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Strengthening the Reflective Functioning Capacities of Parents who Have a Child with a Neurodevelopmental Disability Through a Brief Relationship-Focused Intervention

Abstract

This randomized controlled trial examined the reflective functioning capacities of caregivers who have a child with a neurodevelopmental disorder between the ages of 2 years, 0 months and 6 years, 11 months. Children with a neurodevelopmental disorder receive a range of diagnoses, including Autism, however they all exhibit social communication challenges that can derail social relationships. Forty parent-child dyads in Barbados were randomly assigned to either a Developmental Individual-Difference, Relationship-Based/Floortime (DIR/FT) group ($n=20$), or a psycho-educational (wait-list) group ($n=20$) with parental reflective functioning measured before and after a 12-week DIRFloortime® treatment intervention. Results revealed significant gains in parental reflective functioning in the treatment group as compared to the psycho-educational (wait-list) group after the 12 week relationship-focused intervention.

Key Words: Reflective functioning, neurodevelopmental disability, DIRFloortime®, parent-child relationship.

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Observations of parent-child behaviour have greatly informed our understanding of the subtle and specific features that comprise the dyadic caregiving relationship, and seminal research, such as the still-face experiments (Tronick, Als, Adamson, Wise, & Brazelton 1979; Tronick, Als & Brazelton, 1980), has created a wealth of information to enrich our understanding of the parent-child relationship. However, this observational research does not provide a deeper understanding of the less conscious mechanisms that shape the dyadic attachment relationship. The assessment of parental reflective functioning examines the narratives that capture and convey the parents' mentalizations about their child, themselves and their relationship with the child and conveys the parents' ability to try to make meaning of the child's and their own internal experiences (Fonagy, Steele, Steele, Moran & Higgitt, 1991). A reflective parent can hold in her mind the thoughts, feelings, beliefs and intentions of her child and reflect on how these mental states may be affecting the child's behaviour whilst also acknowledging her own mental states and how these may be impacting the relationship. Pajulo et al. (2012) stated that reflective functioning refers to "the ability to hold, regulate, and experience emotions through the ability to reflect on feelings before acting on or responding to them" (p.3). These authors argued that maternal reflective functioning is a prerequisite for parenting sensitivity suggesting that parents who demonstrate strong reflective functioning capacities are more emotionally attuned to their child.

Reflective functioning is strongly rooted in an individual's capacity to mentalize about oneself and others. Mentalization describes how one can interpret and reason about the behaviour of self and others by evaluating conscious and unconscious feelings, beliefs, intentions and desires and act accordingly (Fonagy & Target, 2002). The concept of mentalization is theoretically grounded in psychoanalytical tradition and developmental psychology and is related

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to the ability to ascribe intentions, feelings and ideas to others, what is known as theory of mind (Premack & Woodruff, 1978; Baron-Cohen, Leslie & Firth, 1985). However, mentalization goes further to encompass the capacity to reflect on how these processes influence behaviour and affect-regulation. Developing the reflective functioning capacities of parents with preschool age children is particularly significant as it is at this age that children begin to develop theory of mind, specifically it is the age that children demonstrate an understanding of the feeling states of others. Models of theory of mind suggest that these capacities develop as the child acquires language and are due to innate mechanisms however, Fonagy & Target (1997) argued that this view fails to take into consideration the two-way communication within the caregiving attachment relationship that sets the foundation for the older child to understand the mental states of others. These researchers stated, “The child’s development and perception of mental states in himself and others thus depends on his observation of the mental world of his caregiver. He is able to perceive mental states, to the extent that his caregiver’s behavior implied such states. This he does when the caregiver is in a shared pretend mode of playing with the child” (p. 690).

Reflective functioning has been found to play a mediating role in the intergenerational transmission of secure attachment and to predict infant attachment security. Slade, Grienberger, Bernbach, Levy, & Locker, A. (2005) suggested that differences in infant attachment may be more influenced by a parent’s reflective functioning capacities than the parent’s adult attachment status. The extensive literature on attachment provides some insight into why some parents are unable to tune in and accurately reflect on their child’s mental states. Research in this area has drawn attention to the importance of the early infant-parent relationship in the development of our mental states (feelings, beliefs, desires, and intentions), and has revealed how the parent’s representational world is vulnerable to the assaults from the past.

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Understanding these two coexisting realities is informed by the work of Winnicott (1960) and Fraiberg (1980) who placed the fantasies and maternal memories at the core of the therapeutic relationship in an attempt to understand trauma in the early parent-child relationship. Fraiberg, Adelson, & Shapiro (1975) introduced the metaphor of “ghosts in the nursery” to suggest that remnants of a mother’s past attachment relationships, “visitors from the unremembered past of the parents” infiltrate the present parent-child relationship and derail the emotional wellbeing of the dyad (p. 387). According to Stern (1995), internal representations are built up over time through our interactive experiences, and can be lived or imagined. He describes these as our “schemas-of-being-with” (p. 107) and explains that these internal representations form out of our subjective experience of being with others. Siegel and Hartzell, (2004) stated that the reflective process helps to build a deeper self-understanding, and the integration of one’s own narratives from the past, present, and future with the child’s mental states is the essence of mentalizing and is at the core of healthy parent-child attachment relationships.

The main aim of the current study was to examine parental reflective functioning, specifically exploring if a brief, relationship-based intervention can enhance the reflective functioning capacities of parents/caregivers of children with a neurodevelopmental disorder. This population of children is a heterogeneous group who display varying behaviours and symptoms. The DSM-V outlines six categories of neurodevelopmental disorders including autism spectrum disorders, intellectual disability, attention deficit disorder, learning disorder, communication disorder and motor disorder. In an attempt to create a more homogenous grouping for the children in the study the classification of neurodevelopmental disorder of relating and communicating (NDRC) was used and all children referred to the study were assessed using the Psychodynamic Diagnostic Manual, (PDM). Many children with a NDRC

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such as those diagnosed with an Autism Spectrum Disorder (ASD) engage in less social referencing with adults compared to typical infants (Cornew, Dobkins, Akshoomoff, McCleery, & Carver, 2012) and exhibit social relational deficits that affect their ability to read subtle communicative signals and respond to social cues (Toth, Munson, Meltzoff, & Dawson, 2006), and demonstrate challenges in social communication that can derail the development of healthy social relationships (Smith, Ronski, Sevcik, Adamson, & Barker, R. M. 2014; Casenhiser, Shanker & Stieben, 2011).

Parents of children with a NDRC may have spent many years not feeling connected to their child. For example, Slade (2009) argued that parents of children with an ASD have great difficulty reflecting on their child's mental states in a "sea of confusing and chaotic communications" (p. 10). The dance of communication is often stalled leaving the parent to feel incompetent and ineffective with the child's social avoidance interpreted as rejection by the parent. Kalmanson (2009), in her exploration of parents of children with a neurodevelopmental disorder stated, "parents' perceptions and interpretations of their infant's behaviour are rapidly coded into meaningful information about their unfolding relationship with their baby. Parents feel effective and competent caring for their infants when the baby looks at them intently, when the parent sees the gleam in the baby's eyes and when the infant's movements are rhythmically synchronized with the parent's vocalizations and actions" (p. 45).

The DIR approach, used in this study is based on the premise that affective interactions promote healthy social and emotional development in children. The DIR model looks at where the child is developmentally and also looks at each child's individual differences, i.e. the unique way each child takes in, regulates, responds to, and understands sensations as well as the way the children plan and sequence their actions and ideas. The DIR approach is built on the

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understanding that every interaction a child has needs to be supported through a relationship that maintains a high emotional connection, mirroring the child's feelings and fostering mutual engagement, trust and interest in the other person. Using the DIR/FT framework, the therapists coach the parents to tune in to their own and their child's sensory processing capacities (i.e., the way they interact with their sensory world), understanding what supports emotional regulation and what is disruptive. This involves modulating sensory input where necessary, for example the parent may speak too loudly or too harshly or may come into the child's space too quickly. It requires the parent to read the mismatches in communication and adjust in the moment, developing what Tronick (2007) has termed a "dyadic expansion of consciousness" (p. 402). This is likened to the concept of embodied self-awareness (ESA) introduced by Fogel (2011) who stated, "ESA is sensing one's internal condition with full awareness and without the need for verbal articulation" (p. 184). In DIR/FT therapy the goal is for the parents to be aware of their own internal condition (ESA) while also tuning in to their child's sensory-affect-motor patterns with an understanding of how all of these factors impact the interactive dynamics. The therapists model appropriate responses within the play sessions, often using the child's voice to suggest to the parent what the child may be thinking or feeling, helping the parents to perceive the subtle affective cues and the rhythms, timing, and pacing of their interactions with their child. The parents are encouraged to join their child where they are reading and responding to non-verbal cues. In DIR/FT therapy it is sensory-affect-motor coordination that molds the contours of the communication with the parent encouraged to follow children's ideas, tacitly and empathically communicating to the child that his or her communicative intent has been read and understood. In the reflective component of the treatment intervention more explicit mentalizing occurs incorporating the use of video feedback. In the current study the parent and therapist

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reviewed video recordings of previously recorded therapy sessions and the parent was encouraged to comment on salient aspects of the interaction. For example, the therapist would identify when a parent lost the engagement with her child and would discuss with the parent why he or she felt this happened, what the parent thinks he or she could have done differently, and how the parent felt in that moment. Through this medium the therapist is providing information to support the quality of the interaction and at the same time is nurturing the reflective capacities of the parent. In DIR/FT therapy sessions, therapists are trained to consider the gestalt of the parent-child interaction and discrete behavioural skills are never taught. Therapists do not direct parents within the session, rather the therapists create a holding environment, a safe space where “implicit relational knowing occurs” (Stern, 2010, p. 11).

Method

This study incorporated a randomized controlled design where between group differences were explored. Scores derived from the Parent Development Interview (PDI; Aber, Slade, Berger, Bresgi, and Kaplan, 1985; PDI-R; Slade, Aber, Bresgi, Berger, and Kaplan, 2004), comprised the dependent variable, and the data were explored using an analyses of variance (ANOVA) in which the within-subjects factor was time and the between-subjects factor was group status (i.e., experimental condition). The data analyses explored the following research question

1. Will there be a difference in growth from baseline in the reflective functioning capacities of parents after 24 hours of DIR/FT intervention when compared to the psycho-educational (wait-list) group?

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Using a pretest/posttest experimental design, forty parent-child dyads were randomized to a treatment intervention group ($n=20$) or to a psycho-educational (wait list) group ($n=20$). The treatment group received 24 hours of therapy over 12 weeks based on the Developmental Individual-Difference Relationship-Based (DIR) approach developed by Greenspan and Wieder (1998) incorporating interactive video feedback analysis (VFA), and the parents in the wait-list group received only literature on the DIR/FT model.

Participants

The study population consisted of parents/primary caregivers in Barbados with a child with a neurodevelopmental disability within the age range of 2 years and 6 years and 11 months. This age group was chosen due to the increased concerns both parents and professional have with regard to developmental progress during this period. In the Caribbean many homes are characterised by extended kinship networks, and female-headed households and extended family members are closely involved in the parenting of children (Barrow, 2010), therefore to be culturally relative the criteria for inclusion were extended to include persons who may not be family but who was the child's consistent, primary caregiver. Five males and 35 females participated, comprised of 5 fathers and 33 mothers, 1 grandmother who was the child's primary caregiver from birth and 1 Aunt who had also been the child's primary caregiver since birth. Participants were recruited throughout private and public child health clinics, and special needs private and public facilities located across Barbados. A travel stipend was offered to participants to offset the cost of travelling to the test centre. Table 1 outlines the parent demographics.

TABLE 1 HERE

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Parents who responded to the notice and who met the eligibility criteria were invited to the study site where the study protocols were explained. Once parents agreed to participate they were asked to complete an informed consent form that outlined the risks and benefits of the study. The following inclusionary and exclusionary criteria guided participant recruitment.

Inclusion Criteria:

- Parents or primary caregivers of the child.
- Children between the ages of 2 years 0 months and 6 years 11 months.
- Children who met the criteria for a neurodevelopmental disorder according to the Psychodynamic Diagnostic Manual (PDM 2006).
- Parents/caregivers who could commit to the time required for their participation in the study.

Exclusion Criteria:

- Parents/caregivers who were not the child's primary caregiver.
- Parents/caregivers who had recently participated in, or who were presently participating in any type of parent-child intervention or research project other than regular, scheduled therapy sessions.
- Children who were younger than 2 years 0 months or older than 6 years 11 months.
- Parent-child dyads that had previously received, or who were currently receiving intensive DIR/FT intervention.
- Parents/caregivers who disclosed to the study that they have been diagnosed with a mental illness or psychological disorder.

Procedure for Allocating Participants to Groups

The first 40 parents who agreed to participate in the study met with a research assistant

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who assessed their eligibility using the psychodynamic diagnostic manual (PDM). Once eligibility criteria were met, parents were allocated a number and after the pretest measures were administered participants were randomly assigned to either a treatment group or a psycho-educational (wait-list) group depending on the colour of the ball they chose from a bag (red or blue). This method was repeated until 40 participants were recruited. After one group reached the required 20 participants the subsequent participants automatically qualified for the alternative group. Each of the two groups comprised of 20 parent-child dyads, and all 40 participants completed the study.

Setting

The data were collected at a child development centre in Barbados. Pre and posttest measures and the treatment intervention were administered on site. The treatment rooms were approximately 10 x 10 square feet and were set up as brightly decorated playrooms with soft floor furnishings and a number of symbolic, sensory, and educational toys. The treatment intervention was also conducted in an outdoor playground and a multi-sensory room.

Measures

Parental reflective functioning was measured using the Parent Development Interview. The author and a post graduate research assistant (RA¹) were trained to score the PDI and received reliability training from the Anna Freud Centre in London and the PDI Training Institute, New York respectively. The PDI was administered to both groups at pre intervention and post intervention time points in an interview with the parents that lasted approximately 40 minutes. The PDI assessed parents' reflective functioning capacities in a 45-item, semi-structured, clinical interview. Scores were obtained by examining digitally recorded, transcribed scripts of the unstructured interview, and assigning scores for identified mental states according

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to the standardized manual (Aber, Slade, Berger, Bresgi, & Kaplan, 1985). Reflective functioning was measured on an 11-point scoring scale beginning at -1, given in cases where no reflection was present, and responses were hostile, unintegrated, or bizarre, to +9, representing an exceptional reflective functioning capacity.

Raters considered four general types of mentalization: (a) awareness of the nature of mental states, (b) explicit effort to tease out mental states and underlying behavior, (c) recognizing developmental aspects of mental states, and (d) mental states in relation to the interviewer. The two raters (who were blind to group allocation) identified mental states and scored the transcripts based on the richness of the parents' reflections in accordance with the above categories. Caregiver representations of the affective experience were captured within six areas: (a) modulation of anger, (b) separation, (c) guilt, (d) joy and pleasure, (e) a sense of competency and efficacy, and (f) neediness. "Permit" questions offered the opportunity for parents to reveal their reflective capacities without any deep probing by the interviewer. The 23 "demand" questions were scored and provided the core data for the PDI overall scores.

According to Slade, Grienenberger, Bernbach, Levy, and Locker (2005), an average parent reflective functioning score is between 6 and 8 and an "ordinary" level reflective functioning is awarded a score of 5. Studies using the PDI have consistently achieved reliability above .80. Good interrater reliability was found between the two PDI raters in the current study after dual coding a random sample of 20% of the 40 PDI scripts ($ICC = .68$).

Procedure

On meeting the inclusion criteria the treatment group and the psycho-educational, (wait-list) group received a DVD and printed literature on the DIR/FT produced by the author explaining the DIR/FT model of intervention along with a journal to record their reflections on

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their daily Floortime interactions with their children at home. The PDI was administered to the parents in both groups in the clinic setting by the author and a RA¹ who were both blind to group allocation and who were not involved in conducting the treatment intervention. After the 12-week intervention period the PDI was re-administered to both groups by the same test administrators.

The parents in the treatment group received 24-four hours of DIR/FT therapy over an average of 12 weeks. Two DIR/FT therapists who were certified to advanced level in DIR/FT by the Interdisciplinary Council on Development and Learning (ICDL) Training Institute administered this therapy and were not involved in the administration of any of the measures or any other aspect of the study. The DIR/FT coaching at the clinical setting comprised of Floortime (FT) therapy sessions with the parent and child engaged in a natural play interaction. The FT therapists facilitated the play, coaching parents on how to affectively attune to their child and how to enrich the parent-child interaction. The therapist video recorded part of the session capturing play interactions between the parent and child. When the FT session was over the parent and therapist engaged in a reflective session where they reviewed the video recording and discussed the interaction. Throughout the reflective session the FT therapist paused the video recording of the DIR/FT interaction at random intervals and asked the parents to reflect on their feelings regarding the identified snapshots of the parent-child interaction. For example, the therapist would prompt the parent to think about why the child may have acted in a particular way encouraging the parent to enter the child's world and to attempt to understand their mental states, that is their thoughts, feelings and intentions. The same therapists coached parents on how to incorporate DIR/FT strategies into their everyday routines such as bath time, bedtime and

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meal times. The parents were given a journal and were asked to record their thoughts and feelings regarding their sessions at home to further encourage reflective thinking.

Results

All dependent variables were examined for accuracy of data entry and missing values. To ensure that groups were evenly matched, chi-square tests and one-way analyses of variances (ANOVAs) comparing the two groups were performed. An alpha level of .05 was used for all analyses. There was no significant difference between group allocation and age of parent, $F(1,38) = 2.99, p = .092$, and no association between group allocation and parents' level of education, $\chi^2(3) = 4.49, p = .214$. There was also no difference found between the age of the children in the treatment group, ($M = 51.85, SD = 15.07$), compared to the children in the waitlist group, ($M = 53.15, SD = 17.45$), $F(1,38) = .064, p = .802$ and no association between group allocation and type of children's NDRC diagnosis, $\chi^2(3) = 1.83, p = .356$. No association was found between group allocation and the sex of the children, $\chi^2(1) = 2.84, p = .091$. Preliminary analyses found no significant differences on the PDI scores at pre intervention, PDI: $F(1,38) = .019, p = .891$.

The research question examined if there is a difference in growth from baseline in the reflective functioning capacities of parents after twenty-four hours of DIR/FT treatment intervention as measured with the PDI assessment and compared to the wait list group. To determine if there were differences between the two independent groups over time a mixed Analysis of Variance (ANOVA) was conducted with one between-subjects factor, (group), with two levels, treatment and waitlist, and one within-subjects factor was (time) with two levels, pre and post. The ANOVA examined if there was an interaction between the two factors, (time and

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group) on the dependent variable, (reflective functioning).

Preceding the main analysis of the ANOVA, preliminary tests were conducted to ensure that all of the assumptions of analyses of variance were met. No outliers were identified in the data, as assessed by an inspection of boxplots that revealed no values greater than 1.5 box lengths from the end of the box. Reflective Functioning was normally distributed for the posttest intervention point, as assessed by Shapiro-Wilk's test ($p > .05$), however the pretest reflective functioning did not meet the assumption of normality, ($p < .05$). Research has provided evidence of the robustness of the ANOVA to violations of normality, (Glass, Peckham & Sanders, 1972, Harwell, Rubinstein, Hayes & Olds, 1992), and more recently by Schmider, Ziegler, Danay, Beyer, and Bühner (2010) who conducted an empirical investigation of the robustness of the ANOVA and concluded that “The results give strong support for the robustness of the ANOVA under application of non-normally distributed data” (p. 150). However, to reduce the possibility of a Type 1 error, the alpha level in this analysis was reduced from .05 to .025. The assumption of homogeneity of covariance was met as assessed by Box’s test of equality of covariance matrices, $p = .991$, and there was homogeneity of variances for the pre and post test scores as assessed by Levene’s test of equality of error variance, ($p = .946$ and $p = .967$ respectively).

The ANOVA revealed that there was a statistically significant interaction between the intervention and time on parental reflective functioning, Wilk’s $\Lambda = .739$, $F(1,38) = 13.39$, $p = .001$, partial $\eta^2 = .261$. Follow up tests revealed that at the pre intervention time point there was no statistical difference in reflective functioning between the treatment and waitlist groups, $F(1,38) = .019$, $p = .891$, partial $\eta^2 = .001$. However, there was a statistically significant difference in reflective functioning at the post intervention time point when comparing the treatment group to the waitlist group, $F(1,38) = 8.96$, $p = .005$, partial $\eta^2 = .191$. A statistical

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difference was found for time, Wilk's $\Lambda = .405$, $F(1,38) = 55.72$, $p < .001$, partial $\eta^2 = .595$, with pairwise comparisons revealing that overall the reflective functioning scores of parents increased from the pretest time point, ($M = 3.45$, $SE = .171$) to the posttest time point, ($M = 5.35$, $SE = .171$). There was a significant time by group effect, Wilk's $\Lambda = .381$, $F(1,38) = 61.86$, $p < .001$, partial $\eta^2 = .619$ with pairwise comparisons indicating that both group's reflective functioning increased over time, however the DIR/FT therapy had a larger effect on the reflective functioning of the parents in the treatment group compared to the parents in the wait list group (see Table 2 below).

TABLE 2 HERE

Discussion

The results of this study revealed that the DIR/FT treatment had a significant and large effect on the reflective functioning capacities of parents. The significant effect of time showed that all of the participants' reflective functioning increased from pretest to posttest, however the effect of group was large and significant and indicated that a high degree of the variation in the reflective functioning of parents was due to group allocation. Simply stated, the parents who participated in the psycho-educational (wait-list) group, who received only DIR/FT literature, did experience some change showing a small and non-significant increase in reflective functioning from pretest to posttest. However, participation in the group that received the DIR/FT treatment intervention resulted in significantly greater change in parents' ability to reflect on their own and their child's mental states.

The evidence supports the hypothesis that parental reflective functioning is responsive to a brief therapeutic treatment. The DIR/FT therapists reported observing a 'shift' in parents' reflective thinking that seemed to coincide with richer reciprocity in the parent-child interaction

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towards the end of the intervention. In considering the mechanisms that affect change in an intervention, particularly how a change in dosage affects outcomes, Wasik, Mattera, Lloyd, and Boller, (2013) suggested that it is important to consider the intensity of an intervention and not simply the duration of the treatment. Although brief, this intervention provided intensive one-on-one support to the parent-child dyad and it appears that this methodology rather than duration, contributed to the significant treatment effect.

Relationship focused therapeutic programmes aimed at intervening in the parent-child relationship have evolved out of the infant-parent psychotherapy literature that has informed our understanding of the critical relationship between attachment security and the caregivers' mental representations of their child. According to Feldman (2012), when the mother is able to recognize and anticipate the child's state of mind and act upon this communication contingently they are passing down the ability to accurately reflect others' states of mind. Fonagy, Gergely and Target (2007) stated that this nurtures the child's internal representations of the world and shapes the quality of the parent-child attachment relationship.

When reflective parents attempt to understand their child's mind, they are making an effort to feel what the child may be feeling to better understand what may be guiding the child's behaviour. Reflective parents at the same time are aware of their own mental states and attempt to understand how these impact the child and the relationship. For example, in the current study a highly reflective parent responded as follows:

Interviewer: How do you think your relationship with your child is affecting his development and personality?

Parent: Sometimes I think me being really supportive is good because he knows that Mummy is always there, there is not ever a situation where he would want comfort or something from me and I would purposely not do it and I think that can be good for him but also bad for him sometimes as I think maybe my need to comfort him maybe making him more needy than he has to be at this time.

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Compare this to the response to the same question from low scoring reflective script:

Parent: "I don't think it affecting it at all."

Interviewer: "Not at all?"

Parent: "No."

According to Slade (2005) a highly reflective parent "grasps the complex interplay between her own mental state and that of her child, between her internal experience and her behavior, and between her child's internal experience and behavior". Slade (2005) further stated that "A reflective parent uses such understanding to guide her behavior; thus, RF is in a very real sense central to her capacity to respond sensitively" (p. 279). Highly reflective parents do not profess to fully understand their child's mental states and/or behaviour, rather there is an element of thinking in the moment, a sense of wondering what the child may be feeling and how this may be shaping their behaviour. In contrast, Grienberger and Slade (2002) suggested that, "Mothers with low reflective functioning are unable to grasp the powerful impact that their thoughts, feelings, and behaviors can have on the infant's emotional experience" (p. 6). A high scoring reflective parent can look back and analyze the relationship with her parents with an awareness of the way the past may influence the present. For example, one parent commented as follows in the post-intervention PDI in response to the question "Why do you think your parents behaved the way they did?"

Because I think they had really crappy lives themselves. I think my mom had no mother and I don't know an awful lot about what her childhood was like. She never spoke about it, in a positive sense anyways. I was lucky in my childhood I had my grandmother who lived with us who was incredibly loving, caring, and supportive. It's almost like I feel I took an awful lot from her that I didn't get from my parents. I think I was so lucky to have had her because she gave me self-esteem, praise, and made me feel good about myself. At least I had that model. In terms of my parents, they didn't have anything to draw on themselves.

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In the pre intervention PDI the same parent responded as follows:

So hmm it wasn't a good start and I think I would have been a headstrong child, so I think she found that difficult to deal with as well hmm but she was not a loving person, she was very closed off emotionally hmm I understand it now that I'm an adult as she had a tough childhood herself.

Prior to participating in the treatment intervention this parent displayed a relatively good level of reflective thinking however, it is clear to see that in the post intervention PDI response the mentalizations about the way this parent was parented are more elaborate and explicit.

The parent is encouraged through coaching and modeling to reach the higher DIR/FT stages of reflective and multi-causal thinking. The objective is to build the parent's (and if able, the older child's), capacity for "reflecting on feelings in relationship to an internalized sense of self" and to explore "multiple reasons for a feeling, comparing feelings, and understanding triadic interactions among feeling states" (Greenspan & Shanker 2004, p. 90). Greenspan and Wieder (2006) stated that DIR/FT is a "parent-oriented developmental therapy" that places parents at the core of the intervention (p. 91). DIR/FT therapy encourages parents' participation and values the parent as a partner unlike many clinical therapeutic interventions where the therapist is seen as the expert. According to Greenspan and Wieder (2006), the DIR/FT therapist's role as coach is not to "demoralize the parents by taking over or lecture them on proper techniques of interaction" but to "empathize with their fears and anxieties, and to help them understand how their own histories contribute to the ways in which they interact with the child" (p. 92).

In determining what aspects of the attachment relationship appear to facilitate the capacity for mentalization in the parent-child relationship, Liotti and Gilbert (2011) suggested

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that the attachment process inhibits the “fight” or “flight” responses in the face of a perceived threat. The soothing responsive parent, by creating a sense of trust and safety, prevents the infant from feeling emotionally overwhelmed and thus allows for the activation of the mentalizing capacities. Feldman (2012) argued that the affiliative bonds between the parent and infant create the context where infants develop the capacity to modulate their arousal and regulate their stress response. It is this process that then prepares the infant for co-regulated interactive relationships throughout the lifespan.

Conclusion

The current study examined the effect of a brief relationship-based intervention on the reflective functioning capacities of parents of children with a neurodevelopmental disability. Parent reflective functioning is an interpersonal and an intrapersonal capacity that underlies how parents to attune to their child’s affective state and how they interpret and respond to their child’s subjective experience. The intrapersonal aspect of reflective functioning refers to the parents’ ability to give meaning to internal feeling states, their own and others, and the transactional nature of reflective functioning depends on the parents’ ability to weave the subjective experience of the child with their own internal representations of the world in order to accurately make sense of actions and respond appropriately. According to Slade (2009), children develop their sense of themselves in the mental representations of their parent whose “observations of the moment to moment changes in the child’s mental state, first in action and later in words and play, are at the heart of sensitive caregiving and are crucial to the child ultimately developing mental capacities of his own” (p. 9). The DIR/FT therapy intervention appeared to greatly enhance the parents’ reflective functioning capacities suggesting that the parents in the

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intervention group were better able to read their child's social cues and respond more sensitively compared to the parents in the psycho-educational (wait list) group. According to Kennedy, Lander and Todd, (2010), the use of video feedback plays a significant role in contributing to the changes that occur between the parent and the child in therapeutic relationships. These authors suggest that using Video Interaction Guidance, (VIG), positive changes in attachment security can be achieved by creating a warm and accepting 'holding' environment for parents. Kennedy, Lander & Todd (2010) stated that helping the parent to observe and understand the micro moments of their intersubjective experience with their child becomes the catalyst for change whereby "The guider pays attention to the rhythm of the interaction leaving 'spaces' for the parent to think. This enables them to develop new thoughts, feelings and intentions that can trigger new narratives about themselves as parents and their view of their own parenting" (p. 63). Parsing out the specific elements of the treatment intervention that led to the changes in parental reflective functioning is difficult. A review of the literature suggests that it is a synthesis of the implicit, non-verbal affective attunement along with the more explicit understanding of the child's subjective experience that was the vehicle for the therapeutic change.

Limitations and Future Directions

In the current study a number of limitations are noteworthy. First, the small sample size restricts the generalization of these findings to the population of children with a neurodevelopmental disability within a specific age range. A larger sample would enable a wider age range of children to be considered and further empirical research incorporating the DIR/FT model may benefit parents of children within other "at risk" populations, such as parents living in poverty, siblings of children diagnosed with an ASD and children of teenage parents.

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Another limitation of this study is the reliance on assessment measures that are not developed for the Caribbean population and therefore may not be culturally relevant. There are culturally specific characteristics of the parent-child relationship in the Caribbean that Eurocentric measures may not be sensitive to detect. For example, children in the Caribbean are often a part of multiple caregiving environments including wider kinship networks yet the majority of European and American measures assess one principle caregiver. It is therefore important to be mindful of the need to adapt measures and the designs of interventions to ensure their cultural relevance to the Caribbean environment (Brown & Johnson, 2008).

A limitation of the pretest/posttest experimental design utilized in this study is that it only provides information on change from one time point to another. The use of a pretest, posttest follow-up design would enable an exploration of the long-term effects of the treatment intervention to determine if the gains made were sustained over time. The current study may also have been limited by the time demands placed on parents. Selection bias may have occurred as only parents who could commit to 2 hours per week to attend the study site with their child were eligible to participate.

Implications for Clinical Practice

The empirical literature shows a relationship between parental reflective functioning and attachment security (Slade, 2005), therefore intervening with parents to enhance their ability to understand their own, and their child's mental states has the potential to strengthen the parent child relationship. This is particularly significant with parents of children who have a neurodevelopmental disability as this group of children have challenges that can stall and disrupt the two-way purposeful communication between a parent and child. This study also has implications for early intervention across disciplines in the areas of health, social care, and

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education. Heckman (2013) stated that a major shift is needed in social policy to promote early intervention programmes, particularly for disadvantaged populations. Heckman (2013) further argued that, “The proper measure of disadvantage is not necessarily family poverty or parental education. The available evidence suggests that the quality of parenting is the important scarce resource” (p. 35).

Finally, the efficacy of the DIR/FT model in enhancing the quality of the parent-child relationship has implications for implementation throughout child development programmes. The results revealed that both groups demonstrated enhanced reflective functioning capacities suggesting that the psycho-educational treatment intervention can be considered as a lower cost option for those families who may not be in need of the longer, more intensive DIR/FT treatment intervention.

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Table 1

Parent Age, Level of Education, and Occupation

Demographic Variable	<i>N</i>	%
Age of Parent		
18-30	7	17.5
31 - 43	23	57.5
Over 44	10	25.0
Total	40	100
Education Level Completed		
Primary	2	5.0
Secondary (high school)	18	45.0
College	7	17.5
University	13	32.5
Total	40	100
Occupation of Parent		
Housewife	5	12.5
Police Officer	1	2.5
Unemployed	9	22.5
Hairdresser	1	2.5
General Worker	5	12.5
Engineer	2	5.0
Mechanic	1	2.5
Nurse	1	2.5
Clerk/Administrative	4	10.0
Actuary	1	2.5
Banker	2	5.0
Veterinary Surgeon	1	2.5
Insurance Agent	2	5.0
Lecturer	2	5.0
Health/Spa Worker	2	5.0
Marketing Executive	1	2.5
Total	40	100

Note: *N* = Number of participants, % = Percentage of parents.

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Table 2 Estimated Means, Standard Error and Confidence Intervals for Pre and Post Intervention Parental Reflective Functioning for the Treatment and Waitlist Groups.

Group	Time	M	SE	N	95% C.I.	
					LL	UL
Treatment	1	3.45	.256	20	2.93	3.97
	2	5.35	.284	20	4.78	5.92
Waitlist	1	3.50	.256	20	2.98	4.02
	2	4.15	.284	20	3.58	4.72

Note: N = number of participants, M = Mean, SE = Standard Error, C.I. = Confidence Interval, LL = Lower Limit, UL = Upper Limit. Time 1 = pretest, Time 2 = posttest. Treatment = DIR/FT^(R) Intervention Group, Waitlist Group = Psycho-educational.