MET / NOT MET)

Revisit: Hiding & changing emotions

##### Key Points to Be Covered:

- Emotion expression does not equal emotion experience: You don't have to express every feeling you experience
- Other people don't always express what they experience either, so you may have to pay close attention or use other information you know to tell how they're feeling
- People hide their emotions for many different reasons

#### **Goal 2** (MET / NOT MET)

Explain the common strategies for hiding emotions

##### Key Points to Be Covered:

- Fake it – Simplest way is to fake a different feeling
- Stay quiet
- Distract others – Verbal or physical distraction can draw attention away from how you're feeling

#### **Goal 3** (MET / NOT MET)

Explain that feelings should be hidden rarely and strategically

##### Key Points to Be Covered:

- Sometimes hiding feelings is socially helpful
- It's not healthy to hide emotions all the time
- Since it could be harmful, we shouldn't hide them forever, and should pick the right situations

#### **Goal 4** (MET / NOT MET)

Discuss when hiding feelings might be a good idea

##### Key Point to Be Covered:

- When expressing feelings might make others uncomfortable/unhappy
- When the feeling is probably temporary
- When a situation is unsafe: Showing your true feelings in some situations may make things more dangerous or difficult for you

#### **Goal 5** (MET / NOT MET)

Play the Hiding feelings card game

- Create a deck of cards with situations where a character is likely to hide their feelings. Place the cards face down, then take turns drawing a card.
- In phase 1, the player reads the card and players discuss the situation and decide whether hiding feelings would be a good idea – if so, how.
- Phase 2: The person who drew the card acts out the scene (can recruit help), based on the discussion
- Phase 3: The player then does the opposite of their first choice

*If goal(s) not met, coder comments on missing or unclear elements:*

### *Fidelity Coding Guidelines – Session #6*

#### **Goal 1** (MET / NOT MET)

Revisit: Recognizing emotions in others

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

### Key Points to Be Covered:

- Remember that telling how other people are feeling comes from 2 types of clues: External (facial and body signs) and situational (understanding how a situation might make them feel)
- Situational clues are particularly important if you're on the phone with someone or emailing
- Everyone is different, so someone might have a different reaction to a situation than you would

### **Goal 2** (MET / NOT MET)

Activity: Feelings Jeopardy

- Play a Jeopardy game using 11 clips of varying difficulty, 5 for Body Signs, 5 Situation Signs, and the hardest as Final Jeopardy.

### **Goal 3** (MET / NOT MET)

Introduce: Sharing others' feelings

### Key Points to Be Covered:

- "Empathy" is not just being able to recognize what someone else is feeling, but to feel it with them
- If you have empathy, you can put yourself in another person's shoes, and know what it feels like to walk in those shoes.

### **Goal 4** (MET / NOT MET)

Activity: Emotional Idol game

- Players take turns "trying out" for a part in a movie by acting out scenes based on cards with emotional situations. Other players serve as the audience.

### **Goal 5** (MET / NOT MET)

Discuss: Separating from others' emotions

### Key Points to Be Covered:

- Having empathy for someone can give you a better idea of someone else's perspective, but there are pros and cons to empathy
- Pro: Empathy can help you figure out how to help someone or make the situation better
- Con: Feeling someone else's negative feelings can be a lot to handle.
- While feeling with others can let us understand and help them, it's important to be able to separate your own emotions from theirs
- Optional Activity: Call-In Radio Show
  - The therapist calls in with scenario. The client must then respond as a radio host, guessing what emotion(s) the caller must be feeling and describing how they guessed that. Next, the host offers help in the form of practical advice or verbal support.

*If goal(s) not met, coder comments on missing or unclear elements:*

### ***Fidelity Coding Guidelines – Session #7***

### **Goal 1** (MET / NOT MET)

Administer midpoint measures.

### **Goal 2** (MET / NOT MET)

Introduce: Regulating emotion

### Key Points to Be Covered:

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- There are lots of ways to deal with feelings, which is good because there's not a surefire strategy that works for everyone every time
- Sometimes more than one strategy is needed, and together they can be helpful

### **Goal 3** (MET / NOT MET)

Activity: Emotion-Coping Story Building

- Work with the client to create a script that involves a child facing a set of emotionally taxing situations
- Stories can be plotted verbally, in written form, or drawings/comics
- Note that there are many ways to deal with emotions in different situations

### **Goal 4** (MET / NOT MET)

Discuss staying active

#### Key Points to Be Covered:

- Introduce Prevention skills: Just by taking better care of yourself, you might make it easier to handle tough situations
- Exercise is good for the body, but can also have mental health benefits
- It can help by “burning off steam” or by making you feel good about yourself
- Ask about the client's activities, and if limited/none, work with the client and caregiver to build a list of possible activities to try

### **Goal 5** (MET / NOT MET)

Discuss: Healthy eating

#### Key Points to Be Covered:

- Healthy eating promotes overall health – if your body is in balance, it's easier to handle stressful things
- Explain “hangry”: Our moods can get worse when hungry
- Ask about their family's eating habits and make suggestions on promoting healthy eating

### **Goal 6** (MET / NOT MET)

Discuss: Sleeping well

#### Key Points to Be Covered:

- Discuss the child's sleeping habits – do they ever have trouble sleeping or getting up?
- It can be helpful to have a routine in place that is predictable – it actually signals the body that it's time to get sleepy
- Discuss ways to make the bedroom and bedtime more sleep-friendly & give **Getting Better Sleep** handout

*If goal(s) not met, coder comments on missing or unclear elements:*

## ***Fidelity Coding Guidelines – Session #8***

### **Goal 1** (MET / NOT MET)

Check in on discussed prevention skills – troubleshoot if applicable

### **Goal 2** (MET / NOT MET)

Introduce: Rationale for mastery

#### Key Points to Be Covered:

- Making time to do things you're good at can work like prevention skills: Helps you feel better which helps you handle triggers better
- It can also help improve mood if you're feeling bad
- Mastery is particularly helpful for depressed moods

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

### **Goal 3** (MET / NOT MET)

Activity: Select an activity to master

- Brainstorm a list of a variety of activities
- If the child already has a suitable activity, encourage them to use that as an emotion regulation tool, and to consider the other options listed as future or off-season options
- If not, select something from the list that meets criteria

### **Goal 4** (MET / NOT MET)

Schedule activity practice

- May already have a scheduled practice time – if so, are they happy with how it's going?
- If not, help them practically figure out what, when, how of doing the activity
- Discuss how to observe the impact of the activity
  - It may help to rate its effect on Mood & Mastery
- Mastery rating is for gauging how “well” they do the activity, and should increase over time
- If ratings don't improve over time, should consider why and if the activity should continue

### **Goal 5** (MET / NOT MET)

Play a game on the computer to reinforce prevention material and illustrate that mastery involves practice

- <http://www.fns.usda.gov/multimedia/games/trackandfield/> or similar

*If goal(s) not met, coder comments on missing or unclear elements:*

### *Fidelity Coding Guidelines – Session #9*

### **Goal 1** (MET / NOT MET)

Discuss: Expressing Yourself

#### Key Points to Be Covered:

- Revisit: Why would it be helpful to express an emotion
  - Might make the situation better – others can understand how you're feeling
  - Can make the feelings less intense or troubling
- Feelings tell us what matters
- No matter what the feeling, emotions themselves are not a bad thing, it's just your body trying to tell you something

### **Goal 2** (MET / NOT MET)

Reflecting on what matters

#### Key Points to Be Covered:

- Not all emotions are equal – have to figure out which ones matter and need to be expressed
- If you expressed every little feeling, you'd probably hurt a lot of people's feelings
- The target of the emotion may be hard to figure out – sometimes it's ourselves
- The reason for the emotion may also be hard to figure out
  - Often more than one reason, and not all are easy to admit
  - Often the most hidden reasons are the most important to figure out in order to do better

### **Goal 3** (MET / NOT MET)

Activity: Who can you share with?

- Use whiteboard to brainstorm a list of people they are comfortable or willing to share feelings with

### **Goal 4** (MET / NOT MET)

Activity: **To Share or Not to Share**

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- Read scenarios on index cards involving a person with a choice about whether or not to share their feelings
- Go over Editing Emotion Talk in the **handout** and decide whether to share or not.
- If sharing, roleplay the scene. If not, consult Changing the Emotional Channel to identify a strategy to use in the situation.

### **Goal 5** (MET / NOT MET)

Discuss: When to Share?

#### Key Points to Be Covered:

- Even if you decide what matters, it can be helpful to find the best time to talk about it
- Discuss examples of situations where you may have to wait to express emotions or not

*If goal(s) not met, coder comments on missing or unclear elements:*

## *Fidelity Coding Guidelines – Session #10*

### **Goal 1** (MET / NOT MET)

Discuss: Types of support

#### Key points to cover:

- Sharing our emotions can get us two kinds of support: Emotional or Instrumental
- Emotional support is when someone listens to you and sympathizes with you
  - Sometimes it feels good to get something off your chest and have someone hear you, even if they don't do anything about the problem
- Instrumental support is when the person does something to help fix what's bothering you

### **Goal 2** (MET / NOT MET)

Introduce a formula to share emotions

#### Key points to cover:

- Expressing yourself = Feeling + Reason
- It can be even more helpful to add what you think you need (+ Request) – specify the type of support you're looking for

### **Goal 3** (MET / NOT MET)

Activity: Role play expressing feelings

- The therapist should play the role of a kid who had a tough day at school, while the client provides support
- Child should practice identifying Who (talking to), What (talking about), Why (you're sharing), How (you should express your feelings)

### **Goal 4** (MET / NOT MET)

Discuss: Write it down

#### Key points to cover:

- Introduce the strategy of keeping an art/writing journal to express your feelings
- Useful when you don't feel like talking or when something still bothers you after expressing it
- Introduce the steps:
  - Describe/draw the situation
  - Describe your feelings/draw your emotions - body signs, etc
  - List/thought bubble the thoughts you were having

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- Advanced: Come up with one thought that might help you feel a little better about the situation

*If goal(s) not met, coder comments on missing or unclear elements:*

### ***Fidelity Coding Guidelines – Session #11***

#### **Goal 1** (MET / NOT MET)

Check on writing/art journal – go over example together and give feedback

- If they did not try it, discuss, problem solve, and possibly do an entry together

#### **Goal 2** (MET / NOT MET)

Introduce: The Cognitive Triangle

#### **Key Points to Cover:**

- Draw the Thoughts→Feelings→Actions triangle and explain
- How you think influences how you feel and what you do
- If you can change your thinking, your feelings may change too, and so can how you react

#### **Goal 3** (MET / NOT MET)

Practice the Cognitive Triangle

- Give an example of two different thoughts and explore how actions and feelings would be affected.
- Discuss an example of a recent tough situation for the client (may be after activity)
- Note that some thoughts are more helpful than others

#### **Goal 4** (MET / NOT MET)

Activity: Cognitive Shuttle

- Position **signs** reading “Helpful thought”, “Unhelpful thought”, and “Neutral thought” around the room
- Bring a deck of **Situation & Thought cards** that have a 1 sentence description of a situation followed by a list of possible helpful and less helpful thoughts.
- The player should draw a card, read the situation, then read any thought on the list and then run over to and touch the appropriate sign for that thought.
- Bonus points by identifying an emotion that a thought might make someone feel.
- Alternatives/Advanced rounds:
  - Cognitive Targets - Player 1 throws a projectile at a sign and gives a situation, Player 2 has to come up with the designated type of thought
  - Cognitive Hoops – Attach signs to cups; players aim to get a ball of paper or ping pong ball in the appropriate hoop instead of running

*If goal(s) not met, coder comments on missing or unclear elements:*

### ***Fidelity Coding Guidelines – Session #12***

#### **Goal 1** (MET / NOT MET)

Introduce: Thinking Traps

#### **Key Points to Be Covered:**

- “Thinking traps” are common but unhelpful thought patterns
- Introduce the thinking traps one at a time:
  - All-or-nothing/Black and white thinking
  - Jumping to conclusions

## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

- Catastrophizing
- Emotional reasoning
- Hostile attribution bias
- Mind reading
- Overgeneralization
- Overpersonalization
- Looking for the bad news (Selective abstraction)
- The goal is not so much to avoid them in the first place, but to notice when they happen in order to make it easier to get out of these patterns and try different ways of thinking

### **Goal 2** (MET / NOT MET)

Discuss: Changing thoughts

#### **Key Points to Be Covered:**

- Thinking traps tend to involve thinking in unrealistic ways
- Changing to thoughts that are more in line with reality often helps us cope better
- Remember that it's not really just about "thinking happy thoughts," but more about thinking helpful thoughts.
- When noticing and evaluating thoughts, it can help to look for whether the evidence supports those thoughts or not.

### **Goal 3** (MET / NOT MET)

Activity: What's your guess?/Thought Detectives – may substitute similar detective activity to practice looking for un/helpful thoughts and evidence behind thoughts

- Bring index cards with several scenarios ("case files") with multiple characters
- Have player 1 read the scenario and guess what the main character thinks will happen next
- Like a detective, Player 1 must then answer questions such as:
  - Why would the character make that guess/deduction? (evidence for)
  - How will they feel if they make that guess? (Feelings)
  - What will they do? (Actions)
  - What if the first deduction is wrong? What else might they guess that would lead them to have a different feeling?
- If time, discuss how thinking trap examples might fit into the situation.

### **Goal 4** (MET / NOT MET)

Introduce Situation-Thoughts-Emotions-Actions-Alternative thought worksheets and explain how the last column can be used to practice coming up with alternative thoughts and getting out of thinking traps.

*If goal(s) not met, coder comments on missing or unclear elements:*

## ***Fidelity Coding Guidelines – Session #13***

### **Goal 1** (MET / NOT MET)

Discuss: Using thoughts to deal with anger

#### **Key Points to Be Covered:**

- Anger is designed to make us act fast without thinking, so one of the goals for dealing with it is to increase the time between when anger starts and action begins
- Perspective taking: Using empathy skills can be very helpful for dealing with anger
- Stand in different parts of the room to illustrate how a situation can look different to different people
- Internal experiences can give situations different meaning even if you are standing in the same place looking at the same thing - what you have previously experienced with it may have an impact
- Different perspectives can result in different feelings

### **Goal 2** (MET / NOT MET)



## EMOTION REGULATION TREATMENT OF DISRUPTIVE BEHAVIOR

Activity: Simulated anger memory game

- Explain that to win the game, you have to overcome annoyance or anger and do a memory task
- Generate thoughts and other strategies that the client can use during challenges to help focus on remembering the cards: “Stay focused,” “I can do it,” “The teasing is not really true”
- Discuss with child and parent what might be good provocations to use
- Have the child try to remember and say back the words on a set of cards. Between each word, present an emotional challenge such as calling the child’s name in different voices, saying “hey” over and over, teasing names, discouraging words, etc
- Add another card to make it harder until through with the list of annoyances

### **Goal 3** (MET / NOT MET)

Summary/Review of skills

#### Key Points to Be Covered:

- Make a list of skills with the child’s help that can help deal with tough situations and emotions
- Include the behavioral and cognitive skills covered during sessions
- Send the list home with the child, encouraging them to keep trying their tools in their daily life

*If goal(s) not met, coder comments on missing or unclear elements:*