Feasibility of using telepractice to provide Modified Interaction Guidance as an intervention tool for caregivers and their child with autism

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A thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

In partial fulfillment of the requirements of the degree of

MASTER OF SCIENCE

College of Rehabilitation Sciences

Rady Faculty of Health Sciences

University of Manitoba

Winnipeg, Manitoba

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Abstract

Problem. Fewer children with autism spectrum disorder (ASD) form secure attachments with their caregivers. Modified Interaction Guidance (MIG) is a strength-based attachment intervention that supports caregivers in building relationships with their child, but MIG has never been used with children with autism and their caregivers. Parenting programs specific to ASD are scarce and waitlists are long. Identifying alternative service delivery models of therapy and expanding options for interventions are needed. Therefore, this study examined the feasibility of using telepractice to deliver MIG as an intervention to improve attachment between children with autism and their primary caregiver.

Method. Dimensions of feasibility (acceptability, implementation, demand, and practicality) were examined using an embedded mixed method approach incorporating a single-subject design. Data collection occurred over 6 sessions (Pre-intervention assessment, 4 weekly intervention sessions and a final post interview). The PICCOLO was administered after each weekly session, the Goal Attainment Scale was administered at session one and four. The Parenting Sense of Competency was administered at pre-intervention and re-administered again at the final interview. Descriptive statistics were used to analyse the outcome measures data. The post-interview qualitative questionnaire explored the caregivers' experience with MIG. Outcome data was analyzed individually. Qualitative data was gathered throughout the research process and followed up with post intervention individual interviews.

Results. Four participants and their children completed the intervention. All participants found both the intervention (MIG) and the service delivery model (telepractice) to be acceptable. Caregivers found implementation via telepractice easier and in some cases, preferred. The outcome measures used identified changes in outcomes pre and post MIG, though had limitations. The practicality addressed barriers and facilitators including time commitments, flexibility in timing of sessions, and recourses required to participate at home. All participants had adequate resources and felt time commitments and flexibility of sessions supported success and ongoing commitment.

Conclusion. This study is the first to use the MIG intervention with a caregiver-child dyad including a child with an ASD and to deliver this intervention via telepractice. Overall, the intervention was feasible and acceptable. Future studies should include larger sample sizes, different outcome measures and multiple arms of MIG intervention to further explore if a difference is observed between telepractice and in-person.

Acknowledgements

This thesis, long in the making would not have been possible without the help, support, suggestions, guidance from my advisor, committee, friends and family.

First, I would like to thank my advisor Dr. Leanne Leclair for agreeing to be my mentor and supporting me on this journey. Your guidance, feedback and gentle focusing when my ideas got out of hand, was invaluable to me. I appreciated your patience and understanding as I worked my way through this process. Likewise, I am grateful to my co-advisor, Dr. Kerri Walters for agreeing to be part of the team and sticking with me even though the project took a large turn. Next, I would like to thank Dr. Toby Martin for stepping up and sharing his expertise, support, advice and time.

To my friends, particularly Liz who thought my master's pursuit was a fabulous idea and as a result was always ready to help, encourage, support and guide when I was lost on this big journey and to Shawna, for not only her support and encouragement but also for her word skills, editorial knowledge and for keeping me sane with exercise purists.

How does one thank those closest to you? To my family who have supported, watched and been curious supporters over these past few years, thank you!! To my husband Brendan, whose constant support, love, encouragement, willingness to read and proofread many copies of my drafts, meant so much to me. To my children, Seamus, Nola and Declan for being patient with mom while she is "doing her homework", understanding that even adults go to school and for encouraging me to keep at it. To my parents, thank you for your curiosity, support, and encouragement from afar to reach this goal.

I would like to dedicate this thesis to my study participants. Thank you for letting me not only into your homes, but into your lives. Your willingness to participate, learn and understand your child was such a gift and an honor to be a part of.

A special acknowledgement also goes to my friend Nancy and her son Ben, for first introducing me to and allowing me to witness the wonders and beauty of the "attunement dance".

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Chapter 1: Background

What is Attachment?

Bowlby (1980) first introduced the idea of attachment by researching institutionalized children who were separated from their parents. Building off Freud and Piaget's work, Bowlby formulated the "attachment theory." His focus was on the impact of the quality of attachment on child development. He was able to identify the impact of attachment on our biological, evolutionary and behavioural development as well as highlight the role that attachment plays with our survival system. He defined attachment as 'a strong disposition to seek proximity to and contact with a specific figure and to do so in certain situations, notably when frightened, tired or ill' (Bowlby 1969/1982, p. 371 as cited in Zeanah et al., 2011). He believed that there is an innate need for attachment and that it evolved as an aid to survival, as it keeps the child in close proximity to the caregiver.

Mary Ainsworth (1978) was instrumental in helping to identify attachment patterns and the way these patterns develop. She created and implemented the "Strange Situation Procedure" (SSP). From the SSP, three patterns of attachment have been developed. Optimally, "Secure or Balanced," displayed by caregiver and child synchronicity. The child can express the need for comfort and protection freely and directly. "Avoidant," the child hides or limits feelings and only displays feelings to indicate a need. Lastly, "Ambivalent/Resistant" where children send mixed messages, expressions and feelings that are often exaggerated. (Ainsworth et al., 1978) Main and Solomon (1990) later added a fourth pattern termed "disorganized." The disorganized pattern is thought to be caused by frightening parental behaviour and/or exposure to trauma or loss. It is classified as the most insecure of all the attachment categories and as a result is a risk factor for psychopathologies (Lyons-Ruth, 1999). See Table 1.

Why is Attachment Important?

Years of research have determined that child development is severely negatively impacted without a healthy attachment from a sensitive caregiver (Stronach et al., 2013). Bowlby found that the effects of attachment are observed throughout one's lifespan and even into the next generation. Attachment not only encompasses a child's sense of security and nurturing, but also expands to include the relationship between the dyad. A secure bond not only creates resiliency, but it also has a direct impact on the overall development of the chid. Stronach et al. (2013) found parents with a history of maltreatment develop poor parenting skills. As a result, children growing up in these home environments may develop a disrupted disorganized attachment. van Ijzendoorn (1995) identified that a vital predictor of a child’s attachment is that of the caregiver’s attachment history. The caregiver’s own history is demonstrated through their sensitivity and attunement to their child.

Table 1

Description of Attachment Classification Behavior

Infant behaviour	
Secure Attachment (B)	Secure children use the attachment figure as a base from which to explore. These children appear to strike a balance between attachment and exploration behaviour. These children may show signs of missing the parents during separation. With return, of the parents, the child actively greets the parent, usually initiating physical contact. After return of the parent, the child is easily settled and returns to play.
Insecure Avoidant Attachment (A)	Insecure -avoidant children show little or no response to the attachment figure’s leave taking. Their exploration is considered a strategy aimed at minimization of attachment behavior. These children show little to no proximity or contact seeking, no distress and no anger.
Insecure Resistant Attachment (C)	Children classified as insecure-resistant appear preoccupied with their attachment figures throughout the procedure. They appear to maximize the display of attachment behaviour at the expense of exploration. They may seem angry or upset and fail to settle after reunion.
Insecure Disorganized Attachment (D)	Disorganized attachment is observed in children who are not able to develop a specific organized attachment behavioural pattern with their primary caregiver. The disorganized classification is considered to be an index of the child’s inability to cope with his or her anxiety in the face of stress although the attachment figure is present. In fact, for disorganized children the attachment figure is also perceived as a source of fright instead of only as a potentially safe haven. The children may show behaviour like freezing, stereotyped behaviour, cling or cry hard while looking and leaning away.

Note. Reprinted with permission from “Attachment in Toddlers with Autism and Other Development Disorders,” by F.B.A Napier, Swinkels, S.H.N., Buitclaar, J.K., Bakermans-Kranenburg, M.J., van IJzendoorn, M.H., Dietz, C., Van Daalen, E., and van Engeland, H. (2007) *Journal of Autism and Development Disorders, 37*, p. 1123. Copyright [2006] by Springer science + Business Media, LLC.

Research highlights that the impact of disrupted attachment is far-reaching. In addition to the detriment of the relationship, research has shown an insecure or disorganized attachment can lead to delayed child development, decreased skill acquisition, dysregulation (physical and emotional), limited communication skills, heightened anxiety (Stronach et al., 2013), increased physiological responses to stressors (Leerkes et al., 2017), increased use of substances to manage regulation, increased risky behaviours (Meredith, 2009), decreased treatment adherence, increased risk of chronic illness, and reduced ability to maintain relationships (Mikail et al., 1994). Therefore, without intervention, poor parenting may lead to a cycle of maltreatment, neglect, and abuse and perpetuate this cycle for future generations.

Authors have also highlighted the physiological manifestations of attachment. (Porges, 2007). The social relationships we seek for safety and connection are complex and are rooted in our nervous system. This connection allows for the development of co-regulation and from which a child can develop the ability to self-regulate (Kain and Terrell, 2018).

What Supports Attachment?

Secure attachment is broadly defined as a sensitive caregiver who is attuned to the infant and can recognize and respond appropriately to the infant’s cues thus meeting all the infant’s needs. Minimally, a sensitive parent is categorized as a parent who responds promptly, appropriately and dependably and success is measured by their ability to calm a distressed infant and help him/ her to self-regulate (Holden, 2015). Research assessing parental sensitivity and capacity for caregiving has been examined over the years by many different theorists, researchers and clinicians (Holden, 2015). The critical overall finding is that strong attachments are shaped by the behaviour of the caregiver and their interactions with the infant. Ultimately it is these actions that shape how an infant will attach and how securely. When there is a break in attachment and the dyad is not in sync, repair needs to occur. This repair can happen in various forms of clinical intervention that focus on creating security, sensitivity, mentalization, attunement and a general understanding between caregiver and child.

Early interventions that particularly focused on caregiver sensitivity resulted in enhanced secure attachments in children (Korie-Karie et al., 2009; Wright & Edginton, 2016). A meta-analysis by Bakermans-Kranenburg and colleagues in 2005 supported the idea of sensitivity as an effective key for attachment. The authors found that interventions focused on sensitivity were more effective than broad-based interventions (those also involving maternal needs or familial concerns) for supporting attachment. The interventions were also found to be most successful with infants six-months-old or older when the formation of selective attachments is paramount. The treatments were most effective when it was the infant who was at risk (due to prematurity, irritability or international adoption) versus the caregivers. Having functioning caregivers with the capacity to be an ally in the treatment makes for success compared to having two clients with clinical concerns and needing co-treatment.

The sensitivity-based interventions were successful in reducing "frightening or extremely intrusive or unresponsive parental behaviours" (Bakermans-Kranenburg et al., p.208, 2005). However, overall findings of the infant/parent dyads deemed "disorganized" proved to have the most room for change and the interventions were found to be most effective for minimizing disorganization compared to a frightening/frightened behaviour pattern (Bakermans-Kranenburg et al. 2005). This increase in sensitivity may be due to creating change in the parent's attention to the child and their needs. For example, interventions previously reviewed in the literature, such as Wait, Watch and Wonder (Cohen et al. 1999), teaches the caregiver to focus on the child and take the child's lead in the interaction, thereby, generating sensitivity. The authors also noted that these specific interventions are easier for many professionals to implement, rather than requiring specialized qualified interveners, specifically those who are trained in infant psychotherapy, who may be harder to come by. Thus, making it a more accessible intervention.

Zeegers et al. (2017) completed a meta-analysis on parental mentalization and sensitivity, and found that not only the parents need to be sensitive caregivers but they also need to demonstrate "parental mentalization" to establish a secure foundation. Parental mentalization is defined as the "parent's ability to represent and hold in mind the internal states of their child" (Zeegers et al., 2017 p.1246). The idea of mentalization encompasses the three concepts – "parental mind-mindedness (a caregiver's ability to see their child as an individual with a mind of their own), parental insightfulness (the caregiver’s ability to see things from the child’s point of view) and parental reflective functioning (the caregiver’s ability to reflect not only on their own but also their caregiver’s mental status)” (p.1246) all of which are predictors of creating a securely attached infant. Camoirano (2017) reviewed various studies that looked at parental reflective functioning and mentalization and found that there is strong correlation between parental mentalization and the quality of caregiving provided. This in turn has a direct impact on the child’s attachment and emotional regulation and own reflective functioning.

Research shows that not only do we need to be sensitive parents but attuned as well. Attunement is the “process of being present with and deeply knowing oneself and/or another person (Siegel, 2010). Rees (2005) describes ‘attuned parenting,’ as, “imparting meaning to the ‘inner world’ of body signals (for example, hunger, satiety, full bladder, thought and emotions) (p. 1060). By vocalizing what a child is displaying (e.g. when the child is expressing emotions such as anger, for the caregiver to say “it is ok to be angry”) it provides the child not only vocabulary around these sensations and signals, it also indicates to them that their caregiver “sees” them and is here to help them manage their sensations and emotions. In a study by Meins (2013), the authors studied attuned parenting comments and researched whether the parents with unattuned comments affected the attachment outcomes of their child. The findings indicated that although parents with insecure-resistant infants can “mentalize” about their infant, “their comments do not accurately reflect the child’s internal states” (p. 538), therefore, demonstrating a lack of attunement. Being attuned is critical to the attachment. It is imperative for secure attachment to both respond to a child’s needs, and to answer them accurately and correctly.

With secure attachment comes attunement. By teaching children how to recognize their own needs – internal and external it further teaches them to develop empathy and perspectives in addition to providing the foundation for trust in relationships and how to understand the complicated nature of communication – verbal and non-verbal. Hibel et al. (2015) carried out a prospective study looking at the attunement between mother-child dyads, notably the adrenocortical attunement. The authors stated that the “attunement of adrenocortical activity between mothers and children is thought to be the physiological manifestation of a dyad’s shared emotional and behavioural experiences” (p.84). This study illustrated the depth that social interactions have on our bodies’ physiology.

Ultimately, attachment is a two way, mutually reinforcing process that depends on what each member of the relationship contributes, their ability to attune to one another, and level of openness to the relationship. Anything that interrupts the cycle of attunement also affects the quality of the attachment. If breaks in attunement are unreliable or inconsistently resolved, levels of stress, trust, and emotional regulation are impacted. Trust is developed through experiences of relationships that are consistent, reliable and safe. It is through this learning that we can become independent as we evolve into secure beings. Research has helped to improve our understanding of the far-reaching effects that attachment has on both the caregiver and the child.

Secure attachments are the gateway to successful internal working models. Internal working models are our building blocks of the self. They are built upon stability, coherence and self-worth. From interactions with caregivers and other adults, a child learns to recognize their self-worth. In the case where there is not a secure attachment, children can also learn to feel that they are unworthy of care and even love. Early learning of worth shapes the child and how they interact with adults for the rest of their life. The key for attachment treatment intervention is that the internal working model is a cognitive concept and possible to reshape how one sees oneself. Just as attachments can shift and change over time, so can how we think of ourselves and our internal representation (Holden, 2015). Attunement and sensitivity combined with mentalization are needed to create a successful bond as they all have a direct impact on the other. Each feature of parenting can cause a variance in attachment.

What Influences Attachment?

A number of variables are key influencers in the development of a secure bond. Greenberg and Deklyen (1993) discussed the impact of family ecological variables, socialization practices, parent and child characteristics and how all these interact and play a role in attachment.

Family characteristics such as stress levels in the home, family adversity, marital strain or economic stability can have an impact on attachment and ultimately change how the child views the caregiver. While the primary focus of research is directed to the parent-child relationship, the environment that the dyad lives within also influences the development of attachment. As found by Zeanah et al. (2011), an unsafe or unpredictable environment laced with safety concerns can have a more significant impact on secure attachment, even more so than any physical or neurological anomalies.

Parental characteristics including parent's perception of attachment and overall sense of competence as a parent (Goodman and Glenwick, 2012; Poslawsky et al., 2015), their own attachment history (Bond et al., 2020; van IJzendoorn, 1995), psychopathologies and overall health (Teti, 2000), mental health and stress levels (McKenzie, 2020; Scott et al, 2021), maternal depression, substance dependency and low self-esteem (O'Hara et al., 2016) play a role in parental capacity. Due to any of these factors, the caregiver can be seen as unavailable and therefore, attachment security is compromised (Waters et al., 2000). Research consensus is that maternal sensitivity is a crucial factor in "secure" attachments. Having a caregiver who is attuned to the needs of the infant/child and can provide and meet those needs is paramount (Haft and Slade, 1989).

An additional layer of attachment is the characteristics of the child. Hobson et al. (2016) stated that it is "widely recognized that children's characteristics affect their relations with caregivers, just as interactions and relationships with adults affect a child's functioning" (p.746). Further features such as infant prematurity, babies who are difficult to settle, or those who are frequently irritable or angry can impact the caregiver's ability to perceive successful parenting (Greenberg and Deklyen, 1993).

Clinically we are seeing an increase in a variety of diagnoses such as Attention Deficit Hyperactive Disorder (ADHD), Conduct disorder (CD), and Oppositional defiant disorder (ODD) appearing alongside other behaviours such as lack of emotional regulation, poor social skills, inability to empathize, poor stress management skills and lack of relationship skills developing with the more dysfunctional attachments (Melling & Smethurst, 2017; Rees, 2005). Not surprisingly, Greenberg et al. (1993) found that children referred for disruptive behaviours were also the ones who had insecure attachments and when further investigated, it was found that their mothers often had insecure attachments as well. Due to clinical similarities, misdiagnosis of ADHD, CD, and ODD occurs due to the presentation of behaviours and symptoms, when the true diagnosis is that of insecure attachment.

Moreover, Meredith (2009) discussed the importance of knowing a client's (child or adult) attachment history/strategy as this history will affect how health behaviours present and are addressed. Also, understanding the attachment history is essential for selecting an appropriate intervention, improving the quality of the interaction and as a result the outcome of the treatment. By adopting an attachment-based perspective, occupational therapists can understand

and perhaps explain why some clients are more prone to chronic illness, mental health concerns and physical conditions, due to “maladaptive behaviours and emotions” (p.290).

Zeanah et al. (2011) mirrored this idea emphasizing that interventions need to be based on the parents’ own attachment history. Increasing the parents “reflective capacity” (p.827), will allow them to better understand their child’s behaviours as well as their responses to the behaviour. The outcome of attachment interventions is not only to repair disrupted bonds but also to attend to increasing parental knowledge of development, understanding social cues and reciprocity, as well as relationship building.

What Interventions Improve Attachment?

The critical focus of attachment interventions needs to be focused on improving caregiver sensitivity, reducing atypical caregiver behaviours, creating safe environments and increasing parental working knowledge of their child and their particular needs. Research has shown that the uses of early intervention strategies that have focused on increasing parental capacities and sensitivity have improved the development of healthy child-parent attachments (van IJzendoorn, 1995; Liebermann, 2007; Schore 2001).To the Child Resource Institute, the core components of evidence-based attachment interventions must have the following: Focus on enhancing the quality of interaction, supporting parent’s ability to respond to child’s attachment cues and needs, education about attachment and developmental trauma and enhancing caregiver observation skills (DeOliveira, 2008).

Zeanah et al. (2011) completed a review of effective types of attachment-based interventions. Many techniques have been used to treat disrupted attachments and promote healthy child development. The following interventions will be further explained in this chapter:
Child-Parent Psychotherapy (CPP), video-based guidance, Circle of Security, Wait, Watch and Wonder, and MIG. All of which have similar underlying principles, that of dyad specific treatment.

Child-Parent Psychotherapy (CPP)

Child-Parent Psychotherapy (CPP), the oldest dyadic psychotherapy, has been utilized since the 1980’s. In CPP neither the parent nor the child is the “client,” instead it is the relationship between the two. In the 2011 review by Zeanah et al., five randomized control trials (RCT) focusing on CPP were deemed effective in enhancing emotional communication for the dyad. Sample sizes ranged from 63 to 137. Although each trial focused on a different population (infants of stressed immigrant families, infants and preschoolers from maltreating families, toddlers of depressed mothers, toddlers exposed to partner violence), the central themes were that of exploring the relationship between the child and parent, as well as helping the parent recognize signs of child distress and how to respond appropriately, all of which improved in the RCT's.

Stronach et al. (2013), in a RCT (N=137), found that the positive modeling of the therapist and the home-based treatment led to decreased distorted views and/or perceptions that the mothers had of themselves and their relationship with their infant (~13 months old). Ultimately, with a change in attitude came the ability to form positive parent-child bonds that were proven to be still intact 12 months post-treatment.

Video-based Intervention to Promote Positive Parenting (VIPP)

Video-based Intervention to Promote Positive Parenting (VIPP) is used as a brief intervention technique. By being able to review the video after a home-based play interaction, the therapist can highlight the areas needing therapeutic focus. The goal is to enhance maternal sensitivity and minimize any maladaptive attachment strategies in place (Zeanah et al., 2011).

Kennedy et al. (2017) described the theoretical underpinnings of the concept of video-based interaction, thereby supporting the utilization of this method. The authors described the principles of this tool to be "intersubjective, attunement and mediated learning" (p. 500), and they developed a protocol to evaluate the effectiveness of video feedback for improving caregiver sensitivity and attachment. To date, interventions utilizing video feedback as part of the intervention are more efficient, due to the objectivity (of being able to witness the interaction on the video) they provide to parents, evoking change (Kennedy et al. 2017). A key factor for the effectiveness of this type of session was that the caregiver had an opportunity to experience attunement from the "therapist", for some, this may be the first experience they have had where an adult figure can follow their initiatives and recognize and then meet their needs. Experiencing attunement is "key to the caregiver's recovery and new abilities to form attuned relationships themselves with their child and other adults" (p. 500).

By being able to review a session immediately, caregivers had an opportunity to evaluate their behaviours, words, body language and other signals. They were not only able to gauge their actions, but they could see the direct results they had on their child and as an outcome, their child's behaviour. This experience allowed for the caregiver to gain insight and reflect, resulting in positive caregiving changes, such as increased patience, empathy, sensitivity and understanding (Kennedy et al., 2017; McDonough, 1995; O'Hara et al., 2016; Zeanah et al., 2011).

Circle of Security (COS)

Circle of Security (COS) developed by Cooper, Hoffman and Powell (2000) is another intervention focused on the relationship and repairing the "circle" that is needed to create a stable or secure bond. An essential element is an educational piece provided to parents through DVDs and handouts. The intervention focus is ensuring that the caregivers are open to education about attachment, child development and understanding their reactions to their child's behaviour. For this work to be successful, the therapist needs to ensure that the parents do not misinterpret the comments or educational tools as a threat or criticism of their abilities. The focus is on caregiver education regarding child development, building caregiver capacity and their ability to reflect on how their actions impact their child (Zeanah et al., 2011).

Mercer (2015) reviewed the research completed to date on COS and found it to be a valuable teaching tool, specifically the COS graphic and the concept of "shark music" (the internal cue a parent notices when determining if their child's cue is causing them to feel safe or in danger based on their own COS) for parents how to understand their child's cues and needs. Additionally, no adverse treatment affects have been noted in any of the research studies although strong scientific evidence does not support the use of COS, it is deemed that the interventions are plausible due to the theoretical background and it is user-friendly (Mercer, 2015). See Appendix B.

Wait Watch Wonder (WWW)

WWW is a dyadic psychotherapy treatment developed by Cohen et.al in 1999, with the goal of enhancing parental sensitivity and attunement as well as boosting a child's sense of self and self-efficacy, their emotion regulation, and overall enriching the child-parent attachment relationship. WWW is a form of play therapy that has the child in charge of the free play and leading the interaction. In the initial study by Cohen et al, in 1999 and follow up in 2002, the outcomes from the 34 dyads that were in the WWW group showed an increase in attachment security, emotional regulation and cognitive development in the infants and an increased sense of parenting competence, a reduction in depression and in parenting stress compared to the 33 in the mother-infant psychotherapy group. By getting down on the floor and following the child's lead, sitting back, watching, waiting and wondering, the caregiver begins to understand their child in a different way – seeing the world from their child's perspective and consideration of what the child is experiencing and needing and how it may differ greatly from that of their own. This learning helps the caregiver become focused on the child's internal experiences; this in part then decreases any distortions that may be present, and the caregiver then becomes more attuned to their child's cue's and needs. This ultimately shifts the dyads attachment orientation (Philipp, 2012). Though there is still little research or evidence to support its use. See Appendix A.

Modified Interaction Guidance (MIG)

Interaction Guidance (IG) was developed to work with young, inexperienced parents or caregivers who were facing multiple life stressors and/or who were difficult to engage. The main steps in the procedure are to have the family identify the primary concern they are facing, highlight the strengths that the family already has in place and expand on those strengths, convey/impart caregiving and societal norms, and offer other perspectives (McDonough, 2004). The goal of this therapy is to engage the family to take an active role in the construction of their overall treatment. The individualized treatment approach focuses and builds on existing strengths. This treatment method has been proven effective with a variety of populations such as infants with growth failure, infants/children with regulation disorders, and those born with substance exposure (McDonough, 2000).

Dr. Diane Benoit (2001) took IG one step further and developed MIG. MIG intervention focuses on caregivers who display frightening or atypical behaviours associated with disorganized attachment. Like IG, it is a strengths-based attachment intervention used to enhance and work with each dyad to meet their own particular needs. WWW is used as part of the MIG intervention to help guide the intervention and enhance the dyad attachment. The first step is to introduce the WWW as it helps develop caregiver awareness through free play and works to enhance caregiver sensitivity and to increase the child's sense of worth and emotional regulation and as a result, the caregiver-child relationship (Cohen et al. 1999). The adapted Aulneau MIG manual added the COS as the next step. The understanding was that once a new sense of awareness and sensitivity has been introduced, the COS was a building block and next step from the WWW. As the primary goal of the COS is to help caregivers be able to reflect on their child attachment needs in order to better promote a secure attachment with their child (Cooper et al. 2000), it is a natural evolution and also a perfect fit for the MIG intervention.

Benoit (2001) found a significant reduction in atypical maternal behaviours following the MIG intervention (N= 28 mother-infant dyads). Madigan et al. (2006) looked at the effectiveness of using MIG for brief intervention treatment for disrupted caregiver behaviours, such as role confusion, fear provoking behaviour, intrusiveness or negativity and withdrawal. The dyads (N=11) were initially referred for assessment of feeding difficulties that were believed to be primarily attributable to caregiver child relationship difficulties. The dyads completed an assessment as well as a feedback session and depending on their level of need, 3, 4 or 5 treatment sessions. Their findings indicate that MIG produces relatively quick changes in behaviours for parents with the capacity to make the necessary adjustments. A limitation to this intervention then is whether or not the caregivers have the capacity to change. The authors note the following limitations to their study, study size and lack of comparison group, if the behaviour changes noted during the MIG sessions were transferable to other environment and situations. Madigan et al. (2006) chose to reanalyze data from a previous convenience sample study (N=11 dyads) referred for infant feeding issues. The authors were examining how many treatment sessions were needed to detect positive changes within the dyad. Through their findings, they noted that fewer than five sessions were needed to make dramatic changes in caregiver sensitivity and as a result enhance attachment security.

Madigan et al. further stated that there is a need for RCT’s and more in-depth systematic follow up to determine if the effects are long lasting. Although there has been limited research on the MIG, all of the components of MIG – Video-based, parent education, modeling from a therapist, coaching from therapist, parental reflection, and using existing strengths, have all been proven effective throughout the literature for working with insecure attachments (Benoit, 2001; Kennedy et al., 2017; McDonough, 1995; O’Hara et al., 2016; Zeanah et al., 2011).

The MIG intervention uses WWW as a method to help guide the intervention and enhance the dyad attachment. The first step is to introduce the WWW as it helps develop caregiver awareness through free play and works to enhance caregiver sensitivity and to increase the child’s sense of worth and emotional regulation and as a result, the caregiver-child relationship (Cohen et al. 1999). The adapted Aulneau MIG manual added the COS as the next step. The understanding was that once a new sense of awareness and sensitivity has been introduced, the COS was a building block and next step from the WWW. As the primary goal of the COS is to help caregivers be able to reflect on their child attachment needs in order to better promote a secure attachment with their child (Cooper et al. 2000), it is a natural evolution and also a perfect fit for the MIG intervention.

What is Autism Spectrum Disorder (ASD)?

Autism spectrum disorder (ASD) is a complex neurological condition in which one of the primary deficits is compromised social behaviour. It is considered a spectrum as children can have a variety of deficits that impact them at various functioning levels. Recent statistics show that 1 out of every 94 Canadian children are currently diagnosed with autism (Ontario Autism, 2017). According to the DSM-V, a diagnosis of autism occurs on the basis of two main areas of difficulty: social communication and restricted, repetitive behaviour or interests. The DSM-V has now created severity levels to help determine with which level a child's functioning corresponds. They are "Level 1 - Requiring support, Level 2- requiring substantial support and Level 3 - Requiring very substantial support" (Boland, 2015). A diagnosis from a pediatrician, psychiatrist or psychologist must include both of these areas and symptoms have to be present from early childhood. Kanner (1943) initially described individuals with autism as "coming into the world with an inability to form the usually biologically provided affective contact with other people" (p. 250).

How does Autism Affect Attachment?

Attachment among children with autism spectrum disorders (ASD) and their parents is often strained due to ASD symptomology. Due to social deficits that are common for children with ASD, the ability to interact with others, even parents, can be challenging and over stimulating. In contrast to earlier thinking, children with autism can form secure attachments with their caregivers (Rutgers et al, 2007). A mother who is particularly sensitive can establish a secure attachment with her child despite subtle, odd, overwhelming, inconsistent or absent cues from the child (Teague et al., 2017). Rozga et al. (2018) and Vivanti and Nuske (2017) found a direct link between increased maternal sensitivity and an increase in attachment security; their findings also indicated that the increase in maternal sensitivity helped aspects of the child's cognitive and social communication skills such as receptive language, play and social interactions when the dyad was involved in play.

In 2007 Rutgers et al. completed a comparison study. The authors selected 89 children, 41 with autism (ranging from high to low functioning and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), 12 with mental retardation and 11 with a language disorder, with a mean age of 26.5 months, and a non-clinical group n=25, that were developmentally matched. Over a period of five weeks and the completion of five measurements, the children were observed in a small group setting with their parents. The findings supported the idea that children with autism can form secure attachments, but found that these relationships are often intractable, laced with a lack of synchronicity and attunement due to the social implications that come with a diagnosis of ASD. In this study, the authors discovered that the parenting style that was most commonly used was that of an "authoritarian" ("control through anxiety induction" p. 863) approach instead of an "authoritative" ("rational guiding of the child, encouraging independence and open expression of affect" p. 863) approach. The use of an authoritarian approach created further difficulties developing the bond and supported the theory that parenting styles can enhance the ASD symptomatology. Again, emphasizing the need for improved reciprocal interaction between children and their caregivers.

Following this idea that caregiving affects the attachment bond and exacerbating ASD symptomatology, Goodman and Glenwick (2012) looked at parent's perceptions of attachment with their child with autism aged 2-10 (Mothers n=76, fathers n=30). They studied parent's own feelings of attachment toward their child, their perceived parenting stress, and level of competence as a parent and how parents would rate their child's functional impairment. They found that parents of children with ASD often perceived that their child was less attached to them. Due to this perception, the parents experienced more stress and questioned their parenting capabilities. When parenting behaviour is negatively affected, a barrier is built, and attachment is likely to be affected. The overall findings of the study were that parent's perceptions of attachment were related to their child's functional impairments, child's age, global parenting competence and stress levels (Goodman & Glenwick, 2012; Teague et al., 2018). The authors suggested that clinical interventions targeting stress and parental competence would help to increase caregiver attachment to their child.

Further to this, Bond et al,. (2020) indicated that it is important for caregivers to not only receive general caregiving education, but also information specifically about autism and how caregiving may look different based on their child's needs. The authors stressed the importance of having the caregivers express their “wishes, hopes and intentions” (p.775), in order to help clarify and address the frustrations and disappointments that they have about caregiving. This is especially important as intentions and fantasies that they have for this role may be unattainable due to the nature of autism. Being able to express these concerns can help to mitigate barriers impeding attachment bonds and remind caregivers to focus on their actual child vs. the one they had dreamed of having (Di Renzo, et al., 2020).

Due to the disruption in social skills/behaviours, relationship building can be tricky. Missed signals and cues, inability to read body language, lack of affect and reciprocity, all create a problematic platform on which to build a relationship. As a result, attachments are challenged and often disrupted. These impairments result in caregivers feeling unsure of the best ways to interact with their child, consequently negatively affecting parental sensitivity, increasing stress and anxiety levels, and decreasing parent’s feelings of self-efficacy and overall mental health. All of which combined leads to a decreased parent-child attachment security (Hobson et al., 2016; Poslawsky et al., 2015; Teague et al., 2018).

McKenzie and Dallos (2017) and Beurkens et al. (2013) studied the implications of poor communication and social competence on relationships and the quality of the relationships for a child with autism and their caregiver. They found that impaired communication and poor relatability lead to impairments in the relationship. The child’s lack of communication cues resulted in less reflective thinking and insight from the parents. Even though the intention may be sincere, insecure attachments can arise due to difficult circumstances. The insecurity is exacerbated in cases where parents themselves have a mental health history or unresolved trauma, both of which can create adverse parenting models, leading to misattunement and unmet needs (McKenzie and Dallos, 2017).

Recalling the physiological impact of stress on our body, Naber et al. (2007) looked at the physiological impacts that attachment has on the body. The authors found that children with “greater” ASD symptoms had lower cortisol levels and were less securely attached to their caregiver. In addition to lower cortisol levels, these children also experienced “higher heart rate reactivity” (p. 1133).

As a result, these children are less likely to be calmed by their caregivers than neurotypical children. These responses and behaviours were often off-putting for caregivers, resulting in misattunement and decreased levels of parental self-efficacy. The fact that caregivers were unable to soothe or be seen as safe was detrimental to the attachment relationship. Hence the need for interventions that work on developing these secure attachments. Ultimately, the function of attachment behaviour is not predominantly social, but rather to protect ourselves from potential danger. As a result, we seek out those with whom we feel the safest for survival reasons primarily. Not being able to recognize who is "safe" creates enormous amounts of stress on a person – physically and mentally (Naber et al., 2007; Rees, 2005; Scott et al. 2021). As a result, secure attachments can form; however, they take time and patience as well as acceptance (Teague et al., 2017). Interventions that enhance attachment among children with autism and their parents are emerging as a tool to strengthen the bond.

What are Effective Attachment interventions for Children with ASD and their Caregivers?

Years of research have gone into the most effective treatments to support attachment in autism, resulting in many different approaches used all over the world. However, there is a strong prevalence throughout the literature featuring early intervention and relationship development. Early diagnosis and intervention are critical for children with autism (Baker et al., 2015; Hobson et al., 2016; Salomone et al., 2016; Schore, 2014). While the focus with early intervention is often around skill development and acquisition, it is also a critical time to foster the parent-child relationship. Relationship-based models ultimately address the synchronicity between the parent and child. Hobson et al. (2016), through exploratory analysis (N=18) with children with autism aged 2-12, using the Autism Diagnostic Observation Schedule (ADOS), Relationship Development Assessment and dyadic coding scales found that the more in sync the parent and child, the more significant the reductions in ASD symptomatology. Baker et al. (2015), in a pilot study (N=28) of children with autism aged 4-10, addressed synchronicity and the physiological effects it had on the child's body and overall in reducing ASD symptoms over time. Results indicated that there is a strong correlation between a synchronized sympathetic nervous system in parent and child decreasing the ASD symptoms. The authors described synchronicity as "affective mutuality," meaning the degree of, "observed emotional attunement, comfort, intimacy, and positive responsiveness observed during a parent-child interaction" (p. 4141).

Solomon et al. (2008) clarified the importance of working on parent-child relationships and the profound impact attunement had on the physiological body, the ASD, and synchronicity. Their pilot trial (N=19) addressing parent-child interactions using the Eyberg Child Behaviour

Inventory (ECBI), the Behaviour Assessment System for Children Parent Rating scales (BASC) and the Parent Stress Index, of boys aged 5-12 years with high functioning ASD found significant positive results already by the midpoint of the study. From baseline to midpoint the positive affect (measured with the “Shared Positive Affect Coding”) scores had already doubled. This trend continued through to post-treatment (a minimum of 12 sessions later). Positive affect is described as “moments where both child and parents are engaged in happiness, laughter, and smiling or affectionate touch” (p. 1768). Once again solidifying the importance of early focused relationship-based interventions, to not only work on minimizing ASD symptomatology but possibly and even more importantly, enhancing the shared positive affect between parent and child.

Consequently, specific relationship-based interventions have been created to work on enhancing the existing strengths of the dyad, which focus on enhancing attachment.

Developmental, Individual-Difference, Relationship-based (DIR) is an example of this kind of intervention. The focus of DIR is to work on “relationships, social skills, meaningful, spontaneous use of language and communication, and integrated understanding of human development” (Pajareya & Nopmaneejumruslers, 2011 p. 565). In a pilot study (N=32) in which the children aged 24 months to 6 years were assigned either to a typical treatment or to the DIR treatment group, both groups were assessed with the Functional Emotional Assessment Scale (FEAS) and the Childhood Autism Rating Scale (CARS), Pajareya and Nopmaneejumruslers (2011) observed gains (p=.031) for those in the DIR treatment group in communication, and the ability to relate and engage more effectively with their caregiver.

Relationship Development Intervention (RDI) is another type of intervention that focuses on social connectedness. RDI is a family-based behavioural treatment. The treatment is specific to the core symptoms of autism the child displays. In a study by Guststein et al. (2007) they assessed 16 participants with the ADOS and the Autism Diagnostic Interview-Revised (ADI-R) as well as looked at their educational placement. They found positive results around social experiences; specifically noting changes in reciprocal conversation, increased engagement with peers and decreased need for adult assistance in social settings for 16 children whose progress was followed over a five-year span (aged 20 months to 8 years) and participated in 3.5 years of RDI therapy. These gains were found to remain stable over the course of the intervention and were still noted three years post-intervention. A noted limitation to this study was the lack of control or comparison group.

Case-smith and Arbesman (2008) examined occupational therapy (OT) interventions for children with ASD in a systematic review. One of the most commonly used tools was relationship-based interactive interventions (such as RDI). The focus of these types of interventions was to “emphasize responsive, supportive relationships and social-emotional development in young children” (p. 420). The studies reviewed suggested that occupational therapists embraced parents within their intervention and coached them in methods that promoted their child’s social-emotional growth (p. 421). A large part of OT is providing parent education, whether it is around ways to help improve their child’s skills or finding ways to best manage their child’s behaviours. By looking at the strengths of the family, the environment, and the appropriateness of goals, change can occur through educating parents/caregivers and facilitating parent-child attunement and interactions.

In an RCT (N=78 dyads), Poslawsky et al. (2015) examined the effectiveness of video-feedback interventions for caregivers and their child with autism aged 16 months to 5 years. The authors were specifically looking at parent’s sensitivity levels, their attitudes and the child’s ability to sustain joint attention and their play skills. The outcome of the RCT showed a decrease in “intrusiveness” and feelings of competence increased for those caregivers in the video-feedback intervention group. The authors define intrusiveness as “qualities of over directness, overstimulation, interference, or overprotectiveness, and undermining the child’s autonomy” (p. 597). As a result of decreased intrusiveness and increased feelings of competence, the caregiver had the ability to create a comfortable and joyful interaction. Consequently, these changes helped the child feel safe and from that place of safety, learn to explore and play.

No studies have been published using MIG as an intervention for a child with autism and their caregiver. All of the components of MIG -video based parent education, modeling from a therapist, coaching from a therapist, parental reflection, and using existing strengths, have been proven effective for working with insecure attachment. Exploring the effectiveness of MIG with children with autism is warranted, given the importance of attachment for all children.

What is Known about the use of Telepractice with Children with ASD?

Telepractice is defined as “the application of telecommunications technology to the delivery of professional services at a distance by linking clinician to client or clinician to clinician for assessment, intervention, and/or consultation”(ASHA, 2013b, para.1).

Although Telepractice (virtual care) has been around since the 1970’s in Canada, (Ferrer-Roca et al., 1998), until recently, its primary focus has been to serve rural or remote populations. Telepractice is supported in the literature to provide an opportunity to improve patient-centered care. Telepractice can lower costs, improve efficiency and accessibility, and improve family-centered care (Herendeen & Deshpande, 2014). Research has also shown that overall telepractice improves cost savings to the health system as well as to patients and families. Examples of this are: travel expenses, time off work, and time taken from school and family affecting normal routines (Solomon & Soares 2020). Therapy via telepractice is especially beneficial for socioeconomically disadvantaged, assuming they have access to the necessary technology needed, and those with chronic medical needs by improving accessibility through providing in-home visits at convenient times. However, concerns have been expressed around this method of service delivery, including: suitability as a service delivery model, impact on therapeutic relationships, safety concerns, willingness of clients and families, and effectiveness of treatment (Hines et al, 2019) .

Hung Kn and Fong (2019) completed a systematic review looking at the effectiveness of telerehabilitation on OT practice. The findings supported telerehabilitation in offering user-friendly treatment for clients at home, resulted in high parent satisfaction, observed improvement in school performance, satisfaction with the online format, reduced parental stress and improved parent-therapist collaboration. While some parents and clients reported preference for face-to-face visits, the majority seemed to report positive experiences and acceptance of virtual therapy in OT (Hung Kn & Fong, 2019).

An ASD diagnosis feasibility study found 78.95% sensitivity using telepractice assessment. Psychologists administering the remote testing reported being ‘very satisfied’ with remote technology in 80% of cases. In this small study (n=45), 91% reported satisfaction with telemedicine consultation. The main concerns for both families and clinicians were surrounding the technical challenges around audio and visual quality (Juárez et al., 2018). Similarly, Lindegren et al. (2016) found that parent training completed via telepractice (video-conferencing) was the most cost-effective way to provide education and treatment to families, compared to that of clinic-based telehealth or in-home therapy. Additionally, the skills being addressed were significantly reduced (such as challenging behaviors, functional communication training), and that parent-rated acceptability was high.

Solomon and Soares (2020), highlighted that for ASD, telepractice may in fact be considered superior to in-person sessions. The telepractice allows for more naturalistic observations due to being observed in comfortable and familiar environments. It further reduces the burden of travel and transitions that are difficult for many with ASD. The authors further found that due to the limited supply of qualified providers, telepractice is becoming viewed as an appropriate means of intervention.

Once telepractice has been deemed an appropriate modality for the family, it is imperative that modifications be made to provide the equivalent standard of care using telepractice. It is important to keep in mind that telepractice is a modality for delivering treatment not a separate form of care. Other identified skills critical for successful telepractice included clinical reasoning, communication, collaboration, problem solving, preparedness and flexibility. Planning therapy sessions in advance to gather toys, equipment, uploading resources and checking internet speeds and preparing a back-up plan prevents complications during the session (Hines et al., 2019).

Research has primarily focused on the efficiency, cost analysis, satisfaction, and non-inferiority trials of telepractice compared to face-to-face service delivery models. The limitations and concerns of remote therapy include privacy, safety, and effectiveness of treatment when you cannot be there in person. The general consensus around major problems with this form of therapy are: technical difficulties, bandwidth issues, poor internet connections, both of which are currently a problem in various parts of Manitoba (Government of Manitoba, 2016), potential risk around confidentiality, difficulty establishing rapport and trust with the families and reimbursement for services (not all insurance plans cover telehealth) (Solomon & Soares, 2020).

Summary

Throughout the literature, the central themes of parent education, fostering attunement, creating safety, developing confidence in parenting skills and using strengths-based approaches to deliver this message to the caregiver were found to be successful. The literature consistently highlights that the relationship between the child and caregiver must be the focus of the intervention. Not only do these interventions help form secure bonds, they further foster child development, parent-child synchronicity, enhance caregiver sensitivity and increase parental understanding of the child. MIG incorporates many of the components found to be effective for enhancing attachment. Even though there is limited research on MIG and children with autism, the literature discussed above is consistent in displaying effective techniques for both a disordered attachment population and an autism population. Due to the overlap in intervention strategies, one can hypothesize that the use of MIG with a population that has autism will be successful and warrants further investigation within this population.

Relationships are dynamic always changing and evolving. The endurance and the strength of the connectedness between the individuals characterize the relationship (Beurkens et al., 2013). Room for change is always possible in a dynamic relationship. What is needed is the time to understand, enjoy, delight in one another, learn each other’s needs and behaviours, but ultimately to share a smile and be comfortable in each other’s company. These pieces are all critical for making the necessary changes to cultivate a secure attachment.

Chapter 2: Methodology

Purpose and Objectives

The purpose of this feasibility study was to explore the use of MIG as an intervention using telepractice to improve attachment for children with autism and their primary caregiver.

The specific objectives were to determine:

1) The acceptability of MIG using telepractice for caregivers and the researcher.
2) The demand for MIG using telepractice
3) The extent, likelihood, and manner in which MIG can be implemented using telepractice
4) The practicality of delivering MIG using telepractice

Rationale for the Study

Parenting programs specific to ASD are scarce and waitlists are long in Manitoba. Identifying alternative service delivery models of therapy and expanding options for intervention are needed. In a pediatric occupational therapy (OT) mental health practice, the underpinnings of attachment theory help to shape clinical reasoning, guide early interventions and/or prevention and improve "understanding of an individual's health behaviours, emotions, and beliefs" (Meredith, 2009, p. 285). As occupational therapists, it is imperative that we understand the impact of attachment history of our clients and their family system, how it influences intervention plans, the clinical implications that it may hold and ultimately how our own attachment history shapes us as clinicians and the care we provide.

To date, studies using MIG as an intervention tool for a caregiver child dyad where the child has a diagnosis of autism have not been published. The lack of data in this area suggests a gap in research. As noted, many of the valid treatment tools for both attachment and autism focus on strengthening the relationship of the dyad. All of the components of MIG- video-based parent education, modeling from a therapist, coaching from a therapist, parental reflection, and using existing strengths, have all been proven effective throughout literature for working with insecure attachments (Benoit, 2001; Kennedy et. al, 2017; McDonough, 1995; O'Hara et. al., 2016; Zeanah et al., 2011) as well as an autism population (Kubo et al., 2021). Addition of the MIG can provide strategies for caregivers to enhance the attachment relationship, further develop caregiver sensitivity while addressing perceptions of confidence, stress and competence as well as attunement or understanding the child's needs. This treatment may be an effective tool to help meet parenting demands while the families are waiting for other services, by providing them with coping skills as well as positively impacting the family dynamic. More research is required to assess the effectiveness of therapy for parents and their children with ASD. It is reassuring that telepractice has support in the literature and has generally been well received. There is an opportunity to expand the evidence for effectiveness of telepractice. The COVID-19 pandemic precipitated the use of telepractice as a method for service delivery. Therefore, as a first step, this study sought to examining if using MIG with a child with autism and caregiver via telepractice was feasible.

Current Practice

Although waitlists are long, several services are being provided to Manitobans with a preschool child with autism. St.Amant offers, Applied Behaviour Analysis (ABA) for families of preschool children up until six years of age. This program is intensive and consists of a two-year early learning program with 20 hours a week of one-to-one intervention. The Rehabilitation Centre for Children provides Relationship Development Intervention (RDI) and Developmental, Individual Difference, Relationship-based model or DIR for to children and caregivers. Unfortunately, at this time the program is not available and families are advised to seek out private consultants who offer RDI. However, there is a lack of autism-based services grounded in attachment theory with a primary focus on working on developing a bond between the child and their caregiver. The principal investigator, an occupational therapist, provides MIG with other populations in Manitoba, but not with children with ASD and their caregivers. While MIG is typically delivered in person, the COVID-19 pandemic restricted this method of delivery. Telepractice became the new norm of service delivery and as a result was used for this study. Generally, a dyad would participate in eight MIG sessions; however, fewer than five sessions were found to make dramatic changes in caregiver sensitivity and as a result enhance attachment security (Madigan et al., 2006). Brief interventions consisting of fewer sessions have also been found to be effective with other interventions (Erickson et al., 2005).

Research Design

Feasibility Studies

Tickle-Degnen (2013) stated that in occupational therapy, feasibility studies need to take into consideration the outcomes, as well as keeping the study as client centered and individualized as possible. Due to these components, feasibility studies are rare in this field. The ultimate purpose of a feasibility study is to determine if the study is not only practical but valid and warrants further exploration on a larger scale. Feasibility studies are critical to the development of successful implementation of RCT's.

Modeling data collection from Bowen et al. (2009), the following categories were used to guide the mixed methods feasibility study using a single-subject research design and qualitative description. Acceptability, Demand, Implementation, and Practicality were evaluated. Table 2 gives a detailed description of the methods and how the data was analyzed.

Acceptability examines the participants and researcher's view of the intervention, demand examines what the recruitment strategies were, what adherence was like and did the participants complete their homework. Implementation examines if the intervention can be carried out via telepractice; in the participants homes, did the chosen outcome measures capture the desired outcomes, and should any other tools be considered. Practicality examines the logistical issues i.e., telepractice and resources as well as time commitments.

Table 2

Description of Four of Bowen et al. (2009) Areas of Focus, Outlining the Research Questions and Methods of Assessment

Area of focus	Research Questions	Method of Assessment	Data Analysis
Acceptability: This relatively common focus looks at how the intended individual recipients-both targeted individuals and those involved in implementing programs -react to the intervention.	How was the MIG intervention for the caregivers?	Participant Interviews	Deductive Directed Content Analysis
	How was implementing the program for the PI?	PI Fieldnotes	Deductive Directed Content Analysis

Area of focus	Research Questions	Method of Assessment	Data Analysis
Demand: Demand for the intervention can be assessed by gathering data on estimated use or by actually documenting the use of selected intervention activities in a defined intervention population or setting.	What recruitment strategies were most effective?	Recruitment process PI Fieldnotes	Deductive Directed Content Analysis
	What was the adherence rate for session attendance?	Attendance record	Descriptive Statistics
	Did Participants complete their homework?	PI Fieldnotes	Deductive Directed Content Analysis
Implementation: This research area focus concerns the extent, likelihood, and manner in which an intervention can be planned and proposed often in an uncontrolled design.	Can the intervention be carried out using telepractice?	PI Fieldnotes	Deductive Directed Content Analysis
	Can the intervention be carried out in the participant's home?	Participant interviews	Deductive Directed Content Analysis
	Did the measures capture the desired outcomes of the intervention?	Outcome measures	Descriptive statistics
	Did the participants complete the self-rated assessment tools?	Participant Interviews and Outcome Measures	Deductive Directed Content Analysis And Descriptive statistics

Area of focus	Research Questions	Method of Assessment	Data Analysis
Implementation: This research area focus concerns the extent, likelihood, and manner in which an intervention can be planned and proposed often in an uncontrolled design.	Are there other considerations related to the outcome measures?	Completion rates and pre and post intervention findings	Descriptive Statistics
	Were the results on the observational measures (i.e., PICCOLO) similar for the PI and the external reviewer?	External Reviewer and Outcome Measures	Descriptive Statistics
	Is four weeks a sufficient duration to provide benefit to the participants?	Participant Interviews and Outcome Measures	Deductive Directed Content Analysis And Descriptive Statistics
Practicality: This focus explores the extent to which an intervention can be delivered when resources, time, commitment, or some combination thereof are constrained in some way.	What are the logistical issues with using telepractice?	PI Fieldnotes and Participant Interviews	Deductive Directed Content Analysis
	Can the intervention be carried out with existing means and resources in each home?	PI Fieldnotes	Deductive Directed Content Analysis
	What are the time commitments for the PI and the participants?	PI Fieldnotes	Deductive Directed Content Analysis
	What are the time commitments for the external video reviewer?	External reviewers fieldnotes	Deductive Directed Content Analysis

This study evaluated the above listed dimensions of feasibility using an embedded mixed method approach incorporating a single-subject design – where the participants are both the control and the treatment group. Outcome data was analyzed individually. Qualitative data was gathered throughout the research process and followed up with post intervention individual interviews. Baseline and reassessment data was analyzed for monitoring trends rather than for statistical significance. Non-concurrent study design allowed for greater flexibility in recruitment (Christ, 2007). Interviews were completed to better understand the feasibility of the MIG intervention from the caregiver's point of view. By gathering the "lived" experience in a qualitative manner, it provided a stronger understanding of the research questions and interventions rather than solely relying on quantitative data (Creswell, 2014).

Recruitment

Due to COVID-19, recruitment strategies changed and were ongoing and continuously monitored. Families with a child with autism on the St.Amant Autism programs waitlist for Early Learning services who recently received a diagnosis of ASD were mailed a letter to participate in this study. The letter explained the expectations of the proposed research study, the expectations of the adult and child participants and the assurance of safety and confidentiality of any data obtained via the study. Additionally, study posters were posted on the St.Amant website as well as hung in the main lobby of the building.

Furthermore, study posters were hung within Specialized Services for Children and Youth (SSCY) center and posted on the SSCY/Rehabilitation Center for Children (RCC) social media and on the research web-page. Potential participants were reassured that declining to participate in the study would have no impact on their position on the program's waitlists for future therapeutic services or on their ability to receive other services from St.Amant or SSCY/RCC in the future. Five child-caregiver dyads were recruited for this study.

Child Participants

For inclusion in this study, the children had (1) have a confirmed diagnosis of ASD from a qualified professional (e.g., psychiatrist, psychologist, developmental pediatrician) with an expertise in autism. The diagnosis was confirmed before starting the treatment protocol. (2)be between the chronological ages of 24-60 months old (A diagnosis of autism can typically be made by age two); (3) be the first-born child (MIG is most effective for first time or inexperienced parents (McDonough, 2000)), and (4) not already be receiving ABA treatment.

Adult Participants

Adults in this study were required to be the primary caregiver of the child participant. Varied socioeconomic, ethnic, marital, and educational backgrounds responded. Caregivers were required to: (1) first time caregivers (2) speak and understand English, (3) have at minimum fifth-grade education, and (4) need to have access to a computer and internet that would support virtual meetings.

Participants completed screening questions to determine eligibility based on the inclusion/exclusion criteria. Once goodness of fit was determined, the following tools were selected from the literature to review and determine usability for the current study.

Outcome Measures

To obtain a pre-interview functioning level of the parent and child, the following measures were administered by the student researcher during the baseline assessment.

Adult Attachment Interview (AAI)

The AAI is one of the most recognized and widely used tools to assess attachment, it is a semi-structured interview that takes approximately an hour to complete. It was initially developed to assess an adult's frame of mind concerning their early attachment figures. Questions are asked to have the adult reflect back on experiences and recount them. The assessment is looking for crucial features describing the "respondents' inner world: (a) the nature of the speaker's probable childhood experiences with his or her parents; (b) the nature of the speaker's mental representations of each parent, including their emotional stance toward them; and (c) the extent to which loss or other traumatic events or life circumstances have influenced their development and current personality organization" (Steele & Baradon, 2004, p. 287).

This information is transcribed and then coded, to place the adult in one of three categories (dismissing, preoccupied, or autonomous) based on the qualitative descriptors used to answer the questions. To be deemed "dismissing" the answers would need to be positive yet lacking any confirming memories. Difficulties in memory recall will be noted. For a classification of "preoccupied" the narrative is confusing, passive or even angry concerning parents. "Autonomous" adult's answers are clear, consistent and coherent, in that the answers given are relevant to the questions and succinct (Goldberg et al., 2003). For many adults, having the chance to share this experience may be the first time that they may have had the opportunity to disclose what could have been traumatic experiences, therefore, creating a platform in which the adult can experience the emotional support of the therapist.

The psychometric features of the AAI have been studied over time, and the overall results show that the AAI has “demonstrated remarkable reliability and discriminant validity” (van IJzendoorn, 1993, p. 388).

Research has shown the correlation between AAI findings and infant attachment classifications. Benoit and Parker (1994) administered the AAI to a sample of (N=96) expecting mothers and were able to predict within 81% accuracy (K=. 55) the attachment classification of the infant one-year later. Illustrating that the internal working models of the parent and their ‘mentalization,’ has a direct impact on the attachment of their infant. This highlights the clinical importance of carefully attending to parent’s perceptions of their (unborn) baby. Caregiver-infant relationships exist at two levels: internally (‘Working models”) and externally (observable interactions). The AAI functions as a way of assessing the internal working model of relationships in the adult caregiver. A limitation of this tool is that the individual coding/scoring the interviewer needs to be trained (training is an 18-month process and costs approximately $2300) and deemed reliable and consistent in their abilities. See Appendix E.

Working Model of the Child Interview

WMCI is a tool used to measure a parent’s perception of their infant (Zeanah et al., 1997). This tool was based on the AAI and has been widely used clinically and in research environments since its conception in the late 1980’s (Gustman, 2015). It is an open-ended semi-structured interview focused on the parent’s perception and subjective experiences of their infant’s characteristics and their attachment to their child. Questions such as emotional reactions to the pregnancy all the way through to anticipated difficulties later in development (adolescents). WMCI is the only tool that addresses the parent-child relationship and assesses this aspect, not just the parents’ internal working models of caregiving (Gustman, 2015).

The interview is rated and coded using eight 5-point scales to measure qualitative content and affective features of the report. In the end, the parent is placed into one of three categories – balanced, disengaged and distorted. Theran et al. (2005) investigated the test-retest reliability. The authors found that the overall stability of the measure was 71%. Balanced classifications were significantly more stable (79%) than non-balanced classifications (62%) (Theran et al., 2005). In a study by Benoit et al. (1997) findings denote that mother’s representation of their infant and their relationship to their infant as assessed by the WMCI, “remained stable over a 12-month period, including pregnancy, childbirth, and early child rearing” (p. 311). With test-retest stability of 89%. The authors further noted that when the WMCI was administered in pregnancy, they were able to predict the attachment classifications within 74% accuracy (predictive validity) a year later. The predictive element was also found to be significant (90% agreement; K =. 79) in an RCT by Niccols et al. (2015) (N=62), the overall results of the WMCI support a caregiver’s representation of their child, and the relationship remains stable for the first year of life.

Rosenblum et al. (2004) looked at the inter-rater reliability and external validity of coding from videotaped interviews and found that the WMCI was a valid and reliable tool. It was found to be advantageous insomuch that the videotapes not only hold the richness of the interview, but they allow for consistency in coding, cost-effectiveness strategy (compared to transcript-based approaches) and are more accessible to researchers and clinicians. The tool is available online for use. A limitation of this tool, like the AAI, the individual coding/scoring the interviewer needs to be trained (2-day training and cost varies from $600-1,000 UDS) and deemed reliable and consistent in their abilities. See Appendix F.

Throughout the literature, various other assessment tools have been used to address topics such as parental knowledge, problematic child behaviour, parenting dysfunction/nurturance, parenting confidence/self-efficacy and parental emotional adjustment. These areas are relevant, as we know; parental ability and variances affect attachment. Bornstein (2003) as cited in Vance and Brandon (2017) summarized nicely the three essential dimensions that encompass parenting. “(1) Providing care that protects children from harm that includes boundaries for the safety of the child and others, (2) parent-child interactions that support developmental, emotional, and physical health, and (3) enhancing a child’s potential by helping parents learn parenting strategies that facilitate effective growth and development” (p.18). As a result, the following tools were also used.

Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO)

Created by Roggman, Cook; Innocenti and Norman (2013) as an observational tool to determine parental abilities in four specific domains: Affection, Responsiveness, Encouragement and Teaching. Collectively the domains are observing behaviours that relate to attunement, sensitivity and mentalization in the caregiver and reflectively, attachment in the dyad.

Each of the domains had several questions and each question is scored with either a 0= absent (no behaviour observed), 1= barely (brief, minor or emerging) and 2= clearly (definite, strong, or frequent behaviour). A final score is provided for each domain. Roggman et al. (2013) reported an inter-rater reliability of .77 and an overall scale reliability of .78, and content validity of parenting behaviours rated 2.58 on an importance scale of 1-3, construct validity of r=0.62 and a predicative validity of r=. 0.19 -0.24 at age 3 and an r=0.23– 0.25 at age 5 obtained from assessing over 4,500 video observations from the National early head start research and evaluation project (Cook & Roggman, 2013). The higher the domain score the better. When all domains are added together, a total PICCOLO score is obtained. The minimum score is 6 and the maximum is 58.

The scale takes only 1-2 minutes to score and is $60.00 to purchase. A limitation of this tool is that all the research completed to date on this tool has been by the authors and additionally there is no clinically significant difference reported for this tool. See Appendix D.

Parenting Sense of Competence (PSOC)

Developed by Johnston and Mash (1989) to assess and measure parent’s feelings of self-esteem and satisfaction of their ability in a parenting role. The PSOC is a 16-item scale that was initially developed in 1978 by Gibaud-Wallston and Wandersman. The items are rated on a 6-point Likert-type scale. Questions such as” Being a parent is manageable, and any problems are easily solved” are rated from a 6 (strongly disagree) to 1 (strongly agree). A higher score indicates a more positive sense of parenting capacity (self- esteem). Total scores between 16-50 reflect low parental confidence, scores between 51-69 reflect moderate parental confidence and scores of 70-96 reflect high parental confidence.

The PSOC generates three scores: a satisfaction score, an efficacy score, and a total score. Johnston and Mash (1989) reported adequate internal consistency for the total score (α =. 79), and Goodman and Glenwick (2012) found the internal consistency for mothers was reported to be α =. 83 and for fathers α =. 82. The construct validity was supported in Tobing and Glennwicks (2007) study where it was found that the overall sense of parenting efficacy was related to the severity of psychological stress in mothers of children with ASD.

In a review by Vance and Brandon (2017), parenting confidence, self-efficacy and competence were addressed to distinguish between the commonalities and distinctions of the terms. Of the 37 articles reviewed by the authors, six utilized the PSOC scale to assess overall parenting self-efficacy. This scale in particular highlights the following "an individual's belief in his or her ability to be successful in the role of parenting (i.e., Confidence) is an essential component of the quality and sustainability of parenting behaviours" (Vance and Brandon, 2017 p.18). For this reason, it is critical to assess parental capacity.

Limitations of this tool are the possibility of response bias due to the self-report as well as possible comprehension difficulties due to the higher reading level required (Grade 8) as well as the fact that there is no clinically significant difference reported for this tool. See Appendix C.

Goal Attainment Scale (GAS)

The GAS was initially developed by Kiresuk and Sherman (1968) to evaluate mental health programs. Since then, it has been widely utilized to evaluate a number of fields and to gain program funding. There have been numerous studies completed specifically in pediatrics, from evaluating services delivered to measuring functional goal outcomes.

Kiresuk et al. (1994) identified that the tool is most effective when a maximum of three client goals are identified. These goals are then evaluated and measured by client specific criterion and as a result, demonstrate responsivity to minimal clinically significant changes. Mailloux et al. (2007) stated that by having the clients identify which goals are most relevant to them and their families, the GAS captures the "functional and meaningful" (p. 255) aspects of the relationship process. The individual nature of the GAS is sensitive enough to capture the smallest changes even in small samples.

The psychometric properties have been evaluated in a variety of research studies and the GAS has been shown to have high reliability and responsiveness and variable validity across a variety of diseases (Krasny-Pacini et al., 2013). Due to the fact that the GAS can be used in a variety of contexts, validity needs to be assessed case by case. Administration takes from 5-60 minutes (range is due to the client's awareness of goals they would like to address) and it is applicable for all age groups and populations. By setting goals the client is engaged in the therapeutic process. Seeing successes in goals being met further enhances feelings of competence and confidence. Parental confidence is then evident in the interactions they have with their child. Parents were asked to set relationship goals that they wanted to work on over the course of the 4 sessions. These goals then directed the psychoeducation that was provided to the parents and shaped the daily homework. Mailloux et al., (2007) found that GAS is an effective tool for occupational therapists to use as its client specific. The goals that are decided upon are done so in a meaningful and purposeful way to ensure success, therefore, creating outcomes that are significant to the clients. For this study, the GAS scale was adapted to using a Likert scale similar to that of Cusick et al. (2006), who found that the traditional GAS scores had a ceiling affect. Tennant (2007) also points out that the traditional scoring of the GAS is quite complex and requires a mathematical formula therefore making it unstainable. A 10-point ordinal scale like the one used in the Canadian Occupational Performance Measure (COPM) allows for more range and attainment than a traditional GAS scale that uses -2.-1, 0, +1, +2. As well, it further provides better opportunity to detect change, and it is also a commonly used scale that most caregivers are familiar with. The 10-point scale helps to capture the importance and also the understanding and the engagement of the client (All Answers Ltd., 2018). Moreover, the traditional GAS scoring was hard to explain/understand for participants who spoke English as a second language. As a result, the scoring was adapted to be more accessible.

In addition, caregivers took part in a semi structured interview two weeks after the study was completed via Zoom to provide feedback about their experiences. (see Appendix K). The interview was approximately 50 minutes long and the nine questions ranged from, how would you describe your overall experience of the MIG? to what MIG strategies have you continued to use since completing the session?

Procedures

The planned intervention had to be changed due to COVID-19. Initially the plan was to have the intervention take place in person in a designated location that was set up with cameras, two-way mirrors and a semi-controlled environment. In addition, the intervention was set to be 7 weeks long in duration. Due to limits on social interactions, the intervention needed to be changed to virtual meetings via the health care provider version of the Zoom platform in the participant’s homes and reduced to only four weeks long based on the research from Benoit (2001) who found that MIG produces relatively quick changes in behaviours for parents with the capacity to change. Caregivers that responded to the notice of the study were contacted via phone by the student PI and screened for inclusion based on both child and adult participant criteria. Once eligibility criteria were met, the participants met with the student PI virtually via Zoom and were provided with an informed consent form to review and complete. Following completion (signed, scanned and emailed it back to PI) of the consent form, the caregivers were emailed the

Parenting Sense of Competence Scale (PSOC) to fill out and send back the completed form to the student PI to score.

The first and second virtual visit was used to complete the following two questionnaires, the AAI and the WMCI. The AAI is used to assess caregiver frame of mind concerning their early attachment figures. Questions were asked to have the adult reflect back on experiences and recount them. The WMCI, focuses on caregiver perception and subjective experiences of their child's characteristics and their attachment to their child. Questions such as emotional reactions to the pregnancy all the way through to anticipated difficulties later in development (adolescents) were asked. For the purpose of this study, these questionnaires were used for screening purposes to better understand the caregiver's experiences and then to further guide the psychoeducational component of the intervention. They were not scored or coded by the PI.

Data collection occurred prior to the start of the intervention, during the screening session (1 session). (see Appendix A) It continued from the baseline phase (2 sessions), throughout the intervention phase (4 sessions), and two weeks after the last day of the intervention. The GAS was administered at the first intervention session and again on the fourth week. The PSOC was administered at baseline and re-administered again at the end of the intervention (session four). The qualitative questionnaire was administered two weeks post treatment to determine caregivers' experience with MIG. (See Figure 1).

Scoring Procedure

The student PI completed and scored all of the outcome measures. PICCOLO was scored during each session; the student PI scored the PSOC following completion by the caregivers. Random selections of the PICCOLO were scored by an external assessor to establish inter-rater reliability and determine if the PICCOLO was well suited to the intervention. The external assessor was blind to the intervention session being scored, the result of all the outcome measures, and did not know the dyads goals. Weekly scores were calculated and noted for change. At the fourth intervention session, the PI revisited the goals that were set on the GAS and had the dyad provide a current "score" based on how they felt that the intervention was going. This is considered the final score. See Table 3.

Figure 1

Study Timeline

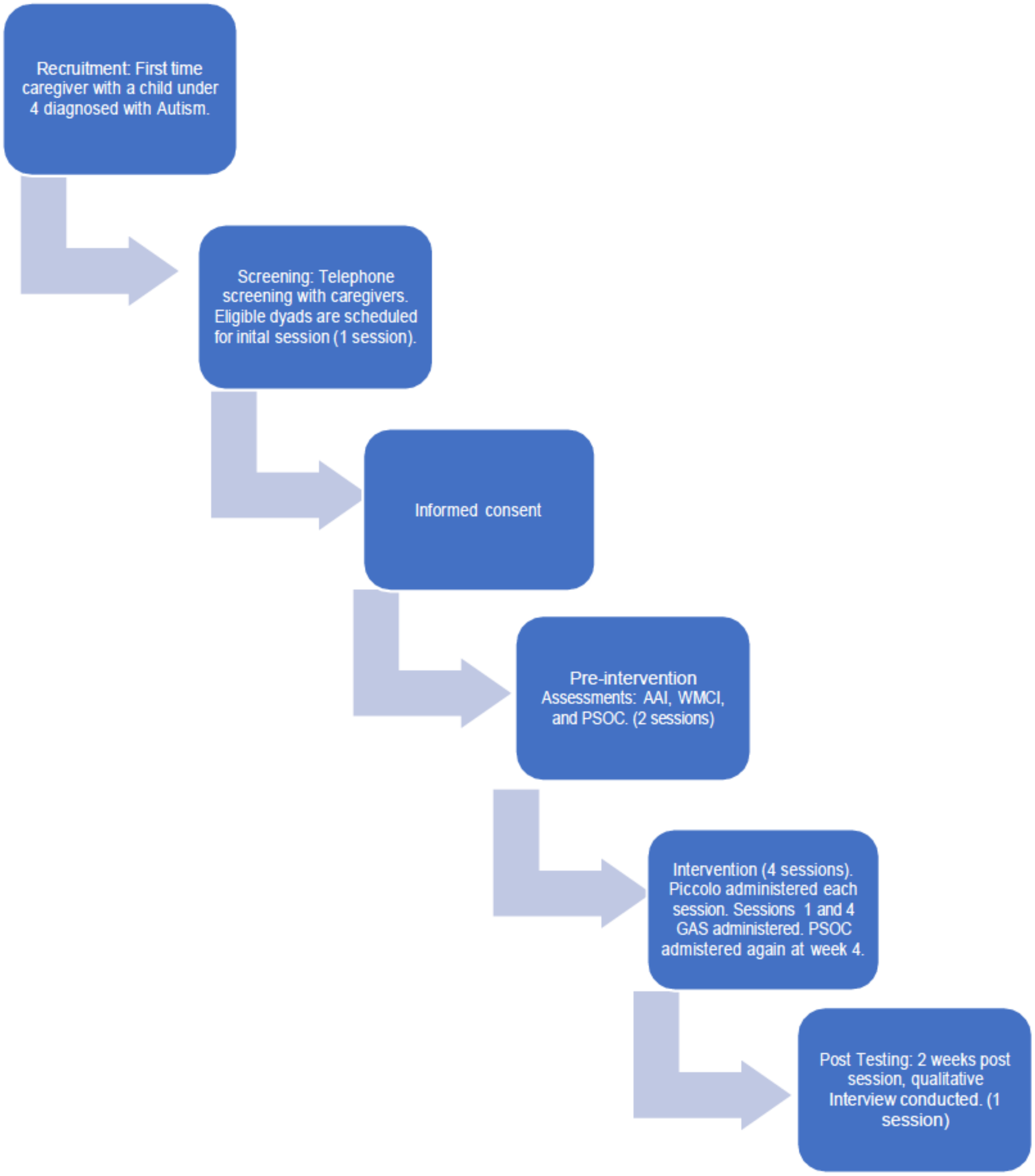


Table 3

Study Measures Timeline

Variable	Demographic Data	Pre-intervention functioning level	Parenting Dysfunction/ Nurturance	Attachment/ Sensitivity Scale	Goal Setting/ Parenting Confidence	Overall Satisfaction
Outcome Measure	Demographic questionnaire	AAI/ WMCI	PSOC	PICCOLO	GAS	Qualitative Interview
Who will Administer	PI	PI	Caregiver	PI	PI/Caregiver	PI
Time to Administer	~5-10 mins	~1hour each	~10 mins	~10 mins	~10 mins	~30 mins
Screening	X	X				
Session #1			X	X	X	
Session #2				X		
Session #3				X		
Session #4			X	X	X	
2 weeks Post Treatment						X

Intervention (4 weeks)

The PI met virtually via the Zoom Healthcare platform with each dyad for an individual session, for one hour, once weekly for 4 weeks and then again for a follow-up session approximately 2 weeks later. The participating children were present with their primary caregiver for all the sessions except for the sessions in which the caregiver was interviewed.

Intervention – Week 1

The intervention was completed following the MIG manual adapted version from Aulneau Renewal Center in which the PI was trained in. At week one, the first play-session occurred. Caregivers and child were asked to spend 10 minutes playing together in the room with a variety of toys present. They played while the PI watched via Zoom. The PI used the recorded Zoom video to score the PICCOLO tool post session.

Following the 10 minutes of play, the PI discussed how the play felt, any concerns that they had, and then showed the caregiver the video of the play. During the feedback portion, the PI provided 90% positive feedback and encouragement about the interaction. The other 10% was spent educating the parent on ways to interact with their child, providing psychoeducation relevant to the dyad and demonstrating play techniques.

Through PI guidance, a semi-structured MIG intervention plan was implemented. Dyad specific goals were set that are relationship and behaviourally based. Once each goal was rated with the GAS scale, the PI ensured that the goals were developmentally appropriate and also evaluated if the caregiver’s expectations were realistic. Using videotaped feedback, the PI and the caregiver had the ability to watch for clinical information provided in the content and style of the play. ‘Content’ addressed the chosen activities, who directed the play, were they talking, laughing, arguing, etc. For ‘style,’ the PI is assessing the interaction, was the caregiver following the child’s lead or directing the play, were they intrusive in the play, did the child comply with the requests and when looking for comfort was the caregiver receptive, etc. (McDonough, 2000). The remainder of the session was spent making relationship specific goals to guide the sessions and to work on at home and completing the GAS. The PI scored the PICCOLO tool post session using the recorded video of the caregiver and the child playing.

Intervention – Weeks 2-4

The structure of each session looked the same from week to week, with Zoom video play interactions starting off each session, followed by the PI reviewing the interaction with the dyad. Using videotaped feedback, the PI and the parent had the ability to watched for clinical information provided in the content and style of the play (see above for description of content).

One of the tools taught to the caregivers was that of the 3 W's – Wait, Watch and Wonder (Cohen et al., 1999). The WWW teaches the caregiver to slow down, sit at the child's level and watch what they are doing. By being curious about the child' play, it engages the caregiver in a different way, one that often becomes more attuned to the needs of the child. The PI also taught the Circle of Security (COS) (Copper, Hoffman and Powell, 2000) if needed and time allowed (see Appendix A). The PI received her certificate of completion in MIG in 2016 from Aulneau Renewal Center. Both the WWW and the COS are tools used in the Aulneau Renewal Center MIG training Manual (2005) compiled using components of MIG and training material from Diane Benoit and Sonya Vellet. The PI asked the caregiver how they felt the interaction went and what they thought they could have done to make it go better (if needed). This feedback and guidance were followed by education tailored to the individual needs of the dyad. Specific focus was on meeting the set goals and ensuring caregivers recognized signs of distress and responded appropriately, promptly and warmly. Other topics such as feeding, sleep disturbances, regulatory difficulties, boundary and limit setting, and other family-specific issues were also discussed in each session. Each session was finalized with homework, and each dyad was asked to spend 5-10 minutes together uninterrupted, daily doing something they both enjoyed. The caregivers were encouraged to use the 3 W's that they were taught.

At the end of week 4, the PSOC and the GAS were readministered to assess for change. Two weeks post intervention the caregivers participated in a qualitative interview to gather their lived experience of the intervention.

A financial incentive of a $50 gift card was provided at the two-week data qualitative collection time point based on compensation for participation.

Data Analysis

This design seeks to establish the feasibility of implementing the intervention with a larger sample. It examined the following areas: acceptability, demand, implementation and practicality. While baseline and end of intervention data was collected the emphasis is on feasibility rather than results from the outcome measures. The quantitative data was analyzed for trends with descriptive statistics. Pre and post data was collected for the PSOC and the GAS. While the weekly scores of the PICCOLO were noted for change.

The qualitative data (semi-structured interviews) were analyzed using deductive content analysis (Hsiesh and Shannon, 2005). Deductive, though not as commonly used, is helpful when testing concepts, or looking to specific research questions or theories. (Elo and Kynga 2008; Hsiesh and Shannon, 2005).

Ethics

This study received ethical approval from the University of Manitoba Health Research Ethics Board (HREB); ethics number HS22677 (H2019:105).

All participants received written and verbal information about the intervention before providing written consent to participate. Participating in the study was voluntary and participants could withdraw at any point without needing to explain. The participants were provided with access to support numbers and information in the event they felt they needed additional mental health support. See Appendix G.

Chapter 3: Results

Participants Demographics and Characteristics

The initial study design called for three dyad groups. Five dyads began the intervention, one dropped out and four completed the intervention. Two dyads (N=4) self-identified as Filipino. The other two dyads identified as Caucasian and one identified as Bangladeshis. All of the caregivers were female. Three out of the five worked, two worked full time; one part time and the other two were a stay-at-home caregivers. All had post-secondary education and lived in a two-parent home. Three of the children were boys and one was a girl, ages ranged from 22 months to 48 months, the mean age was 28 months old. All children were on waiting lists for ABA therapy. All were receiving some form of OT, SLP and/or Play therapy while being involved in the study.

Table 4

Participant Demographics

Characteristics	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
Age	30	45	35	35	35
Gender	F	F	F	F	F
Education	University degree	Postsecondary diploma	University degree	University degree	University degree
Ethnicity	Caucasian	Filipino	Caucasian	Filipino	Bangladeshis
Number of children	2	1	1	2	2
Employment status	Part time	Full time	Stay at home caregiver	Full time	Stay at home caregiver
Marital Status	Married	Married	Married	Married	Married
Child gender	F	M	M	M	M
Child age	4y	2.5y	22 mo.	3.5y	4y
Completed study	Yes	Yes	Yes	Yes	No

Findings from AAI and WMCI

For this study the AAI and WMCI were not used as an outcome measure, rather they were used as assessment tools to gain insight into the caregivers' attachment strategies and to gain an understanding of how they "see and feel" about their child. This information shapes the psychoeducational component of the intervention.

Participant 1

The main findings of the interview were that she grew up in a loving home environment. Her parents both worked full time so as a result she spent a lot of time in her aunt's care. She learned quickly how to be independent and also grew up in a house with high expectations for rule following. Responses to her needs were situationally based. She spoke about feeling closer to her mom as she was more consistently present in her life but reports dearly loving her father as this is a relationship that has grown over the years. She expressed that mom was very imaginative and when she had the time, would play with her and older sister. Fond memories of these times were evident in the smile on her face.

When going through the WMCI, the pregnancy was a surprise but wanted. She felt prepared for the baby and knew what to expect and how to care for a child. Her biggest concerns were around her daughter's speech and how this would impact her ability to be independent as she grew up. Her goals for her were to be successful in what she chooses to do; degree or diploma. Her biggest fears are that she would always require a lot of assistance to be independent.

Participant 2

The main findings of the interview were that she grew up in the Philippines and lived there until she was married. She felt that her needs were often not met. She was cared for by a variety of family members – shipped off to grandparents for school, aunts for summer, therefore, had a variety of people who were "supposed" to meet her needs, but inconsistent. She reported that she felt that she grew up "spoiled" was not expected to do any chores, was not taught how to cook or even to organize herself – as a result, she was very dependent on those around her. She reported that her parents were hard working and loving people who had high expectations for her. Free time was spent alone as she reports struggling to make friends.

For the WMCI- Their child was a result of IVF, so very much wanted. She felt overwhelmed by parenting and caring for another, as she did not have experience with this before; she felt very unprepared/educated. She used her sons reading/counting skills as a marker of development, noting that he was ahead of his peers making her proud of this achievement. She would spend their time together doing these activities as that was familiar to her. Her concerns were around the fact that they didn't take the time to play with him when he was young as neither parent had that experience growing up. Her goals for him were to learn and have options so that he could be independent and do whatever made him happy as an adult.

Participant 3

The main findings of the interview were that she spent most of her time with her mom and had a very close relationship. Mom was fun and playful with her and her brother. She had a non-existent relationship with her father. When her mom was working, she spent a lot of time with her aunt and cousins and grandmother who lived next door while she was growing up. She was dismissive of the negative events in her life and had a hard time answering questions that evoked an emotional response. WMCI summary was that the baby was planned and wanted. She felt that she noted his differences very early on and as she was a first-time mom, was not confident in her knowledge or skills. As a result of this, her concerns were around what to expect with his autism diagnosis, concerned that she would not be able to meet his needs. Her goals for him were to be able to move out, get a job that he was passionate about and find a partner who loved and respected him.

Participant 4

The main findings of the interview were that she grew up in the Philippines and stated that she had a happy childhood. She recalled playing in the streets with friends in the neighborhood and with her siblings. Her parents worked full time and they had nannies and aunts and uncles that cared for them while parents were working. The home environment was very strict, and she does not have any memory of her parents ever playing with her or her siblings. After sharing this, she stated that she knows that fear is not healthy in an environment for children and that carefree play was only accepted with her grandma and as a result she was really happy to spend her summers in that environment. The goal for her child was to grow up in an environment that was loving and less punishing/strict. WMCI findings were that the pregnancy was planned, and while both parents were educated, they still felt very worried and helpless as it was their first time as parents. She hoped that her son would be able to have a few close friends and engage and enjoy “mainstream school”. Her hope for him as an adult was to maintain and develop the skills to socialize, have friends, a relationship, a job that suited him and family, and to be independent and healthy.

Participant 5

The main findings of the interview was that there was a theme of separation from her mother for various reasons at various times throughout her life. During these times of separation, she was sent to live with her maternal grandparents. While she could give general descriptions of her relationships with her parents, all of her answers were without affect and very “matter of fact”. She recalls that cuddles and affection were not demonstrated in her family and instead things were discussed more conversationally. She reported spending a lot of time alone, not having play mates. Her goal for her child was to be a good man, educated and understandable as well as able to maintain his own life in his own way. WMCI findings were that the pregnancy was wanted. They had miscarried previously and as a result she was very nervous and stressed during this pregnancy. While both parents were educated, she was separated from her family and support system, was lonely and not sure what to do with a baby. She was left to manage alone while her husband was at work, so this was a very hard time for her. Her hope for him as he grows is that he can communicate effectively to then be able to “function like others”.

Feasibility

Using data collected in individual interviews with caregivers and the repeated measures throughout the four MIG intervention sessions, the findings were categorized into the four main areas of feasibility: acceptability, demand, implementation and practicality. Each participant was assigned an identifier (e.g. P1) that was used when referring to their interview data.

Acceptability

This relatively common focus looked at how the intended individual recipients—both targeted individuals (caregivers) and those involved in implementing programs (researchers) —reacted to the intervention.

The student PI was interested in understanding:

- How was the MIG intervention for caregivers?
- How was implementing the program via telepractice for the PI?

MIG intervention for the caregivers. The overall findings indicated that all the caregivers in this study found the MIG to enhance their parenting skills as well as their relationship with their child. How caregivers noted the changes varied as well as did their sense of competency.

One caregiver, stated that participation in the MIG, was a confirming experience and one that she did not experience often in the medical setting. She felt reassured by the support received from the PI during the intervention which gave her confidence.

> I think a lot of the praise was really nice to be honest because a lot of the time with this we're told what we do wrong, and you told me a lot of stuff I did right, so I was like, okay, that's great. And then, in there you also were like, "But here you could've just added this, but this was still great," and a lot of the times when we get assessments, we're told you didn't do this, you didn't do that, and it's really hard, so you saying I did things right it really gave me extra confidence. (P1)

Caregivers stated that the introduction of the MIG allowed them to develop their parenting skills by focusing their attention on the child with the Wait, Watch, and Wonder, new cues were noticed and therefore responded to. New routines were developed and added into daily interactions and play became a means of communication that was not previously used.

> I mean, it was helpful. We were able to build each week with different observations and homework. I like how it was delivered; this is great. The work. I mean, there's homework and then there's also someone else being able to watch us and see things that maybe I may not be able to see in the moment, maybe little clues of engagement or disengagement I may not

> notice. Or they may be subtle or they may be a quick little clue of some sort that I just, in the moment, did not see, which we have come across in some recordings. Well, I definitely learned I can fill in time and it’s hardcore, which before it would have been so hard to do, but once we had a daily thing, it’s just what we automatically do now. So, there’s definitely a lot in terms of engagement, and I definitely want to continue that. (P3)

Another caregiver spoke about how participation in the MIG provided her with the opportunity to connect with her child:

> I find it very helpful and plus it given me...Usually on my day off I don't usually set a time to play with him, but because of this session I get a chance to do that and play exclusively with him because I think he's always yearning to have a special time with me. So, it gave us a chance to bond and have a meaningful time together. The best part is even after the session, I feel like our interaction has improved. I get to apply what I've learned during the session in our daily play or our daily activities. Whether it's play or just spending lazy day together. I think it has improved my parenting skills. (P4*)*

All of the caregivers expressed how their husbands also noted the changes.

> You told me so many good tips and then you just started to do them by yourself, so you learned so much." I feel like I didn't realize how much I changed in how I talk to [child’s name], how I play with [child’s name], but he's like, "It made a big difference." He saw it more than I saw it. (P1)

Some spouses stated that they were jealous of the interactions between the participant and the child. They felt like the participant had created a stronger bond with the child because of how they interacted and played with the child following the MIG intervention. For example, “Right now, my husband is, they're like jealous, because most of the time [my son] is looking for mama, mama, mama.” (P2)

Another shared that due to the intervention,

> And my husband, he would say, "Oh, our children, you are their favorite. They prefer to spend time with you because you played differently than me." My husband feels that I'm more creative than him. Like when we were out in the park, I would say interesting things that would capture the interest of my children and I got the time, I always think of a creative activity, things that I think they would enjoy. (P4)

One caregiver noted that her husband had started to use some of the strategies he had observed her using, and she was teaching him to use some of the strategies she had learned.

> My husband has definitely seen a difference in engagement between [child’s name] and I, and now he started to do the things that I've done with him about this interaction. I have started training my husband a little bit, but he's really happy to do it, he's 100% team [child’s name], so I have no worry about it. (P3)

Realizations were made about “play” and what that meant, to take the time to sit and play each day, what it built in the relationship was so valuable. Taking time to connect with their child through play became more apparent through participation in the MIG intervention. For one caregiver, her realizations were around,

> One-on-one time with just me and her, It's super important and it can make a big impact. It made me realize to just slow down and take time with them. She's looking for us, to play with us. I think that it mostly just makes me realize I just need to be a little more present, and a little less busy. (P1)

For another caregiver it provided the information needed to know how to play with her child and interact with him.

> Knowledge on how to play with [child’s name] and how to improve the vocabulary that goes with playing and the imaginative play. It gives me idea on how to spend more time with my son. Before, I just left him play, and it's probably, it's kind of boring. But when you suggested some ideas,

> it's really good because he's into acting, and I know that he really likes it, is more engaged. (P2)

An additional caregiver noted the different strategies she had learned about how to play with and teach her child and how she was able to apply these strategies.

> I’ve learned different strategies on how to play with him and teaching him at the same time effectively. I sort of realized that I don’t usually spend enough time with him and I noticed how important that even the short amount of time, it means a lot to my children. (P4)

Additionally, one caregiver found that she was working on taking the play skills she had learnt in session and was learning to adapt them to other environments. Stating

> See what happens, because there's going to be a different kind of play, in different ways. And that's something that just kind of transferring it to somewhere else, because any environment or any kind of things that get attention differ in each place. (P3)

Wait, Watch and Wonder proved to be a useful tool and one that was deemed really helpful for all caregivers. This tool taught the caregivers to 1) watch, the child’s face (not what he/she is doing). 2) Wait, for the child to initiate an interaction. If the child initiates an interaction, respond and respond warmly. If the child backs off from the interaction (turns away, looks way), back off too, and finally 3) wonder silently in their head, what is going on in their child’s heart and mind? Teaching the caregivers to slow down and let the child lead the play by keeping in mind these three steps, the caregivers found the following; “The watch wonder, I'm not the best at waiting, but I liked the watching part especially and trying to understand what the game is.” (P1) Another shared, “I always think of that wait, watch, and wonder. I get to apply it to my little one as well. Even what I've learned through the play session, I knew that I can apply to both my children.” (P4).

Another imparted:

> Watch and wonder. Yeah, I like it because it gives me idea on how my child feels. And yeah, I like that at least now, I know what he feels. And it gives me, unlike before, I was just kind of thinking about his behavior. But now, it gives me idea to be more understanding. Like the sounds, and

> imaginations about the things. And he's wondering about like, the spark on his eyes whenever I give him some imagination. And it's good (P2).

The same idea is expressed again here;

> There's definitely a lot more watching that's happening. If he's in the same room as me, I look way more than I ever have before, because I guess the first thing us parents say, "Is he going to be, okay?" Well, I know he's going to be okay playing in the world now. It's like, "Okay, is he looking for something? Is he trying to get my attention in a subtle way?" So definitely reaching out for potential engagement, either if I start it or if he starts it (P3).

When asked, all participants shared that they would advise other parents with children with autism to seek out MIG if provided the opportunity. Participants reported that MIG was helpful and informative. They highlighted the emphasis on play as a method for teaching children was beneficial. MIG provided a new way to understand and engage with their child. One caregiver confirmed stating that from her own findings she found that, "I think I would tell them that they should try it and it's very helpful, informative and fun for both parents and children. And they said play is this... What did you call it, best way to teach your children." (P4) Another caregiver followed this up by affirming, "… if they have the opportunity and the means that they should try it because it helped us, and that it really helps you realize your relationship with your kiddo and stuff." (P1) Another indicated, "it's going to improve the relationship." (P2) And finally, another caregiver shared why she felt it was an important intervention and how it helped her feel comfortable with play,

> I think especially parents of children with autism, there's no wrong thing, but there's definitely a huge delay in expanding their play. So, I guess it's just to kind of, "You know what? This is the way they play, go with it." If they want to play with you or if they don't know they can play with you, become a part of it. We can't force play or kind of play on them, we have to be in the play they want. That they enjoy (P3).

When asked about parts of the intervention that were found to be challenging, two of the caregivers found that they struggled with "planning the play" and the idea of being watched while playing, “At first, I felt like I had to fill up 10 minutes of time. So, it was kind of like, "What do I do for 10 minutes? ”(P3) Another stated that she felt that “I need to plan a good play.” (P4) For one of the caregivers the area that proved to be most challenging was answering the AAI questions at the beginning of the process. She found it upsetting to reflect back on how she wasn’t as close to her parents when she was little. She was happy however, to re-count and reflect on how their relationship has grown and evolved overtime.

Implementation of MIG via Telepractice for PI. The experience was positive for the PI. It proved to be an effective use of time – not having to travel to the clinic, set up the room, clean the toys and reset the room for the next dyad was a large time saver. Due to the time saved, the PI was able to see the dyads when it fit into their schedule best. The PI was previously trained in the MIG protocol and had had years of experience providing MIG sessions in a clinical environment. Due to this comfort, being able to modify the means of delivery was not difficult. It was helpful to see the play in the child’s natural environment. For the child, it eliminated any distress from being asked to play in unfamiliar rooms with unfamiliar toys. The inability to model the skills in person for the dyad was a challenge for the PI. Modeling via telepractice proved to be difficult. The PI attempted to model this by enacting the play out with the caregiver and then having them practice with their child. Therapeutic rapport was necessary for this step to occur. Over the course of the sessions, the caregivers became more comfortable with the PI and their play demonstrated that, their willingness to be playful with the PI was the evidence.

Demand

Demand for the intervention can be assessed by gathering data on estimated use or by actually documenting the use of selected intervention activities in a defined intervention population or setting. The research questions of interest for demand included:

- What recruitment strategies were most effective?
- What was the adherence rate for session attendance?
- Did participants complete their homework?

Recruitment. The student PI employed several recruitment strategies for this study: mailouts to families on St.Amant ‘s waiting list, posters in various sites, online listings on the SSCY research board and on St.Amant’s Facebook page. The most effective of the recruitment strategies was by far the direct mailout. The letters were sent to those waiting on St.Amant’s waiting list for ABA services – specifically linked to the Early Learning Services. A total of 88 letters were sent out. Seven individuals responded, five started the intervention and four completed the intervention.

Session Adherence. With the exception of the one dyad who dropped out after the first intervention session for personal reasons, the remaining four dyads had 100% session attendance for all four sessions. Some appointments needed to be moved around to accommodate shift work, but weekly appointments were met. Highlighting the value of virtual appointments and the flexibility that comes with this service delivery. The ability to reschedule to avoid missed appointments is not always possible in a shared clinic environment.

Completion of Homework. The homework requirements were to spend ten minutes every day with their child uninterrupted – no other children, spouse or electronics. All of the participants reported completing their homework though this was not documented or tracked, just discussed. The two participants that did shift work found it a more difficult to find the time that worked with the child’s sleep schedules, but did try to make the effort each day to fit it in where they could. These caregivers also had younger children in the home.

Implementation

This area of feasibility concerns the extent, likelihood, and manner in which an intervention can be fully implemented as planned and proposed often in an uncontrolled design. The research questions for implementation were:

- Can the intervention be carried out using telepractice in the participants home?
- Did participants complete self-related assessment tools?
- Did the measures capture the desired outcomes of the intervention?
- Were results on the observational measures (e.g., PICCOLO) similar for the researcher and an external reviewer?
- Are there other considerations related to the outcome measures?

- Is four weeks a sufficient duration to provide benefit to the participants?

Use of telepractice in the home environment. To the PI's knowledge, the MIG has not been implemented using telepractice. The original plan for this study involved delivery of the MIG intervention in a clinical setting in person. The COVID 19 pandemic required a shift in delivery to telepractice. When participants were enrolled in the study, they were aware that the PI would deliver the intervention this way. Based on the weekly adherence rate, the positive comments on the ease of the practical side of the intervention- for example, not having to travel as one participant stated, "getting him ready, make sure he's eating, he's fed, driving all the way there, trying to find parking. He's not walking all the time, so it's kind of a fight and also picking him up and taking him with me." (P3). Another commented on not needing to find childcare, "I find it a lot easier just not having to find childcare, because we don't have traditional childcare. "(P1) or change work schedules around. For these reasons, the intervention worked using telepractice. While it was noted that modeling provided by the PI could not occur, the caregivers felt that virtual treatment was valuable. Two of the caregivers stated when asked about choice of virtual therapy over in person, that "I would prefer the virtual sessions than nothing." (P1 &P4) implying that in person would still be the preferential form of treatment.

All the study participants had access to a smart phone, tablet or computer to use as well as all homes had efficient WIFI and toys for the child to play with. With smart phones having video functioning, it was easy for the participants to link to the PI via zoom and set up their phones to capture the play interaction. Comfort and ease around the set up evolved over the four sessions, at times the cameras needed to be moved to best capture the play, but this did not impact the play or the interaction. When asked how the home environment felt for a therapeutic intervention, one caregiver stated, "it makes sense, because this is where we are every day. We play at home every day. It just kind of makes sense from a modeling point of view to do it where you're doing it." (P3) Having a therapeutic interaction within the home setting was unfamiliar for some of the dyads. The camera set up to document the play added to the foreignness, one caregiver shared,

> I think she would stare at the camera a lot and be a little bit confused, because I would explain to her that we were going to play, and someone

> was going to be there, and she didn't really get it, but I think that you got a more accurate picture of her because she was in the home, because I think in the clinic she would've just been like scatter-brained anyways, so I think the actual play being at home and taped was a better representation of how she is because I know if she went to a clinic she wouldn't have her dolls, have her toys, and everything like that, so you definitely got a more accurate picture there. (P1)

The home environment also added another element of difficulty for two of the participants. As noted above, they found it hard to complete the play sessions if their partner was not home to interact with their younger child. While completing the therapy at home removed the need for finding alternative childcare that would be needed if the sessions were taking place in the clinic, ensuring their other child was occupied was still a factor that needed to be taken into consideration.

Outcome Measures. Overall, the measures that were used in the study captured the changes made week to week by each dyad (see Table 5). All participants completed all of the self-rated assessment tools and emailed them back to the PI to be scored in a timely fashion. The participants noted changes when they were able to look back on their first PSOC score and see the growth, finding the assessment/paperwork to be a validating experience. One participant stated, "when I answer the questionnaire, I noticed my previous answer to the next answer is totally different." (P2)

PSOC: A higher score indicates a more positive sense of parenting capacity (self-esteem). Total scores between 16-50 reflect low parental confidence, scores between 51-69 reflect moderate parental confidence and scores of 70-96 reflect high parental confidence. Three of the caregivers' scores on the pre-test were in the moderate range with only one participant in the high range. At post-test, Participants 2 and 4 had overall score increases of 20 and 3 respectively. Participants 1 and 3 had overall score decreases of 6 and 1 respectively. One participant's score increased from the moderate to high range of confidence. The remaining participants did not see a change in low, moderate or high.

GAS: Parents were asked to rate the starting score of the goal and the end score of the goal (see Table 6). All participants had an increase in score on their GAS ranging from 1 to 4 points on the 10-point scale, indicating a change in the relationship goal they had set. Participant 1 had more than one goal and also saw an increase in score pre to post intervention of 5 points for that goal 2. The participant goals ranged from increasing eye contact, responding to name when called, increasing ability to express emotions via body language and/or vocabulary, and shared play with caregiver. All fall within the category of joint attention.

PICCOLO: The higher the domain scores the better. When all domains are added together, a total PICCOLO score is obtained. The overall minimum score is 6 and the maximum is 58. The overall findings demonstrated change in parental capacity in the four weeks as measured by the PICCOLO (See Table 7). The difference notes the changes from week one to week four (see Figure 4). Two of the participants (2&4) had a larger change noted overall out of the four participants (also consistent with the PSOC). While changes may not have been made in each category, all dyads made overall total changes in the four-week span (see Figure 3). The domain with the most amount of growth over the four weeks was that of "teaching" (See Figure 2). Teaching in PICCOLO is evaluated for example by the following: explaining things to the child, labeling objects or actions, engaging in pretend play, sequencing steps, discussing characteristics of the objects that the child is playing with and asking the child for information. The domain with the least amount of change noted was that of affection. Responsiveness and encouragement also saw minimal change (See Figure 2). Though for participant 4 encouragement saw the most change (5 points) of all domain.

Table 5

Outcome Data

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
PSOC Pre	77	57	69	64	48
PSOC Post	71	77	68	67	N/A
Difference	-6	+20	-1	+3	N/A
GAS Pre Goal 1	4/10	4/10	2/10	3/10	1/10
GAS Post Goal 1	8/10	6/10	3/10	6/10	N/A
Difference	+4	+2	+1	+3	N/A

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
GAS Pre Goal 2	1/10	N/A	N/A	N/A	1/10
GAS Post Goal 2	6/10	N/A	N/A	N/A	N/A
Difference	+5	N/A	N/A	N/A	N/A
Piccolo 1	44	35	39	40	N/A
Piccolo 2	44	35	33	39	N/A
Piccolo 3	46	38	41	45	N/A
Piccolo 4	53	51	45	54	N/A
Overall Difference Week 1 to week 4	+9	+16	+6	+14	N/A

Table 6

GAS Goals and Data

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
Goal 1	Open posture during play	Ability to express emotions via body language	Respond to name	Increase eye contact	Express emotions
GAS Pre Goal 1	4/10	4/10	2/10	3/10	1/10
GAS Post Goal 1	8/10	6/10	3/10	6/10	N/A
Difference	+4	+2	+1	+3	N/A
Goal 2	Increased eye contact	N/A	N/A	N/A	Understand Parent request
GAS pre Goal 2	1/10	N/A	N/A	N/A	N/A
GAS Post Goal 2	6/10	N/A	N/A	N/A	N/A
Difference	+5	N/A	N/A	N/A	N/A

Table 7

Participants' Weekly PICCOLO Scores for each Domain and Total Score

Piccolo Domains	Week 1	Week 2	Diff. Week 1 &2	Week 3	Diff. Week 2&3	Week 4	Diff. Week 3&4	Diff. Week 1 to 4
				Participant 1				
Affection	10	10	0	11	1	10	-1	0
Responsiveness	13	11	-2	14	3	14	0	1
Encouragement	12	12	0	11	-1	14	3	2
Teaching	10	11	1	10	-1	15	5	5
Total	45	44	-1	46	1	53	7	8
				Participant 2				
Affection	7	9	2	9	0	10	1	3
Responsiveness	11	12	1	12	0	13	1	2
Encouragement	11	9	-2	12	3	14	2	3
Teaching	6	5	-1	5	0	14	9	8
Total	35	35	0	38	3	51	7	16
				Participant 3				
Affection	11	10	-1	10	0	11	1	0
Responsiveness	13	12	-1	13	1	13	0	0
Encouragement	11	7	-4	9	2	11	2	0
Teaching	4	4	0	9	5	10	1	6
Total	39	33	-6	41	8	45	4	6
				Participant 4				
Affection	11	13	2	11	-2	13	2	2
Responsiveness	9	10	1	12	2	13	1	4
Encouragement	9	7	-2	11	4	14	3	5
Teaching	11	9	-2	11	2	14	3	3
Total	40	39	-1	45	6	54	9	14

Figure 2

Participants' Weekly PICCOLO Scores for each Domain and Total Score

Teaching Scores by Week

Responsiveness Scores by Week

Encouragement Scores by Week

Affection Scores by Week

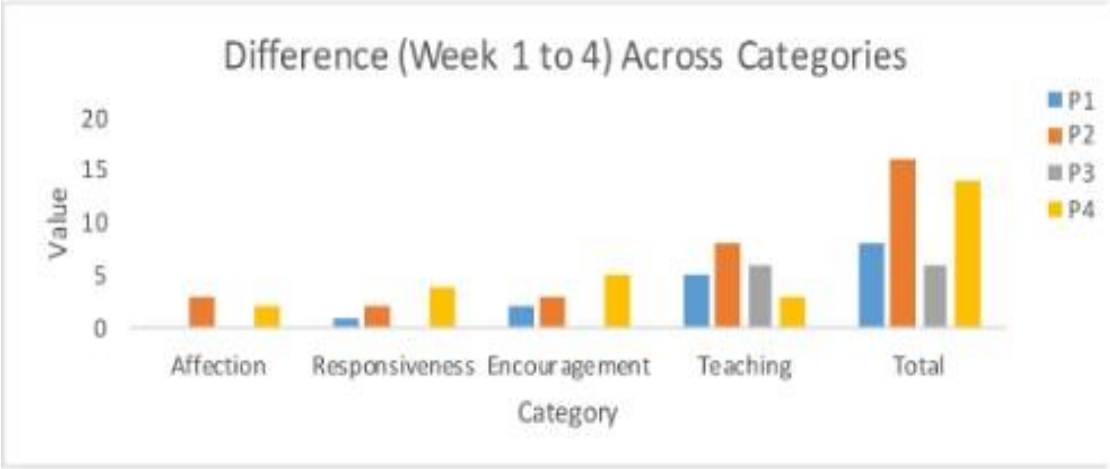
Figure 3

Participants Total PICCOLO Score

Total Scores by Week

Figure 4

Difference from Week 1-4 across PICCOLO Categories



Inter-rater Reliability. To ensure inter-rater reliability of PICCOLO, a random sample of four videos were re-evaluated by an external reviewer, one for each dyad. The scores of the student PI who delivered the intervention and scored the PICCOLO was compared with the external reviewer who was blind to the sessions. The average for each domain (affection, responsiveness, encouragement, and teaching) as well as the total agreement overall was calculated. The findings are as follows, the agreement for the affection domain was 64%, for responsiveness 78%, encouragement 75% and for teaching the agreement was 50%. The overall agreement was 66.6% (see appendix G).

Duration of Intervention. In the four weeks, all dyads made positive changes as outlined in Table 4; however, all requested the service to be longer lasting. They stated that they were excited to see the changes that were happening with the play and relationships and wondered what changes could occur over eight weeks.

When asked if the length of time was acceptable for the dyads, one caregiver stated, “I think it's really very short. I know I improved, but I know it's good if you can still see some of the behavior that needs to be improved.” (P2). Another offered,

> Eight weeks would have been better or even or perhaps instead of four weeks in a row, maybe it's four months’ worth, but you check in every two weeks or something like that. So, then there's 14 days of repetition,

> trying to build on the homework, then come back. Maybe something like that. (P3)

Another shared that the weekly intervention was a new experience for her (the MIG is always a weekly intervention – in person or virtually), "When doing in person you only get to see them once a month or so, but with you weekly is quite intense, but very empowering, enriching and educational." (P4)

Practicality

This focus explores the extent to which an intervention can be delivered when resources, time, commitment, or some combinations thereof are constrained in some way. The research questions for practicality included:

- What are the logistical issues with using telepractice to deliver the MIG?
- What are the resources needed to deliver the MIG?
- Can the intervention be carried out with existing means and resources in each home?
- What are the time commitments for the PI and participants?
- What are the time commitments for the external video reviewer for establishing inter-rater reliability?

Logistical Issues. In a few of the sessions, the participant and PI experienced some WIFI and connection issues. It was not enough of a problem however, that the session ended.

In one of the homes, the camera set up was not ideal, the angle of the tablet was not gathering the facial expressions of the dyad. As a result, the PI had to cue the caregiver to move the camera in order to capture the interaction at all times.

Another caregiver chose to have her husband hold the camera to allow for a wider range of play to be captured. When asked about how they felt the logistical side of the intervention went, none of the participants stated having any difficulty. As stated by one, "as long as the parents have a good working laptop or smartphone and good WIFI. Everything will work out fine."(P4)

Resources. Home based therapy is much more obtainable now with technology – smart phones and tablets make it easier to do this type of intervention – due to the cameras and video capabilities. All of the homes had the child's preferred toys set up in “toy rooms” or in shared living spaces (living rooms) that were easy to access when needed. For homes with younger siblings present, the caregiver would choose which space they wanted to use and ask their partner to take the other child into a different location to allow the time to complete the video recording. As long as there was a space free of distractions and a recording device, the intervention was possible in the home environment.

To be able to implement the MIG, training and time is required. Training and supervision takes over seven months (5 consecutive weeks of half day training followed by a practicum phase of about six months) to complete and the cost is $800. Additionally, previous course requirements and clinical background are necessary to take the training. Acquiring the tools needed to complete the intervention had an additional cost, the PICCOLO starter kit is $60 to purchase. The other two outcome measures were free to download off the internet (PSOC and the GAS).

Time Commitment. For the participants the overall time commitment was approx. 7 hours over the course of the four weeks. Due to the fact that the PI was previously trained in MIG and had experience using the intervention in clinical settings, it greatly reduced the overall time commitment needed for the PI. In addition to having time prior to the interventions to become familiar with the outcome measures, the overall time commitment for the PI per dyad was approximately 8 hours to score, make notes and summarize data outcomes. When the participants were asked if they found the time commitment overwhelming at all, one stated,

> No. You said an hour. It was an hour. I think that if you didn't tell me a timeframe beforehand then I would've been like that was a really long time, but since you're like it'll take an hour, I was like okay it will take an hour. I think just being told how long they were going to be I was like, okay, so it's going to be an hour of talking about my childhood. I was just prepared. I didn't feel they were too long just because I knew it was going to be that long. (P1)

External time commitments. It took the external reviewer 20 min per video to score the PICCOLO. Time was needed to review the tool, watch the videos once to observe and then a second time to score. Overall, the time commitment was 80 minutes to review four videos.

Summary

When looking at the four main areas of feasibility: acceptability, demand, implementation and practicality, delivering MIG via telepractice proved to be a useful tool, even as a brief intervention for the caregivers and the PI. Recruitment proved challenging. One participant withdrew from the study. All participants reported completing their homework. The outcome measures demonstrated trends toward improvement, but some had limitations. The external assessor had different scores on the PICCOLO. Participants completed all self-rated measures in a timely way and indicated they would have preferred the intervention to be of longer duration. The time commitments for caregivers and the PI were reasonable. The existing means and resources in the home proved sufficient for all caregivers, though two indicated they would prefer in-person.

Chapter 4: Discussion

Early intervention is critical for children with autism (Baker et al., 2015; Hobson et al., 2016; Salomone et al., 2016; Schore 2014) and for forming secure attachments (Callanan et al., 2020; Poslawsky et al., 2015). Attachment ultimately addresses the synchronicity and attunement between the parent and child (Baker et al., 2015; Hobson et al., 2016; Solomon et al., 2008) resulting in better developmental outcomes. The MIG is an intervention that supports attachment, but no research has been published on its effectiveness for children with ASD and their caregivers. This study investigated four areas of feasibility (Bowen et al., 2009) with MIG for caregivers and their child with ASD via telepractice. The following will discuss the findings related to the delivery of MIG using telepractice, MIG as an intervention for children with ASD, and finally study procedures and outcome measures that could be enhanced.

Delivery of MIG Using Telepractice

Caregivers of children with autism found the delivery of the MIG via telepractice acceptable. Telepractice was reported to be a feasible method of intervention delivery for families of children with autism (Baharav & Reiser, 2010; Boisvert et al. 2012). This acceptability supported important benefits of home-based interventions. Caregivers found many advantages of the home-based intervention. Being in their homes required less planning than clinic-based intervention and fostered a sense of ease and confidence that comes with remaining in a familiar environment, similar to findings from Solomon and Soares (2020). Caregivers perceived home-based intervention as minimally obtrusive and supporting existing routines of the caregiver and child such as work and nap schedules. Baharav and Reiser (2010) reported similar findings and reported that home-based intervention removed auxiliary stressors such as navigating busing schedules and for some, the need for additional childcare. Another crucial factor with this method of delivery is that the child is more comfortable in their own environment, interacts with their own toys and often engages in therapy at a time that was most conducive to their schedule (Baharav & Reiser, 2010).

For telepractice to be an effective means of delivery, certain details need to be discussed up front to ensure success. Examples of these details are the technicalities of technology. Such as the need for high-resolution video, camera and microphone placement, bandwidth, lighting usage and ensuring the therapist has a phone number to call should the connection be dropped. All of these elements need to be discussed prior to the first session to set both parties up for success (Glueck, 2013).

The student PI had concerns around therapeutic rapport being established using telepractice to deliver the MIG, though she found that caregivers were still very engaged in the intervention and appeared to connect with her despite the mode of treatment. Therapeutic rapport is the foundation of all therapeutic relationships. If not established or present, it can negatively affect the outcome of the intervention (Leach, 2005). Therapeutic rapport is important not only for the treatment outcomes but also for the client satisfaction that then leads to treatment compliance. Knowing the importance of body language and movements, affect and nuances as well as emotional responses, are details that therapists scan for when with a client. These can be more challenging to monitor using telepractice. The findings on the use of telepractice indicate that the clinicians find higher rapport in face-to-face interactions but interestingly, for the clients, there was no difference noted in rapport between telepractice or in-person sessions (Knaevelsrud & Maercker, 2006). These findings were mirrored in the current study, insomuch as it was the PI that noted the challenge. Client's report feeling more open and less embarrassed in their own environments and a further reduction in power differences and a sense of decreased stigma was noted when delivered via telepractice (Glueck, 2013; Duong, 2021).

Ertlelt et al. (2010) indicated that clinicians need to become more familiar with telepractice and developing rapport telepractice. Akamogulu et al. (2018) found a way to further enhance rapport when using telepractice was to develop a means of communication outside of the therapy times, whether it was via email, text or phone calls, the added communication deepened the connection and as a result, the therapeutic rapport. MIG requires the caregiver to cooperate with the therapeutic process and develop a relationship with the PI. The bond that formed with the support of the PI has the ability to impact the overall treatment outcomes. When delivering the MIG using telepractice, researchers and clinicians need to consider various methods to develop therapeutic rapport to ensure the best possible outcomes for participants.

Another challenge experienced delivering MIG using telepractice included modeling and hands on teaching. Knowing that modeling and hands on teaching enhances psychoeducation and coaching, not being able to model play skills face to face was hard for the PI. Challenges were noted from not being in the same environment and not being able to provide hands on support and reassurance for the child. Akamogulu et al. (2018) points out that while therapeutic rapport can be established via telepractice, telepractice may not be a good fit for all children. When given an option on the mode of service delivery, the therapist needs to consider the benefits and challenges of each mode for the type of intervention and the client, as this will vary depending on the context.

The student PI was new to telepractice when delivering the MIG intervention for this study. Like others, she had to learn to use this technology quickly given the context and need for ongoing services and supports during the COVID-19 pandemic Kollia and Tsiamtsiouris (2021) discovered that many clinicians reported a general lack of knowledge around telepractice and the technicalities that accompany it. The clinicians who took part in this study stated that they felt that they should have received specific training in school on how to provide this modality. This is an important piece moving forward as telepractice is now widely used and will continue to be a chosen modality by many. Providing education to all student therapists, will increase skills and knowledge and this will help create feelings of confidence when engaging with clients.

MIG as an Intervention for Children with ASD

During the study, participants realized the importance of play for engaging and teaching their child. The PI had the role of supporting the adult through their own exploration and understanding of play as well as that of the dyad. Using the AAI and the WMCI provided background information needed to understand the caregiver’s attachment style and experience being parented. However, an interview around the caregiver’s perception, understanding, confidence and ideas about play prior to the start of the intervention would have been helpful.

A discovery noted throughout this study was that if the caregiver did not have a childhood where play was encouraged, supported or nurtured by their caregiver, they felt unsure of how to play with their own child. We know that we often parent how we were parented (Schore, 2001). Therefore, this idea of play can be new to the adult. Play is a critical component in a child's development. Through play a child learns about themselves, the world around them, and as a result develops the skills to interact with others and explore new environments (AOTA, 2012). Play for many can be seen as a luxury they did not have growing up. For some, their childhood environment was not safe to play in, not stable, lacked resources or did not have an attentive adult. MIG addresses these concerns and supports caregivers in developing these skills with their child.

The caregivers in this study were from various cultural backgrounds. Cultural experiences of play vastly differ around the world. Many cultures view play as fun and relaxing and this then takes away from learning, implying that play is a waste of time (Roopnarine & Davidson, 2015). Others believe that children learn via work and not play, this is when play mimics adult work. Caregiver and cultural perceptions of play therefore directly impact the importance of play as well as the relationships that are built around it (Roopnarine & Davidson, 2015). This needs to be considered when using the MIG with caregivers from various cultural backgrounds.

Caregivers in this study identified they had not realized the importance of taking the time to play with their child. Often caregivers of children with ASD forget the importance of play and the idea of being playful (Roman-Oyla et al. 2018). Parents who found they were not only able to interact and play with their child, but to also produce positive emotions, ended up enhancing parental experiences of self-efficacy (Roman-Oyla et al. 2018). Engagement of the caregiver in play with the child is essential to the success of MIG. Therefore, being able to support the development of this skill in the caregiver, regardless of the mode of delivery, and understanding the various factors that impact on the development of parents' play skills are crucial aspects of the intervention.

The importance for MIG and this study was to encourage the caregiver to see the child for who they are versus only seeing the diagnosis of ASD. The participants in this study supported this belief, commenting around how the use of the Wait, Watch and Wonder allowed them to see their child in a different light. With the new skills developed from slowing down and watching the child, caregivers stated having an increased sense of competence around being able to read their child's cues. This observation is particularly revelatory as the application of these tools of intervention with caregiver and children with ASD appears to be a novel approach. If play and disabilities are not valued or accepted, then parents will not know how to interact with their child. Di Renzo et al. (2020) found that when parents accepted the disability and demonstrated insight, they were more attuned during the play interactions with their child. Greater attunement promotes secure attachment: when one realizes/feels that they are being accepted and recognized for who they are a shift occurs. MIG, with the intent of changing caregiver behaviour and attunement, can serve as a platform to help a caregiver accept their child and gain insight into their particular needs.

Caregivers in this study also reported that the homework and the time commitments were manageable. This is an important factor as MIG studies have identified homework and time commitments can be a challenge and reflect that the caregiver lacks a readiness for change (Quinlan, 2006). Participants' success in managing homework is a notable element that contributed to successful outcomes for the MIG and would be important considerations for future studies. Homework creates the platform for caregivers to show adherence to the treatment plan. It further demonstrates that the increased rates of homework completion predicted parenting outcomes such as increase in parenting skills, decreased levels of parenting stress, as well as changes in child outcomes such as lower levels of externalizing behaviour problems (Ros, 2016). The change in child behaviours may be as a result of the caregiver spending more time with them, practicing their skills and positive parent child interactions. The more knowledge and practice one has, the greater the outcome (Ros, 2016). Hogstrom et al. (2015) found that the homework assignments promoting positive behaviours were more practiced than those around changing negative behaviours.

Initially the study had been approved to be delivered as an in-person nine-week design, that then needed to be adapted to a virtual four-week design due to COVID-19. Many of the caregivers stated that they would have preferred the longer intervention as they could see the changes that were being made and could only imagine what was to come if they had a longer time with the PI. While the changes made within the four weeks highlight the significance of brief interventions, research has shown us that brief interventions have the ability to decrease parental stress (Feinberg, 2013; Estes et al. 2014, Mullan et al. 2021), and increase parental knowledge (Harrison et al. 2016) as well as help make changes in child's ability to manage anger and as a result have fewer meltdowns and improve functional outcomes (Harrison et al. 2016; Mullan et al, 2021), the PI would still recommend that going forward the MIG be implemented for the whole nine weeks. Nine weeks would allow for a greater sense of confidence and competence to develop due to the time to practice with the encouragement of the therapist, have the opportunity to learn more tools, and with added consistency and repetition that comes with practice, the more likely the skills will be embedded into daily life. The greater feelings of competency result in greater attunement and often a decrease in challenging behaviours (Breiner et al., 2016).

The caregivers in this study found that one of the ways their confidence was increased was by witnessing the interactions on the video as well as receiving positive feedback from the PI. Doria et al.'s (2014) study with another high-risk population (mental-health and substance misuse) concluded that Video Interaction Guidance (VIG) has the ability to increase family joy, as well as the caregiver's self-esteem and confidence. Ultimately, VIG changes behavior because certain key elements- including the support by the therapist, the positive feedback received, and the gentle encouragement to learn and try new things – makes the changes feel safe and within reach. This is all reinforced by the video as overall proof of success and change. The video references actual events and performances which are tangible then to the viewer (Mouton et al. 2018). As a result, these elements are catalysts for change that increase feelings of self-esteem and worth within the caregiver, boosts their confidence and in turn, fosters increased sensitivity and attunement.

Enhancement of Study Procedures and Outcome Measures

One area that proved challenging and had varying results was the manner in which participants were recruited to the study. A direct mailout proved to be the most successful method of recruitment in this study, despite many researchers moving to new forms of recruitment, most often in the form of social media. In a recent study by Ahmed et al. (2020), the authors tested the effectiveness of a traditional radio campaign vs. a social media campaign – Facebook and Instagram. They found that social media had a more expansive reach and proved to be most effective. In contrast, all online forms of advertising proved to be unsuccessful for this study. This may be attributable to greater trust and accountability from prospective participants when receiving a direct mailout from a known source versus reading about a study on social media. In personalized approaches, the caregiver may feel more likely to trust that the research project would be a good fit for them than that of a more broadly-based campaign (Fisher et al., 2011).

The outcome measures used in this study, PSOC, GAS and PICCOLO captured the self-reported perceptual and behavioural changes of caregivers and dyads. The caregivers were increasingly able to respond to their child's needs and communicate correctly, accurately and promptly. As a result, they became more sensitive and attuned to their child and this has the ability to change their attachments. Overall, the tools captured the changes that were noted over the four weeks and were trending in a generally positive direction. All parents saw an improvement overall on the PICCOLO following intervention. While the PICCOLO has four different observation areas linked with outcomes, the area with the most growth for all four dyads was in the "teaching" domain while the area with the least amount of change overall for the four dyads was that of "affection" which was already relatively strong. Over the four weeks, the individual skills of each caregiver developed and areas of strength were expanded on. The more the caregiver was able to respond to their child's cues, correctly and accurately, the shared communication increased and play developed. Using scaffolding techniques the PI helped the caregivers bridge the gap between what they knew and what they needed to know. For example, the PI, encouraged the use of affectionate interactions to bridge over to the teaching domain, having the caregivers use a wider variety of words to discuss emotions and sensory input as well as affection in a playful way to promote communication.
As a result, the PICCOLO can be used to focus on the caregivers' strengths to reinforce and create positive changes in their skill and to minimize areas of weakness (Roggman et al. 2013). For these reasons, the PICOOLO was a good tool to use with the MIG.

However, while the PICCOLO captured the data the PI was interested in, it had a ceiling effect with participants reaching high scores within the four weeks of the research period. The maximum overall score of the tool is 58; after only four weeks the range for the dyads was 45-54. If the study had proceeded as per the originally planned research schedule, at nine weeks the dyads may have hit the maximum range of the scale. A research gap exists around use of the PICCOLO with children diagnosed with autism.

While the authors of the tool suggest it is an effective tool to use with children with disabilities (Roggman et al., 2013), further study is needed.

Given some of the limitations of the PICCOLO, another tool should be considered for use. One such tool for consideration to use instead of the PICCOLO, is the Emotional Availability (EA) Scale, developed by Biringen and colleagues (1998), which consists of four adult characteristics (sensitivity, structuring, non-intrusiveness and non-hostility) and two child characteristics (child responsiveness to the adult and child involvement of the adult) could be considered. This scales is more specific and detailed than that of the PICCOLO as it also allows for awareness around attachment security. The EA is scored on a continuous Likert scale that assigns a score between 1-7, allowing for a wider range in outcomes. The EA has been shown to be reliable and valid tool and a promising measure for detecting sensitivity to change (Biringen et al., 2014). Perzolli et al.(2020) recently tested the scale with 29 mothers and their child with autism and found that not only did the mothers effectiveness increase but so did their ability to better understand their child's signals, overall increasing their parental sensitivity. The EA can also be used as a predictor for developmental outcomes such as attachment security, which makes it even more appealing. One limitation to using this scale going forward is the training required, as a minimum of five days is needed to be able to utilize the scales clinically.

In this study, it was the individualized goals identified for the GAS that drove the psychoeducation that was provided to the caregivers. The use of the Wait, Watch and Wonder was an important tool for providing a safe, encouraging, and dyad-centered approach that facilitated success in the MIG and measurable changes in the GAS. While the GAS can be suitable for identifying "client-centered or relationship-centered" goals, it did need to be adapted for ease of teaching and range of change noted on goals. Therefore, a tool consideration or replacement for the GAS going forward could be using a Visual Analog Scale (VAS). Instead of a 10-point Likert type scale to have caregivers measure change in dyad behaviours, Reips and Funke (2008) found that VAS are easy to implement online making it a viable choice when using telepractice. The VAS was found to be reliable and have internal consistency for those with anxiety (Bernstein, 1992) and in those experiencing pain (Douglas, 2020).

Interestingly, the post-intervention PSOC scores of participants showed varied results: two of the participants scores increased and two decreased. Such results are not entirely surprising; and it is common to see a decrease in score when education has been provided and caregivers become aware of what they “don’t know”, thereby changing their perception of their competence, the concept of being “Consciously Unskilled” (Peel & Nolan, 2015). With the PSOC, the concept of response bias needs to be considered. Parenting self-report measures can be challenging due to the underlying social desirability that is inherently present (Morsbach et al., 2006; Rosenman et al., 2011). Though, having a self-report measure is important when working on parenting skills as development and a felt sense of growth can only be confirmed via this reporting means (Breiner et al., 2016). Additionally, while extensive searching did not find a definitive answer, no information has been published on the acceptable frequency of administration with this test or what constitutes a clinically significant difference.

Due to the lack of agreement between the PI and external reviewer, to establish stronger inter-rater reliability, future studies should be enhanced by a) not having the individual offering the intervention also score the outcome measures; b) blinding all reviewers to the intervention sessions when scoring the outcomes; c) providing education and training for all raters; d) having practice sessions with raters to pilot the tools, and e) having two external reviewers that score all the outcomes to add to the overall reliability and to provide them with a sense of a sense of confidence with what they are scoring (Atkinson & Murray, 1987).

Limitations

There are a number of limitations that need to be identified. First, initially the study had been approved to be delivered as an in-person nine-week design, that then needed to be adapted to a virtual four-week design due to COVID-19. Modifications were made not only to the delivery of the intervention but also in the psychoeducation and tools. Due to the reduction in weeks, the PI only had time to teach and encourage the use of the WWW tool. If further time had been available the PI would have moved on to teaching the Circle of Security. Second, all of the caregivers in the study identified as the mother to child this study. It would be interesting going forward to have fathers participate in the study and/or perhaps have both parents participate one after the other.

Other studies have examined relationship-based interventions with fathers and have found that they are just as emotionally flexible and expressive as the mothers in the study (Bentenuto et al. 2020; Van der Giessen & Bogels, 2018).

Third, while the PI was trained in the MIG and completed all the necessary training to be able to use the PICCOLO, this is a limitation going forward. Replication of the study would take more time and effort than other areas of research as it could not be completed by anyone without first obtaining the MIG training. Learning and implementing the MIG is not easily accomplished in spare time, it takes time and a commitment to learning. It is also emotionally intensive and therefore, needs to be done within a supportive environment. Fourth, the PI is not a trained coder of the AAI and WMCI tools which means that the PI was unable to "classify" what attachment style was used by the participants in the study. Fifth, There were additional limitations around the other outcome measures used as well. However, with the PSOC, the concept of response bias needs to be considered. Furthermore, there is a gap in the research and literature around the use of WWW, PICCOLO and the MIG with children diagnosed with autism. There was only one study found and it was completed by the authors of the PICCOLO that suggests it is an effective tool to use with children with disabilities (Roggman et al, 2013). It is suggestive that theses insights merit further study. Additionally, another limitation is the tools chosen for this study did not highlight the minimal clinically significant differences (MCID). By not having this information, it is difficult to interpret the results to know the true effectiveness of the intervention.

Sixth, the variability of internet access, while the participants that completed the study, all had access to quick and reliable WIFI, it is a known fact that for those living in rural or northern Manitoba, the access is inconsistent creating a limitation to telepractice as a modality. Cost would also be a barrier for lower income families who may not have WIFI in their home.

Next Steps

This study provided preliminary evidence of the feasibility of using MIG as an intervention for children with ASD and their caregivers. MIG as an intervention with this population warrants further study. Recommended next steps would be a pilot RCT with three arms – one arm as parent psychoeducation only, one arm as in person MIG treatments and the last arm as MIG delivered via telepractice. This would be an effective way to really test the efficacy of both the MIG intervention and telepractice as a therapeutic modality.

Knowing how important play is to both development and relationships, adding in an initial interview around the caregiver’s experience and knowledge of play would be important knowledge to have prior to the start of the intervention.

Going forward using different outcome measures as mentioned previously would also be interesting to see if these tools have the ability to capture attunement, sensitivity and mentalization and overall attachment more definitively.

With feasibility studies constantly evolving, it could be of value to add the concept of social validity assessments to a feasibility study. Social validity assessments are widely used in behavioral literature (Schwartz et al., 1991). The purpose of using a social validity assessment is to understand from a number of levels – individuals to systems, how likely the program (under assessment) is going to be successful and likely to be worth implementing. With social validity being similar to acceptability, looking at the “who, when, what” with the goals, methods, outcome tools and ease of implementation, it could provide an enhanced way to look at the acceptability within the feasibility model. These assessments take information not only from the participants one is hoping to gather (direct consumers) but also gathering input from the larger systems at play (indirect consumers) (Schwartz et al., 1991). By gathering data from these groups, the researcher is better able to anticipate problems and even rejection before even starting the researcher and recruitment process. This enhanced information can not only aid the acceptability portion but also the demand portion of a feasibility study by gathering some of this pertinent info, it may help the researcher understand the “why’s” around recruitment and retention of the participants. Including social validity assessments may be a way of enhancing the viability of a feasibly study.

Chapter 5: Conclusion

This study is the first to use the MIG intervention with a dyad with a child who has a diagnosis of ASD. Overall, the intervention was found to be feasible, although some changes would need to be made to reproduce on a larger scale. Qualitative data indicated that goals were being met, relationships were evolving and increased attunement was developing. Further, caregivers identified realizations around play, being with the child, taking the time to follow the child’s lead, and understanding the world from the child’s point of view. The findings warrant a larger replication as the trend upwards in changes to caregiver sensitivity and increased attunement suggest that with a bigger sample MIG could be effective. The study further suggests that MIG could address gaps in parenting skills and confidence and provide education around attachment. Additionally, the findings indicate that MIG can also be delivered effectively via telepractice and it has the potential to be not only feasible but most importantly a beneficial intervention to these families. Due to the ease in the delivery, MIG may be a service that could be considered for families waiting on waitlists around the province. The positive feedback received from the study participants indicate that there is value in both the intervention and the delivery method and therefore, implying it was feasible and warrants further study.

There is considerable evidence that for secure attachments to form, caregivers need to be able to read and perceive the signals their child is sending them, respond to those signals promptly and with sensitivity as well as display affection and accept the child’s behaviours and feelings whatever they may be. The WWW enhanced the strength-based caregiver approach and taught the caregivers just how to recognize these signals and to be able to interpret them effectively, enhancing the dyads attachment bond and this therefore fits well with the MIG. Interventions like the MIG that can encourage developmentally supportive caregiving and facilitate improvements in caregivers’ affective qualities, develop sensitivity, reduce caregiver stress and ultimately learn how to play can be fun for all, not only emphasizing the importance of caregiver interventions but are vital to secure attachments and attunement.

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Appendix A: WATCH, WAIT, AND WONDER

WATCH…your child's face (not what he/she is doing).

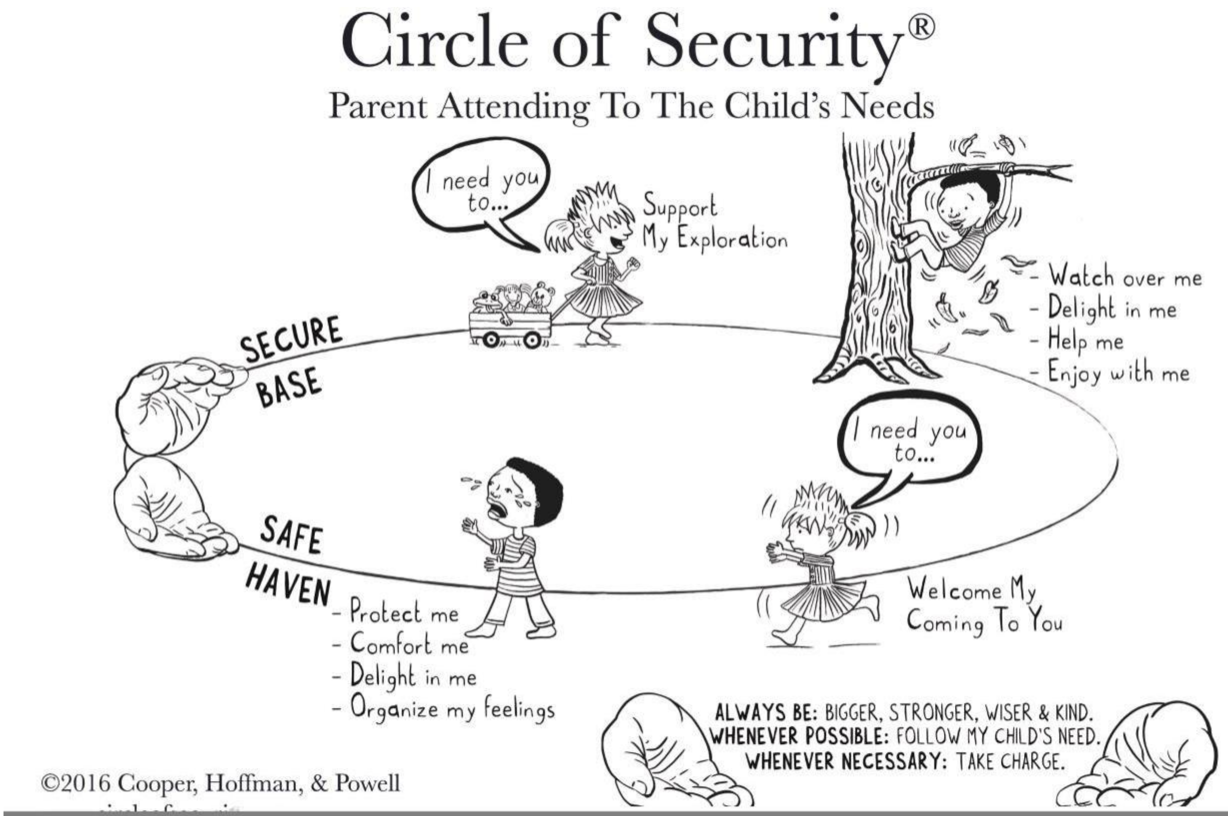
WAIT…for your child to initiate an interaction. If your child initiates an interaction, respond and respond warmly. If your child backs off from the interaction (turns away, looks way), back off too.

WONDER…silently in your head, what is going on in your child's heart and mind.

INSTRUCTIONS FOR WATCH, WAIT, AND WONDER:

- Get down on the floor with your child
- Follow your child's lead at all times.
- Do not initiate the activities yourself.
- Be sure to respond when your child initiates but do not take over his activities in any way.
- Allow your child freedom to explore; whatever he wants to do is okay as long as it is safe.
- Remember to WATCH, WAIT, AND WONDER.

Appendix B: Circle of Security



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[redacted]

Appendix C: Parenting Sense of Competence Scale

Parenting Sense of Competence Scale

(Gibaud-Wallston & Wandersman, 1978)

Please rate the extent to which you agree or disagree with each of the following statements.

Strongly Disagree	Somewhat Disagree	Disagree	Agree	Somewhat Agree	Strongly Agree
1	2	3	4	5	6

1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired. 1 2 3 4 5 6

2. Even though being a parent could be rewarding, I am frustrated now while my child is at his / her present age. 1 2 3 4 5 6

3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot. 1 2 3 4 5 6

4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated. 1 2 3 4 5 6

5. My mother was better prepared to be a good mother than I am. 1 2 3 4 5 6

6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent. 1 2 3 4 5 6

7. Being a parent is manageable, and any problems are easily solved. 1 2 3 4 5 6

8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one. 1 2 3 4 5 6

9. Sometimes I feel like I'm not getting anything done. 1 2 3 4 5

10. I meet by own personal expectations for expertise in caring for my child. 1 2 3 4 5 6

11. If anyone can find the answer to what is troubling my child, I am the one. 1 2 3 4 5 6

12. My talents and interests are in other areas, not being a parent. 1 2 3 4 5 6

13. Considering how long I've been a mother, I feel thoroughly familiar with this role. 1 2 3 4 5 6

14. If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent. 1 2 3 4 5 6

15. I honestly believe I have all the skills necessary to be a good mother to my child. 1 2 3 4 5 6

16. Being a parent makes me tense and anxious. 1 2 3 4 5 6

17. Being a good mother is a reward in itself. 1 2 3 4 5 6

Parent Sense of Competency Scale (PSOC)

Scoring Instructions

The Parenting Sense of Competency Scale (PSOC) was developed by Gibaud-Wallston as part of her PhD dissertation and presented at the American Psychological Association by Gibaud-Wallston and Wandersman in 1978. The PSOC is a 17 item scale, with 2 subscales. Each item is rated on a 6 point Likert scale anchored by 1 = "Strongly Disagree" and 6 = "Strongly Agree". Nine (9) items (#s 2, 3, 4, 5, 8, 9, 12, 14, and 16) on the PSOC are reverse coded.

Nine items on the PSOC are reverse coded, this is important for accurate scoring. Reverse coded means that a high score on the individual item is not indicative of having a sense of competency; essentially, the item is worded negatively.

Scoring Instructions:

To aid scoring, the score / number for each item can be written in the in the right hand margin of the questionnaire once completed.

For items 1, 6, 7, 10, 11, 13, 15, and 17 simply write the number the participant indicated as their choice.

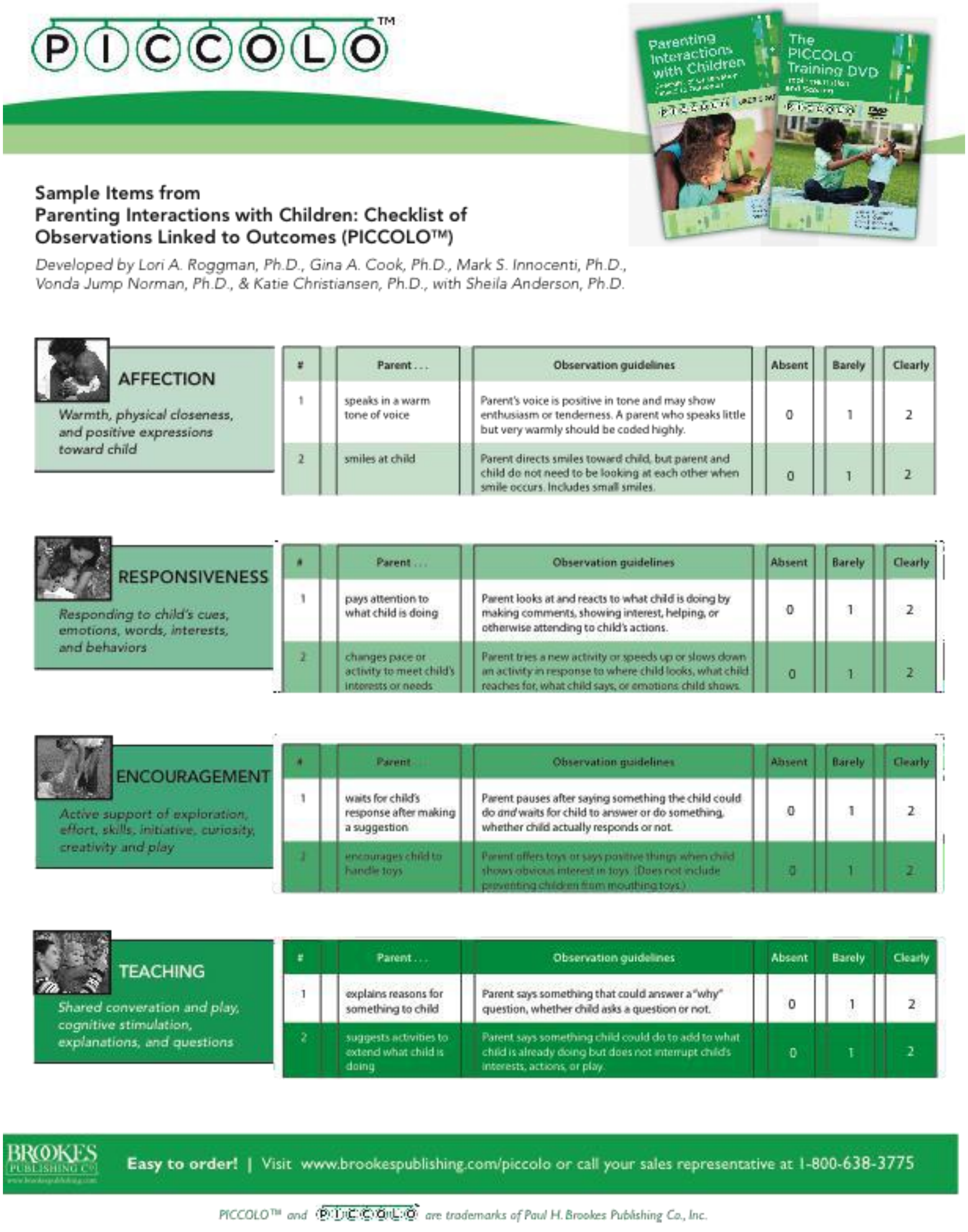
Reverse coding: For items 2, 3, 4, 5, 8, 9, 12, 14, and 16 substitute the following numbers and write in right hand margin for totaling:

Answer	Score
6	1
5	2
4	3
3	4
2	5
1	6

Total all numbers you have written in the right hand margin; this is participants PSOC score.

A higher score indicates a higher parenting sense of competency. There are no average scores or 'cut-off's' for this tool.

Appendix D: PICCOLO



PICCOLO™

Sample Items from Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO™)

Developed by Lori A. Roggman, Ph.D., Gina A. Cook, Ph.D., Mark S. Innocenti, Ph.D., Vonda Jump Norman, Ph.D., & Katie Christiansen, Ph.D., with Sheila Anderson, Ph.D.

AFFECTION

Warmth, physical closeness, and positive expressions toward child

#	Parent . . .	Observation guidelines	Absent	Barely	Clearly
1	speaks in a warm tone of voice	Parent's voice is positive in tone and may show enthusiasm or tenderness. A parent who speaks little but very warmly should be coded highly.	0	1	2
2	smiles at child	Parent directs smiles toward child, but parent and child do not need to be looking at each other when smile occurs. Includes small smiles.	0	1	2

RESPONSIVENESS

Responding to child's cues, emotions, words, interests, and behaviors

#	Parent . . .	Observation guidelines	Absent	Barely	Clearly
1	pays attention to what child is doing	Parent looks at and reacts to what child is doing by making comments, showing interest, helping, or otherwise attending to child's actions.	0	1	2
2	changes pace or activity to meet child's interests or needs	Parent tries a new activity or speeds up or slows down an activity in response to where child looks, what child reaches for, what child says, or emotions child shows.	0	1	2

ENCOURAGEMENT

Active support of exploration, effort, skills, initiative, curiosity, creativity and play

#	Parent . . .	Observation guidelines	Absent	Barely	Clearly
1	waits for child's response after making a suggestion	Parent pauses after saying something the child could do *and* waits for child to answer or do something, whether child actually responds or not.	0	1	2
2	encourages child to handle toys	Parent offers toys or says positive things when child shows obvious interest in toys. (Does not include preventing children from mouthing toys.)	0	1	2

TEACHING

Shared converation and play, cognitive stimulation, explanations, and questions

#	Parent . . .	Observation guidelines	Absent	Barely	Clearly
1	explains reasons for something to child	Parent says something that could answer a "why" question, whether child asks a question or not.	0	1	2
2	suggests activities to extend what child is doing	Parent says something child could do to add to what child is already doing but does not interrupt child's interests, actions, or play.	0	1	2

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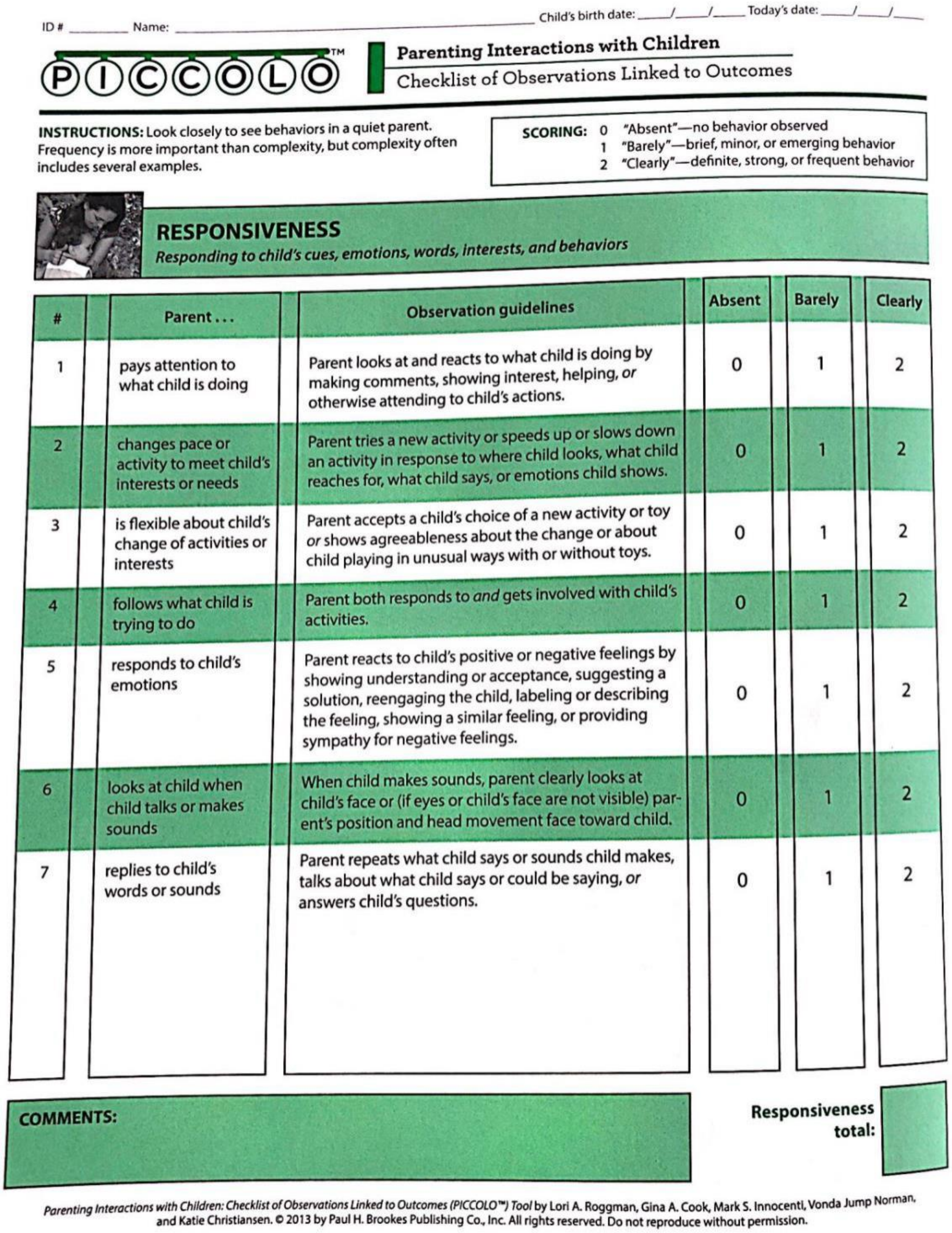


ID # ________ Name: ______________________________ Child's birth date: ____/____/____ Today's date: ____/____/____

PICCOLO™

Parenting Interactions with Children
Checklist of Observations Linked to Outcomes

INSTRUCTIONS: Look closely to see behaviors in a quiet parent. Frequency is more important than complexity, but complexity often includes several examples.

SCORING:
0 "Absent"—no behavior observed
1 "Barely"—brief, minor, or emerging behavior
2 "Clearly"—definite, strong, or frequent behavior

RESPONSIVENESS

Responding to child's cues, emotions, words, interests, and behaviors

#	Parent . . .	Observation guidelines	Absent	Barely	Clearly
1	pays attention to what child is doing	Parent looks at and reacts to what child is doing by making comments, showing interest, helping, *or* otherwise attending to child's actions.	0	1	2
2	changes pace or activity to meet child's interests or needs	Parent tries a new activity or speeds up or slows down an activity in response to where child looks, what child reaches for, what child says, or emotions child shows.	0	1	2
3	is flexible about child's change of activities or interests	Parent accepts a child's choice of a new activity or toy *or* shows agreeableness about the change or about child playing in unusual ways with or without toys.	0	1	2
4	follows what child is trying to do	Parent both responds to *and* gets involved with child's activities.	0	1	2
5	responds to child's emotions	Parent reacts to child's positive or negative feelings by showing understanding or acceptance, suggesting a solution, reengaging the child, labeling or describing the feeling, showing a similar feeling, or providing sympathy for negative feelings.	0	1	2
6	looks at child when child talks or makes sounds	When child makes sounds, parent clearly looks at child's face or (if eyes or child's face are not visible) parent's position and head movement face toward child.	0	1	2
7	replies to child's words or sounds	Parent repeats what child says or sounds child makes, talks about what child says or could be saying, *or* answers child's questions.	0	1	2

COMMENTS:

Responsiveness total:

Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO™) Tool by Lori A. Roggman, Gina A. Cook, Mark S. Innocenti, Vonda Jump Norman, and Katie Christiansen.

ID # ________ Name: ______________________________ Child's birth date: ____/____/____ Today's date: ____/____/____

PICCOLO™

Parenting Interactions with Children
Checklist of Observations Linked to Outcomes

INSTRUCTIONS: Look closely to see behaviors in a quiet parent. Frequency is more important than complexity, but complexity often includes several examples.

SCORING: 0 "Absent"—no behavior observed
1 "Barely"—brief, minor, or emerging behavior
2 "Clearly"—definite, strong, or frequent behavior

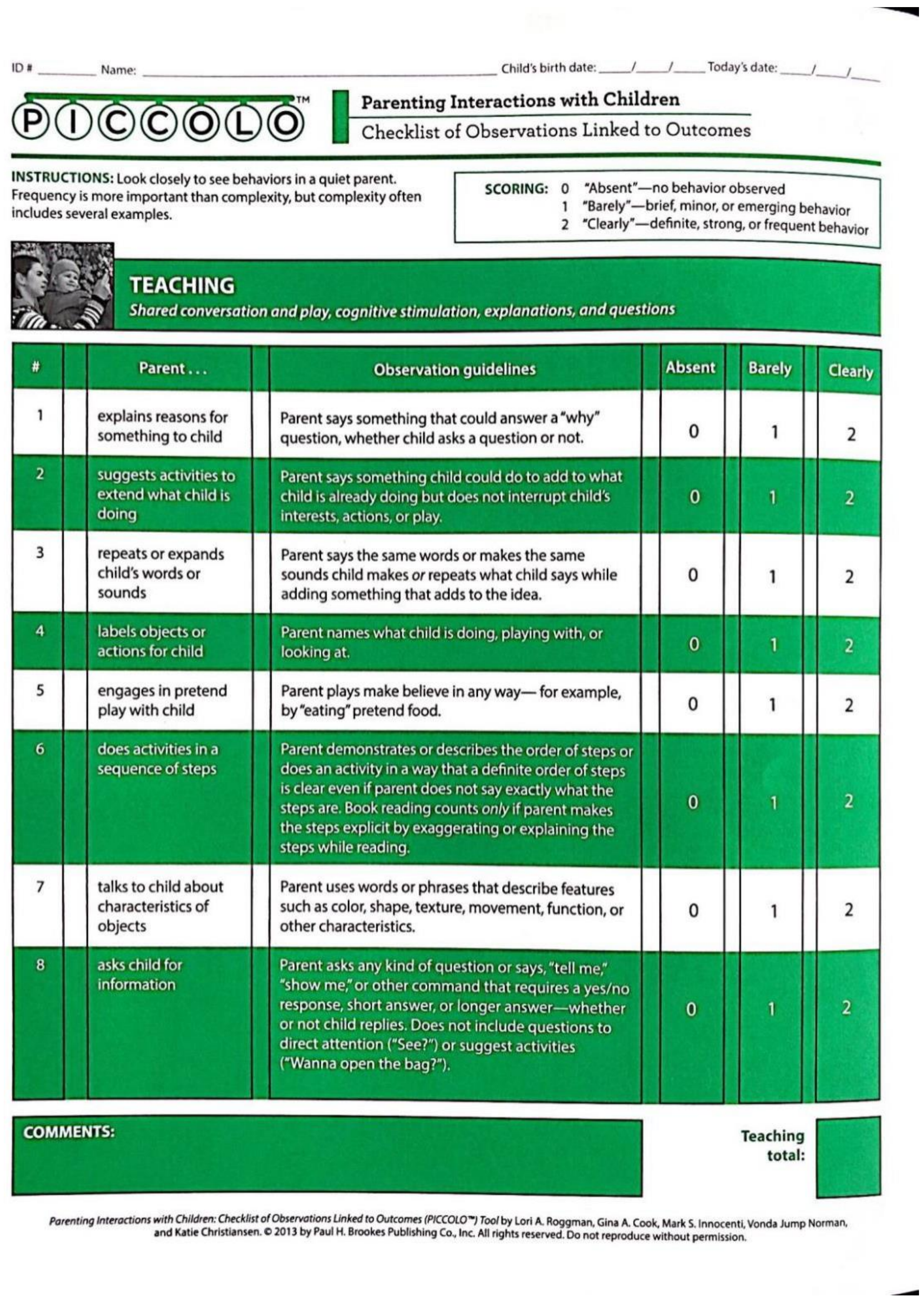
ENCOURAGEMENT

Active support of exploration, effort, skills, initiative, curiosity, creativity, and play

#	Parent . . .	Observation guidelines	Absent	Barely	Clearly
1	waits for child's response after making a suggestion	Parent pauses after saying something the child could do *and* waits for child to answer or do something, whether child actually responds or not.	0	1	2
2	encourages child to handle toys	Parent offers toys or says positive things when child shows obvious interest in toys. (Does not include preventing children from mouthing toys.)	0	1	2
3	supports child in making choices	Parent allows child to choose activity or toy *and* gets involved with activity or toy child chooses.	0	1	2
4	supports child in doing things on his or her own	Parent shows enthusiasm for things child tries to do without help, lets child choose how things are done, *and* lets child try to do things before offering help or suggestions. Parent can be engaged in activities child does "on his/her own."	0	1	2
5	verbally encourages child's efforts	Parent shows verbal enthusiasm, offers positive comments, *or* makes suggestions about child's activity.	0	1	2
6	offers suggestions to help child	Parent gives hints or makes comments to make things *easier* for child without interfering with child's play.	0	1	2
7	shows enthusiasm about what child is doing	Parent makes positive statements, claps hands, or shows other clear positive response to what child is *doing,* including quiet enthusiasm such as patting child, nodding, smiling, or asking child questions about activities.	0	1	2

COMMENTS:

Encouragement total:



ID # ________ Name: ________________ Child's birth date: ____/____/____ Today's date: ____/____/____

PICCOLO™

Parenting Interactions with Children

Checklist of Observations Linked to Outcomes

INSTRUCTIONS: Look closely to see behaviors in a quiet parent. Frequency is more important than complexity, but complexity often includes several examples.

SCORING:
0 "Absent"—no behavior observed
1 "Barely"—brief, minor, or emerging behavior
2 "Clearly"—definite, strong, or frequent behavior

TEACHING

Shared conversation and play, cognitive stimulation, explanations, and questions

#	Parent . . .	Observation guidelines	Absent	Barely	Clearly
1	explains reasons for something to child	Parent says something that could answer a "why" question, whether child asks a question or not.	0	1	2
2	suggests activities to extend what child is doing	Parent says something child could do to add to what child is already doing but does not interrupt child's interests, actions, or play.	0	1	2
3	repeats or expands child's words or sounds	Parent says the same words or makes the same sounds child makes *or* repeats what child says while adding something that adds to the idea.	0	1	2
4	labels objects or actions for child	Parent names what child is doing, playing with, or looking at.	0	1	2
5	engages in pretend play with child	Parent plays make believe in any way— for example, by "eating" pretend food.	0	1	2
6	does activities in a sequence of steps	Parent demonstrates or describes the order of steps or does an activity in a way that a definite order of steps is clear even if parent does not say exactly what the steps are. Book reading counts *only* if parent makes the steps explicit by exaggerating or explaining the steps while reading.	0	1	2
7	talks to child about characteristics of objects	Parent uses words or phrases that describe features such as color, shape, texture, movement, function, or other characteristics.	0	1	2
8	asks child for information	Parent asks any kind of question or says, "tell me," "show me," or other command that requires a yes/no response, short answer, or longer answer—whether or not child replies. Does not include questions to direct attention ("See?") or suggest activities ("Wanna open the bag?").	0	1	2

COMMENTS:

Teaching total:

Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO™) Tool by Lori A. Roggman, Gina A. Cook, Mark S. Innocenti, Vonda Jump Norman, and Katie Christiansen.

Appendix E: Adult Attachment Interview Protocol

ADULT ATTACHMENT INTERVIEW PROTOCOL

George, C., Kaplan, N., & Main, M. (1985). *The Adult Attachment Interview.* Unpublished manuscript, University of California at Berkeley.

(Note: This document is for illustration only. Contact the authors for information about training and the most current version of the interview protocol.)

Introduction

I'm going to be interviewing you about your childhood experiences, and how those experiences may have affected your adult personality. So, I'd like to ask you about your early relationship with your family, and what you think about the way it might have affected you. We'll focus mainly on your childhood, but later we'll get on to your adolescence and then to what's going on right now. This interview often takes about an hour, but it could be anywhere between 45 minutes and an hour and a half.

1. Could you start by helping me get oriented to your early family situation, and where you lived and so on? If you could tell me where you were born, whether you moved around much, what your family did at various times for a living?

This question is used for orientation to the family constellation, and for warm-up purposes. The research participant must not be allowed to begin discussing the quality of relationships here, so the "atmosphere" set by the interviewer is that a brief list of "who, when" is being sought, and *no more than two or three minutes* at most should be used for this question. The atmosphere is one of briefly collecting demographics.

In the case of participants raised by several persons, and not necessarily raised by the biological or adoptive parents (frequent in high-risk samples), the opening question above may be *"Who would you say raised you?':* The interviewer will use this to help determine who should be considered the primary attachment figure (s) on whom the interview will focus.

Did you see much of your grandparents when you were little? If participant indicates that grandparents died during his or her own lifetime, ask the participant's age at the time of each loss. If there were grandparents whom she or he never met, ask *whether this (these) grandparents) had died before she was born.* If yes, *continue as* follows: *Your mother's father died before you were born? How old was she at the time, do you know?* In a casual and *spontaneous way,* inviting only a very brief reply, the interviewer then asks, *Did she tell you much about this grandfather?*

Did you have brothers and sisters living in the house, or anybody besides your parents? Are they living nearby now or do they live elsewhere? -

2. I'd like you to try to describe your relationship with your parents as a young child if you could start from as far back as you can remember?

Encourage participants to try to begin by remembering very early. Many say they cannot remember early child- hood, but you should shape the questions such that they focus at first around age five or earlier, and gently re- mind the research participant from time to time that if possible, you would like her to think back to this age period.

Admittedly, this is leaping right into it, and the participant may stumble. If necessary, indicate in some way that experiencing some difficulty in initially attempting to respond to this question is natural, but indicate by some silence that you would nonetheless like the participant to attempt a general description.

3. Now I'd like to ask you to choose five adjectives or words that reflect your relationship with your mother starting from as far back as you can remember in early childhood--as early as you can go, but say, age 5 to 12 is fine. I know this may take a bit of time, so go ahead and think for a minute...then I'd like to ask you why you chose them. I'll write each one down as you give them to me.

Not all participants will be able to think of five adjectives right away. Be sure to make the word *relationship* clear enough to be heard in this sentence. Some participants do use "relationship" adjectives to describe the parent, but some just describe the parent herself --e.g., "pretty"... "efficient manager"--as though they had only been asked to "pick adjectives to describe your mother". These individual differences are of interest only if the participant has heard the phrase, "that reflect your childhood *relationship"* with your mother. The word should be spoken clearly, but with only slight stress or emphasis.

Some participants will not know what you mean by the term *adjectives,* which is why we phrase the question as "adjectives or words". If the participant has further questions, you can explain, "just words or phrases that would describe or tell me about your relationship with your (mother) during childhood".

The probes provided below are intended to follow the entire set of adjectives, and *the interviewer must not be- gin to probe until the full set of adjectives has been given.* Be patient in waiting for the participant to arrive at five adjectives, and be encouraging. This task has proven very helpful both in starting an interview, and in later interview analysis. It helps some participants to continue to focus upon the relationship when otherwise they would not be able to come up with spontaneous comments.

If for some reason a subject does not understand what a memory is, you might suggest they think of it like an image they have in their mind similar to a videotape of something which happened when they were young. Make certain that the subject really does not understand the question first, however. The great majority who may seem not to understand it are simply unable to provide a memory or incident.

The participant's ability (or inability) to provide both an overview of the relationship and specific memories supporting that overview forms one of the most critical bases of interview analysis. For this reason, it is important for the interviewer to press enough in the effort to obtain the five "overview" adjectives that if a full set is not provided, she or he is reasonably certain that they truly cannot be given.

The interviewer's manner should indicate that waiting as long as a minute is not unusual, and that trying to come up with these words can be difficult. Often, participants indicate by their non-verbal behavior that they are actively thinking through or refining their choices. In this case an interested silence is warranted. Don't, however, repeatedly leave the participant in embarrassing silences for very long periods. Some research participants may tell you that this is a hard job, and you can readily acknowledge this. If the participant has extreme difficulty coming up with more than one or two words or adjectives, after a period of two to three minutes of supported attempts ("Mm... I know it can be hard ...this is a pretty tough question... Just take a little more time"), then say something like "Well, that's fine. Thank you, we'll just go with the ones you've already given me." The interviewer's tone here should make it clear that the participant's response is perfectly acceptable and not un- common.

Okay, now let me go through some more questions about your description of your childhood relation- ship with your mother. You say your relationships with her was (you used the phrase) Are there any memories or incidents that come to mind with respect to (word)

The same questions will be asked *separately* for *each* adjective in series. Having gone through the probes, which follow upon this question (below), the interviewer moves on to seek illustration for each of the succeeding adjectives in turn:

You described your childhood relationship with your mother as (or, `your second adjective was", or "the second word you used was"). Can you think of a memory or an incident that would illustrate why you chose to describe the relationship?

The interviewer continues, as naturally as possible, through each phrase or adjective chosen by the participant, until all five adjectives or phrases are covered. A specific supportive memory or expansion and illustration is requested for each of the adjectives, separately. In terms of time to answer, this is usually the longest question. Obviously, some adjectives chosen may be almost identical, e.g., "loving ... caring". Nonetheless, if they have been given to you as separate descriptors, you must treat each separately, and ask for memories for each.

While participants sometimes readily provide a well-elaborated incident for a particular word they have chosen, at other times they may fall silent; or "illustrate" one adjective with another ("loving ...um, because she was generous"); or describe what usually happened--i.e., offer a "scripted" memory--rather than describing specific incidents. There are a set series of responses available for these contingencies, and it is vital to memorize them.

If the participant is silent, the interviewer waits an appropriate length of time. If the participant indicates non- verbally that she or he is actively thinking, remembering or simply attempting to come up with a particularly telling illustration, the interviewer maintains an interested silence. If the silence continues and seems to indicate that the participant is feeling stumped, the interviewer says something like, "well, just take another minute and see if anything comes to mind". If following another waiting period, the participant still cannot respond to the question, treat this in a casual, matter of fact manner and say "well, that's fine, let's take the next one, then". Most participants do come up with a response eventually, however, and the nature of the response then determines which of the follow-up probes are utilized.

If the participant re-defines an affective with a second adjective as, "Loving ---she was generous", the interviewer probes by repeating the original adjective (loving) rather than permitting the participant to lead them to use the second one (generous). In other words, the interviewer in this case will say, "Well, can you think of a specific memory that would illustrate how your relationship was loving?" The interviewer should be careful, however, not to be too explicit in their intention to lead the participant back to their original word usage. If the speaker continues to discuss "generous" after having been probed about loving once more, this violation of the discourse task is meaningful and must be allowed. As above, the nature of the participant's response determines which follow-up probes are utilized.

If a specific and well-elaborated incident is given, the participant has responded satisfactorily to the task, and the interviewer should indicate that she or he understands that. However, the interviewer should briefly show continuing interest by asking whether the participant can think of a second incident.

- If one specific but poorly elaborated incident is given, the interviewer probes for a second. Again, the interviewer does this in a manner emphasizing his or her own interest.

- If as a first response the participant gives a "scripted" or "general" memory, as

"Loving. She always took us to the park and on picnics. She was really good on holidays" or "Loving. He taught me to ride a bike"--the interviewer says, "Well, that's a good general description, but I'm wondering if there was a particular time that happened, that made you think about it as loving?"

- If the participant does now offer a specific memory, briefly seek a second memory, as above. If another scripted memory is offered instead, or if the participant responds, "I just think that was a loving thing to do", the interviewer should be accepting, and go on to the next adjective. Here as elsewhere the interviewer's behavior indicates that the participant's response is satisfactory.

4. Now I'd like to ask you to choose five adjectives or words that reflect your childhood relationship with your father, again starting from as far back as you can remember in early childhood--as early as you can go, but again say, age 5 to 12 is fine. I know this may take a bit of time, so go ahead and think again for a minute...then I'd like to ask you why you chose them. I'll write each one down as you give them to me. (Interviewer repeats with probes as above).

5. Now I wonder if you could tell me, to which parent did you feel the closest, and why? Why isn't there this feeling with the other parent?

By the time you are through with the above set of questions, the answer to this one may be obvious, and you may want to remark on that ***("You've already discussed this*** a bit, but I'd like to ask about it briefly any- way..."). Furthermore, while the answer to this question may indeed be obvious for many participants, some--particularly those who describe both parents as loving--may be able to use it to reflect further on the difference in these two relationships.

6. When you were upset as a child, what would you do?

This is a critical question in the interview, and variations in the interpretation of this question are important. Consequently, the participant is first encouraged to think up her own interpretations of "upset", with the inter- viewer pausing quietly to indicate that the question is completed, and that an answer is requested.

Once the participant has completed her own interpretation of the question, giving a first answer, begin on the following probes. Be sure to get expansions of every answer. If the participant states, for example, "I with- drew", probe to understand what this research participant means by "withdrew". For example, you might say, "And what would you do when you withdrew?"

The interviewer now goes on to ask the specific follow-up questions below. These questions may appear similar, but they vary in critical ways, so the interviewer must make sure that the participant thinks through each question separately. This is done by placing vocal stress on the changing contexts (as we have indicated by underlining).

*-----**When you were Upset emotionally when you were little, what would you do?*** (Wait for participant's reply). ***Can you think of a specific time that happened?***

*-----**Can you remember what would happen when you were hurt. physically?*** (Wait for participant's reply). ***Again, do any specific incidents (or, do any other incidents) come to mind?***

*-----**Were you ever** M **when you were little?*** (Wait for participant's reply). Do ***you remember what would happen?***

When the participant describes going to a parent, see first what details they can give you spontaneously. Try to get a sense of how the parent or parents responded, and then when and if it seems appropriate you can briefly ask one or two clarifying questions.

Be sure to get expansions of every answer. Again, if the participant says, "I withdrew", for example, probe to see what the participant means by this, i.e., what exactly she or he did, or how exactly they felt, and if they can elaborate on the topic.

If the participant has not spontaneously mentioned being held by the parent in response to any of the above questions, the interviewer can ask casually at the conclusion to the series, ***"I was just wondering, do you re- member being held by either of your parents at any of these times--I mean, when you were upset, or hurt, or ill?"***

In earlier editions of these guidelines, we suggested that if the participant answers primarily in terms of responses by one of the parents, the interviewer should go through the above queries again with respect to the remaining parent. This can take a long time and distract from the recommended pacing of the interview. Consequently, it is no longer required.

What is the first time you remember being separated from your parents? - - -How did you respond? Do you remember how your parents responded?

- - -Are there any other separations that stand out in your mind? Here research participants often describe first going off to nursery school, or to primary school, or going camping.

In this context, participants sometimes spontaneously compare their own responses to those of other children. This provides important information regarding the participant's own overall attitude towards attachment, so be careful not to cut any such descriptions or comparisons short.

8. Did you ever feel rejected as a young child? Of course, looking back on it now, you may realize it wasn't really rejection, but what I'm trying to ask about here is whether you remember ever having rejected in childhood

-----*How old were you when you first felt this way, and what did you do?*

----*Why do you think your parent did those things--do you think he/she realized he/she was rejecting you?*

Interviewer may want to add a probe by refraining the question here, especially if no examples are forthcoming. The probe we suggest here is, *did you ever feel pushed away or ignored?"* Many participants tend to avoid this in terms of a positive answer.

So, were you ever frightened or worried as a child?

Let the research participant respond "freely" to this question, defining the meaning for themselves. They may ask you what the question means, and if so, simply respond by saying "It's just a more general question". Do not probe heavily here. If the research participant has had traumatic experiences which they elect not to de- scribe, or which they have difficulty remembering or thinking about, you should not insist upon hearing about them. They will have a second, brief opportunity to discuss such topics later.

9. Were your parents ever threatening with you in any way - maybe for discipline, or even jokingly?

-----*Some people have told us for example that their parents would threaten to leave them or send them away from home.* ----- (Note to researchers). In particular communities, some specific kind of punishment not generally considered fully abusive is common, such as "the silent treatment", or "shaming", etc. One question regarding this one selected specific form of punishment can be inserted here, as for example, *'Some people have told us that their parents would use the silent treatment -- did this ever happen with your parents?':* The question should then be treated exactly as threatening to send away from home, i.e., the participant is free to answer and expand on the topic if she or he wishes, but there are no specific probes. The researcher should not ask about more than one such specific (community) form of punishment, since queries regarding more than one common type will lead the topic away from its more general intent (below).

Some people have memories of *threats or* of *some kind* of *behavior that was abusive.* ----- *Did anything like this ever happen to you, or in your family?*

-----*How old were you at the time? Did it happen frequently?* ----- *Do you feel this experience affects you now as an adult?* -----*Does it influence your approach to your own child?*

-----*Did you have any such experiences involving people outside your family?*

If the participant indicates that something like this did happen outside the family, take the participant through the same probes *(age? frequency? affects you now as an adult? Influences your approach to your own child?).* Be careful with this question, however, as it is clinically sensitive, and by now you may have been asking the participant difficult questions for an extended period of time.

Many participants simply answer "no" to these questions. Some, however, describe abuse and may some suffer distress in the memory. When the participant is willing to discuss experiences of this kind, the interviewer must be ready to maintain a respectful silence, or to offer active sympathy, or to do whatever may be required to recognize and insofar as possible to help alleviate the distress arising with such memories.

If the interviewer suspects that abuse or other traumatic experiences occurred, it is important to attempt to as- certain the specific details of these events insofar as possible. In the coding and classification system which ac- companies this interview, *distressing experiences cannot be scored for Unresolved /disorganized responses unless the researcher is able to establish that abuse (as opposed to just heavy spanking, or light hitting with a spoon that was not frightening) occurred.*

Where the nature of a potentially physically abusive (belting, whipping, or hitting) experience is ambiguous, then, the interviewer should try to establish the nature of the experience in a light, matter-of-fact manner, with- out excessive prodding. If, for example, the participant says "I got the belt" and stops, the interviewer asks, "And what did getting the belt mean?". After encouraging as much spontaneous expansion as possible, the interviewer may still need to ask, again in a matter-of-fact tone, how the participant responded or felt at the time. "Getting the belt" *in itself will* not qualify as abuse within the adult attachment scoring and classification systems, since in some households and communities this is a common, systematically but not harshly imposed experience. Being belted heavily enough to overwhelmingly frighten the child for her physical welfare at the time, being belted heavily enough to cause lingering pain, and/or being belted heavily enough to leave welts or bruises will qualify.

In the case of sexual abuse as opposed to battering, the interviewer will seldom need to press for details, and should be very careful to follow the participant's lead. Whereas on most occasions in which a participant de- scribes themselves as sexually abused the interviewer and transcript judge will have little need to probe further, occasionally a remark is ambiguous enough to require at least mild elaboration. If, for example, the participant states `and I just thought he could be pretty sexually abusive', the interviewer will ideally follow-up with a query such as, ` well, could you tell me a little about what was happening to make you see him as sexually abusive?'. Should the participant reply that the parent repeatedly told off-color jokes in her company, or made un- toward remarks about her attractiveness, the parent's behavior, though insensitive, will not qualify as sexually abusive within the accompanying coding system. Before seeking elaboration of any kind, however, the inter- viewer should endeavor to determine whether the participant seems comfortable in discussing the incident or incidents.

All querying regarding abuse incidents must be conducted in a matter-of-fact, professional manner. The inter- viewer must use good judgment in deciding whether to bring querying to a close if the participant is becoming uncomfortable. At the same time, the interviewer *must not avoid the topic or give the participant the impression that discussion of such experiences is unusual.* Interviewers sometimes involuntarily close the topic of abuse experiences and their effects, in part as a well-intentioned and protective response towards participants who in point of fact would have found the discussion welcome.

Participants who seem to be either thinking about or revealing abuse experiences for the first time-- "No, nothing ....no... well, 1, I haven't thought, remembered this for, oh, years, but ...maybe they used to... tie me "-- must be handled with special care, and should *not* be probed unless they clearly and actively seem to want to discuss the topic. If you sense that the participant has told you things they have not previously discussed or remembered, special care must be taken at the end of the interview to ensure that the participant does not still suffer distress, and feels able to contact the interviewer or project director should feelings of distress arise in the future.

In such cases the participant's welfare must be placed above that of the researcher. While matter-of-fact, professional and tactful handling of abuse-related questions usually makes it possible to obtain sufficient information for scoring, the interviewer must be alert to indications of marked distress, and ready to tactfully abandon this line of questioning where necessary. Where the complete sequence of probes must be abandoned, the interviewer should move gracefully and smoothly to the next question, as though the participant had in fact answered fully.

10. In general, how do you think your overall experiences with your parents have affected your adult personality?

The interviewer should pause to indicate she or he expects the participant to be thoughtful regarding this question, and is aware that answering may require some time.

Are there any aspects to your early experiences that you feel were a set-back in your development?

In some cases, the participant will already have discussed this question. Indicate, as usual, that you would just like some verbal response again anyway, "for the record".

It is quite important to know whether or not a participant sees their experiences as having had a negative effect on them, so the interviewer will follow-up with one of the two probes provided directly below. The interviewer must stay alert to the participant's exact response to the question, since the phrasing of the probe differs according to the participant's original response.

If the participant has named one or two setbacks, the follow-up probe used is:

---Are there any other aspects of your early experiences that you think might have held your development back, or had a negative effect on the way you turned out?

If the participant has understood the question, but has not considered anything about early experiences a setback, the follow-up probe used is:

---Is there any thin about your early experiences that you think might have held your development back, or had a negative effect on the way you turned out?

Although the word ***anything*** receives some vocal stress, the interviewer must be careful not to seem to be expressing impatience with the participant's previous answer. The stress simply implies that the participant is being given another chance to think of something else she or he might have forgotten a moment ago.

12.

RE: PARTICIPANTS WHO DON'T SEEM TO UNDERSTAND THE TERM, SETBACK. A few participants aren't familiar with the term, ***set-back.*** If after a considerable wait for the participant to reflect, the participant seems simply puzzled by the question, the interviewer says,

"Well, not everybody uses terms like **set-back** *for what I mean here. I mean, was there anything about your early experiences, or any parts* of *your early experiences, that you think might have held your development back, or had a negative effect on the way you turned out?"*

In this case, this becomes the main question, and the probe becomes

-Is there anything else about your early experiences that you think might have held your development back, or had a negative effect on the way you turned out?

Why do you think your parents behaved as they did during your childhood?

This question is relevant even if the participant feels childhood experiences were entirely positive. For participants reporting negative experiences, this question is particularly important.

Were there any other adults with whom you were close, like parents, as a child?

--- *Or any other adults who were especially important to you, even though not parental?*

Give the participant time to reflect on this question. This is the point at which some participants will mention housekeepers, au pairs, or nannies, and some will mention other family members, teachers, or neighbors.

Be sure to find out ages at which these persons were close with the participant, whether they had lived with the family, and whether they had had any caregiving responsibilities. In general, attempt to determine the significance and nature of the relationship.

13. Did you experience the loss of a parent or other close loved one while you were a

young child--for ex- ample, a sibling, or a close family member?

(A few participants understand the term "loss" to cover brief or long-term separations from living persons, as, "I lost my mom when she moved South to stay with her mother". If necessary, clarify that you are referring to death only, i.e., specifically to loved ones who had died).

-----*Could you tell me about the circumstances, and how old you were at the time?* -----*How did you respond at the time?* -----*Was this death sudden or was it expected?* -----*Can you recall your feelings at that time?*

-----*Have your feelings regarding this death changed much over time?* If not volunteered earlier. *Did you attend the funeral, and what was this like for you?*

If loss of a parent or *sibling. What would you say was the effect on your (other parent) and on your household, and how did this change over the years?*

-----*Would you say this loss has had an effect on your adult personality?* -----Were relevant *How does it affect your approach to your own child?*

13a. Did you lose any other important persons during your childhood?

13b. Have you lost other close persons, in adult years? (Same queries).

Be sure that the response to these questions covers loss of any siblings, whether older or younger, loss of grandparents, and loss of any person who seemed a "substitute parent" or who lived with the family for a time. Some individuals will have been deeply affected by.

Probe any loss which seems important to the participant, including loss of friends, distant relatives, and neighbors or neighbor's children. Rarely, the research participant will seem distressed by the death of someone who they did not personally know (often, a person in the family, but sometimes someone as removed as the friend of a friend).

If a participant brings up the suicide of a friend of a friend and seems distressed by it, the loss ***should be fully*** probed. The interviewer should be aware, then, that speakers may be assigned to the unresolved/disorganized adult attachment classification as readily for lapses in monitoring occurring during the discussion of the death of a neighbor's child *experienced during the adult* years as for loss of a parent in childhood.

Interviewing research participants regarding loss obviously requires good clinical judgment. At maximum, only four to five losses are usually fully probed. In the case of older research participants or those with traumatic histories, there may be many losses, and the interviewer will have to decide on the spot which losses to probe. No hard and fast rules can be laid out for determining which losses to skip, and the interviewer must to the best of his or her ability determine which losses--if there are many--are in fact of personal significance to the participant. Roughly, in the case of a participant who has lost both parents, spouse, and many other friends and relatives by the time of the interview, the interviewer might elect to probe the loss of the parents, the spouse, and "any other loss which you feel may have been especially important to you". If, however, these queries seem to be becoming wearying or distressing for the participant, the interviewer should acknowledge the excessive length of the querying, and offer to cut it short.

14. ***Other than any difficult experiences you've already described, have you had any other experiences which you should regard as potentially traumatic?***

Let the participant free-associate to this question, then clarify if necessary with a phrase such as, ***I mean, any experience which was overwhelmingly and immediately terrifying.***

This question is a recent addition to the interview. It permits participants to bring up experiences which may otherwise be missed, such as scenes of violence which they have observed, war experiences, violent separation, or rape.

Some researchers may elect not to use this question, since it is new to the 1996 protocol. If you do elect to use it, it must of course be used with all subjects in a given study.

The advantage of adding this question is that it may reveal lapses in reasoning or discourse specific to traumatic experiences other than loss or abuse.

(Same queries--again, this refers to people who have died rather than separation experiences).

Be very careful, however, not to permit this question to open up the interview to all stressful, sad, lonely or up- setting experiences which may have occurred in the subject's lifetime, or the purpose of the interview and of the question may be diverted. It will help if your tone indicates that these are rare experiences.

Follow up on such experiences with probes only where the participant seems at relative ease in discussing the event, and/or seems clearly to have discussed and thought about it before.

Answers to this question will be varied. Consequently, exact follow-up probes cannot be given in advance, although the probes succeeding the abuse and loss questions may serve as a partial guide. In general, the same cautions should be taken with respect to this question as with respect to queries regarding frightening or worrisome incidents in childhood, and experiences of physical or sexual abuse. Many researchers may elect to treat this question lightly, since the interview is coming to a close and it is not desirable to leave the participant reviewing too many difficult experiences just prior to leave taking.

15. Now 1'd like to ask you a few more questions about your relationship with your pants. Were there many changes in your relationship with your parents (or remaining parent) after childhood? We'll get to the present in a moment, but right now 1 mean changes occurring roughly between your childhood and your adulthood?

Here we are in part trying to find out, *indirectly* (1) whether there has been a period of rebellion from the parents, and (2) also indirectly, whether the participant may have rethought early unfortunate relationships and "forgiven" the parents. Do not ask anything about forgiveness directly, however--this will need to come up spontaneously. This question also gives the participant the chance to describe any changes in the parent’s behavior, favorable or unfavorable, which occurred at that time.

16. Now I'd like to ask you, what is your relationship with your parents (or remaining parent) like for you now as an adult? Here I am asking about your current

relationship.

----Do you have much contact with your parents at present?␟- What would you say the relationship with your parents is like currently?␟ Could you tell me about any (or any other) sources of dissatisfaction in your current relationship

with your parents? any special (or any other) sources of special satisfaction?

This has become a critical question within the Adult Attachment Interview, since a few participants who had taken a positive stance towards their parents earlier suddenly take a negative stance when asked to describe cur- rent relationships. As always, the interviewer should express a genuine interest in the participant's response to this question, with sufficient pause to indicate that a reflective response is welcome.

17. I'd like to move now to a different sort of question--it's not about your relationship with your parents, instead it's about an aspect of your current relationship with (specific child of special interest to the re- searcher, or all the participant's children considered together). How do you respond now, in terms* **of** ***feelings, when you separate from your child / children*?* (For adolescents or individuals without children, see below).

Ask this question exactly as it is, without elaboration, and be sure to give the participant enough time to respond. Participants may respond in terms of leaving child at school, leaving child for vacations, etc., and this is encouraged. What we want here are the participant's feelings about the separation. This question has been very helpful in interview analysis, for two reasons. In some cases, it highlights a kind of role-reversal between parents and child, i.e., the participant may in fact respond as though it were the child who was leaving the parent alone, as though the parent was the child. In other cases, the research participant may speak of a fear of loss of the child, or a fear of death in general. When you are certain you have given enough time (or repeated or clarified the question enough) for the participant's naturally-occurring response, then (and only then) add the following probe:

-----*Do you ever feel worried about (child)?*

For individuals without children, you will pose this question as a hypothetical one, and continue through the remaining questions in the same manner. For example, you can say, now I'd *like you to imagine that you have a one-year-old child, and I wonder how you think you might respond, in terms of feelings, if you had to separate from this child?"Do you think you would ever feel worried about this child?".*

18. If you had three wishes for your child twenty years from now, what would they be? I'm thinking partly of the kind* of *future you would like to see for your child I'll give you a minute or two to think about this one.

This question is primarily intended to help the participant begin to look to the future, and to lift any negative mood, which previous questions may have imposed.

For individuals without children, you again pose this question in hypothetical terms. For example, you can say,

"Now I'd like you to continue to imagine that you have a one-year-old child for just another minute. This time, I'd like to ask, if you had three wishes for your child twenty years from now, what would they be? I'm thinking partly of the kind of future you would like to see for your imagined child I'll give you a minute or two to think about this one':

19. Is there any particular thing, which you feel you learned above all from your own childhood experiences? I'm thinking here of something you feel you might have gained from the kind of childhood you had.

Give the participant plenty of time to respond to this question. Like the previous and succeeding questions, it is intended to help integrate whatever untoward events or feelings he or she has experienced or remembered within this interview, and to bring the interview down to a light close.

20. We've been focusing a lot on the past in this interview, but I'd like to end up looking quite a ways into the future. We've just talked about what you think you may have learned from your own childhood experiences. 1'd like to end by asking you what

would you hope your child (or, your imagined child) might have learned from his/her experiences of being parented by you?

The interviewer now begins helping the participant to turn his or her attention to other topics and tasks. Participants are given a contact number for the interviewer and/or project director, and encouraged to feel free to call if they have any questions.

Appendix F: Working Model of the Child Interview

WORKING MODEL OF THE CHILD INTERVIEW

Charles H. Zeanah Diane Benoit Marianne Barton

1986, rev. 1993

This is a structured interview to assess parents' internal representations or working model of their relationship to a particular child. The setting of the interview should be comfortable enough to allow for attention to the questions posed and a relaxed atmosphere that permits the opportunity for reflection.

The introductory section on developmental history is optional, depending upon the setting and purpose for which the interview is used. Otherwise, the interviewer should follow the outline. The interview allows for some follow-up probes, particularly those that encourage the individual to elaborate on responses. The interviewer [should] not make interpretative comments, since we are interested in the degree to which individuals make these links on their own. Requests for clarification about contradictions may be made but only for the purpose of ascertaining whether the individual maintains contradictory views of the infant and only after allowing the individual an opportunity to recognize, acknowledge, and resolve the contradictions on his/her own. Essentially, the purpose of the interview is to have individuals reveal as much as possible in a narrative account of their perceptions, feelings, motives, and interpretations of a particular child and their relationship to that child.

Reference

Zeanah, C.H., & Benoit, D. (1995). Clinical applications of a parent perception interview in infant mental health. Child and Adolescent Psychiatric Clinics of North America, 4, 539-554.

Interview

We are interested in how parents think and feel about their children. This interview is a way for us to ask you about child’s name and your relationship to him/her. The interview will take us about an hour to complete.

(1) I’d like you to begin by telling me about your child’s development.

(1a) Let’s start with your pregnancy. I’m interested in things like whether it was planned or unplanned, how you felt physically and emotionally, and what you were doing during the pregnancy (working, etc.). In a follow-up probe, find out how much the baby was wanted or not wanted. Had you ever been pregnant before? Why did you want to get pregnant at this time in your life? When did the pregnancy seem real to you? What were your impressions about the baby during pregnancy? What did you sense the baby might be like (including gender, temperament/personality)?

The idea is to put the subject at ease and to begin to obtain a chronological history of the pregnancy. Additional probes may be necessary to make sure that the individual is given a reasonable opportunity to convey the history of his/her reactions to and feelings about the pregnancy and the baby (which may or may not be the same).

(1b) Tell me about labor and delivery. Give some time to respond before proceeding. How did you feel and react at the time? What was your first reaction when you saw the baby? What was your reaction to having a boy/girl? How did your family react? Be sure to include husband/partner, other siblings.

(1c) Did the baby have any problems in the first few days after birth? How soon was the baby discharged from the hospital? Did you decide to breastfeed or bottle-feed? Why? What was the experience of breast-/bottle feeding like for you?

(1d) How would you describe the first few weeks at home in terms of feeding, sleeping, crying, etc. This is often a very important time because it may set the “emotional tone” of the baby’s entrance into the family, particularly if the delivery and perinatal period were routine.

(1e) Tell me about your baby’s developmental milestones such as sitting up, crawling, walking, smiling, and talking. Be sure to get a sense of the ways in which the baby was thought to be different, ahead or behind in motor, social, and language development. Did you have any sense of your baby's intelligence early on? What did you think?

(1f) Did your baby seem to have a regular routine? What happened if you didn't stay in the routine?

(1g) How has the baby reacted to separations from you? Try to get a sense of the baby's reactions at various ages. Were there any separations of more than a day in the first or second year? How did the baby react? How was it for you? How did you feel? What did you do?

(1h) How and when did you choose your baby's name? Find out about family names, etc. How well does your baby's name fit him/her?

(2) Does your baby/child get upset often? Give sometime to respond before proceeding to specific queries. What do you do at these times? What do you feel like doing when this happens? What do you feel like at these times?

(2a) What about when he/she becomes emotionally upset? Can you recall a specific example (or tell about a time when your child was emotionally upset [e.g., sad, frightened])? Make sure that subject describes incident(s) about the child being sad, frightened and not only angry. Also, indicate that you want an example by providing a reasonably long time to think of one. What did you do when that happened? What did you feel like doing? How did you feel or what was that like for you to see him/her upset like that? If the subject becomes extremely anxious and cannot recall an example, then proceed to part (2b).

(2b) Tell me about a time when he/she was physically hurt a little bit (e.g., a bump on head, scraping knees, cuts, bleeding) – in terms of what happened, what you did and what you felt. Be sure to find out what the subject felt like and did.

(2c) Tell me about a time when your baby/child was ill (e.g., ear infection, measles, flu/cold, etc.), in terms of what happened, what you did and what you felt like. Again, include what this experience was like for the parent and how they responded to the child affectively and behaviorally.

(3) Describe your impression of your child’s personality now. Give the subject enough time to respond to this before proceeding to specific descriptors below.

(3a) Pick 5 words (adjectives) to describe your child’s personality. After you have told me what they are, I will ask you about each one. For each one. What is it about him/her that makes you say that? Then again for each one, tell at least one specific incident which illustrates what you mean by each word that you chose. You may tell the subject that it is fine to use any of the descriptors they used in response to the general probe above, but do not remind them what they said before you have given them time to recall themselves. Some subjects will have a hard time coming up with 5 descriptors. If you feel that they cannot come up with 5, then move on. The numbers are less important than the descriptions.

(4) At this point, whom does your child remind you of? In what ways? When did you first notice the similarity? If only one parent is mentioned ask. In what ways does the child remind you of (the other parent)? The following questions should be asked whether or not the parents have been mentioned. Which of his/her parents is your child most like now? In what ways is your child’s personality like and unlike each of his/her parents’?

(4a) Are there any family characteristics on your side you see in your child’s personality? What about (other parent)’s side?

(4b) How did you decide on your child’s name? How well does the name

seem to fit?

. (5) What do you feel is unique or different about your child compared to (what you know of) other children?

. (6) What about your child’s behavior now is the most difficult to handle? Give a typical example. (6a) How often does this occur? What do you feel like doingwhen your child reacts that way? How do you feel when your child reacts that way? What do you actually do?

(6b) Does he/she know you don’t like it? Why do you think he/she does it?

(6c) What does the child do after you respond to the difficult behavior in the way you described? How do you imagine the child feels when you respond this way?

(6d) What do you imagine will happen to this behavior as your child grows older? Why do you think so/what makes you feel that way?

(7) How would you describe your relationship to your child now? Give time to respond.

(7a) Pick 5 words (adjectives) to describe your relationship. For each word, describe an incident or memory that illustrates what you mean.

. (8) What pleases you most about your relationship with your baby? What do you wish you could change about it?

. (9) How do you feel your relationship with your child has affected your child’s personality? Give ample time to respond.

. (10) Has your relationship to your child changed at all over time (since birth)? In what ways? What’s your own feeling about that change?

. (11) Which parent is your child closest to now? How can you tell? Has it always been that way? Do you expect that to change (as the child gets older, for instance)? How do you expect it to change?

. (12) Tell a favorite story about your child – perhaps one you’ve told to family or friends. I’ll give you a minute to think about this one. If the subject is struggling, you may tell them that this doesn’t have to be the favorite story, only a favorite. What do you like about this story?

. (13) As you know, the first (age of child) months/years can be difficult at times – what is your worst memory of (child’s name)’s first (age of child) months/years of life?

. (14) Are there any experiences which your child has had which you feel may have been a setback for him/her? Why do you think so? Indirectly, we're trying to determine whether the parent feels responsible in any way for the setbacks. Therefore, be sure to give time to respond before moving on to the more direct questions, which follow. (14a) Do you have any regrets about the way you'veraised your child so far?

(14b) If you could start all over again, knowing what you know now, what would you do differently?

. (15) Do you ever worry about your child? What do you worry about? How worried do you get about (list each worry)?

. (16) If your child could be the same age forever, let's say you can freeze him/her in time – any age at all – what would you prefer that age to be? Why (what do you like about that age?).

. (17) As you look ahead, what do you think will be the most difficult time in your child's development? Why do you think so?

. (18) What do you expect your child to be like as an adolescent? What makes you feel that way? What do you expect to be good and not so good about this period in your child's life?

. (19) Think for a moment of your child as an adult. What hopes and fears do you have about that time?

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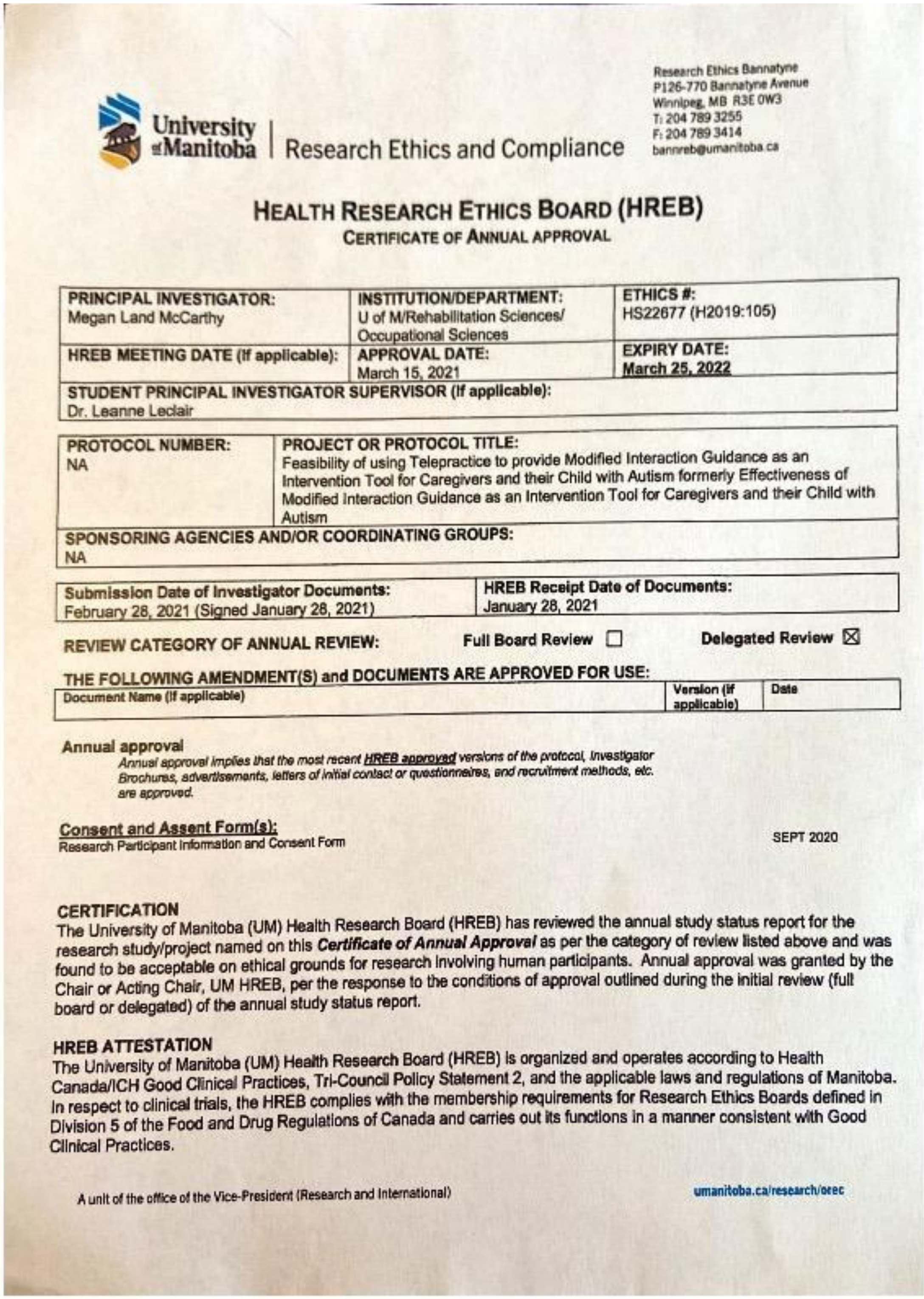
Appendix G: Ethics Certificate



University of Manitoba | Research Ethics and Compliance

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HEALTH RESEARCH ETHICS BOARD (HREB)

CERTIFICATE OF ANNUAL APPROVAL

PRINCIPAL INVESTIGATOR: Megan Land McCarthy	**INSTITUTION/DEPARTMENT:** U of M/Rehabilitation Sciences/ Occupational Sciences	**ETHICS #:** HS22677 (H2019:105)
HREB MEETING DATE (If applicable):	**APPROVAL DATE:** March 15, 2021	**EXPIRY DATE:** **<u>March 25, 2022</u>**
STUDENT PRINCIPAL INVESTIGATOR SUPERVISOR (If applicable): Dr. Leanne Leclair		

PROTOCOL NUMBER: NA	**PROJECT OR PROTOCOL TITLE:** Feasibility of using Telepractice to provide Modified Interaction Guidance as an Intervention Tool for Caregivers and their Child with Autism formerly Effectiveness of Modified Interaction Guidance as an Intervention Tool for Caregivers and their Child with Autism
SPONSORING AGENCIES AND/OR COORDINATING GROUPS: NA	

Submission Date of Investigator Documents: February 28, 2021 (Signed January 28, 2021)	**HREB Receipt Date of Documents:** January 28, 2021

REVIEW CATEGORY OF ANNUAL REVIEW: **Full Board Review** ☐ **Delegated Review** ☒

THE FOLLOWING AMENDMENT(S) and DOCUMENTS ARE APPROVED FOR USE:

Document Name (If applicable)	Version (If applicable)	Date

Annual approval

*Annual approval implies that the most recent **<u>HREB approved</u>** versions of the protocol, Investigator Brochures, advertisements, letters of initial contact or questionnaires, and recruitment methods, etc. are approved.*

<u>Consent and Assent Form(s):</u>

Research Participant Information and Consent Form SEPT 2020

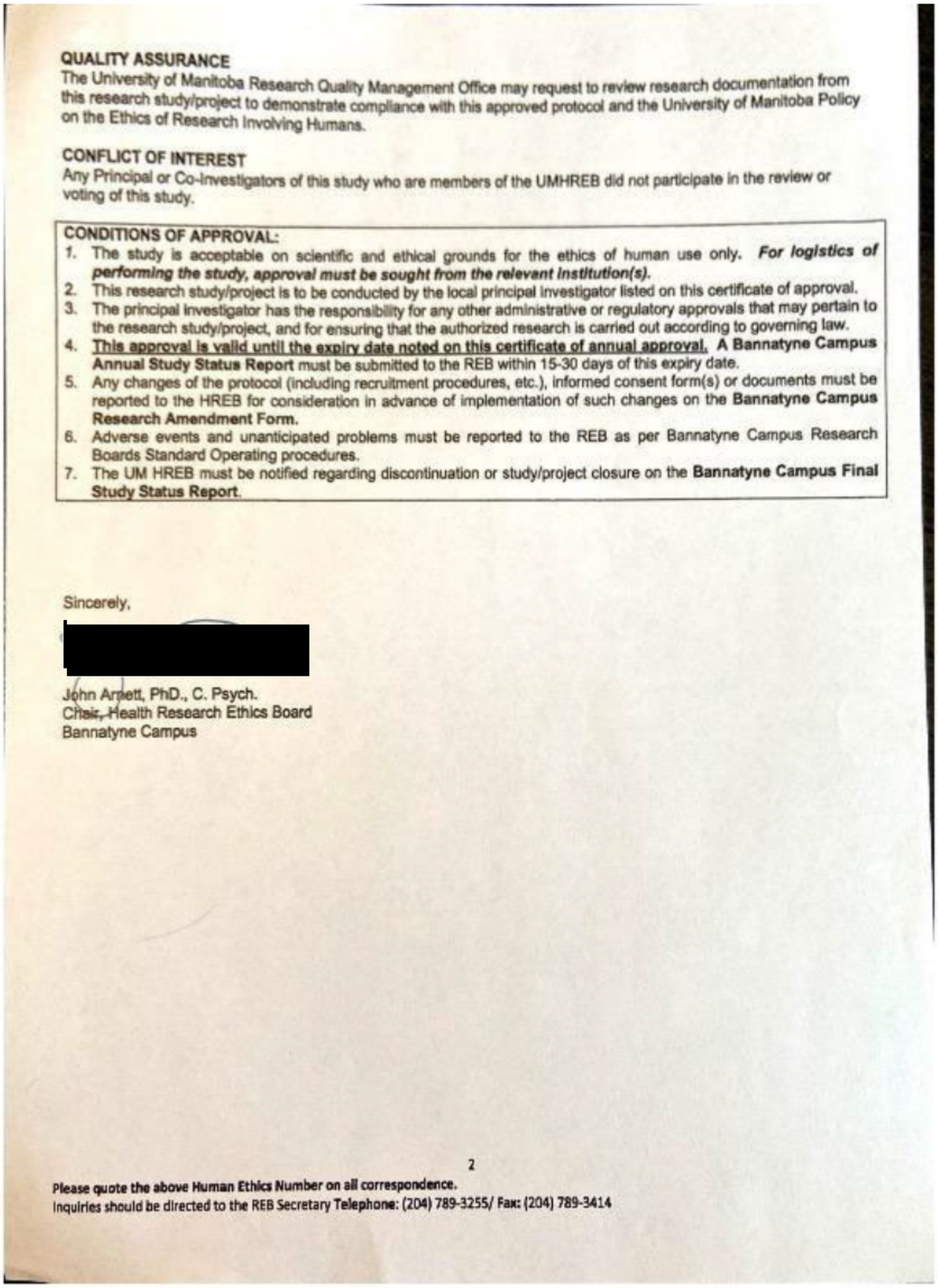
CERTIFICATION

The University of Manitoba (UM) Health Research Board (HREB) has reviewed the annual study status report for the research study/project named on this ***Certificate of Annual Approval*** as per the category of review listed above and was found to be acceptable on ethical grounds for research involving human participants. Annual approval was granted by the Chair or Acting Chair, UM HREB, per the response to the conditions of approval outlined during the initial review (full board or delegated) of the annual study status report.

HREB ATTESTATION

The University of Manitoba (UM) Health Research Board (HREB) is organized and operates according to Health Canada/ICH Good Clinical Practices, Tri-Council Policy Statement 2, and the applicable laws and regulations of Manitoba. In respect to clinical trials, the HREB complies with the membership requirements for Research Ethics Boards defined in Division 5 of the Food and Drug Regulations of Canada and carries out its functions in a manner consistent with Good Clinical Practices.

A unit of the office of the Vice-President (Research and International) umanitoba.ca/research/orec



QUALITY ASSURANCE
The University of Manitoba Research Quality Management Office may request to review research documentation from this research study/project to demonstrate compliance with this approved protocol and the University of Manitoba Policy on the Ethics of Research Involving Humans.

CONFLICT OF INTEREST
Any Principal or Co-Investigators of this study who are members of the UMHREB did not participate in the review or voting of this study.

CONDITIONS OF APPROVAL:

1. The study is acceptable on scientific and ethical grounds for the ethics of human use only. ***For logistics of performing the study, approval must be sought from the relevant institution(s).***
2. This research study/project is to be conducted by the local principal investigator listed on this certificate of approval.
3. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to the research study/project, and for ensuring that the authorized research is carried out according to governing law.
4. **This approval is valid until the expiry date noted on this certificate of annual approval. A Bannatyne Campus Annual Study Status Report** must be submitted to the REB within 15-30 days of this expiry date.
5. Any changes of the protocol (including recruitment procedures, etc.), informed consent form(s) or documents must be reported to the HREB for consideration in advance of implementation of such changes on the **Bannatyne Campus Research Amendment Form.**
6. Adverse events and unanticipated problems must be reported to the REB as per Bannatyne Campus Research Boards Standard Operating procedures.
7. The UM HREB must be notified regarding discontinuation or study/project closure on the **Bannatyne Campus Final Study Status Report.**

Sincerely,

[redacted]

John Arnett, PhD., C. Psych.
Chair, Health Research Ethics Board
Bannatyne Campus

Please quote the above Human Ethics Number on all correspondence.
Inquiries should be directed to the REB Secretary **Telephone:** (204) 789-3255/ **Fax:** (204) 789-3414

Appendix H: Recruitment letter

UNIVERSITY OF MANITOBA

Feasibility of using telepractice to provide Modified Interaction Guidance as an intervention tool for caregivers and their child with autism

Recruitment for Research

Dear Parent/caregiver,

You have been identified you as a potential participant for a research study "Feasibility of using telepractice to provide Modified Interaction Guidance (MIG) as an intervention tool for caregivers and their child with autism" that a Master of Science in Rehabilitation Sciences student is conducting at the University of Manitoba.

This study is determining the feasibility of MIG as an intervention tool for caregivers and their child with autism via telepratice. MIG is a parenting experience where you and your child will meet with a student researcher virtually (on-line) for weekly one-hour sessions. Through the use of recorded and virtual discussions you will learn to understand what your child is saying and what your child needs from you. You will receive help in setting limits and getting him or her to listen to you. In learning a technique called "Watch, Wait and Wonder" you will get to know your child better. There is also an aspect of this program that helps you explore your own upbringing and understand how it affects your parenting.

If you are interested in learning more about this study, please contact the graduate student and research coordinator (Megan Land McCarthy) directly at [redacted] or via email at Landmcc3@myumantioba.ca
Thank you for your time.

Appendix I: Consent Form

University of Manitoba | Rady Faculty of Health Sciences

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R106 – 771 McDermot
Avenue
Winnipeg, Manitoba
Canada R3E 0T6
Phone: 204-789-3897
Fax: 204-789-3927

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM

Title of Study: Feasibility of using telepractice to provide Modified Interaction Guidance as an intervention tool for caregivers and their child with autism

Principal Investigator: Megan Land McCarthy, R106-771 McDermot Ave, [redacted]

Co-Investigator: Leanne Leclair, R106-771 McDermot Ave,204-975-7736

You are being asked to participate in a research study. Please take your time to review this consent form and discuss any questions you may have with the study staff. You may take your time to make your decision about participating in this study and you may discuss it with your friends, family or (if applicable) your doctor before you make your decision. This consent form may contain words that you do not understand. Please ask the study staff to explain any words or information that you do not clearly understand.

Purpose of Study

The purpose of this study is to test the feasibility of an intervention called the Modified Interaction Guidance (MIG) for caregivers and children with autism while you are on the waitlist for additional therapy. MIG is a strengths-based attachment intervention used to enhance and work with each dyad to meet their own particular needs. It is recognized that this is a stressful time for parents waiting to access services. The goals of the MIG are to improve the relationship between parent and child. The parents identify the relationship goals and treatment focuses on these goals specifically in order to strengthen the bond between caregiver and child. A total of 6 participants or 3 dyads will participate in this study. You will remain on your chosen waitlist while receiving this treatment.

Study procedures

If you choose to enrol in the study you will be receiving MIG treatment. There is no control group. You will be required to attend virtually (on-line) initial assessments and 4 weekly intervention treatments, all including a 10-minute play session with your child. A final follow-up visit 2 weeks post treatment will occur after treatment to better understand the feasibility of the MIG intervention from the caregiver's point of view. All of the above with be conducted by the PI virtually (on-line). Homework for this study includes 10 quality minutes of play each day with your child.

If you take part in this study, you will require a computer with internet access, a video camera, a headset or speakers for audio and a microphone. You will have the following appointments virtually (on-line) with the PI:

Pre-Intervention Assessments:

The first of the two virtual interviews is the Adult Attachment Interview(AAI). It is used to assess your frame of mind concerning your early attachment figures. Questions are asked to have the adult reflect back on experiences and recount them. The second is the Working Model of the Child Interview(WMCI). This interview focused on your perception and subjective experiences of your child's characteristics and their attachment to their child. Questions such as emotional reactions to the pregnancy all the way through to anticipated difficulties later in development (adolescents). Additionally, you will be provided the Parenting Sense of Competence Scale (PSOC) to assess and measure your feelings of self-esteem and satisfaction with your parenting role.

Intervention:

4 Weekly Virtual Treatment Sessions

The next 4 weekly virtual treatments concerns your relationship goals with your child that you would like to work on throughout the treatment sessions. Education for the parent and homework for the parent and child will be provided at the end of each session and amended weekly.

The 10-minute play sessions will be videorecorded and then sent back to the PI to review. The PI will be scoring the play with a tool called Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO). It is an observational tool to determine parental abilities in four specific domains: Affection, Responsiveness, Encouragement and Teaching. At the 1st and 4th session, the Goal Attainment Scale (GAS) will be completed with guidance from PI. By setting goals the client is engaged in the therapeutic process. Seeing successes in goals being met further enhances feelings of competence and confidence. Following each 10 min play interaction, the PI will meet virtually to review the findings of the play interaction and provide education and homework for the week.

At the end of the 4th session, you will be asked to fill out the PSOC once again.

2-week Post Follow-Up Visit:

At this time you will meet virtually with the PI to complete the qualitative interview.

You and your child can stop participating at any time. However, if you decide to stop your child's participation in the study, we encourage you to talk to the study staff first. There are no consequences to withdrawing at any time.

You will receive a summary of your study results at the end of the study period.

Risks and Discomforts

Relationship difficulties and children's developmental outcomes may or may not improve while participating in this study. Some of the questions surrounding your upbringing and your family relationships may trigger emotional responses. Recalling traumatic or painful life events can be distressing and manifest in different ways including; poor or interrupted sleep, anxiety, depression, guilt or loss of self-esteem. Should this occur, you will be supplied with resources to guide you to gain the appropriate help. This could include a referral to counselling services or follow-up with your family doctor.

Benefits

There may or may not be direct benefit to you or your child from participating in this study. By being involved, you may learn about parenting, sensitivity and attunement. Attunement is described as the ability to be aware of and respond to another's needs and feelings. We hope the information learned from this study will benefit other caregivers and children with autism in the future.

Costs

All the procedures, which will be performed as part of this study, are provided at no cost to you.

Payment for participation

You will receive reimbursement for your time at the end of the study with a $50 gift certificate.

Alternatives

Your child does not have to participate in this study to receive treatment for his/her developmental concerns. You can talk to your regular doctor about all your treatment options or have your child referred to Children's Therapy Services Central Intake to be seen by a therapist.

Confidentiality

Information gathered in this research study may be published or presented in public forums; however, your name and other identifying information will not be used or revealed. Despite efforts to keep your personal information confidential, absolute confidentiality cannot be guaranteed. Your personal information may be disclosed if required by law. All study related documents will bear only your child's assigned study number and/or initials. The results of your child's assessments will be entered into a computer for analysis.

The University of Manitoba Health Research Ethics Board may review records related to the study for quality assurance purposes.

All records and videos will be kept in secure electronic files that are password protected on a password protected computer and only the study principal investigator will have access to it. All identifying information, will be destroyed (deleted and wiped from hard drive) five years following completion of the study. No presentations, reports, or publications based on this research will contain any identifying information.

Voluntary Participation/Withdrawal from the Study

Your decision to have you and your child take part in this study is voluntary. You may refuse to have your child participate or you may withdraw yourselves from the study at any time. Your decision not to participate or to withdraw from the study will not affect your waitlist or child's care at this centre. If the study staff feel that it is in your child's best interest to withdraw from the study, they will remove your child without your consent. As you are on a waitlist, there is a possibility that you will be called for therapy while participating this study. At this point, it is up to you as the participant to decide if you wish to continue with the completion of the trail and be placed on the waitlist or commence the IBI program.

We will tell you about any new information that may affect your health, welfare, or willingness to stay in this study.

Questions

You are free to ask any questions that you may have about the treatment and your child's rights as a research participant. If any questions come up during or after the study or if your child has a research-related injury, contact the study staff: Megan Land McCarthy at [redacted].

For questions about your child's rights as a research participant, you may contact The University of Manitoba, Bannatyne Campus Research Ethics Board Office at (204) 789-3389.

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions.

Statement of Consent

I have read this consent form. I have had any of my questions answered by the principal investigator, Megan Land McCarthy, in language I understand. The risks and benefits have been explained to me. I believe that I have not been unduly influenced by any study team member to participate in the research study by any statements or implied statements. Any relationship (such as employer, supervisor or family member) I may have with the study team has not affected my decision to participate. I understand that I will be given a copy of this consent form after signing it. I understand that my participation in this study is voluntary and that I may choose to withdraw at any time. I freely agree to participate in this research study.

I understand that information regarding my personal identity will be kept confidential, but that confidentiality is not guaranteed. I authorize the inspection of any of my records that relate to this study by The University of Manitoba Research Ethics Board, for quality assurance purposes.

By signing this consent form, I have not waived any of the legal rights that I or my child have as a participants in a research study.

I agree to be contacted by email for future follow-up in relation to this study,

Yes _ No _

Parent/legal guardian's signature______________________Date ________________

(day/month/year)

Parent/legal guardian's printed name: ____

Resources:

WRHA Mobile Crisis Service	204-940-1781
Klinic Crisis Line	204-786-8686
Health Links	204-788-8200 or toll-free 1-888-315-9257
Manitoba Suicide Line	1-877-435-7170
Family Doctor Connection	204-786-7111

Appendix J: MIG Advertisement

Modified Interaction Guidance (MIG)

Want to build a better relationship with your child?

Want to learn to read her or his cues so you don’t end up with temper tantrums and power struggles?

Want to learn to enjoy your child instead of having to fight with him or her?

MIG is a 9-week parenting experience where you and your child will meet with a counselor for weekly one-hour sessions. Through the use of videotaping and discussions you will learn to understand what your child is saying and what your child needs from you. You will receive help in setting limits and getting him or her to listen to you. In learning a technique called “Watch, Wait and Wonder” you will get to know your child better. There is also an aspect of this program that helps you explore your own upbringing and understand how it affects your parenting.

This program works very quickly to bring change in your relationship with your child. Along with the encouragement of the counselor, the coaching and videotaping helps you to gain awareness and learn new responses. Previous participants have said that MIG is a life-changing experience.

Appendix K: Qualitative Questionnaire

1. How would you describe your overall experience of MIG?
2. What did you like /dislike about the MIG?
3. What was the best/most difficult part of the MIG experience for you and your child?
4. What will you take away from the MIG experience?
5. How has the MIG affected your relationship with your child?
6. How has the MIG affected your parenting/caregiving skills?
7. What would you tell other caregivers of children with autism about the MIG?
8. Are you still working on your MIG relationship goals? If so, how?
9. What MIG strategies have you continued to use since completing the session?

Appendix L: Inter-rater reliability for videos 1-4

Inter-rater reliability for video 1

Video 1			
Domain	PI Scores	ER Scores	Agreement
Affection			
1	2	2	1
2	2	1	0
3	0	1	0
4	2	2	1
5	0	2	0
6	2	2	1
7	2	2	1
Total # Agreement			4
Percentage Agreement			57%
Responsiveness			
1	2	2	1
2	2	2	1
3	2	1	0
4	2	2	1
5	2	2	1
6	2	2	1
7	2	2	1
Total # Agreement			6
Percentage Agreement			86%
Encouragement			
1	2	2	1
2	2	2	1
3	2	2	1
4	2	2	1
5	2	2	1
6	2	2	1
7	2	2	1
Total # Agreement			7
Percentage Agreement			100%

Video 1			
Domain	PI Scores	ER Scores	Agreement
Teaching			
1	1	2	0
2	2	2	1
3	2	2	1
4	2	2	1
5	2	0	0
6	2	1	0
7	2	2	1
8	2	2	1
Total # Agreement			5
Percentage Agreement			63%
Agreement for video 1			16%

Inter-rater reliability for video 2

Video 2			
Domain	PI Scores	ER Scores	Agreement
Affection			
1	2	2	1
2	1	0	0
3	0	0	1
4	2	2	1
5	2	0	0
6	1	2	0
7	1	1	1
Total # Agreement			4
Percentage Agreement			57%

Video 2

Domain	PI Scores	ER Scores	Agreement
Responsiveness			
1	2	2	1
2	2	2	1
3	2	2	1
4	2	1	0
5	1	1	1
6	2	2	1
7	1	1	1
Total # Agreement			6
Percentage Agreement			86%
Encouragement			
1	1	0	0
2	2	0	0
3	2	2	1
4	1	1	1
5	1	1	1
6	1	1	1
7	1	1	1
Total # Agreement			5
Percentage Agreement			71%
Teaching			
1	1	0	0
2	0	1	0
3	1	1	1
4	1	1	1
5	0	0	1
6	1	0	0
7	1	1	1
8	0	0	1
Total # Agreement			5
Percentage Agreement			63%
Agreement for video 2			69%

Inter-rater reliability for video 3

Video 3			
Domain	PI Scores	ER Scores	Agreement
Affection			
1	2	2	1
2	2	2	1
3	1	1	1
4	2	1	0
5	0	1	0
6	2	2	1
7	2	2	1
Total # Agreement			5
Percentage Agreement			71%
Responsiveness			
1	2	2	1
2	2	2	1
3	2	2	1
4	2	2	1
5	1	2	0
6	2	2	1
7	2	2	1
Total # Agreement			6
Percentage Agreement			86%
Encouragement			
1	2	2	1
2	2	2	1
3	2	2	1
4	2	2	1
5	1	2	0
6	1	1	1
7	1	2	0
Total # Agreement			5
Percentage Agreement			71%

Video 3			
Domain	PI Scores	ER Scores	Agreement
Teaching			
1	0	1	0
2	0	1	0
3	2	2	1
4	0	2	0
5	0	0	1
6	1	0	0
7	0	1	0
8	1	1	1
Total # Agreement			3
Percentage Agreement			37%
Agreement for video 3			66%

Inter-rater reliability for video 4

Video 4			
Domain	PI Scores	ER Scores	Agreement
Affection			
1	2	2	1
2	2	2	1
3	0	2	0
4	2	2	1
5	1	2	0
6	2	2	1
7	2	2	1
Total # Agreement			5
Percentage Agreement			71%

Video 4

Domain	PI Scores	ER Scores	Agreement
Responsiveness			
1	2	2	1
2	2	1	0
3	2	1	0
4	2	2	1
5	0	2	0
6	2	2	1
7	2	2	1
Total # Agreement			4
Percentage Agreement			57%
Encouragement			
1	2	2	1
2	1	2	0
3	2	1	0
4	1	1	1
5	2	2	1
6	1	2	0
7	2	2	1
Total # Agreement			4
Percentage Agreement			57%
Teaching			
1	0	2	0
2	2	2	1
3	2	2	1
4	2	2	1
5	2	0	0
6	2	0	0
7	1	2	0
8	0	2	0
Total # Agreement			3
Percentage Agreement			37%
Agreement for video 4			55.50%