

Family Minds: A randomized controlled trial of a group intervention to improve foster parents' reflective functioning

Tina Adkins¹, Samantha Reisz², Dilara Hasdemir¹ and Peter Fonagy³

¹ Steve Hicks School of Social Work, Texas Institute for Child & Family Wellbeing, University of Texas at Austin, Austin, TX, USA

² Department of Human Development, Washington State University-Vancouver, Vancouver, WA, USA

³ Research Department of Clinical, Educational and Health Psychology, University College London, London, UK

Author for Correspondence: Tina Adkins, University of Texas at Austin, Steve Hicks School of Social Work, 1823 Red River St Ste 1.206, Austin, TX 78701;

E-mail: tina.adkins@austin.utexas.edu.

Abstract

Family Minds is a brief group psychoeducational parenting intervention designed to increase the reflective functioning (RF) and mentalization skills of foster parents. RF is important for foster parents who have to build relationships with children whose adverse experiences increase their risk for psychosocial challenges. A randomized controlled trial (RCT) for Family Minds was conducted in Texas with 89 foster parents. The main aims of this study were to examine if the intervention could significantly increase the RF/mentalization skills of the foster parents and decrease their parenting stress. After six weeks, compared with the control group, intervention foster parents improved their RF via a lowering of pre-mentalizing and also significantly decreased parenting stress related to parent-child dysfunctional interactions. Other measures of RF and parenting stress showed no significant differences between groups. Foster child behavior was not significantly different between groups, though data at six months showed a possible lowering of internalizing symptoms for children of intervention parents. This RCT provides some encouraging evidence that Family Minds may increase reflective functioning in foster parents, improve parental sensitivity and their ability to emotionally regulate, decrease parenting stress related to challenging interactions with their foster children, and possibly decrease children's internalizing behavior.

Keywords: Reflective Functioning, Foster Parents, Foster Children, Parenting Stress, Parenting Intervention

Introduction

Promoting positive relationships between foster parents and foster children is key to supporting the wellbeing of foster children and their optimal developmental outcomes (Smyke & Breidenstine, 2019). In the United States, nearly half a million children were reported to be in foster care due to abuse and neglect (U.S. Department of Health & Human Services, 2018). Compared to children not involved in the child welfare system, children in foster care experience higher levels of adversities such as parental separation or divorce, the death or imprisonment of a parent, parental abuse, exposure to violence, and a family member with mental illness and substance misuse (Turney & Wildeman, 2017). Such adverse childhood experiences can produce detrimental physical, psychological, and behavioral problems in children throughout their lives (Child Welfare Information Gateway, 2019; Gilbert et al., 2015). Supportive foster parents can help children cope with the effects of their adverse experiences by building a positive relationship with their foster child (Smyke & Breidenstine, 2019). Foster parents' efforts to create meaningful relationships with their children can offer a positive lifelong influence and mitigate the impact of adverse childhood experiences (McPherson, Gatwiri, Tucci, Mitchell, & Macnamara, 2018). Given the number of children in foster care, the development of evidence-based parenting programs that support foster parents and empirical evaluations of such programs are of paramount importance (Dozier, Albus, Fisher, & Sepulveda, 2002). The current study reports the results of a randomized controlled trial (RCT) for a new psychoeducational parenting program designed for foster parents, Family Minds.

Foster parents have voiced their need and willingness to gain necessary parenting skills to address the emotional and behavioral problems of foster children (Spielfogel, Leathers, Christian, & McMeel, 2011), yet few foster parents receive evidence-based training and support

(Pasztor, Hollinger, Inkelas, & Halfon, 2006). Typical foster parent training covers issues such as behavior management, crisis prevention, and sibling issues. However, a more therapeutic form of parenting is often needed to support the children's developmental recovery after traumatic experiences (Milot, St-Laurent, & Éthier, 2015; Ottaway & Selwyn, 2017), requiring caregivers to adopt a profoundly nurturing style that features self-awareness and *mentalizing*, or the ability to keep their foster child's mental state in mind (Luyten, Campbell, Allison & Fonagy, 2020). The ability to mentalize allows caregivers to engage in *reflective functioning*, which supports caregivers' understanding of their children's behavior (as well as their own), enabling them to respond to children's distress empathically and support the child's self-regulation and social-emotional development (Luyten et al., 2020). Supporting and expanding foster parents' mentalizing abilities was a key focus of this intervention study.

Mentalization & Reflective Functioning

With roots in developmental psychology, attachment theory, and neuroscience, mentalization is the ability to make sense of the mental states of oneself and others, thus rendering behaviors meaningful. It describes the capacity to understand and interpret the actions of oneself and others as an expression of mental states such as feelings, thoughts, needs, and desires (Fonagy, Steele, Steele, Moran, & Higgitt, 1991). In the context of parenting, mentalizing is operationalized as reflective functioning, describing the parent's capacity to mentalize their child and be cognizant of their own emotions, motivations, and actions while also envisioning their children's mental states and understanding their reactions to their child as a function of these states (Fonagy et al., 1991; Slade, 2002, 2005). Caregivers who can effectively mentalize recognize their children as a separate individual and show curiosity and consider the motivations beneath the child's behavior, while admitting the limits of exactly knowing the inner world of

another (Fonagy & Target, 1997; Kalland, Fagerlund, Koskull, & Pajulo, 2016; Zeegers, Colonesi, Stams & Meins, 2017). Effective mentalizing implies relating to others can change as one learns more about the feelings and thoughts of others (Fonagy & Target, 1997), which can influence caregivers' understanding of their child's behavior and how they choose to respond.

Parents' mentalizing abilities are consistently associated with better caregiving, parental satisfaction, parental self-efficacy, and healthy communication between family members (Byrne et al., 2018; Camoirano, 2017; Kalland et al., 2016; Rostad & Whitaker, 2016; Slade, 2005). Parents with higher reflective functioning appreciate their children's behaviors in terms of their mind state and comprehend the interaction between their own mental states and that of the child, which is associated with more optimal parent-child relationships (Slade, 2002). Parental reflective functioning is positively related to the children's social and cognitive development, particularly their mentalizing capacity (Ensink, Bégin, Normandin, & Fonagy, 2017; Laranjo, Bernier, Meins, & Carlson, 2010; Meins, Fernyhough, & Wainwright, 2003). Low parental reflective functioning, on the other hand, has been associated with emotion dysregulation, anxiety disorders, internalizing, and externalizing behaviors in children (Camoirano, 2017; Ensink et al., 2017). Parents with less mentalizing skill may not understand their children's inner world or mental states, which may result in insensitive caregiving (Slade, 2002).

Reflective Functioning is a skill that can be bolstered or challenged by external factors, such as interpersonal stress; however, higher baseline reflective functioning increases the likelihood of maintaining an emotionally regulated state and lower the likelihood of being emotionally triggered (Fonagy, Gergely, Jurist, & Target, 2004). Both of these abilities are important for foster parents, which makes increasing baseline reflective functioning an important goal. Indeed, reflective functioning can be increased with intervention efforts, which then can

contribute to increases in child attachment security, particularly for parents with low reflective functioning prior to the intervention (Sadler et al., 2013; Slade et al., 2019; Volkert et al., 2019). Raising a parent's baseline reflective functioning level can increase the chances of remaining calm and sensitive, even when being tried by stressors, allowing parents to draw on their mentalizing skills to facilitate more positive interactions with their foster children.

Given the high rate of traumatic experiences and resulting challenges of parenting foster children (Pecora et al., 2005; Szilagyi, Rosen, Rubin, & Zlotnik, 2015), mentalizing is an especially crucial skill for foster parents. Foster children's prior experiences of relational trauma can make it challenging to build trusting relationships and contribute to difficulty with self-regulation, even after being adopted out of foster care (Wijedasa & Selwyn, 2015). Rather than assuming negative intentions, parents with higher reflective functioning are more likely to make an effort to understand why their children behave in specific ways (Turner, Wittkowski, & Hare, 2008) and provide a safe environment in which their children can feel comfortable voicing their thoughts, feelings, desires, and needs (Jacobsen, Ha, & Sharp, 2015). With higher levels of reflective functioning, caregivers are more likely to be involved and to communicate with their children, use positive limit setting and discipline, feel more satisfied with the caregiving role, and respond sensitively to their children's needs (Rostad & Whitaker, 2016). When there is insufficient support, caring for children with behavioral and emotional difficulties can result in foster parents' vulnerability to failures in mentalizing (Redfern et al., 2018). Considering that higher levels of reflective functioning promotes well-being within the foster placement (Bunday, Dallos, Morgan, & McKenzie, 2015), training programs to improve reflective functioning can provide critical support for both the foster parents and their foster children. Effective caregiving interventions ideally create change for the child as well as the caregiver. To assess the efficacy of

Family Minds to create meaningful change in foster family wellbeing, we included assessments of foster children's adjustment (strengths and difficulties) as an outcome of the intervention.

Parenting Stress

Parenting stress is a key factor to consider in the context of parental reflective functioning as well. Parenting stress can impair caregiving behavior, including foster parents' ability to help their children regulate their emotions and behavior (Masten & Coatsworth, 1998) and is known to negatively affect the parent-child relationship (Belsky, 1997; Teti, Nakagawa, Das, & Wirth, 1991). Stressors specific to the parenting context are especially important to consider in foster parent-child relationships, as both child and caregiver must build a new relationship with one another. If the foster parent does not understand the foster child's behavior and is frustrated by it, that could increase the likelihood of a negative interaction. Emotional arousal can impair mentalizing in general, as well as a parents' ability to mentalize their children (Berthelot, Lemieux, Garon-Gissonnette, Lacharite, & Muzik, 2019; Georg, Schroder, Cierpka & Taubner, 2018; Muller-Pinzler, Krach, Kramer, & Paulus, 2017; Perroud et al., 2017; van Ee, Kleber & Jongmans, 2016; Williams, Taylor & Schwannauer, 2016). For example, if high levels of stress impair a foster parent's ability to mentalize, it could result in the caregiver being less tolerant of or less able to manage dysregulated child emotional states. They may jump to conclusions to assume negative intentions on the child's part, rather than considering other possible underlying reasons for their foster child's behavior. In addition to caring for a child with likely problems with emotion regulation, foster parents also face unique caregiving challenges, such as uncertainty about placement length and feeling unsupported by Child Protective Services (Smyke & Breidenstine, 2019). These challenges add to the stress of being a foster parent and can add further stress to their relationships with their foster child/ren.

Because the connection between parenting stress and reflective functioning is meaningful for foster family interactions, this RCT also examined whether Family Minds would reduce foster parents' self-reported parenting stress. The goal of Family Minds is to increase foster parents' reflective functioning, increase their capacity to understand their foster child and support their ability to have positive interactions. Learning about mentalizing and gaining an increased understanding of how emotional states are influencing parent/child interactions, could reduce foster parents' frustration with challenging foster child behavior, and thus reduce parenting stress levels. To account for the potential effects of parenting stress on reflective functioning, this study included measures of parenting stress at all time points to assess the efficacy of Family Minds at reducing parenting stress, in addition to increasing reflective functioning.

Reflective Functioning Interventions & Psychoeducation for Foster Parents

Interventions to enhance parental reflective functioning have demonstrated empirical support across multiple parenting groups, including for high-risk, hard to reach parents (Byrne et al., 2018), parents of children with neurodevelopmental disorders (Enav et al., 2019; Sealy & Glovinsky, 2016), substance-abusing mothers (Suchman, DeCoste, Castiglioni, Legow, & Mayes, 2008), pregnant young mothers (Slade et al., 2005), mothers in prisons (Sleed, Baradon, & Fonagy, 2013). These intervention efforts demonstrate that parents with significant challenges to caregiving are able to increase reflective functioning as well as demonstrate these changes support children's outcomes.

Extending interventions into psychoeducational programs whose useful information can be distributed more widely, easily and affordably, is a key step in increasing access to information across families. Recently, there has been an increasing interest in group-based

psychoeducational intervention programs designed to increase reflective functioning of foster parents. Although few in number, programs in the UK such as the Nurturing Attachments Parenting Program (Staines, Golding, & Selwyn, 2019) and the Reflective Fostering Programme (Redfern et al., 2018) have preliminary findings that showed some positive changes in parental distress, reflective functioning, and self-efficacy (Midgley et al., 2019; Staines et al., 2019), though they were limited by the lack of comparison group, possibility of selection bias, and reliance on parent self-report. In the U.S., a quasi-experimental study was conducted to evaluate Family Minds, a group-based psychoeducation intervention specifically developed to increase the mentalizing skills of foster parents (Adkins, Luyten, & Fonagy, 2018; Bammens, Adkins, & Badger, 2015). Results indicate that foster parents in the Family Minds group significantly improved their mentalizing skills and lowered their parenting stress, in contrast to the foster parents receiving regular foster parenting training (Adkins et al., 2018). Because of these promising results, the current study was designed to more rigorously evaluate this program.

Family Minds

Family Minds includes the building of skills such as being curious about the mental states of others and self, understanding how emotions and mental states can be not so transparent, the uncertainty of knowing what is in another's mind, being able to take different perspectives within relationships, and understanding how one's own mental states and actions affect others (Asen & Fonagy, 2012.) Most parents find it relatively easy to simply talk about their child's external experiences and behavior, but it can be a more complex and difficult task to think about the mental states of self and other and understand those as motivators of behavior (Slade, 2006). Furthermore, parents might find it difficult to think about and understand how their thoughts and feelings might be directly impacting their own child (Slade, 2006). Given this, the material of

this intervention is designed in such a way as to ease the parents into the concept and experience of mentalization, progressing from mentalizing self to understanding their children's internal world of experiences, and finally to mentalizing the parent/child relationship.

Family Minds is designed as an educational primer on mentalizing that incorporates experiential exercises that build mentalizing skills and provide opportunities to practice those skills in the training group. The curriculum includes information on trauma, attachment, foster children's behavior, sensitive/reflective parenting and mentalization to support the Family Minds goal of helping caregivers understand their children's emotions and behaviors, as well as their own actions of parenting. In addition to in-class activities, foster parents are asked to complete a variety of at-home parent-child activities that encourage mentalizing (see example in supplementary materials).

A key feature of Family Minds is the classroom experiential group activities that progress from (1) more general and less emotionally demanding mentalizing activities, such as mentalizing strangers, to (2) the more personal, such as mentalizing one another and mentalizing parent and child scenarios, and finally to (3) the potentially more challenging task of mentalizing their own child. The order ensures that the mentalizing activities are familiar and comfortable before being applied to their child and themselves, helping parents emotionally scaffold these mentalization skills. An example of a group mentalizing exercise in Family Minds is the "Projective Picture Exercise" (adapted from Allen, Fonagy, & Bateman, 2008; see supplementary materials). Projective stimuli that are both ambiguous in nature and indicative of an interpersonal scene are shown to the group and they are asked to write/tell a story of (a) what is happening in the scene and (b) what the characters might be feeling or thinking. This scene produces a wide range of responses, paralleling participants' own mentalizing of relationships

and relational interactions. The goal of the activity, beyond having participants practice explicit mentalizing, is for participants to hear the range of responses and experience the sheer diversity of mental perspectives one scene can elicit (Allen et al., 2008). Participants are further asked to ponder where their own stories come from, which stimulates a new understanding of mentalization and how their own unconscious perceptions and assumptions influence their perspectives and behavior. The process can be quite powerful and insightful for participants (Allen et al., 2008).

Current Study

This study reports on the efficacy of a randomized controlled trial (RCT) for Family Minds, which to the best of the authors' knowledge, is the first U.S.-based psychoeducational group intervention designed to increase foster parents' reflective functioning skills. High reflective functioning promotes resilience in family members by enhancing their mentalizing skills as a means to promote relationship building and problem-solving (Allen et al., 2008; Fonagy, Steele, Steele, Higgitt & Target, 1994). Emphasizing the use of mentalization skills allows family members to be more open to seeing and understanding each other's mental states (Midgley & Vrouva, 2012). To ensure understanding and scaffolding, the material is further designed to be cumulative and progressive. Prior evidence showed that parents who participated in Family Minds improved their mentalizing skills and lowered their parental stress, in contrast to the foster parents receiving regular foster parenting training (Adkins et al., 2018). Based on these promising findings, an RCT was designed to further assess the efficacy of Family Minds by addressing the following aims:

1. Examine if the intervention can significantly increase the reflective functioning/mentalization skills of foster parents by the end of the study, and if

parents in the intervention group will show a greater increase than the control group.

2. Examine if the intervention can significantly decrease the parenting stress of foster parents by the end of the study, and if parents in the intervention group will show a greater decrease than the control group.
3. Examine if the intervention impacts the foster children via a significant decrease in parent reported emotional or behavioral difficulties of their children, and if the decrease will be greater for children whose foster parents are in the intervention group than the control group.

Methods

Participants

Participants were licensed foster parents from both Austin and the Dallas/Fort Worth areas of Texas, recruited using private child placing agencies as well as Child Protective Services (CPS), the state authority for foster care children. A total of 89 foster parents were enrolled in the study, 61 mothers and 28 fathers. Parents ranged in age from 22 to 76 years ($M = 43.45$, $SD = 9.89$) and had been a foster parent for between one month and 24 years, with an average of 3.8 years ($M = 45.86$ months, $SD = 64.63$). The sample comprised a relatively well-educated group of parents, with the majority (89%) having at least some college education. Most parents reported their ethnicity as Caucasian (72%), and 11% identified as Black, 11% Hispanic and 7% Multi-Ethnic. The median number of foster children per home was two, ranging from one to five. See Table 1 for additional demographic data regarding foster parents (including by group). Foster children ranged in age from one month to 17.5 years, with a mean age of approximately

6.8 years ($M = 81.54$ months, $SD = 60.02$). They spent between one month and 4.7 years in the homes of these foster parents, with an average stay of almost 10 months ($M = 9.75$ months, $SD = 12.07$). The total time each child spent in foster care is unknown, as this data was not accessible. See Table 2 for additional data about the children. There were no significant differences between the intervention and the control group on almost all of the demographic characteristics of foster parents and their children. The only significant difference seen between groups was concerning “Time as a Foster Parent”, where the control group participants averaged 17 months longer as a foster parent ($t(35) = 5.31$, $p = .000$). There were also no significant differences regarding the demographic data of foster parents who dropped out of the study (see Table 1).

Procedure

Recruitment. Participants for both groups were recruited through child placing agencies and Child Protective Services staff who sent out a study flyer and e-mail to foster parents in the area. Requirements for participation in the study were that a parent: (a) was licensed as a foster parent for the state of Texas and (b) had at least one foster or adopted (from foster care) child at least four years of age placed in their home. It’s important to note that in Texas, foster parents can and do sometimes adopt the foster children in their care. All of the parents in this study were licensed foster parents who either had foster children in their home, or had openings for foster children; some had adopted a foster child placed in their home previously. Participants were offered training hours that count towards the maintenance of their foster parent license and \$25 gift cards for each survey completed. All surveys were completed online, which included informed consent. This study had full university Institutional Review Board (IRB) approval.

Randomization. Foster parents were asked to complete a baseline survey online, which included a demographic questionnaire. Randomization followed consent, enrollment, and baseline assessment. Treatment allocation was made off-site via e-mail by an administrator not familiar with the study hypotheses, with access only to the control parameters. Participants were randomized using a stochastic minimization program (MINIM) balancing for age, gender, and years as a foster parent. A total of 49 participants were assigned to the intervention group and 40 to the control group (see Figure 1). Due to the fact that some of the parents wanted to participate as a co-parenting couple, each couple were randomized together so they would belong to the same group. As a result, 30 of the 49 participants in the intervention group were part of a co-parenting couple, as were 28 of the 40 control group participants. Although each individual participant provided demographic data on themselves and their children, the children (and their demographic data) of couples were only counted once.

Intervention. The intervention group received the mentalizing psychoeducational intervention Family Minds (Adkins et al., 2018). Foster parents in this group participated in three class modules of approximately three hours each, spread out over four to six weeks. The Family Minds classes were taught by the main author of this study. The curriculum is designed to educate parents on the importance of mentalization for relationships, and includes opportunities to practice and build on their mentalizing skills using group experiential exercises. Furthermore, the material is trauma informed and provides basic training on attachment, and how these interact to influence children's emotional and behavioral difficulties. Additionally, parents are encouraged to examine their own triggers and reactions to their children. To further build reflective functioning within themselves and their children, foster parents are encouraged to

complete at-home parent-child activities that are designed to build mentalizing skills (see example in supplementary materials).

Control group. Participants in the control group received a typical foster training class that any foster parent in the same area might receive. In this case, the control group received a four-hour training consisting of educational material on trauma and how to manage the behavior of foster children. Control group classes were taught by experienced foster care agency staff.

Measures

All measures were given at baseline, six weeks & at a six-month follow-up. Foster parents were instructed to think about one particular child in their home while answering all questions. Participants were specifically instructed to be consistent in thinking of the same child for all surveys and measures throughout the study. All measures were distributed and collected online using a secure survey platform by a research assistant without knowledge of treatment allocation.

Reflective functioning. Two measures were used to assess foster parents' reflective functioning (RF) capacity: (1) the Parental Reflective Functioning Questionnaire (PRFQ; Luyten, Mayes, Nijssens, & Fonagy, 2017) and (2) the Reflective Functioning Five-Minute Speech Sample (RF-FMSS; Adkins et al., 2018; Bammens et al., 2015). Two forms of assessment were used to provide multidimensional assessments of RF, which is the primary target of the intervention. Additionally, it allows us to use both self-report and observation methods, which can provide stronger support for the efficacy of Family Minds to effectively increase foster parents' RF.

The Parental Reflective Functioning Questionnaire (PRFQ; Luyten et al., 2017) is a brief self-report measure that assesses parents' mentalizing abilities. The questionnaire consists of 18

items rated a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) that are organized into three subscales: Pre-Mentalizing, Certainty about Mental States, and Interest and Curiosity in Mental States. Pre-Mentalizing describes a non-mentalizing stance, that is, one in which the parent cannot adequately adopt the child's perspective. An example item is "My child cries around strangers to embarrass me." Certainty about Mental State scores reflect a parent's lack of ability to see the changing nature and flexibility of mental states, or their unwarranted certainty that they know exactly what is inside their child's mind. An example item is "I always know what my child wants. Lastly, Interest and Curiosity in Mental States scores reveal a parent's curiosity about the inner mental world of their child. An example item is "I wonder a lot about what my child is thinking and feeling."

The PRFQ has demonstrated validity and reliability across low and high functioning mothers of infants, as well as, mothers and fathers of normally developing children. The authors used exploratory and confirmatory factor analyses to support the three-factor structure, which was replicated with both mothers and fathers in two different samples. Overall, the PRFQ is reported to have good internal consistency in prior studies, with alphas ranging from .70 to .82 (Luyten et al., 2017). In the current study, the alpha for each subscale at baseline was: Pre-Mentalizing ($\alpha = 0.67$), Certainty about Mental States ($\alpha = 0.80$), and Interest and Curiosity about Mental States ($\alpha = 0.56$). Traditionally, alpha levels are considered acceptable above .60 for the number of items in this measure (Cortina, 1993; Loewenthal, 2004). While the scale Curiosity about Mental States had an $\alpha = 0.56$, it was considered preferable to keep the original and theoretically established scale, rather than adjust the scale items for this individual study, in the interest of being consistent with prior research using this measure.

The Reflective Functioning Five Minute Speech Sample (RF-FMSS; Adkins & Fonagy, 2017; Bammens et al., 2015) was the second measure of reflective functioning (RF). This observational measure codes RF from a five-minute long speech sample provided by the participant. The Five-Minute Speech Sample (FMSS) was originally developed to measure psychological states using content analysis of verbal behavior using a five-minute recorded monologue, rather than a lengthy standardized interview procedure (Gottschalk & Gleser, 1969; Magaña et al., 1986). The FMSS method has been used successfully with multiple clinical populations, including attention deficit hyperactivity disorder (Marshall, Longwell, & Goldstein, 1990), bipolar (Miklowitz, Goldstein, Nuechterlein, Snyder, & Mintz, 1988), depressive disorder (Asarnow, Goldstein, Tompson, & Guthrie, 1993), and schizophrenia (Hahlweg et al., 1989). Additionally, the FMSS has been used with other coding scales to measure a variety of interpersonal traits such as “parental warmth” (Pasalich, Dadds, Hawes, & Brennan, 2011) and “parental criticism” (Wamboldt, Wamboldt, Gavin, Roesler, & Brugman, 1995).

The RF-FMSS was developed to utilize FMSS methodology specifically to assess parents’ reflective functioning (RF) capacity. However, instead of using the original FMSS protocol that involved asking a patient to speak freely on a topic for five-minutes, the RF-FMSS includes three structured questions to which they are asked to speak about whatever comes to mind in response to: (1) *What is your child like?*, (2) *How do you feel about your child and how do you think your child feels about you?*, and (3) *Tell me about a problem you had with your child recently and how you dealt with it.* These prompts were chosen because of their similarity to questions in the Parent Development Interview (PDI; Slade, Aber, Bresgi, Berger, & Kaplan, 2004), a semi-structured interview specifically designed to elicit reflective functioning and assess

internal working models of relationships, a parent's representation of their present relationships with their child.

In the current study, The Reflective Functioning Five Minute Speech Sample (RF-FMSS) was collected from all foster parents by asking them to speak for five minutes about their foster child, without the presence of an interviewer and in private, using an instruction sheet that included the three prompts (Adkins et al., 2018). Because data collection was mostly occurring online in this study, the speech sample collection method entailed participants making a digital audio recording of their answers and transmitting these files via a secure internet link. This new online collection method did not deter participants however, as baseline RF-FMSS completion rates were higher than using the in-person method in the previous study (60% vs. 51%; Adkins et al., 2018). In this study, while the participants were completing the online surveys, a prompt would appear with instructions on how to record the answers to the provided questions for five-minutes on their smartphone, and then on how to email the recording securely. Those without smartphones were provided with a phone number to leave a five-minute voicemail recording. Responses were coded using the Reflective Functioning Scale (RFS; Fonagy, Target, Steele & Steele, 1998), which has been successfully used to code reflective functioning (RF) with both the Adult Attachment Interview (AAI; George, Kaplan & Main, 1985) and the Parental Development Interview (PDI; Slade et al., 2004). This coding method assesses a parent's ability to both recognize and describe mental states, as well as their ability to relate these mental states to their own behavior and that of their child. It uses an 11 point scale that ranges from -1 (Negative RF; the inability to understand the mental states of others) to +9 (Full or Exceptional RF; the ability to converse in a dynamic and interpretive manner about their own and the other's subjective experience; Slade, 2007). Speech samples were coded for overall RF. A score +2 to

+4 indicates the low end of RF and speech in this range is often seen as representing mental states in a very one-dimensional manner, never reflecting mixed emotions, or the uncertainty about the feelings of others. A score of +5 indicates that the respondent has progressed from simply being able to verbalize mental states to being able to form more complex reflective statements, such as being able to relate mental states to behavior. A score of +7 or higher indicates sophisticated RF that is complex or elaborate, for example speech that describes multiple mental states in unusual detail and how they are related to one another.

Coders of the RF-FMSS were blind to which time point (baseline or follow-up) or group (intervention or control) each speech sample belonged. To assess inter-rater reliability, 12 speech sample transcripts were randomly selected from both the intervention and control groups and coding for two independent coders was compared. A two-way mixed intra-class correlation coefficient (ICC; McGraw & Wong, 1996) demonstrated strong agreement with ICC = 0.85, indicating that coders had a high degree of agreement and suggesting that RF was rated similarly across the two coders (Cicchetti, 1994).

Parenting stress. Parenting stress was measured using the Parenting Stress Index – Short Form (PSI-SF; Abidin, 1995), which is a 36-item shortened version of the full 120-item PSI. It contains an almost equal number of parent- and child-focused items that cover three different subscales. The PSI-SF measures stress on a five-point Likert scale from 1 (*strongly agree*) to 5 (*strongly disagree*). It results in scores on the three subscales of Parental Distress (extent to which parents feel competent in their role as a parent; $\alpha = 0.88$), Difficult Child (whether a child is easy or difficult to care for; $\alpha = 0.90$), and Parent–Child Dysfunctional Interaction (degree to which parents feel satisfied with their interactions; $\alpha = 0.91$). The PSI-SF also contains a Defensive Responding subscale, to help determine whether low scores on the measure are

indicative of parents who are trying to minimize the problems they may be having as a parent ($\alpha = 0.83$). Raw scores are converted into percentile scores, with high stress scores being those that are at or above the 85th percentile (Abidin, 1995). Raw scores on all of the subscales were used in the analyses in this study. Reliability and validity of the PSI-SF support that parenting stress is a measure that is useful across diverse populations, including inner-city, low socio-economic status, rural, and Hispanic parents (Abidin, 1995 & 2012; Aracena et al., 2016; Barroso, Hungerford, Garcia, Graziano, & Bagner, 2016; Lee, Gopalan & Harrington, 2016).

Foster children's emotional and behavioral strengths and difficulties. This was measured using the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The SDQ was created as a brief instrument for assessing the psychological adjustment of children and adolescents and can be administered to parents and teachers of children aged 4-16, or taken by the children themselves if they are 11-16 years old. The SDQ contains 25 items that are divided equally between five scales: Emotional Symptoms, Conduct Problems, Hyperactivity-Inattention, Peer Problems, and Prosocial Behavior (Goodman, 1999). Each of the 25 items are scored on a 3-point scale with 0 = 'not true,' 1 = 'somewhat true,' and 2 = 'certainly true.' Subscale scores are summed and range from 0-10. In addition, a Total Difficulties score that ranges from 0-40 can be computed by summing the subscale scores. The SDQ's construct validity and clinical applicability is supported by studies across multiple countries (Marzocchi et al., 2004; Obel et al., 2004; Woerner, et al., 2004).

Analytic Approach

Statistical analyses were completed using SPSS 24.0. T-tests and chi square-tests were performed to conduct baseline comparisons of continuous and categorical variables. Furthermore, analysis of variance (ANOVA) using the general linear model (GLM) for repeated measures was conducted. Specifically, multiple analysis of variance (MANCOVAs) and analysis of covariance (ANCOVAs) tests were performed using Group as the between-subjects factor and Time as the within-subjects factor. Effect Sizes (ES) were calculated using partial eta square (η_p^2) and reported as Cohen's *d* according to general guidelines with .02 for small, .05 for medium and .08 for large effects (Cohen, 1988). Scores on all measures were also centered and standardized to facilitate the interpretation of findings and analyses were performed using z-scores.

Analyses were conducted to determine whether participants who dropped out (i.e., those who did not attend the trainings and did not complete the post assessments) were significantly different from those who attended all classes and completed both pre and post assessments (see Figure 1 for full consort diagram of the study). After parents were randomized and assigned to groups, a percentage of parents in each group decided they could no longer participate or they simply did not show. For those assigned to the intervention group, 27% ($n = 13$) dropped out of the study before the classes began, leaving an intervention group of 36 parents. This number was slightly higher for the control group at 35% ($n = 14$), leaving a control group total of 26 parents. Parents who dropped from the study included those that could no longer attend given their schedule, and those that simply did not show and with whom we lost contact. Given this, we wanted to determine if there was a difference between the groups for those participants who decided to drop out of the study. All of the baseline subscales of the PRFQ, PSI-SF and SDQ were analyzed using independent samples *t*-tests, and the demographic data were examined using

chi-squared tests. Analyses indicated that there were no differences between those that dropped out versus those that completed the study. For the pre to six-week post-test, data was analyzed on the 33 intervention parents and 23 control group parents who completed the post six-week survey. A much smaller number of parents completed the six-month post-test, leaving 24 (73% of those who completed the six-week post-test) intervention parents and 10 (43%) control group parents' data to analyze.

Results

Preliminary Analyses

Analysis began with examining the correlations between standardized measures of the outcome variables in relation to the demographic data. We computed change scores for all outcome variables and examined associations between these and the demographic information collected at baseline. There were two demographic variables that significantly correlated with the outcome measures. Gender of the foster parent correlated significantly with Curiosity scale on the Parent Reflective Functioning Questionnaire (PRFQ), $r = .237, p = .02, n = 89$ and the ethnicity of the foster parent also correlated significantly with the Curiosity scale of the PRFQ ($X^2 (75, N = 86) = 125.07, p = .000$) as well as with the Total Stress subscale of the Parenting Stress Index-Short Form ($X^2 (228, N = 84) = 266.39, p = .04$). Therefore, we used foster parent gender and ethnicity as covariates in further analyses. There were no significant differences between groups at baseline on any of the measures. Pre to post six-week descriptive statistics including means and standard deviations, as well as multivariate and univariate main and interaction effects are all listed in Table 3. Multivariate analyses were not possible for post six-month data, due to the low response rate, particularly for the control group (see Figure 1).

Parental Reflective Functioning

The first aim of this study was to examine if the intervention could significantly increase the reflective functioning/mentalization skills of foster parents by the end of the study and if parents in the intervention show a greater increase than those in the control group. Results indicate that foster parents in the intervention group significantly increased their reflective functioning, though there were mixed results on whether this increase was greater than that of the control group.

As shown in Table 3, there was a significant post-six week difference in reflective functioning with a large effect size, as measured by the Reflective Functioning Five Minute Speech Sample (RF-FMSS) across condition ($F(1, 28) = 4.90, p = .03, d = .85$), meaning both groups increased in reflective functioning but not at significantly different rates from each other ($F(1, 28) = .12, p = .73, d = .13$). However, each group was analyzed separately, univariate tests revealed that baseline reflective functioning ($M = 4.42, SD = 1.39$) increased significantly in six weeks ($M = 5.11, SD = 1.52$) only in the intervention group ($t(18) = -2.23, p = .03$), while the control group's baseline reflective functioning ($M = 4.30, SD = 1.34$) six week increase ($M = 4.80, SD = 1.48$) was not significant ($t(9) = -1.10, p = .29$).

On the Parental Reflective Functioning Questionnaire (PRFQ) there were significant six week post-test differences between groups that were significant for only one specific subscale, Pre-Mentalizing (see Table 3). Repeated-measures ANCOVAs performed separately on each scale revealed an increase in mentalizing only for the intervention group on the Pre-Mentalizing (PM) scale, with a large effect size ($F(1, 52) = 6.87, p = .01, d = .71$). Follow-up exploratory analyses revealed that this significant change from a mean of 2.08 ($SD = .89$) to 1.65 ($SD = .60$) was due to the intervention group increasing their mentalizing skills via a lowering of their concrete thinking (PM) ($t(31) = 4.24, p = .000$). There was no significant change in the control

group's mentalizing skills from pre ($M = 2.26, SD = .95$) to post six weeks ($M = 2.26, SD = .95$; $t(23) = 1.20, p = .24$). Both the Curiosity scale ($F(1, 52) = 1.30, p = .61, d = .31$) and Certainty of Mental States ($F(1, 52) = .17, p = .69, d = .11$), showed no differences between the groups at post six weeks.

Due to the low response numbers at post six months, multivariate analysis of this data was not possible. However, follow-up exploratory t-tests on the PRFQ for the intervention group ($n = 24$) did reveal an interesting finding on this measure that indicates a possible maintaining of their post-six week mentalizing gains via a significant pre ($M = 2.01, SD = .87$) to post six month ($M = 1.72, SD = .57$) lowering of Pre-Mentalizing ($t(23) = 2.40, p = .02$). There was not enough post six month data from either group on the Reflective Functioning Five Minute Speech Sample to conduct a similar analysis.

Parenting Stress

The second aim of this study was to examine if the intervention could significantly decrease the parenting stress of foster parents by the end of the study and if parents in the intervention group show a greater decrease than the control group. Results suggest the intervention may significantly lower a certain type of parenting stress, but not other kinds.

There were no significant differences between groups in parenting stress at baseline, however post-test differences between groups were significant for the Parenting Stress Index - Short Form subscale Parent-Child Dysfunctional Interaction (PCDI) (see Table 3). Repeated-measures ANCOVAs performed separately on each scale revealed a significant group difference across time on the PCDI scale ($F(1, 53) = 4.21, p = .04, d = .58$). After exploring this interaction with individual t-tests, it is unclear whether this significant difference is due to a lowering of PCDI parenting stress in the intervention group ($t(31) = 1.67, p = .11$) as the mean did lower

from 27.12 ($SD = 13.14$) to 24.75 ($SD = 11.06$), or an increase in this type of parenting stress in the control group ($t(21) = -.78, p = .44$) as this group's mean did increase from 28.95 ($SD = 13.45$) to 30.36 ($SD = 13.27$). The other subscales of parenting stress, Parental Distress ($F(1, 53) = .68, p = .41, d = .24$) and Difficult Child ($F(1, 53) = .68, p = .42, d = .04$), did not reveal any significant differences between groups at post six weeks.

Foster Children's Emotional/Behavioral Difficulties

The third aim of this study was to examine if the intervention impacted the foster children via a significant decrease in their reported emotional or behavioral difficulties and if that decrease would be greater for children whose foster parents were in the intervention group than the control group. Results on this measure indicate that six weeks later, the intervention did not appear to significantly impact the difficulties of the children, however it might positively impact them six months later.

There were no significant differences between groups at baseline on the Strengths and Difficulties Questionnaire (SDQ), and there were also no significant differences at six week post-test between the groups ($F(1, 47) = .974, p = .44$). Furthermore, repeated-measures ANCOVAs performed separately on each SDQ scale at post six weeks revealed no significant group differences across time on any of the subscales (see Table 3). However, follow-up exploratory *t*-tests for the intervention group at six months revealed a significant pre ($M = 29.91, SD = 6.83$) to post six month ($M = 26.55, SD = 7.18$) lowering of SDQ Total Difficulties ($t(21) = 2.95, p = .008$) was observed for the foster children in the intervention group of parents. Further analyses showed that the scales associated with internalizing difficulties (Emotional Symptoms and Peer Problems; Goodman, Lamping & Ploubidis, 2010) were significantly lower at the six month follow-up (Pre: $M = 15.26, SD = 2.94$; Post 6 month: $M = 12.96, SD = 3.44$) for those in the

intervention group, $t(21) = 3.61, p = .002$. In addition, there was a significant increase in child Prosocial Behavior ($t(21) = -2.53, p = .02$) with a mean that increased from 10.18 ($SD = 2.92$) to 11.86 ($SD = 2.82$). Unfortunately, multivariate and exploratory analysis of the control group was not possible due to low response rate at six months post ($n = 10$).

Discussion

This study reports the first randomized controlled trial (RCT) for Family Minds, a mentalization-based psychoeducational intervention conducted with foster parents. Results demonstrate that foster parents in the intervention group significantly improved their reflective functioning via a lowering of pre-mentalizing, in contrast to the control group who did not show any such improvements. However, there were no differences between groups on the other measures of reflective functioning. The intervention group also showed a significant decrease in one important type of parenting stress related to parent-child dysfunctional interactions, which was not seen in the control group. Again, this was the only difference between groups across the different types of parenting stress. Reflective functioning has been examined in foster parents in a limited number of studies, making Family Minds a meaningful contribution to the literature and psychoeducational repertoire of mentalization-based approaches. This study's design that included a randomized control group, multiple time points, and both self-report and observational methods, is a major strength that provides empirical support for the efficacy of Family Minds.

The elevated risk factors that foster families often navigate make it especially important to have effective short-term interventions that have demonstrated a reduction in foster parents' stress levels related to interactions with their foster children. Results of this study

demonstrate that this psychoeducational program can potentially increase foster parents' reflective functioning in just three sessions, totaling approximately nine hours across four to six weeks, making it cost effective and possibly easier to implement than longer or more intensive programs.

Reflective Functioning

Reflective functioning strongly influences caregiving behavior and child outcomes (Slade, 2007). This study demonstrated that Family Minds has the potential to meaningfully increase reflective functioning in foster parents. A prior study had established the preliminary efficacy of this program (Adkins et al., 2018) and this is the first study to demonstrate its efficacy using an experimental design with random allocation. Foster children have high rates of trauma and adverse experiences that can result in additional challenges for caregivers (Pecora et al., 2005), particularly if the foster parent is new to the child and must build a trusting relationship from scratch. Helping foster parents provide the best support possible for foster children is critical when considering that upwards of 80% of children entering foster care demonstrate significant mental health needs (Szilagyi et al., 2015) and alumni of foster care show rates of posttraumatic stress disorder higher than that of U.S. war veterans (Pecora et al., 2005). High reflective functioning (RF) implies the ability to understand how emotions can vary in intensity, that they are not always obvious and that they can trigger other emotions, both within the self and during social interactions with their child (Fonagy et al., 1998). Increasing foster parent RF is a key factor in supporting foster parents' understanding of their foster children's behavior so that they can intentionally decide on the best response for that child.

While Family Minds did significantly increase foster parent's reflective functioning by the end of the intervention, results only showed a significant difference between groups

on one of the two measures of RF. Furthermore, on the reflective functioning measure that did reveal group differences, there was a significant difference between groups on only one of the three subscales of RF/mentalizing. Although there was a significant reduction in pre-mentalizing tendencies, there were no differences around parents' curiosity or certainty of mental states. These two aspects of mentalizing were addressed in the intervention, so it is unclear why no results were obtained regarding these skills, especially given they were positively impacted in a previous study (Adkins et al, 2018). The data do show an improvement in both these mentalizing skills for the intervention group, but this increase was not statistically significant. The lack of significant improvement in these skills could be because the intervention was not robust enough to impact these aspects of mentalization or because the total number of participants was too low to detect the change. It could also be that the participants had enough baseline reflective functioning abilities, particularly with regards to their curiosity and certainty of mental states, that significant increases in these skills were not achievable. This last hypothesis might hold merit, given that initial mean values for both curiosity and certainty of mental states in our sample indicate that these foster parents already had an average to above average ability in these skills, while also having a below average pre-mentalizing ability compared to a community sample of 770 parents (Pazzagli, Delvecchio, Raspa, Mazzeschi, & Luyten, 2018).

The significant difference between groups on pre-mentalizing is quite an encouraging and useful result. Pre-mentalizing is a form of non-mentalizing or a defense against mentalizing, when one resorts to concrete or "black or white" thinking. It involves a type of psychic equivalence, where what one feels inside, must be what is true, and which prevents flexible thinking and taking another's perspective (Fonagy et al., 2004). A foster parent with high pre-

mentalizing might react to their child's behavior in a very unyielding way or attribute malevolent intentions to the child. Such parents might not be able to enter into the subject world of their child, only taking into account their own emotions and as a result might be more prone to lash out or overreact. Given the vulnerability of foster children, a mentalizing intervention for foster parents should have as its primary goal to specifically lower pre-mentalizing in addition to raising reflective functioning. Research has shown that high levels of pre-mentalizing have been associated with a decrease in parents' sensitivity to their child's distress, while curiosity and certainty of mental states did not impact parental sensitivity (Krink, Muehlhan, Luyten, Romer & Ramsauer, 2018). Additionally, a recent study discovered that mothers who had more difficulty with their own emotional regulation and suppressed their emotions, displayed more pre-mentalizing modes (Schultheis, Mayes & Rutherford, 2019). Furthermore, there is some evidence that the higher the pre-mentalizing of a parent, the lower their emotional availability and mutual attunement to their child (Luyten et al., 2017). Thus, the results of this study are quite encouraging that this intervention can positively impact the parent/child relationship by helping parents better regulate their emotions during distressing interactions and increasing their parental sensitivity. Finally, there is a possibility that this increase in foster parents' mentalizing ability may have been maintained six months later.

The current study also provides encouraging results for a new measure of parental reflective functioning, the Reflective Functioning Five Minute Speech Sample (RF-FMSS; Adkins et al., 2018). The initial study (Adkins et al., 2018) using this measure found a significant increase in reflective functioning across groups on both the RF-FMSS and the Parental Reflective Functioning Questionnaire (PRFQ). Although the current study did not find as strong

results on this new measure, the fact that there was a significant increase in reflective functioning on the RF-FMSS for the intervention group while there was also a significant increase in some mentalizing skills on the PRFQ across groups, provides additional data to indicate this measure needs further investigation in to its validity as a reliable measure of reflective functioning.

Traditionally, parents' mentalizing abilities have been measured using the Parent Development Interview (Slade et al., 2004) or the Adult Attachment Interview (George et al., 1985). Both take approximately an hour to administer and even longer to code, in addition to requiring intensive training to be considered a reliable coder. So, while the Parent Development Interview and the Adult Attachment Interview both have robust psychometric properties, they are resource-heavy instruments that require significant time, skill, and money for the administration, transcription and coding of the interview. The RF-FMSS was originally developed as a brief and practical method to assess reflective functioning, that was also based on parent narrative but did not require an interviewer to be present. Early studies of the RF-FMSS showed preliminary promise (Adkins et al., 2018; Bammens et al., 2015) and the results of this study demonstrate that it might be a worthwhile tool for assessing reflective functioning in foster parents and could be ideal for parenting research because it is an observational measure that is quick to administer, transcribe and code. In addition, the high levels of interrater reliability found in this and previous studies using the RF-FMSS indicate that it is a system that can be effectively trained with congruence retained across coders. Future studies could utilize this measure with other populations to assess its validity across different populations of parents.

Parenting Stress

This study demonstrated that Family Minds can meaningfully decrease parenting stress related to difficult interactions between parent and child. This replicated a prior finding that also

found Family Minds reduced this type of parenting stress for foster parents who received the intervention (Adkins et al., 2018), which provides additional strength to these results and highlights the value of the Family Minds intervention. Parenting stress is an important factor for foster parents, given that children in foster care are more likely to have experienced trauma and adverse events that have negatively impacted their social-emotional development, increasing the likelihood of mental health issues and relational difficulties (Szilagyi et al., 2015). It is interesting to note that the specific parenting stress subscale of Parent-Child Dysfunctional Interaction was positively impacted by this intervention. This subscale measures the parent's distress around the quality of the parent-child interaction and evaluates to what degree the parent sees their child as having dysfunctional interactions with them, which causes problems within their relationship and is a source of parenting stress (Abidin, 1995). The change observed in this study indicates that improvement with a parental mentalizing intervention may be particularly relevant to normalizing interactions previously seen simply as dysfunctional.

The aspects of parenting stress that did not change were noteworthy too. There was no change in parents' internal feelings of overall distress (Parental Distress subscale), nor in the stress related to a difficult child's behavior (Difficult Child subscale), which replicates the findings from a previous study evaluating Family Minds (Adkins, et al., 2018). It could be that a larger sample is needed to see such differences, or alternatively, that Family Minds does not impact these types of parenting stress. Given that the Parental Distress has been highly associated with parent's self-reported psychological symptoms and Difficult Child stress highly correlated with child oppositionality (Reitman, Currier, & Stickle, 2002; Theule, Wiener, Tannock, & Jenkins, 2013), perhaps it makes sense that this intervention did not reduce these types of parenting stress, as the main goal of Family

Minds is to positively impact the parent/child relationship through an increase in parent and family mentalizing, but not necessarily to influence or change parents' psychological symptoms or their child's difficult behaviors.

A major benefit of successful mentalizing is that it improves relational capacities when these are challenged by the apparently incomprehensible attitudes and behaviors of a fostered child. When a parent is able to understand the beliefs and feeling that likely underpin their child's actions and, further develop a more compassionate attitude born of understanding the reasons for their own actions, they are less likely to respond in a dysfunctional manner (to overreact, lash out, or shut down in response) to their child's behavior. This, in turn, increases their ability to help manage the overwhelming emotions in their child and themselves that arise during difficult parent-child interactions. We suggest that if a parent improves their ability to mentalize (themselves and their child), the potential for more satisfying and productive interactions with their child may be realized. Family Minds' efficacy in reducing any parenting stress benefits foster parents and children alike, reducing a substantial potential risk factor for foster family well-being.

The significant difference in the six week post-test results in one type of parenting stress between intervention and control group parents could also be due to intervention parents' stress reducing while control group parents' increasing over the same period. This raises the question of whether it is the increase in reflective functioning capacity that reduced parents' stress, or whether improving reflective functioning prevented an increase in parenting stress as seen in control group parents. Difficulty in mentalizing their children accurately can affect parents' emotions, making negative emotions harder to tolerate (Sharp & Fonagy, 2008). This may be particularly challenging for foster parents who do not always have a long-shared history

of the child to draw upon, particularly when children are displaying behaviors the foster parent finds challenging and hard to understand. The current study results suggest that foster parents' mentalizing abilities improve through Family Minds, which may then be supporting their own experience of the relationship through more satisfaction in their interactions with their foster child. Given that the intervention did not seem to change/impact other types of parenting stress, such as parent's own internal feelings of distress or the stress around their children's difficult behaviors, lends support to this idea.

Child Emotional & Behavioral Challenges

This study explored change in child outcomes, in addition to foster parents' reflective functioning and parenting stress. Foster parents in the intervention and control groups reported similar levels of child emotional and behavioral difficulties at baseline and at six weeks post-intervention. This is a replication of the first study evaluating Family Minds, which also did not find any significant change on this outcome from pre to post six weeks (Adkins et al., 2018). This result could be an artifact of the type of children in this study. When examining the "Level of Care" (see Table 2) demographic information for this sample of children, the majority (77%) were classified as having no significant emotional or behavioral issues. So, it could be that it is difficult to detect change in such behaviors in this sample. It could also be that while changes in foster parents' capacities and attitudes can come about relatively rapidly, that it may take longer than six weeks for the improved parental reflective functioning to impact the parent-child relationship enough for there to be a measurable difference in child behavior. This hypothesis might indeed have merit, as this study's post six-month data revealed that foster parents in the intervention group reported a significantly lower level of total child difficulties, particularly internalizing behaviors. While a comparison to the control group was not possible due to

attrition, this is a promising finding with interesting implications for understanding how increasing foster parent reflective functioning may positively influence children's emotional challenges. For children, overwhelming emotions can lead to behavior issues, and the lack of being able to process these emotions can lead to mental health issues, such as depression or anxiety (Borelli, Ensink, Hong, Sereno, Drury, & Fonagy, 2018; Cicchetti, Ackerman & Izard, 1995; Ensink, Begin, Normandin, Godbout, & Fonagy, 2017; Ensink et al., 2017). Parental reflective functioning is particularly important for supporting children who internalize their emotions, since mentalizing about the child's internal state is often required to meaningfully connect and help the child. This may be particularly important if the relationship between foster parent and child is still being built. This promising longitudinal finding should be explored in more depth in future studies where both control and intervention groups can be compared at six months.

Limitations & Future Directions

This study had multiple strengths in its design but there are severe limitations as well. The current sample size was too small to permit generalization. The overall study dropout rate was high bringing into question the statistical power available to test the study aims and the representativeness of the ultimate sample. Further research with larger samples will be necessary to confirm the promising results reported here. The control group intervention was not well matched to the experimental intervention in terms of duration and implementation. While the control group consisted of a typical foster parent training that was appropriate as it is the intervention generally provided by state law to all foster parents and was delivered by experienced workers, the study cannot tell us if the impact observed would generalize beyond the

individual trainer who developed the program. A replication of this study with the intervention provided by alternative instructors trained to deliver Family Minds to fidelity will be necessary.

We did not have sufficient statistical power to test the mediational model that underpins the intervention. We would predict that the extent of stress reduction and behavioral change at six months should be in line with the observed change in reflective functioning. Larger studies with similar instrumentation will be needed to provide a more nuanced picture of change mechanisms (Cuijpers, Reijnders, & Huibers, 2019). Furthermore, in the absence of a biological parent comparison group we do not know if this essentially generic intervention worked to enhance general parenting capacities or if it was effectively targeted at the problems of foster parents as it was intended.

Another confounding issue with the study participants that could limit the generalizability of this study is the fact that some of the foster parents adopted their foster children. There is a possibility that some of these parents could have different expectations of the children in their care if they adopted their children and if they intend to adopt any more of the foster children in their care. These parents could be qualitatively different from foster parents who never intend to adopt, but in this study these aspects were not able to be adequately considered and assessed. Future studies should assess the efficacy of Family Minds across different populations of parents, taking these issues into account. This could help determine which aspects of the program are most effective at generically increasing reflective functioning versus addressing the needs of particularly stressed groups of caregivers.

However, the question of whether Family Minds can create long-lasting change remains unanswered due to the high level of attrition at the six-month follow-up. It would be ideal to follow these foster parents up again to determine the efficacy of the intervention in the long term.

Long term follow-up is a challenge for all studies with high risk populations but it is particularly difficult with foster parents whose engagement with training programs is normally quite tenuous and whose commitment to research competes with sometimes exceptional demands of care.

Conclusion

Effective family interventions create change for the whole family, particularly children's outcomes, in addition to changing caregiver behavior. It is likely that the success of Family Minds in this is grounded in the mentalization-based curriculum that helped caregivers increase their reflective functioning capacity. Increased reflective functioning likely increased foster parents' capacity to better understand their foster children, resulting in the decreased parenting stress and decreased foster child internalizing behavior.

Mentalization skills are valuable tools for caregivers for understanding child behavior and providing optimal support for children's development. This study provides some encouraging evidence for the effectiveness of the Family Minds program to increase mentalization skills and reflective functioning in foster parents. The efficacy of Family Minds, in combination with the program's brief, flexible, and accessible format, makes it a promising new approach for providing preventative support for families.

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Table 1

Demographic Characteristics of Foster Parents

	Total Parents (<i>N</i> = 89)		Intervention Group (<i>n</i> = 49)		Control Group (<i>n</i> = 40)		Dropped Out Parents (<i>n</i> = 27)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Parent age (years)	43.45	9.89	43.75	10.02	43.05	9.85	42.74	8.80
Time as FP (months)	45.86	64.63	38.16	65.36	55.92*	63.15	43.91	55.79
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender								
Male	28	30.3	16	33.7	12	32.4	7	29.2
Female	61	69.7	33	67.3	25	67.6	17	70.8
Education								
HS degree	9	10.1	6	12.2	3	7.5	4	16.7
Some college	25	28.1	13	26.5	12	32.4	7	29.2
College grad	30	33.7	15	30.6	15	40.5	10	41.7
Grad degree	22	24.7	15	30.6	7	18.9	3	12.5
Ethnicity								
Caucasian	62	69.7	33	67.3	29	78.4	22	81.5
Black	9	10.1	6	12.2	3	8.1	0	0.0
Hispanic	9	10.1	5	10.2	4	10.0	1	4.2
Asian	1	1.1	1	2.0	0	0.0	1	4.2
Native Am.	1	1.1	1	2.0	0	0.0	0	0.0
Multi-ethnic	4	4.4	3	6.1	1	2.5	0	0.0
Marital Status								
Married	59	66.3	33	61.1	29	60.4	17	73.9
Single	24	27.0	10	18.5	8	16.6	6	26.1
Cohabiting	2	2.2	10	18.5	8	16.6	0	0.0

Note: FP, Foster Parents

**p* < .01

Table 2

Demographic Characteristics of Children

	Total Children (<i>N</i> = 85)		Intervention Group (<i>n</i> = 52)		Control Group (<i>n</i> = 33)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Child age (months)	81.54	60.02	83.61	59.07	73.34	62.12
Time in FC (months)	9.75	12.07	10.07	10.84	9.12	14.12
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
Male	39	43.3	23	44.2	16	48.5
Female	46	56.7	29	55.8	17	51.5
Type of Child						
Foster	61	71.8	40	76.9	21	66.7
Kinship	3	3.5	2	3.9	1	3.0
Adopted (from care)	21	24.7	10	19.2	11	33.3
Level of Care for Foster Children						
Basic	47	77.0	29	72.5	18	85.7
Moderate	8	13.1	7	17.5	1	4.8
Specialized	6	9.9	4	10.0	2	9.5

Note: FC, Foster Care; Texas CPS Level of Care designations:

https://www.dfps.state.tx.us/Child_Protection/Foster_Care/Service_Levels.asp

Basic = little to no behavior/emotional problems, Moderate = above average behavior/emotional problems, Specialized = significant behavior/emotional problems.

Table 3

Mean values at two time points and ANCOVA results for control and intervention groups

Outcomes	Per protocol analysis											
	<i>N</i> ^a	Intervention group		<i>N</i> ^a	Control group		Time (across condition)			Time x Condition		
		Baseline	Six-Week Post		Baseline	Six-Week Post	<i>F</i>	<i>p</i>	Cohen's <i>d</i>	<i>F</i>	<i>p</i>	Cohen's <i>d</i>
RF-FMSS	19	4.42 ± 1.39	5.11* ± 1.52	10	4.30 ± 1.34	4.80 ± 1.48	4.90	.03*	.85	.12	.73	.13
PRFQ	32			24								
Pre-Ment		2.08 ± .89	1.65* ± .60		2.26 ± .95	2.10 ± .66	.14	.71	.11	6.87	.01*	.71
Certainty		2.82 ± 1.06	3.00 ± 1.05		3.19 ± 1.03	3.29 ± 1.12	.00	.95	.00	.17	.69	.11
Curiosity		6.02 ± .54	6.18 ± .58		5.83 ± .63	5.81 ± .56	.03	.87	.00	1.30	.26	.31
PSI-SF	30			22								
PD		30.56 ± 12.09	28.72 ± 12.04		36.05 ± 11.57	37.18 ± 10.65	.01	.94	.00	.68	.41	.24
PCDI		27.13 ± 13.14	24.75* ± 11.06		28.95 ± 13.45	30.36 ± 13.27	.62	.43	.22	4.12	.04*	.58
DC		37.39 ± 14.29	37.94 ± 14.74		37.32 ± 14.29	39.81 ± 14.74	.09	.77	.09	.68	.42	.04
SDQ	32			22								
Emotion		8.00 ± 2.48	7.78 ± 2.23		7.55 ± 2.30	7.45 ± 2.23	.87	.36	.11	.10	.75	.06
Conduct		7.69 ± 2.57	6.91 ± 2.26		7.09 ± 2.25	6.68 ± 2.08	.62	.44	.09	.29	.59	.14
Hyper		7.47 ± 2.50	7.38 ± 2.45		7.55 ± 2.60	6.55 ± 2.43	.05	.82	.14	.01	.94	.37
Peer		7.53 ± 1.63	7.50 ± 1.55		7.77 ± 1.95	6.95 ± 1.73	.05	.82	.23	.11	.74	.38
Prosocial		10.41 ± 2.72	11.00 ± 2.51		10.50 ± 3.10	10.64 ± 2.06	.02	.90	.06	.01	.94	.13
Total Diff		30.69 ± 6.32	29.56 ± 6.17		29.95 ± 6.18	27.64 ± 6.52	.98	.33	.27	.04	.84	.06

Results are expressed as mean ± standard deviation

PRFQ Parental Reflective Functioning Questionnaire; Pre-Ment Pre-Mentalizing; RF-FMSS Reflective Functioning Five Minute Speech Sample;

PSI-SF Parenting Stress Index –Short Form; PD Parental Distress; PCDI Parent-Child Dysfunctional Interaction; DC Difficult Child;

SDQ Strengths and Difficulties Questionnaire; Total Diff Total Difficulties

* $p \leq .05$

^a *N* differ due to missing data