

Title: RCT of Mindfulness-Enhanced Pivotal Response Group Treatment on Parenting Stress

NCT# not yet assigned

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Study Protocol and Statistical Analysis Plan

Participants

A total of 15 caregivers and children will be randomly assigned to mPRT or pPRT groups. Inclusion criteria for children includes the following: 1) current or suspected ASD diagnosis, verified by ADOS-2, brief clinical interview, and expert clinical opinion using DSM-5 criteria; 2) demonstrates ability to make meaningful vocalizations; 3) no active medical problems (e.g., unstable seizure disorder). Inclusion criteria for participating caregiver includes the following: 1) no severe mental health problems (e.g., suicidal intent; psychosis); 2) willingness to record weekly videos and share in a group setting.

Participants will be recruited from Southwest Virginia via multiple methods (e.g., university and non-university clinics, registries, local ASD support groups, parent resource centers, local service agencies or schools). A two-stage eligibility process will be used. First, caregivers who expressed interest in the study will complete a phone interview to screen for study eligibility. Caregiver and child dyads who appeared to meet eligibility criteria and who were still interested in the study based on the phone screen will then be scheduled for a two-session assessment appointment to confirm diagnosis and eligibility.

Procedure

All interested families will complete a phone screen to determine initial eligibility criteria. Those who qualify will be invited to participate in two screening visits at the VT Autism Clinic (approximately 3.5 hours total). Parents will be provided with the option to complete all components in one day or two days. During these visits, a clinician will administer the Autism Diagnostic Observation Schedule- 2nd Edition (ADOS-2) to the child and the participating

caregiver to confirm the child's diagnosis of ASD, as well as the Mullen Scales of Early Learning (MSEL), a measure of cognitive ability.

Parents will engage in a 15-minute task with their child to measure baseline levels of child utterances and baseline fidelity of PRT techniques. This task is called the Structured Laboratory Observation (SLO) and will be modeled from Hardan et al. (2014). During the first five minutes, parents will be instructed to sit quietly and watch their child play (i.e., do not initiate interactions; however, parents can respond if child initiates). This period allows the child to become acquainted with the room and materials. Then, parents will be instructed to elicit language from the child for 10 minutes, using whatever strategies they want. Immediately following the SLO, parents will be asked to provide self-reported perceptions of positive and negative mood and stress levels during the parent and child interaction. In addition to measuring baseline child utterances with a caregiver, all children will engage in a 10-minute SLO with a trained PRT clinician to control for baseline levels of fidelity of PRT techniques. Finally, parents will complete paperwork to determine demographic information, child language and social behaviors, as well as levels of parenting stress, parent feelings toward child, and mindfulness.

Data will be collected over the course of four time points (pre-treatment, mid-treatment, post-treatment, 3-month follow-up) and weekly. See Table 1 for the complete battery at each timepoint. All questionnaire data will be collected either via paper and pencil or sent from and stored electronically through an online system called Research Electronic Data Capture (REDCap; Harris, Taylor, Thielke, Payne, Gonzalez, & Conde, 2009), hosted at Virginia Tech. REDCap is a secure, web-based application designed to support data collection for research studies. Weekly measures include a 10-minute home video of a participating parent interacting with his or her child while implementing PRT strategies and eliciting language. These videos will

be used in treatment to review strengths, areas of growth, and barriers encountered in the naturalistic settings as well as in research to monitor changes in child utterances and percentage of fidelity of implementing PRT strategies. In an effort to decrease demands from parents, we will provide families with Android tablets and instructions on how to upload the videos.

Randomization. Eligible families will be randomly assigned to either the mindfulness enhanced mPRT or to pPRT as the control condition. The Randomization Module in REDCap will be completed by a research assistant, blind to the clinician completing the pre-treatment assessment. Groups will be matched on gender of caregiver to control for gender differences previously reported in parenting stress literature (Davis and Carter, 2008). Both caregivers are permitted to attend groups; however, one caregiver must identify as the primary reporter (i.e., individual who completes all self- and parent-report questionnaires, attends sessions regularly, and participates in all home videos).

If challenges with recruitment emerge, randomization rules may be adjusted. In this instance, once the period of recruitment has commenced and 3 or more families have completed the pre-assessment condition, a random number generator will be used to determine the group for the individuals.

Treatment (Appendix A). All families will receive the same dose of PRT parent training delivered in a previously studied package (e.g., Hardan et al., 2014) that includes 16 hours of group sessions and 4 hours of individual sessions, delivered over a 12-week timeframe. The format for teaching PRT techniques and abilities will be replicated from Hardan et al. (2014), who adapted the material from the manual, “How to Teach Pivotal Behaviors to Children with Autism” (Koegel et al., 1989) and has been previously implemented in a feasibility study by the current researchers.

Additionally, all parents will receive 6 hours total of group supplemental treatment that specifically targeted parenting stress either by mindfulness-based techniques or by psychoeducation (depending on random assignment). Materials from the psychoeducation group include didactic training on a variety of topics focusing on the parent, child and family outcomes. For example, literature on general parenting stress as well as parenting stress in parents of children with ASD was one topic presented in an informational manner, without providing instruction regarding specific skills training.

The mindfulness-enhanced treatment, on the other hand, provides specific skills as well as didactic information about applying mindfulness to the parenting role. Components from ACT as well as Mindful Parenting will be incorporated into the weekly sessions in a manner that applied the mindfulness skills to the newly learned PRT skills.

Measures

Eligibility and sample characterization.

Autism Diagnostic Observation Schedule, Second Edition (ADOS-2; Lord et al., 2012).

The ADOS-2 is a semi-structured, observational assessment of ASD characteristics and is one of the gold standard tools used to assess social communicative and repetitive behaviors in children who are suspected of having ASD. The ADOS-2 consists of multiple modules, which are determined by age and language ability. The Toddler Module and Module 1 are administered to children with no or little verbal language and Module 2 is used for children with phrase, but not verbally fluent, speech. The ADOS-2 demonstrates moderate to high levels of internal consistency, moderate test-retest reliability, and acceptable interrater reliability (McCrimmon & Rostad, 2014).

Mullen Scales of Early Learning (MSEL; Mullen, 1995). The MSEL measures developmental functioning for young children, specifically in visual, linguistic, and motor domains. Additionally, the MSEL distinguishes between receptive and expressive language abilities. The MSEL demonstrates good internal consistency and high test-retest reliability (Mullen, 1995).

Treatment feasibility and acceptability.

Parental adherence to treatment. Treatment adherence will be measured by the number of weekly videos provided, as these were crucial components of treatment in regard to teaching and providing feedback. Parents will also receive weekly questionnaires inquiring how often they practiced PRT techniques during the past week and ranged from 0 (Not at all) to 4 (Every day). Averages will be calculated accounting for the amount of questionnaires they completed.

Treatment satisfaction. The participants' satisfaction with the treatment components will be assessed at the post-treatment time point. First, participating caregivers rate their satisfaction with the overall program. Then, parents rate their perceived difficulty and helpfulness of the treatment components (i.e., PRT specific concepts as well as the individual's assigned supplemental group). The satisfaction survey also includes open-ended responses to better understand the components that parents viewed as most helpful, least helpful, and recommendations for future groups.

Treatment efficacy: Primary outcome variables.

Therapist fidelity of treatment implementation (Appendix B). A licensed clinical psychologist trained in PRT will view 5-6 group sessions out of the 11 total group sessions (i.e., 45 to 54% of the total group sessions) to assess for therapist fidelity of treatment implementation. The videos will be randomly assigned for viewing before all groups commenced and the

randomization was blind to treatment providers. Fidelity will be assessed on completion of specific session goals, therapeutic relationship, and level of group engagement.

Child utterances (Appendix C). The level or amount of child utterances during in-laboratory semi-structured tasks and in-home naturalistic environments will be coded by trained undergraduate research assistants using *Noldus The Observer XT* (version 12.0 software, Noldus Information Technology, Leesburg, VA, USA). All videos will be double coded by undergraduate research assistants who were blinded to treatment condition and treatment phase. Three total coders will complete double coding for all videos. Interrater reliability will be assessed by Kappa and Rho, due to the complexity of the coding system. All research assistants will attend group training in behavioral coding and child utterances and will attain above 80% fidelity with sample videos coded by a master's level clinician. As modeled in Hardan et al. (2014), child utterances consist of the following: unintelligible (e.g., sound produced by child that does not appear to demonstrate an attempt at a meaningful utterance; "lalalala"), imitative (e.g., parent models the word and encourages child to imitate exact word), verbally prompted (e.g., parent asks a question with open-ended response), nonverbally prompted (e.g., parent presents an opportunity for language by holding an object in sight and out of reach) and spontaneous (i.e., not prompted by the parent). To reduce variability, the amount of child utterances was expected to increase in both groups from pre SLO to post and follow-up SLO. Amount of child utterances were examined to determine effectiveness of treatment across groups.

In the current study, differences in child utterances will be calculated using changes in SLO and weekly videos will also be used to estimate changes in average utterances from weeks 1 and 2 to weeks 9 and 10. Because frequency/total counts were used for analyses, weekly videos will be excluded from analyses if they were less than 9 minutes in length.

Parent fidelity of PRT implementation (Appendix D). Parent fidelity of PRT

implementation will be coded by trained undergraduate research assistants using *Noldus The Observer XT* to measure changes in level of fidelity in-laboratory semi-structured tasks and in-home naturalistic environments over the course of treatment. All videos, including SLOs at all 4 timepoints as well as weekly videos (averaged for weeks 1-2 and weeks 9-10) will be coded by two research assistants separately (i.e., each research assistant coded all the videos separately). After videos were double-coded, the two research assistants will meet together to complete final consensus coding. All research assistants will attend group training in behavioral coding, behavioral management, and PRT techniques; they will attain at least 80% fidelity with two sample videos coded by PhD and master's level clinicians who were certified in PRT. Standardized measures of PRT fidelity (e.g., Bryson, Koegel, Koegel, Openden, Smith, & Neft, 2007; Minjarez et al., 2011) will be adapted for the current project to accommodate measurement every 30 seconds (as opposed to 1- or 2-minute intervals).

Fidelity of PRT implementation will include 5 total over-arching techniques (i.e., shared control, providing clear opportunities, interspersing maintenance trials, reinforcing attempts, and contingent/natural reinforcement of appropriate behavior), which could be further divided into 10 total components (i.e., following child's lead/child choice, natural reinforcer, attending to task, clear instructions, maintenance, task variation, natural, immediate, appropriate and attempts). The *Noldus* system will be automatically programmed to stop a video after every 30 seconds and prompt the research assistant to input fidelity information for all 10 components in a binary form (i.e., parent either achieved correct performance of component for the entire interval or did not, coded as 1 or 0 respectively). Total correct percentages will be calculated for each component and then averaged over the number of intervals to create a final correct percentage for total PRT

fidelity. Because final percentages will be individually calculated based on the total time they were coded, videos that range in length from 5 minutes to 10 minutes will be used for the current set of analyses.

Parenting Stress Index, Fourth Edition (PSI-4; Abidin, 2012). The PSI-4 is the most widely used measure of parenting stress, not only in ASD but all parenting literature. The PSI-4 focuses on three domains of parenting stress: those relating to child characteristics, those attributed to parent characteristics as well as situational and life stressors. The PSI demonstrates strong internal consistency (alpha .96 or greater for each domain and test-retest reliability ranging from .65 to .96 for the Total Stress score). The PSI-4 child domain will be measured at four time points to measure change in parenting stress relating to child characteristics as a result of treatment.

Autism Parenting Stress Index (APSI; Silva & Schalock, 2012). The APSI consists of questions specific to parenting stress for parents of young children with ASD, such as behavioral symptoms and core deficits. Parents rate how much stress specific aspects of their child's health yield, ranging from "Not stressful" to "So stressful sometimes we feel we can't cope." The original validation of the measure was completed with a sample of children with ASD, other developmental disorders, and typical development. The APSI demonstrated good internal consistency ($\alpha = .83$) within the ASD population as well as high test-retest reliability ($r = .88$) for parents of children with ASD over a 4-month period of time.

Subjective Units of Parenting Stress Scale (Appendix E). An adaptation of the Subjective Units of Distress Scale, previously utilized in Singh et al., 2007, will be used to assess for levels of parenting stress immediately following all 10-minute SLOs.

Exploratory outcome variables.

Positive parent feelings toward child.

Parent Feelings Questionnaire (PFQ; Deater-Deckard, 2000). The PFQ (Appendix F) consists of 24 items rated on a 5-point Likert-type scale and measured self-report of personal negative and positive feelings toward the child participating in treatment. The items include statements about feelings toward the child participating in the study. For example, “Sometimes my child can really test my patience” and “I find it easy to praise and compliment my child, especially for good behavior” are questions from the negativity sub-scale and positivity subscale respectively. Previous literature demonstrates good internal consistency for both the positivity scale (Cronbach’s alpha = .88) and negativity scale (Cronbach’s alpha = .90; Wang, Deater-Deckard, & Bell, 2013). The positivity scale will be used to assess group differences over time.

Positive and Negative Affect Schedule (PANAS; Crawford & Henry, 2004). The PANAS (see Appendix G) is a reliable and valid measure of positive and negative affect in adults. Previous literature demonstrates good internal consistency for the Positive Affect scale ($\alpha = .89$) and .Negative Affect scale ($\alpha = .85$). For the current study, the instructions for the PANAS were adapted to assess level of parent affect during parent-child interactions in clinic (i.e., during each SLO). The positive affect scale will be used to measure changes over time.

Parent mindfulness.

Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006). The FFMQ (Appendix H) is a 39-item self-report measure that assesses one’s general propensity towards mindfulness in daily life. The FFMQ consists of 5 subscale scores (i.e., non-reactivity to inner experience, observing, describing, acting with awareness, and non-judging of inner experience) that load onto a total mindfulness score. Parents endorse statements on a 5-point Likert scale ranging from

1 (Never or Rarely True) to 5 (Very Often or Always True), with higher scores reflecting increased levels of mindfulness.

Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011). The AAQ-II (Appendix I) is a seven-item measure designed to capture a person's level of experiential avoidance, where each item is ranked on 7 point scale ranging from "never true" to "always true". Higher scores on the measure reflect increased levels of experiential avoidance, the antithesis of psychological flexibility. The AAQ-II demonstrates good internal consistency (i.e., ranging from .78 to .87 across three samples) and acceptable test-retest reliability (i.e., .78 - .88). The AAQ-II will be administered at all time points.

Child problem behavior. The Child Behavior Checklist for Ages 1.5-5 (CBCL/1.5-5; Achenbach & Rescorla, 2001) is a parent report measure on child emotional and behavioral characteristics. Previous research suggests a bidirectional relationship between parent stress and child problem behaviors. Although the treatments in the current study focus on increasing child utterances and reducing parenting stress, changes in child problem behavior are also included to better understand baseline differences and change because of treatment. The CBCL demonstrates good internal consistency in general populations (.89 for internalizing and .92 for externalizing; Achenbach & Rescorla, 2001) as well as ASD specific populations (.80 for internalizing, .90 for externalizing; Pandolfi, Magyar, & Dill, 2009).

Statistical Analysis Plan

All data will be checked for normality, skewness, and kurtosis. In the case of small sample size and non-normal distributions, non-parametric analyses will be used to compare groups and changes over time.

Treatment feasibility and acceptability.

Parental adherence to treatment. Retention rate will be calculated by dividing the number of participants who were considered treatment completers by the total number of participants who were randomly assigned to a group. Because weekly videos were a crucial and core component of the PRT treatment package, the total number of videos submitted by parents will be calculated as a measure of adherence. Finally, parent weekly ratings of the amount of time spent implementing PRT skills in the home environment will be averaged to compare between groups.

Treatment satisfaction. The sections on perceived level of difficulty and helpfulness for PRT strategies will be averaged separately for each group.

Treatment efficacy and exploratory analyses.

Group differences. Pending anticipated non-normal distributions of the small samples, Mann-Whitney U tests will be used to make baseline comparisons to compare independent samples (i.e., completers versus non-completers; mPRT versus pPRT). G*Power3 (Faul, Erdfelder, Lang, & Buchner, 2007) power analyses will be completed to evaluate the size of effect one can be expected to obtain given the obtained sample size, and $\alpha = .05$. A sample size of 95 will be necessary to detect a large effect ($r = .5$). Group comparisons will also be made at post-treatment to analyze differences in parent fidelity of PRT techniques and treatment satisfaction. To calculate effect size, the following formula will be ($r = Z/\sqrt{N}$). The

interpretation of r values are as follows: .5 = large effect, .3 = medium effect, .1 = small effect (Coolican, 2009; Fritz, Morris, & Richler, 2012).

In addition, to test within-group changes, non-parametric Wilcoxon Signed Rank Test (equivalent to a dependent t -test) will be used to compare baseline and endpoint/follow-up scores for each group across variables of interest. A sample size of 27 will be necessary to detect a large effect ($r = .5$) and 648 for a small effect ($r = .1$). Due to low power, effect sizes will also be calculated when determining change as a result of treatment.

Single-Subject Analyses. In addition to group change over time, individual level change will be calculated for parenting stress, parent mindfulness, and parent positive feelings toward child using Reliable Change Index (RCI; Jacobson & Truax, 1991). RCIs will be calculated to determine the magnitude of change needed to show meaningful change above and beyond standard error. RCI calculations will be completed by dividing the difference of scores between two timepoints (i.e., either pre-treatment and post-treatment or pre-treatment and follow-up), divided by the standard difference, which includes test-retest reliability and standard deviation of the original measure. RCI values above 1.96 are suggested to infer statistically significant and meaningful change. The test-retest reliabilities and standard deviations used to compute the S_{diff} score will be obtained from the literature. If test-retest reliability was not previously reported in literature, then Cronbach's alpha was used (from the literature).

Table 1
Assessment Schedule

Construct/ Measure	Pre-Tx	Mid	Weekly	Post-Tx	Follow-up
Sample Characterization					
ADOS-2	X				
Child History Form	X				
Mullen	X				
Child Behavior Checklist	X				
Treatment Efficacy					
SLO Child Utterances	X	X	X	X	X
Treatment Satisfaction				X	
Therapist Fidelity of Treatment Implementation			X		
Parenting Stress					
PSI-4 (Child)	X	X		X	X
APSI	X	X		X	X
SUPSS	X	X		X	X
Positive Parent/Child Interactions					
PANAS	X	X		X	X
PFQ	X	X		X	X
Parent Mindfulness					
AAQ-II	X	X		X	X
FFMQ	X	X		X	X

Notes. PSI-4 = Parenting Stress Index Fourth Edition; APSI = Autism Parenting Stress Index; SUPSS = Subjective Units of Parenting Stress Scale (completed after 10 minute parent/child interaction); SLO = Structured Laboratory Observation; PANAS = The Positive and Negative Affect Schedule; PFQ = Parent Feelings Questionnaire; ADOS-2 = Autism Diagnostic Observation Schedule Second Edition; SRS-2 = Social Responsiveness Scale Second Edition; AAQ-II = Acceptance and Action Questionnaire; FFMQ = Five Facet Mindfulness Questionnaire

Appendix A

Session Fidelity Rating Form

Date of session:

Length of session (timed): _____ min

Treatment visit #:

Randomization group: mPRT

pPRT

Therapists (list all names):

Number of parents present:

1. How many of the stated objectives for the session did the therapist(s) complete?

of objectives met/ # of objectives stated for this session = _____ / _____

2. Was homework assigned from the previous session?

0 = NO

1 = YES

2a. IF YES → Did the therapist(s) review practice/homework assigned in previous session (even if homework was not completed)?

0 = NO

1 = YES

3. Did the therapist(s) explain or preview the session agenda at start of session?

0 = NO

1 = YES

4. How would you describe the therapeutic relationship during the session?

1 = Very poor (e.g., no responding to questions or materials that are posed)

2 = Less than ideal (e.g., partial responding to questions that are posed)

3 = Average (e.g. responds to questions that are posed, seem to understand concepts covered)

4 = Good (e.g., parent asks at least one question or provides elaboration or example, brings up new information or content)

5. Please rate how engaged the caregivers were in the group.

1 = Unengaged

2 = Minimally engaged

3 = Moderately engaged

4 = Actively engaged

Appendix B
mPRT and pPRT Treatment Outline

Wk#	Session	PRT Training Focus	Mindfulness Training Focus	Psycho-education Focus	Worksheets for Homework
Pre	Screening/ Assessment (~2 hr)				
1	Group 1 (2 hr)	Introduction/Administrative; Overview of behavioral treatment approach and PRT (1 hr 15 min)	Overview of ACT components; Define current struggles/difficulties (30 min)	Overview of parent stress research (30 min)	"Play Interest Survey"
2	Group 2 (2 hr)	Detailed review of PRT motivational strategies (1 hr 15 min); Homework review (15 min)	Mindful awareness ("being present") - attention focused (30 min)	Understanding ASD and overlapping conditions (30 min)	"Setting goals for your child" + "Parent values"
	Individual 1 (1 hr)	Individual PRT goals; Demonstrate PRT through therapist-child interactions	Individual check-in on values (10 min)	Individual check-in on info (10 min)	N/A
3	Group 3 (2 hr)	Structured PRT learning opportunities; Natural/incidental learning opportunities	Discuss valued living, committed action and barriers (30 min)	Understanding ASD perspectives (30 min)	"Structured Teaching Brainstorm"
4	Group 4 (2 hr)	In-depth review*: Following the child's lead and shared control	Defusion exercises (30 min)	ASD Interventions I (30 min)	"Maintenance vs. Acquisition"
5	Group 5 (2 hr)	In-depth review*: Maintenance vs. acquisition tasks	Self-compassion (30 min)	ASD Interventions II (30 min)	N/A (plan to revisit child goals during individual session)
6	Midpoint Assessment (30 min) Combine with Individual session				
	Individual 2 (1 hr)	Demonstrate PRT through therapist coached parent-child interactions	Practicing self-compassion before/after session (10 min)	Individual check-in on info (10 min)	"Reinforcing attempts"
7	Group 6 (2 hr)	In-depth review*: Reinforcing reasonable attempts to respond	Incorporating mindfulness into daily life (30 min)	ASD Interventions III (30 min)	N/A
8	Group 7 (2 hr)	In-depth review*: Contingent vs. natural reinforcers	Introduce "self-as-context" or "observing self" (30 min)	ASD Resources: Local/National (30 min)	"Behavior Monitoring Form"
9	Group 8 (2 hr)	Tackling disruptive/problem behaviors	Practicing non-judgment and acceptance attitude (30 min)	Navigating service system (30 min)	N/A (plan to revisit child goals during individual session)
	Individual 3 (1 hr)	Demonstrate PRT through therapist coached parent-child interactions	Apply non-judgment/accepting attitude to interaction (10 min)	Individual check-in on info (10 min)	N/A
10	Group 9 (2 hr)	Planning for future: Child initiations and question asking	Mindful awareness review: emotion focused (30 min)	Neurobiological research (30 min)	N/A
11	Group 10 (2 hr)	Review all PRT points & future target behaviors	Review all material (30 min)	Biomedical Treatment Research (30 min)	"Applying PRT to future situations"
12	Group 11 (2 hr)	Review all PRT points & future target behaviors	Planning for the future (30 min)	Review of all material (30 min)	N/A
12+	Individual 4 (1 hr)	Demonstrate PRT through therapist coached parent-child interactions	Answer questions about material	Answer questions about material	N/A
Post Treatment Assessment					

Appendix C
Utterance Coding Sheet

	1—Unintelligible	2—Imitative (Model Prompt)	3—Verbally prompted	4—Non-verbally prompted	5—Spontaneous	Total Utterances
SLO 1						
						
SLO 4						
Total						

Operational Definitions

1—Unintelligible: The child produces a sound or syllable that is either prompted or unprompted but that is not for a functional purpose or does not constitute an attempt at a meaningful utterance (i.e. “lalalala” or other self-stimulatory repetitious speech)

2—Imitative (model) prompt: The child is responding directly to what the parent has said by imitating or attempts to imitate the word or phrase spoken. For example: Parent: “Ball” Child: “Ball” (or “Baa” or “Buh”) Parent: “I want the ball” Child: “I want the ball” or “I wan Bah”

3—Verbally prompted: The child is responding directly to the prompt given by the parent, such as a fixed-choice prompt (“Do you want the red ball, or the green ball?” “Green ball”), a phrase completion prompt (“One, two, three...” ”GO!”), or an open ended prompt (“What do you want?” “Ball”). The child responds by answering the question or completing the phrase, or provides an expressive verbal attempt to do so.

4—Non-verbally prompted: There is a clear non-verbal prompt from parent, in which they present a clear opportunity by doing something like holding up an item that the child could request, or deliberately pausing an activity and waiting for a response. The child responds with a reasonable attempt to get the desired outcome (i. e. saying “ball” to get the ball the parent is holding up, or “swing” to get to be pushed on the swing again).

5—Spontaneous: There is no intentional verbal or nonverbal effort of the parent or clinician to elicit a response from the child. The child makes a relevant utterance in order to achieve a desired outcome

Appendix D

Fidelity of Implementation Scoring Sheet

	Shared Control		Opportunities to Respond		Interspersing Tasks		Contingent			Attempts
30 second Interval	1. Follow Lead / Choice	2. Identify Natural Reinforcer	3. Attending to the Task	4. Clear Instructions	5. Maintenance	6. Task Variation	7. Natural	8. Immediate	9. Appropriate	10. Attempts
00:00 – 00:30										
9:30-10:00 or end of video clip										
%										
							TOTAL:	%		
* Score each category as (+) or (-)										
* Watch the whole 10 minute sequence, then score each 1 minute interval										
* Score entire 1 minute interval as (-) if no opportunities for language are provided										
* Parents' performance should be independent of child's response.										
* Opportunities for language: Verbal utterances from the parent, produced with the intention of eliciting functional expressive language from the child.										

Operational Definitions:

1. Follow Lead/ Choice: Parent does the following during the entire 30 second interval: follows the child's nonverbal or verbal initiations toward their preferred activity, allows the child to freely select or reject toys from the area, and allows the child to end play with a toy/activity.

2. Natural Reinforcer: During the entire 30 second interval, parent identifies and gains control of preferred object, preferred aspect of an object and/or the aspect of an activity that the child finds most motivating.

3. Attending to Task: During the entire 30 second interval, parent only provides opportunities for language when the child is attending to the task. If child is not attending, parent takes appropriate action to gain child's attention (e.g., covering the toy child is focused on, moving closer to child,

non-verbally enticing with a toy, calling their name, etc.) Attending to the task includes, but is not limited to, child looking at the parent, child looking in direction of parent or object parent is holding, or reaching for object.

4. Clear instructions: During the entire 30 second interval, the parent provides opportunities for language that are short, simple, and related to the task. These opportunities can include, but are not limited to, a verbal model prompt, time delay, offering a choice, and/or asking a question. "Say" can only be used as a prompt under two circumstances: 1) if parent is modeling a replacement behavior (e.g. "Say: 'all done' if you are finished) and/or 2) if the child is stuck in echolalia or is unclear how to respond (e.g. Child says, "What do you want? Ball. Parent models "You can say, 'ball'.") Time delays must be clear as well. Parent should provide a model prompt 3-5 seconds after a time delay if the child cannot respond. Model prompt should maintain object-label correspondence. Recasting and labeling should be distinguishable from model prompts.

5. Maintenance: During the entire 30 second interval, parent clearly balances tasks the child already knows with new tasks. This can include a balance of receptive and expressive tasks. The level of prompts may also be used to balance maintenance and acquisition and should vary based on the motivation of child. If the child is non-verbal or does not have any maintenance tasks, the parent keeps the demands easy for the child (e.g. presenting single syllable, easy to pronounce words).

6. Task Variation: During the entire 30 second interval, parents must use a variety of prompting strategies (e.g., MP, TD, CP, Ch., Q, LS) and/or vary prompting within an activity (not always the same words within the same activity).

7. Natural: During the entire 30 second interval, parent provides a contingent reinforcer that is directly related to the child's expressive verbalizations. A parent scores (-), if they provide an arbitrary reinforcer for the child's expressive verbalization (e.g. child says "ball", parent gives a piece of candy). Parent does not provide reinforcement if the child does not respond.

8. Immediate: During the entire 30 second interval, parent provides primary and/or arbitrary reinforcement just as the child's verbal response is being completed or just after it has been completed (within 2-5 seconds). To be immediate the reinforcement must occur before a second response is made. (must account for intervals where child does not respond or parent is too contingent and no reinforcement is given during entire interval)

9. Appropriate: During the entire 30 second interval, parent never provides reinforcement if the child responds inappropriately. Inappropriate responses can include, but are not limited to, disruptive behaviors and/or self-stimulatory behaviors. Appropriate responses include verbal responses with intent in a clear and calmed voice which includes the child looking in the direction of the adult.

10. Attempts: During the entire 30 second interval, parent provides contingent reinforcement following the child's reasonable verbal attempt, unless otherwise specified (a specific shaping program in place). Reasonable: attending to the item/adult while producing a verbalization, word approximation, or correct word attempt.

Appendix F

Parent Feelings Questionnaire (Deater-Deckard, 2000)

Every parent experiences both positive and negative feelings toward his or her child. Listed below are statements describing some of these feelings that parents may experience. Read each statement carefully and circle the number that most closely reflects your feelings toward your child: **1 = definitely untrue for you**, to **5 = definitely true for you**. Try to provide an answer for each item without skipping or looking back.

Think about your child, and use this scale when circling the appropriate number for each item:

1	2	3	4	5
Definitely untrue for me	Somewhat untrue for me	Not really true for me	Somewhat true for me	Definitely true for me
I usually make an effort to praise my child for good behavior.				1 2 3 4 5
Sometimes I am not happy about my relationship with my child.				1 2 3 4 5
Every once in a while my child's behavior can bring out the worst in me.				1 2 3 4 5
Every once in a while I avoid talking or playing with my child, such as when I am angry with her/him				1 2 3 4 5
I enjoy hugging and cuddling with my child.				1 2 3 4 5
Sometimes I find it difficult to be around my child.				1 2 3 4 5
My child and I do not get along as I had hoped we would.				1 2 3 4 5
Most of the time, my child brings out the best in me.				1 2 3 4 5
Sometimes I do not enjoy being with my child.				1 2 3 4 5
My child and I fight or argue more than I would like to.				1 2 3 4 5
I enjoy being my child's parent.				1 2 3 4 5
Every once in a while I wish that my child would just go away for a few minutes.				1 2 3 4 5
Sometimes my child's behavior makes me so angry I can barely stand it.				1 2 3 4 5
Being around my child is more enjoyable than I ever thought it would be.				1 2 3 4 5
Every once in a while I feel some resentment toward my child.				1 2 3 4 5
Sometimes I do not get along well with my child.				1 2 3 4 5
I am usually affectionate with my child.				1 2 3 4 5
I find it easy to praise and compliment my child, especially for good behavior.				1 2 3 4 5
Sometimes I do not enjoy spending time alone with my child.				1 2 3 4 5
Sometimes I find it difficult to communicate with my child.				1 2 3 4 5
When I think about my child, it usually gives me warm feelings.				1 2 3 4 5
Sometimes I raise my voice with my child, especially after I've had a bad day.				1 2 3 4 5
Sometimes my child can really test my patience.				1 2 3 4 5
I usually feel quite happy about my relationship with my child.				1 2 3 4 5

Appendix G

PANAS

INSTRUCTIONS: This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you were feeling this way during the 10-minute interaction with your child. Use the following scale to record your answers.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

1. _____ interested
2. _____ distressed
3. _____ excited
4. _____ upset
5. _____ strong
6. _____ guilty
7. _____ scared
8. _____ hostile
9. _____ enthusiastic
10. _____ proud
11. _____ irritable
12. _____ alert
13. _____ ashamed
14. _____ inspired
15. _____ nervous
16. _____ determined
17. _____ attentive
18. _____ jittery
19. _____ active
20. _____ afraid

Appendix H

FIVE FACET MINDFULNESS QUESTIONNAIRE

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

- _____ 1. When I’m walking, I deliberately notice the sensations of my body moving.
- _____ 2. I’m good at finding words to describe my feelings.
- _____ 3. I criticize myself for having irrational or inappropriate emotions.
- _____ 4. I perceive my feelings and emotions without having to react to them.
- _____ 5. When I do things, my mind wanders off and I’m easily distracted.
- _____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
- _____ 7. I can easily put my beliefs, opinions, and expectations into words.
- _____ 8. I don’t pay attention to what I’m doing because I’m daydreaming, worrying, or otherwise distracted.
- _____ 9. I watch my feelings without getting lost in them.
- _____ 10. I tell myself I shouldn’t be feeling the way I’m feeling.
- _____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
- _____ 12. It’s hard for me to find the words to describe what I’m thinking.
- _____ 13. I am easily distracted.
- _____ 14. I believe some of my thoughts are abnormal or bad and I shouldn’t think that way.
- _____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
- _____ 16. I have trouble thinking of the right words to express how I feel about things
- _____ 17. I make judgments about whether my thoughts are good or bad.
- _____ 18. I find it difficult to stay focused on what’s happening in the present.
- _____ 19. When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.
- _____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
- _____ 21. In difficult situations, I can pause without immediately reacting.
- _____ 22. When I have a sensation in my body, it’s difficult for me to describe it because I can’t find the right words.

PLEASE TURN OVER □

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

- _____ 23. It seems I am “running on automatic” without much awareness of what I’m doing.
- _____ 24. When I have distressing thoughts or images, I feel calm soon after.
- _____ 25. I tell myself that I shouldn’t be thinking the way I’m thinking.
- _____ 26. I notice the smells and aromas of things.
- _____ 27. Even when I’m feeling terribly upset, I can find a way to put it into words.
- _____ 28. I rush through activities without being really attentive to them.
- _____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.
- _____ 30. I think some of my emotions are bad or inappropriate and I shouldn’t feel them.
- _____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
- _____ 32. My natural tendency is to put my experiences into words.
- _____ 33. When I have distressing thoughts or images, I just notice them and let them go.
- _____ 34. I do jobs or tasks automatically without being aware of what I’m doing.
- _____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
- _____ 36. I pay attention to how my emotions affect my thoughts and behavior.
- _____ 37. I can usually describe how I feel at the moment in considerable detail.
- _____ 38. I find myself doing things without paying attention.
- _____ 39. I disapprove of myself when I have irrational ideas.

Appendix I

AAQ-II

Below you will find a list of statements. Please rate how true each statement is for you by using the scale below to fill in your choice.

1	2	3	4	5	6	7
never true	very seldom true	seldom true	sometimes true	frequently true	almost always true	always true

1. My painful experiences and memories make it difficult for me to live a life that I would value.	<input type="text"/>
2. I'm afraid of my feelings.	<input type="text"/>
3. I worry about not being able to control my worries and feelings.	<input type="text"/>
4. My painful memories prevent me from having a fulfilling life.	<input type="text"/>
5. Emotions cause problems in my life.	<input type="text"/>
6. It seems like most people are handling their lives better than I am.	<input type="text"/>
7. Worries get in the way of my success.	<input type="text"/>
TOTAL	<input type="text"/>