Development and preliminary evaluation of Family Minds:

A mentalization-based psychoeducation program for foster parents

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Introduction

In the United States, approximately 437,000 children reside in substitute care because they were removed from their home due to abuse or neglect (U.S. Department of Health & Human Services, 2016). Maltreatment has deleterious effects on the mind and body and puts a child at lifetime risk for both physical and mental health problems (Arnow, 2004). Foster children are under tremendous physical and emotional stress and need the support of foster parents to recover from trauma. A number of research studies have identified the need for more intensive foster parent training to help improve foster parents' ability to handle foster children's difficult behaviors and emotions (Chamberlain, Price, Reid, & Landsverk, 2006; James, 2004). Unfortunately, evidenced-based training is rarely used to address these issues (Blakey et al., 2012). Furthermore, the effectiveness of many foster parent training curricula is presently unknown and current research has not provided any evidence that the most common foster parent training programs actually change parenting behavior or improve foster parents' success at parenting (Puddy & Jackson, 2003).

Although foster children often suffer from a range of emotional and behavioral issues, it appears that foster parents seldom receive the training or support needed to deal with the psychological needs of foster children (Timmer, Urquiza, & Zebell, 2006). Most foster parents typically receive parenting classes that are more focused on information sharing or skills training. These parent skills trainings mostly focus on practical behavior management skills such as learning how to employ rewards, negative reinforcement and the like. These types of trainings do not normally include information that helps parents understand the emotional needs that form the basis for their children's behavior (Suchman, Mayes, Conti, & Slade, 2004). They do not usually address the issues behind their behavior, which includes children not feeling emotionally or physically safe, needing reassurance or acceptance with regards to their relationship with their parent (Speltz, Greenberg, & DeKlyen, 1990). Typical foster parenting programs also do not tend to focus on helping enhance parents' responsiveness, emotional availability, or their ability to respond to a child in a mentalizing manner (Suchman et al., 2004).

The mentalizing approach to development is a theory that came about as an integration of complementary ideas within the fields of psychoanalysis, developmental psychology and cognitive neuroscience. It describes the way in which human beings make sense of their interpersonal world, by imagining the mental states that lie beneath the behavior of self and other (Fonagy, Gergely, Jurist, & Target, 2004). Mentalizing, also referred to as reflective functioning, is the process by which a person understands and interprets the actions of self and others as meaningful

based on mental states such as feelings, needs, beliefs and desires. Parental mentalization or parental reflective functioning (PRF) involves the ability of a parent to be aware of their own emotions and behavior while also allowing for, and being open to, understanding their children's mental states and behaviors (Fonagy, Steele, Steele, Moran, & Higgitt, 1991). Research suggests it is a critical aspect of sensitive caregiving and important for understanding the emotions that influence behavior and drive the interactions between parent and child (Fonagy et al., 2004; Zeegers, Colonnesi, Stams, & Meins, 2017). Mentalizing is believed to be important for healthy psychological functioning and sensitive caregiving, as parents with higher PRF are more able to experience difficult and emotionally activating relational exchanges without becoming overwhelmed and lashing out or shutting down (Borelli, St John, Cho, & Suchman, 2016). Effective mentalizing is being able to accurately identify and interpret one's own or another's mental states. However, it also reflects an attitude of curiosity and respect of others' mental states, while understanding the limits of truly knowing the inner emotions and thoughts of another (Fonagy & Target, 1997). It is not just being able to accurately glean one's own or another's mental states, but it is also a way of coming into a relationship with an attitude that one's own thinking and feeling can be enhanced and altered by learning about the thoughts and feelings of another (Fonagy & Target, 1997).

Parental reflective functioning (PRF) has been significantly associated with greater communication between caregiver and young children, as well as increased parental satisfaction and positive parenting skills (Rostadt & Whitaker, 2016). PRF also appears to impact the quality of caregiving and be a critical factor in creating secure attachments in children, which is well-known factor that significantly impacts a child's development of self-esteem, confidence, social competency and emotional health (Borelli, West, DeCoste & Suchman, 2012; Ensink, Normandin, Plamondon, Berthelot, & Fonagy, 2016; Huth-Bocks, Muzik, Beeghly, Earls, & Stacks, 2014; Sroufe, 2005). For example, a parent who has low reflective functioning might not fully recognize their child's internal world and may not think that their child has feelings or thoughts that are unique. As a result, this parent would be more likely to parent in an insensitive manner and in ways that contribute to their child having an insecure or disorganized attachment (Slade, 2002; Zeegers et al., 2017). On the other hand, a highly reflective parent understands the complex association between her own mental states and that of her child, as well as the connection between her child's internal world and behavior (Slade, 2002). Parents with high reflective functioning are connected to their own feelings and thoughts about parenting and are therefore less likely to deny their feelings or

become defensive (Slade, 2005). Such a parent is more likely to parent sensitively and in a manner that leads to secure attachment.

Research has also demonstrated that higher levels of reflective functioning can help parents tolerate distress in their children, which is thought to be helpful in managing parenting stress as well (Rutherford, Goldberg, Luyten, Bridgett, & Mayes, 2013). Helping foster parents manage their parenting stress appears quite important as parenting stress has been found to have a deleterious impact on the parent-child relationship (Belsky, 1997; Teti, Nakagawa, Das, & Wirth, 1991) and may interfere with the parenting skills that help children regulate their emotions and behavior (Masten & Coatsworth, 1998). Such self-regulation is important for children's social and relational development and is a key factor in the development of mentalizing skills (Allen, Fonagy & Bateman, 2008). Additionally, lowered levels of distress tolerance in parents may be connected to unhealthy parental responses to stress such as avoiding the negative emotions of their children (Brown, Lejuez, Kahler, & Strong, 2002). A number of studies have revealed that when parents perceive their children as being difficult, they also tend to lack sensitivity and warmth in their interactions with their children, and display inconsistent or harsh discipline and inappropriate developmental expectations (Creasey & Reese, 1996; Karrass & Braungart-Rieker, 2004; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000).

The capacity for parental reflective functioning might be particularly important for foster parents given the high rate of emotional and behavioral difficulties of foster children, and their corresponding high levels of trauma. In other words, foster parents' PRF may prove critical in tolerating and managing foster children's dysregulated emotional states. A foster parent with such skills may be less likely to jump to conclusions about their foster child's negative behaviors, less likely to assume negative intentions for those behaviors, and as a result may be more likely to interact with the child in a therapeutic manner. These specific mentalizing skills may help parents regulate themselves emotionally and behaviorally during difficult interactions with children, which also may help in the long term regulate the children as well (Asen and Fonagy, 2012). It has been argued that most parents find it fairly easy to simply talk about their child's external experiences, but to actually think about the mental states of self and other is a far more complex task (Slade, 2006). In other words, parents might find it difficult to think about and understand how their thoughts and feelings might be directly affecting their own child (Slade, 2006).

Given these points, foster parent trainings that include the goal of enhancing mentalization have much potential in helping support foster parents and the traumatized children in their care. The higher a parent's reflective

functioning, the more likely it is they will be able to display positive and nurturing emotions toward children, avoid harsh and negative interactions, and not overreact to their children's negative behaviors (Suchman et al., 2010). By emphasizing the use of mentalization skills, this allows parents to be more open to seeing and understanding each other's mental states (Midgley & Vrouva, 2012). Furthermore, improving a parent's understanding of their child will help that child not only understand his own psychological experiences, but will help him increase his own ability to both express his feelings effectively and better control/regulate his emotions (Fonagy et al., 2010).

Currently in the United States, there are no known psychoeducation programs designed to increase the mentalizing skills of foster parents. However, there are mentalization-based interventions for parents that are clinical, such as Minding the Baby (Slade et al., 2005), which is a preventive intervention created for pregnant young mothers and their families. This intervention involves intensive home visits by therapists over the course of two years, and is designed to help parents become more reflective with their children and themselves (Sadler et al., 2013). Evaluation of this program has found positive results, such as infants being more likely to display secure attachment, less disrupted mother–infant disrupted communications, and few behavior problems as children reach 3–5 years old (Ordway, Sadler, Dixon & Close, 2014; Sadler et al., 2013). Another promising parenting intervention, the Mother and Toddler Program (Suchman, DeCoste, Castiglioni, Legow, & Mayes, 2008), is a 12-week individual therapy program designed to increase the reflective functioning of substance-abusing mothers. Although these mentalizing interventions appear promising for increasing the reflective capacities of parents, they do not appear to have been attempted with foster parents. Furthermore, although both of these interventions include some amount of psychoeducation on mentalization and reflective parenting, they are both time intensive and are not purely psychoeducational interventions (Slade et al., 2005; Suchman et al., 2008). Therefore, there does appear to be a need to explore whether stand-alone psychoeducational interventions that require less time and money, might also be effective in increasing parental mentalization.

Given the potential benefits of increasing the mentalizing skills of foster parents, the main aim of this study was to investigate whether foster parents could be taught mentalizing skills in a short psychoeducational format (*Family Minds*). Therefore, we set about empirically evaluating the effectiveness of a newly created psychoeducational intervention for foster parents designed to increase parental reflective functioning (PRF), compared to a control group who received a typical foster parent training that included an information-only approached designed to educate parents about the behaviors of foster children. We hypothesized that *Family Minds*

would increase PRF and lower parenting stress more significantly than for parents who attended a typical foster parent training.

Method

Participants

Participants consisted of licensed foster parents recruited from the Central Texas area using private child placing agencies as well as Child Protective Services (CPS), the state authority for foster care children. Participants totaled 102 foster parents (64 mothers and 48 fathers) and were split almost evenly between groups, with 54 completing the intervention and 48 participating in the control group class. Parents ranged in age from 24 to 71 years (M = 44.27, SD = 10.60) and had been a foster parent for between 1 month and 24 years, with an average of just over 3 years (M = 37.70 months, SD = 48.29). The sample comprised a fairly well-educated group of parents, with the majority (84%) having at least some college education. Most parents reported their ethnicity as Caucasian (61%), with 18% declaring Black and 15% Hispanic. The median number of foster children per home was 2. Foster children ranged in age from 2 months to 18 years, with a mean age of approximately 6.5 years. They spent between 1 month and 17 years in foster care, with an average stay of 19 months. There were no significant differences between the intervention and the control group on any of these demographic characteristics.

Procedure

This study was conducted from 2011 to 2014 in Texas and was a quasi-experimental study in which participants were not randomized, but self-selected into either the intervention or control group. See Figure 1 for an outline of the study as presented in a consort diagram. The control group was a typical foster parent training, that is, a 4-hour class consisting of educational information about the behaviors of foster children. Participants for both groups were recruited through child placing agency and CPS 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 child at least 4 years of age placed in their home. Both groups were offered training credit and their name entered into a drawing for a $25 gift card for study participation. At the beginning of both group's first class, the study was explained by the researcher and an informed consent form was included in the pre-survey packet.

The intervention group received the mentalizing psychoeducational intervention (three, 3 hour classes totaling 9 hours of class time) called Family Minds. The three classes were spread out over 4–6 weeks. A total of 5 intervention workshops were conducted during the study. Participants in the control group received a typical training class that any foster parent in the same area might receive. In this case, the control group received a 4-hour training consisting of educational material on attachment, trauma, and the behavior of foster children, without any information or experiential exercises related to mentalizing. Both the intervention and control group classes were taught by the same instructor, who had a background working in foster care as well as training in mentalization-based interventions. Because of this, both intervention and control classes were audio recorded for review to ensure that each group were taught in a similar high quality manner.

The intervention. The *Family Minds* psychoeducational mentalizing intervention was designed to meet the need for an effective, short-term psychoeducational training program specifically designed to help increase foster parents' use of mentalizing skills. For this study, it was designed as three class modules of approximately 3 hours each. Since the main purpose of this intervention is to impact parents' mentalization skills, it seemed judicious to use principles and guidelines set out by the few such interventions that currently exist, such as the "Minding the Baby" (Slade et al., 2005) reflective parenting intervention. Using these principles, we built and designed the material in such a way as to ease the parents into mentalization and their children's internal world of experiences. To ensure understanding and tolerance, the material is designed to be cumulative and progressive.

When developing *Family Minds*, it was also important to consider what might be most helpful given the population and the time constraints of a short intervention. Because of the focus on the parent–child relationship, we drew on the principles from Mentalization-Based Therapy for Families (MBT-F) when developing the Family Minds intervention. MBT-F is a promising and short clinical intervention of 6-12 sessions, that was designed as a way to promote resilience in family members by enhancing their mentalizing skills as a means to promote relationship building and problem-solving (Allen et al., 2008). Therefore, *Family Minds* also includes the building of such skills, such as being curious about the mental states of others and self, understanding how emotions and mental states can be opaque (the uncertainty of knowing another mind), being able to take different perspectives within relationships, and understanding how one's own mental states and actions affect others (Asen & Fonagy, 2012, p. 350).

The design of the intervention incorporates both an educational primer on mentalizing, as well as experiential exercises designed to build mentalizing skills and provide opportunities to practice such skills. Table 1 presents an outline of the curriculum components of Family Minds. One of the goals when working with foster families is to help the parents understand their child's behavior by sharing knowledge about how trauma and attachment impact child development and shape behavior (Muller, Gerits, & Sieker, 2012). Therefore, this curriculum includes information on trauma, attachment, foster children's behavior, sensitive/reflective parenting and mentalization. All of these topics provide a wealth of information that easily relate to one another and that can be tailored for foster parents to help them understand their children's emotions and behaviors, as well as their own. A key feature of *Family Minds* is the classroom experiential group activities. They are meant to progress from more general and safe mentalizing activities, such as mentalizing strangers, to the more personal, such as mentalizing one other and mentalizing parent and child scenarios, and finally to the potentially more challenging task of mentalizing their own child. The order is designed to build skill, as well as to ensure the mentalizing activity is familiar and comfortable before potentially moving into mentalizing activities that could be more challenging.

An example of a group mentalizing exercise in *Family Minds* is the "Projective Picture Exercise" (see supplementary materials). This group activity is based on an exercise used at the Menninger Clinic (Allen et al., 2008) that was found to be an extremely fruitful exercise for mentalizing. The exercise uses projective stimuli that are ambiguous in nature and indicative of an interpersonal scene. It involves showing the drawing to the group, and asking them to write down a story of what is happening in the scene and what the characters might be feeling or thinking. The idea is that this scene will produce a wide variety of responses from participants, paralleling their own mentalizing of relationships and relational interactions. The goal of the activity is to not only have participants practice explicit mentalizing, but by hearing the variety of responses, participants experience the sheer variety of mental perspectives one scene can elicit (Allen et al., 2008). Additionally, participants are asked to ponder where their own stories come from. This stimulates a new understanding of mentalization and of the role of their own unconscious in relation to their assumptions and perspectives. It can be quite powerful and insightful for participants (Allen et al., 2008). Finally, foster parents are asked to complete a variety of at-home parent-child activities that encourage mentalizing (see example in supplementary materials).

The control group. The control group received a 4 hour, one class training titled "Parenting the Traumatized Child: Understanding and Navigating Behaviors." This curriculum was developed by the first author

and had been successfully delivered to foster parents prior to this study. It was designed primarily to share knowledge and information about foster children's behaviors and ways to parent such children. The curriculum contains information on trauma and its impact on the brain and behavior, attachment and how it is related to the emotional and behavioral regulation of children, understanding children's behavior and ways to create emotional safety and reduce overwhelming emotions, and lastly, how to promote attunement and help children deal with their feelings and behaviors. The training also includes videos, real life examples and encourages classroom discussion.

Measures

All measures and demographic data were collected at the beginning of the first class and after the classes were complete. We instructed foster parents to think about one particular child in their home while answering all questions. Furthermore, we asked them to be consistent in thinking of that same child for all surveys and measures throughout the study. Because the intervention was given over 4–6 weeks and the control group class was given in one day, we decided to structure the data collection so that the same amount of time had passed between the pre/post tests for the control group. Therefore, the post assessments for the control group were mailed and provided online for participants six weeks after their class. Due to the different methods of post-collection, there was a greater drop-off of post-data for the control group, with completion rates of 80% and 58% for the intervention group and control group respectively (see Figure 1). Given that the main purpose of the intervention is to increase the mentalizing skills of parents, two ways to measure reflective functioning (RF) were chosen: (a) The Parental Reflective Functioning Questionnaire (PRFQ) and (b) the Five-Minute Speech Sample (FMSS) coded for RF using Reflective Functioning scale (Fonagy, Target, Steele, & Steele, 1998). The PRFQ (Luyten, Mayes, Nijssens, & Fonagy, 2017) was chosen for this study because it provides a brief, validated, multidimensional assessment of reflective functioning that is easy to administer in combination with the FMSS.

The PRFQ is a brief self-report measure that is designed to assess the mentalizing abilities of parents (Luyten et al., 2017). It consists of 18 items that are scored 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 "put themselves in their child's shoes." Certainty about Mental State scores reflect a parent's lack of ability to see the changing nature and flexibility of mental states, or their certainty that they know exactly what is inside their child's mind. Lastly, Interest and Curiosity in Mental States scores reveal a parent's curiosity about the inner mental world of their child. Each item is scored using a 7-point Likert scale ranging from 1

(*strongly disagree*) to 7 (*strongly agree*). 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, with alphas ranging from .70 to .82 (Luyten et al., 2017).

The Five Minute Speech Sample (FMSS; Gottschalk & Gleser, 1969) was developed as a way to measure psychological states using content analysis of verbal behavior. It is a 5-minute recorded monologue in which the respondent is asked to speak about a topic for the entire 5 minutes, without verbal prompts from the interviewer. Originally, expressed emotion (EE) was measured within the standardized interview procedure, the Camberwell Family Interview (Brown & Rutter, 1966). However, Magaña et al. (1986) created a way to code EE from a 5-minute speech sample. The FMSS and the EE coding system has been used successfully with a variety of clinical populations, including patents with schizophrenia (Hahlweg et al., 1989), patients with bipolar illnesses (Miklowitz, Goldstein, Nuechterlein, Snyder, & Mintz, 1988), children with attention deficit hyperactivity disorder (Marshall, Longwell, & Goldstein, 1990), and children with depressive disorder (Asarnow, Goldstein, Tompson, & Guthrie, 1993). 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).

In the current study, the FMSS was collected from intervention group foster parents who were asked to speak for 5 minutes about their foster child into a recorder, without the presence of an interviewer and in a private area of the building, using an instruction sheet and a kitchen timer. On the instruction sheet, foster parents were asked to speak about whatever comes to mind in response to three questions/prompts: "What is your child like?", "How do you feel about your child?", and "Tell me about a problem you had with your child recently and how you dealt with it." These prompts were chosen because they are similar to questions in the Parent Development Interview (PDI; Slade, Aber, Bresgi, Berger, & Kaplan, 2004), a semi-structured interview used to elicit parental reflective functioning and assess internal working models of relationships, a parent's representation of their present relationships with their child. This method of collecting the speech sample was developed out of necessity, given there was only one interviewer for approximately 15 participants per class. Control group foster parents were also given an instruction sheet but were asked to call a telephone number and leave a 5-minute voicemail answering the same questions. The control group participants provided their speech sample in a voicemail because they were asked to complete all their post-assessments 4-6 weeks after their class, to match the timeframe of the intervention.

Given the flexibility of the FMSS and the fact that others have successfully applied a variety of coding systems, it seemed quite likely that we could use this procedure to effectively assess the foster parents' mentalizing. Responses were coded using the Reflective Functioning Scale, which was developed to be used with adult attachment measures and has already been applied successfully to both the Adult Attachment Interview (AAI; George, Kaplan & Main, 1985) and the Parental Development Interview (Fonagy et al., 1998). 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 Reflective Functioning; the inability to understand the mental states of others) to +9 (Full or Exceptional Reflective Functioning; 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 three scales: Global Reflective Functioning, Parent Reflective Functioning (reflective discourse about self), and parent reflective functioning of the child (Child Reflective Functioning). The first significant increase in reflective functioning in the scoring is when a score of 4 moves to a 5, indicating that the respondent has progressed from simply being able to verbalize mental states to being able to form more complex reflective statements. The next significant increase in reflective functioning is a score of 7, when a parent demonstrates sophisticated reflective functioning consistently throughout the speech sample. A high reflective functioning ability implies that a parent is able to understand that emotions vary in intensity both within the self and during relational interactions, and that such affects are not always obvious and may trigger other emotions (Fonagy et al., 1998). As this is a new measure, a manual for the Five-Minute Speech Sample coded for Reflective Functioning (FMSS-RF) was created specifically for this study (Adkins & Fonagy, 2017; Bammens, Adkins & Badger, 2015).

For coding of the FMSS, coders were blind to which time or group each speech sample belonged. To assess inter-rater reliability, 12 speech sample transcripts were randomly selected from both the intervention and control groups and the coding for reflective functioning was compared across two independent coders. Inter-rater reliability was assessed using a two-way mixed intra-class correlation coefficient (ICC; McGraw & Wong, 1996) to determine the degree to which the two coders provided consistency in their ratings of reflective functioning. The resulting reliability was in the excellent range, ICC = 0.85 (Cicchetti, 1994), indicating that coders had a high degree of agreement and suggesting that reflective functioning was rated similarly across the two coders.

Additionally, participants in each group received 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 13 different subscales. Initial reliability and validity of the PSI-SF support that parenting stress is a measure that is useful across diverse populations, including inner-city, poor rural, and Hispanic parents (Abidin, 1995). Overall reliability was .78–.88 on the Child subscale and .75–.87 on the Parent subscale (Abidin, 1995). Reliability coefficients for these two domains and the Total Stress scale were .96 or greater, indicating a high degree of internal consistency (Abidin, 1995). Test–retest reliability after 1 year was .70 on the Parent subscale and .55 on the Child subscale (Abidin, 1995). The PSI-SF measures stress on a five-point Likert scale from 1 (*strongly agree*) to 5 (*strongly disagree*). It results in a Total Stress score, as well as scores on the three subscales of Parental Distress (extent to which parents feel competent in their role as a parent), Difficult Child (whether a child is easy or difficult to care for), and Parent–Child Dysfunction Interaction (degree to which parents feel satisfied with their interactions). 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 parent. Raw scores are then 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 of the current study.

Lastly, both intervention and control group classes were audio recorded and two independent raters, who were blind to group assignment, used a fidelity assessment to code 20 audio samples (15 min long) chosen randomly from both groups. This fidelity measure was developed specifically for this study and contains 12 questions in total: 5 questions evaluating the quality of training delivery and 8 questions assessing the type of content (see supplementary materials). The expectation was that the groups would not be different on any of the quality-of-training variables (such as the clarity or enthusiasm of the instructor) and that the only difference between the groups would be on three training variables: material on reflective functioning/mentalizing, mentalizing exercises, and content directed toward helping parents understand their own emotions. These three variables represent content that was included only in the Family Minds intervention. The rest of the metrics refer to content that was delivered to both groups. Inter-rater correlation was high at $r = .89$ and there were no statistical differences in the quality of delivery between the intervention and control group.

Data Analyses

Statistical analyses were completed using SPSS 20.0. 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 was only one demographic variable that significantly correlated with the outcome measures: age of the foster parent. It was older participants who were, on average, more likely to report change in Dysfunctional Interaction on the Parenting Stress Index-Short Form (PSI-SF), $r = .25$, $p = \leq .05$, $n = 66$ and higher levels of Pre-mentalizing on the Parent Reflective Functioning Questionnaire (PRFQ), $r = .21$, $p = \leq .04$, $n = 97$. Therefore, we used age of the foster parent as a covariate in further analyses.

Additionally, an analysis was conducted to determine whether participants who dropped out (i.e., those who did not finish the training 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). The intervention had very little attrition with only 6 participants dropping (11%). Due to the control group only being one class, none of these participants dropped. Although a high number of participants completed the post-test in the intervention group (80%), only 58% of the control group participants completed their post-test. Given this, we wanted to determine if there was a difference between the groups and for those participants who did not complete the post-assessments. All of the baseline subscales of the PRFQ and PSI-SF 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 and/or did not complete the post-test and those that completed the study.

To conduct baseline comparisons of continuous and categorical variables, t-tests and Chi square-test were performed. Furthermore, analysis of variance using the general linear model (GLM) for repeated measures was conducted. Specifically, MANCOVAs and ANCOVAs were performed using Group as the between-subjects factor and Time as the within-subjects factor. Effect Sizes (ES) were calculated using eta square (η^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 was performed on the z-scores obtained.

Results

There were no significant differences between groups at baseline on any of the measures. Descriptive statistics including means and standard deviations, as well as multivariate and univariate main and interaction effects are all listed in Table 2. Refer to this table for the following results.

Parental Reflective Functioning

The Parental Reflective Functioning Questionnaire (PRFQ). There were no significant differences between groups at baseline, however post-test differences between groups were significant for this measure (see Table 2). The overall F revealed a significant difference between groups at the post-test ($F(1, 65) = 8.86$, $p < 0.004$, $d = 0.74$) with a significant increase in reflective functioning (RF) only for the intervention group. Repeated-measures ANCOVAs performed separately on each scale revealed that the pattern of increased RF was clearest in two of the three scales on the PRFQ, namely the Certainty in Mental States (Certainty) and the Interest & Curiosity in Mental States (Curiosity). On the Certainty scale, the interaction was significant ($F(1, 65) = 5.1$, $p < .03$, $d = .55$) and although it increased slightly in the control group at follow-up, it significantly decreased in the intervention group ($t(42) = 2.32$, $p = .026$). For the Curiosity scale, the interaction was again significant, ($F(1, 65) = 4.3$, $p < .05$, $d = .50$) with Curiosity having decreased significantly in the control group ($t(27) = 2.65$, $p = .013$) by the end of the study. The effect sizes were moderate.

Five-Minute Speech Sample coded for Reflective Functioning (FMSS-RF). As presented in Table 2, the overall F for this measure was also significant ($F(1, 31) = 13.07$, $p = .001$, $d = 1.31$), with increases in all FMSS-RF subscale scores in the intervention group by the post-test, with a large effect size. Univariate tests revealed that RF increased significantly only in the intervention group for all three subscales. On the Global RF scale, only the intervention group increased their RF significantly ($t(17) = -3.33$, $p = .004$, $d = 1.25$) while the control group decreased their RF, although not significantly. We found similar results for both the Parent and Child RF subscales. Parent RF in the intervention group was actually lower initially than in control group, although this was not a significant difference between groups. However, by follow-up, Parent RF had increased significantly in the intervention group ($t(17) = –2.83$, $p = .01$, $d = .94$) while simultaneously decreasing in the control group, although this decrease was not significant . When we examined the Child RF scale, we found similar results to the Global RF scale. While the groups were not very different at baseline, by follow-up the groups were significantly different (*F*

(1, 31) = 8.94, p = .005). Univariate tests revealed a significant increase in Child RF from baseline to follow-up in the intervention group (t(17) = -2.85, p = .011, d = .77) while the control group's slight decrease in RF was not significant. The effect sizes were moderate to large.

Parenting Stress

Parenting Stress Index (PSI). The overall F for this measure was not significant, but further analyses with the subscales of the PSI showed significant interaction effects on three of the five subscales. Univariate tests on Total Stress revealed a clear trend toward statistical significance between groups at post-test (F(4, 63) = 3.74, p = 0.054), and when examining the linear component of this interaction, there was a significant decline in parenting stress of the intervention group compared with the control group (F(4, 63) = 4.35, p = 0.043). On the Defensive Responding scale, there was significant difference between groups at post-test (F(4, 60) = 6.5, p < .02, d = .63) with only the control group significantly increasing their scores on this subscale by the post-test (t(26) = –1.71, p = .05, (one-tailed)). On Parental Distress scale, the F score was highly significant, F(4, 60) = 7.6, p = .008, d =.70, with Parental Distress scores having significantly increased (t(26) = –1.97, p = .03 (one-tailed)) only in the control group by the end of the study. Effect sizes were moderate.

Discussion

The findings from this study contribute to the existing literature in several ways. First, this study pilots a brief and practical psychoeducational mentalizing intervention that shows preliminary evidence for increasing reflective functioning in foster parents. Additionally, our use of a new tool for measuring reflective functioning (RF) in a five-minute speech sample protocol (FMSS-RF) has shown preliminary promise as a new brief way to measure parental reflective functioning. Finally, the study reveals that a brief psychoeducational mentalizing intervention may also contribute to reducing parenting stress for foster parents.

Changes in Parental Reflective Functioning

The effect of the intervention on foster parents as measured by the Parental Reflective Functioning Quesitonnaire (PRFQ), appears to be a significant increase in the treatment group parents' ability to be flexible in their mentalizing, as indicated by the lowering of their "Certainty" scores on this measure. Parents who are more certain they know exactly what their child thinks, feels, believes etc., are more likely to be rigid and inaccurate with regards to their child's mental states (Asen & Fonagy, 2012). This can lead to misinterpretations of the meaning of

behavior and more non-mentalizing interactions between parent and child. Another significant finding was the decrease in PRFQ scores on the "Curiosity" subscale for the control group. Curiosity is an important aspect of parental mentalization as it indicates a parent's willingness to understand what lies beneath their children's behaviors, which may increase their own ability to tolerate and manage these behaviors. (Asen & Fonagy, 2012). In a recent study, curiosity in mental states was related to infant distress tolerance in that the more curiosity and interest the parent displayed about their child, the less distress was shown by the infant (Rutherford et al., 2013). The authors suggest that if parents can mentalize in this manner, this will improve parent–child interactions when the child is in distress, helping the parent to regulate their own internal emotional state while helping their child calm down.

The lowering of the control group parents' curiosity and mentalizing scores in general is the opposite result from the intervention group, and was surprising given that other studies have indicated the relative stability of RF and the related measure of maternal sensitivity in control group samples (Kemppinen, Kumpulainen, Raita-Hasu, Moilanen, & Ebeling, 2006; Suchman, Decoste, McMahon, Rounsaville, & Mayes, 2011). This is also an interesting finding given that in a study of the Minding the Baby mentalizing intervention, a clinical intervention, maternal reflective functioning actually increased in both the control and intervention groups (Sadler, et al., 2013). Although our result may simply reflect a regression to the mean, it raises the question whether short educational classes primarily meant to impart knowledge can have a negative impact on parents' reflective capacities. Perhaps a typical class might decrease foster parents' curiosity because they are learning specific facts about foster children, which gives them a feeling of mastery, that is, an overconfidence in "knowing" these children. This in turn might either decrease further curiosity about their children and/or support a non-mentalizing state. Overall, this finding might raise questions about the possible negative impact on mentalizing for foster parents who receive traditional educational trainings in this manner, and further exploration could be useful.

Results from the Five-Minute Speech Sample coded for Reflective Functioning (FMSS-RF) parallel the positive results from the PRFQ, namely, that RF only significantly increased in the intervention group while tending to decrease somewhat in the control group by the end of the study. Specifically, results indicate that before the intervention, foster parents seemed to have a relatively low level of reflective functioning, suggesting that they frequently used mental-state language but were not especially reflective and did not appear to have a complex view of the interactional nature of mental states in relationships. However, by the end of the study, parents in the intervention group had significantly increased their overall ability to be reflective and mentalize themselves (Parent

RF subscale), as well as their children (Child RF subscale). Some had even developed their mentalizing abilities to a more sophisticated and complex level, being able, for example, to figure out the mental states that underlie behavior. The mentalizing skills gained by the participants in the intervention group may be specifically beneficial for foster parents, as they frequently deal with children who come into their home with difficult behaviors and a history of trauma that may challenge the parent-child relationship.

Changes in Parenting Stress

It is important to note that for both groups, on average, these parents were not dealing with a clinically significant level of stress, as indicated by their scores on the Parenting Stress Index (PSI; see Table 2). Despite this, there was still an overall difference between the groups on the PSI that approached significance. We believe that with a larger sample we might observe a more obvious and significant reduction in parenting stress in the intervention group. Overall, the differences between the groups appears to have been mostly due to the significant increase in scores on the PSI subscales Defensive Responding and Parental Distress among the control group parents. Again, the control group seems to have ended up with scores that could indicate a trend towards negative outcomes for those foster parents who attended the standard educational class. One way of interpreting these results is that the intervention might have mitigated a natural process of cumulative increase in defensiveness on the part of the foster parents as the course progressed. In other words, as the intervention progresses, it inevitably confronts foster parents with emotionally evocative material that is both pertinent to them, because of the direct relevance to the child they are looking after, and because it may also resonate with aspects of their own personal histories. In these circumstances, it might be expected that if such material is distressing, then it may be treated dismissively, denying its personal relevance and emotional significance. We know that such a defensive attitude is common in the face of emotional trauma (Bond, 2004; Northoff, Bermpohl, Schoenich, & Boeker, 2007). By contrast, we might expect that a training course primarily concerned with the mentalizing of emotional experiences would disrupt this natural process of self-protection. Remaining reflective about emotional experience is a key feature of mentalizing. We may consider that two processes are at work: first, reflecting on one's own emotional reactions helps to limit their impact and reduces the need for self-protection; second, focusing on the potential impact of traumatic experience on the child in a thoughtful and manageable manner will serve to limit avoidance, and facilitate open contemplation of distressing scenarios that a child in care is likely to have experienced prior to being taken into care.

Both processes are likely to work in the direction of reducing cognitive distortion as a way of managing negative emotions.

All of these results raise the question of whether it was the increase in mentalizing skills that helped the intervention parents feel less stressed, or whether their improved mentalization allowed them to not increase their parenting stress in the manner that was seen among the control group parents. When parents fail to mentalize their children accurately, it has an impact on their own emotions (Sharp & Fonagy, 2008). For instance, when a child misbehaves, it is the parent's interpretation of the child's intentions that determines how upset the parent becomes (Dix & Grusec, 1985).

Limitations

Although this study appears to demonstrate that a mentalizing psychoeducation program alone can lower parenting stress and improve reflective functioning in foster parents, there are a number of limitations to consider in light of these results. First, participants were not randomly selected or assigned to the treatment conditions. This both limits the generalizability of the results and introduces the possibility of selection bias, for example more "dedicated" foster parents could have been more interested in the more intensive intervention. Despite the lack of random assignment, both groups of foster parents proved highly similar to one another, with no significant differences between groups. There was a slight difference in attendance rates given the structure of the intervention versus the control group class, with an eventual 12% dropout rate for the intervention compared with no dropouts during the control group class (see Figure 1). However, this difference in drop-out rate is entirely expected given the intervention totaled three classes and the control group only required one class. Another limitation of this study is the difference in the amount of training hours between the groups. A standard foster parent training was used as the control group, resulting in parents being exposed to 4 hours of material while the intervention group received 9 hours of training. Additionally, the intervention was divided into three separate classes while the control group was delivered as a single class. These differences could have had an effect on the results, possibly increasing the likelihood of favorable outcomes for the intervention group, who received extra material, time, and attention. There was also a difference in the timing of the post data collection for each group, with an extension of time for the control group so as to match the amount of time that had passed between pre and post data collection in the intervention group. This could have impacted participant responses favorably for the intervention group given they had more recently been exposed to the material when taking their post-tests compared to the control group. In

addition, given the study's short timeframe and the challenges of conducting research with a foster parent population in which instability and attrition is common, the sample size was small, and this reduced the power of some of the analyses as well as generalizability of the results. Finally, although some standardized measures were used, little is known about the validity of the Five-Minute Speech Sample coded for Reflective Functioning described in this study. However, the Reflective Functioning Scale, which was used to score the speech samples, has been used with success on other types of narrative materials, such as transcripts of psychotherapy sessions (Gullestad & Wilberg, 2011).

Despite these limitations, the results of this study do provide preliminary evidence that psychoeducation alone can impact parental reflective functioning. Future directions should include the replication of these findings, ideally with a randomized controlled trial with a larger population of foster parents, along with long-term follow-up to see if these mentalizing gains are maintained over time. Future studies should also consider including additional measures of reflective functioning (RF) such as the Parent Development Interview coded for RF (PDI; Slade, et al., 2004). Finally, the intervention needs to be tested with other parenting populations and in other cultures.

In conclusion, this study appears to provides preliminary evidence that a brief psychoeducational intervention can make a positive impact on foster and adoptive parents' mentalizing skills. This intervention also seems to have somewhat lowered foster parents' perceived parenting stress, perhaps as a result of the increase in their mentalizing capacities.

Compliance with Ethical Standards

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee of University College London and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Author Contributions

TA: created and implemented the *Family Minds* intervention and the study, assisted with the data analyses, and wrote the paper. PL & PF: collaborated with the design and writing of the study. PF: analyzed the data and wrote part of the results and discussion. PL: collaborated in the writing and editing of the final manuscript.

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Table 1 Family Minds intervention curriculum

Session	Components
Session 1 3 hours	• Introduction to reflective parenting • Parental mentalizing • Function of Attachment; attachment basics • Attachment, trauma and mentalizing • 3 mentalizing group activities • 2 videos with discussion • At-home parent/child exercises set #1
Session 2 3 hours	• Benefits of mentalizing • Developmental impact of trauma • Trauma, the brain and behavior • Mentalizing behavior • Attachment categories/impact of attachment disruptions • 3 mentalizing group activities • 2 videos with discussion • At-home parent/child exercises set #2
Session 3 3 hours	• Internal working models • Components of mentalizing • Emotional regulation and its link to behavior • Insecure attachment and angry/controlling behaviors • Accurate mentalizing and difficulties mentalizing • 3 mentalizing group activities

Table 2 Mean values at baseline and post for control and intervention groups, and results of ANOVA tests for interaction effects

Variable	Per protocol analysis							
	N^a	Intervention group		N^a	Control group		Group x time	ES
		Baseline	Post		Baseline	Post	(*F*, *p*)	Cohen's *d*
PRFQ	41			27				
Pre-Mentalizing		-.16 ± .77	-.35 ± .75		-.20 ± .91	-.28 ± .94	.35 (.56)	.16
Certainty		.02 ± .99	-.37 ± 1.08		-.07 ± .96	.04 ± .91	5.10 (.03)*	.55
Curiosity		.06 ± .89	.17 ± .92		.30 ± .76	.01 ± .93	4.30 (.05)*	.50
FMSS-RF	18			15				
Global RF		4.10 ± 0.90	5.00 ± 1.28		4.07 ± 0.80	3.53 ± 0.99	11.79 (.00)**	1.25
Parent RF		3.72 ± 0.58	4.50 ± 1.38		4.07 ± 1.22	3.60 ± 1.06	6.68 (.02)*	.94
Child RF		4.11 ± 1.18	5.00 ± 1.46		3.73 ± 0.96	3.60 ± 1.18	4.77 (.04)*	.77
PSI-SF	41			25				
Total Score		-.03 ± 1.00	-.19 ± .90		-.05 ± 1.05	.14 ± 1.13	3.74 (.054)†	.50
Defensive Resp		-.06 ± .93	-.17 ± .83		-.08 ± 1.04	.30 ± 1.27	6.50 (.02)*	.63
Parental Distress		-.05 ± .92	-.18 ± .88		-.12 ± 1.00	.28 ± 1.21	7.60 (.01)**	.70
Dysfunct Interact		-.01 ± 1.02	-.14 ± .89		-.01 ± 1.01	.18 ± 1.04	3.10 (.08)	.46
Difficult Child		.00 ± 1.02	-.18 ± .92		-.01 ± 1.02	.03 ± .87	1.28 (.26)	.29

Results are expressed as mean ± standard deviation
PRFQ Parental Reflective Functioning Questionnaire, Certainty = Certainty in Mental States, Curiosity = Interest and Curiosity in Mental States, *FMSS-RF* Five Minute Speech Sample coded for Reflective Functioning, *PSI-SF* Parenting Stress Index –Short Form
* $p \leq .05$
** $p \leq .01$
† Approaches significance
[a] *N* differ due to missing data

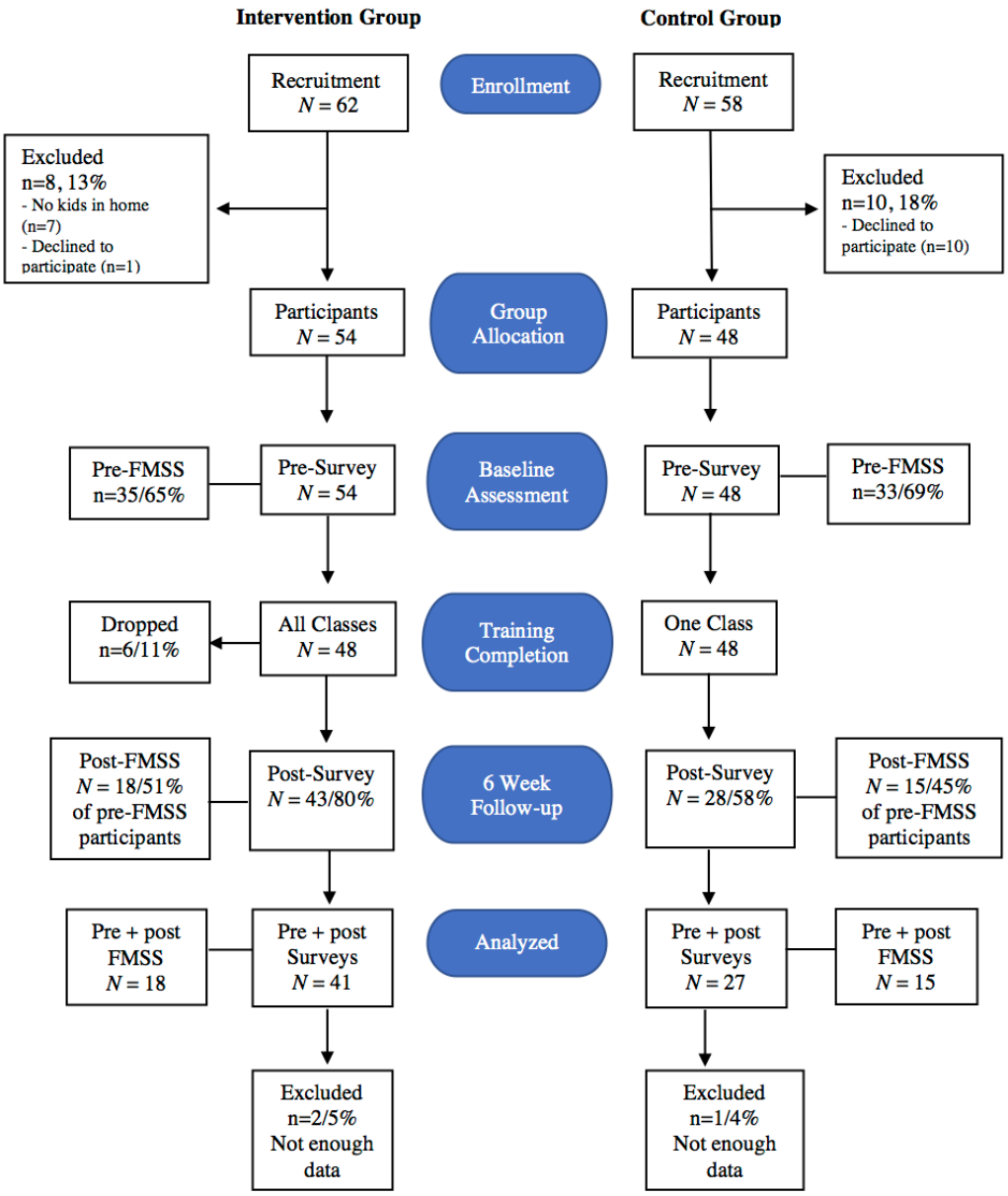

Figure 1. Consort Diagram of Study