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## Efficacy of a Reminiscing and Emotion Training Intervention on Maltreating Families with Preschool Aged Children

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### Abstract

The current investigation reports the results of a randomized controlled trial of a brief, relational intervention for maltreated preschool-aged children and their mothers, called Reminiscing and Emotion Training (RET). RET facilitates elaborative and emotionally supportive parent-child communication, which is an essential component of the parent-child relationship and is especially relevant for the preschool age period. Participants were 248 children between the ages of 3- to 6-years-old and their mothers. Following a baseline assessment, 165 maltreating families were randomized into RET or a Community Standard (CS) condition in which families received case management and written parenting information; 83 families participated in the nonmaltreating comparison condition. Results indicated that the key mechanisms targeted by the RET interventions were enhanced, such that mothers who participated in RET were significantly better in elaboration and sensitive guidance during reminiscing at the post test than were maltreating mothers who did not receive the intervention, with medium to large effect sizes; additionally, mothers in the RET group were more elaborative than mothers from the nonmaltreatment group. Children in the RET condition also contributed significantly more memories and had better emotional knowledge than did children in the CS condition, controlling for baseline values and language, and approximated the functioning of nonmaltreated children. These findings add to a growing literature underscoring the benefits of brief, focused, relational interventions for maltreated children and their caregivers.

### Keywords

mother-child reminiscing; child maltreatment; intervention; elaboration; memory; child abuse

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Child maltreatment has persistent and destructive consequences for individuals across multiple developmental domains. According to the most recent national reports, approximately 3.5 million children are the subject of child welfare investigations and nearly 700,000 cases of child maltreatment are substantiated in the United States annually (US DHHS, 2018). Approximately 80% of child maltreatment perpetrators are the parents of the child victims (US DHHS, 2018), underscoring maltreatment as a pathogenic relational

experience that primarily occurs in the context of the parent-child relationship. Whereas the development of supportive parent-child relationships is critical for early development, their maladaptive nature among maltreating families dramatically increases the risk for psychopathology and other negative developmental sequelae. Non-optimal parenting practices among maltreating families undermine children's ability to successfully resolve stage-salient developmental tasks, which in turn, increase the risk for further maladaptation throughout the lifespan (Cicchetti & Valentino, 2006). In contrast, positive aspects of the parent-child relationship have significant buffering effects in the association between maltreatment and children's emotional and behavioral adjustment (i.e., Toth, Cicchetti & Kim, 2002). As such, a developmental psychopathology perspective argues that relational interventions for child maltreatment, which seek to improve the parent-child relationship, may hold the most promise for interrupting negative developmental cascades and promoting resilience among maltreated children (Valentino, 2017). The current investigation reports the results of a randomized controlled trial of a brief relational intervention designed for maltreated preschool-aged children and their mothers.

Intervening with maltreating parents and their children during early childhood (e.g., under 7 years), where the highest risk for abuse and neglect occurs, is ideal from both theoretical and practical perspectives considering the hierarchical nature of development (Cicchetti & Valentino, 2006; US DHHS 2018). In recent years, important progress has been made in establishing the efficacy and effectiveness of relational interventions for maltreated infants and toddlers (e.g., Attachment & Biobehavioral Catchup; Dozier et al., 2006; Child Parent Psychotherapy; Cicchetti, Rogosch, & Toth, 2006; Stronach, Toth, Rogosch, & Cicchetti, 2013). Rooted in ecological-transactional theory on the development of maltreated children (e.g., Cicchetti & Valentino, 2006), these interventions largely focus on improving maternal sensitivity and responsivity, thus enhancing the security of mother-child attachment organization (see Toth et al., 2013; Valentino, 2017 for reviews). There is a significant gap in the literature, however, with regard to relational interventions for preschool-aged children. During early childhood, sensitive parenting begins to shift towards increasing reliance on verbal behavior, including supportive guidance during discussion of children's emotion (Thompson & Meyer, 2007). Thus, relational intervention approaches that focus on enhancing maternal communication specifically may be especially relevant for improving parent-child relationships among maltreating families with preschool-aged children.

The current investigation presents the results of a randomized controlled trial of a brief, dyadic, intervention for maltreated preschool-aged children and their mothers called Reminiscing and Emotion Training (RET). RET aims to facilitate elaborative and emotionally supportive parent-child communication, which is an essential component of the parent-child relationship and is especially relevant during the preschool age period (Nelson & Fivush, 2004; Salmon & Reese, 2015). Given meta-analytic evidence that brief (5–16 week) dyadic interventions focused on parent interactive behaviors and sensitivity may be more effective and less costly than longer-term (20–52 week) parenting programs (Bakermans-Kranenburg, Van Ijzendoorn, & Juffer, 2003), brief, relational interventions may be a useful first-tier treatment approach for maltreating families (Valentino, 2017).

Parent-child interactions throughout early childhood shape children's emerging cognitive and emotional development as well as their biobehavioral patterns of responses (Gunnar & Vazquez, 2006). As children's language skills develop during early childhood, sensitive parenting begins to rely on verbal discourse. Throughout this time, parents' ability to co-construct elaborative and emotionally supportive narratives about children's emotional experiences is critical for children's emerging cognitive and socioemotional development (Fivush, Haden, & Reese, 2006; Thompson, 2006). There are important individual differences, however, among parents with respect to their ability to provide elaboration and sensitive guidance during discussions of children's past experiences (Fivush et al., 2006; Koren-Karie et al., 2003a; McCabe & Peterson, 1991).

Parents who are high in *elaboration* during reminiscing tend to ask open-ended questions and provide confirmations and elaborations on their children's contributions to the memory narrative (Fivush, 2011; Nelson & Fivush, 2004). Longitudinal research demonstrates that maternal elaborations are positively associated with children's memories during subsequent mother-child conversations (cf., Fivush et al., 2006) as well as with memory recall outside of mother-child discourse (e.g., Leichtman, Pillmer, Wang, Koreshi, & Han, 2000). Similarly, there are benefits of maternal elaboration on language, literacy development, and autobiographical memory specificity during early childhood (e.g., Melzi & Caspe, 2017; Peterson, Jesso, & McCabe, 1999; Reese, Haden, & Fivush, 1993; Valentino et al., 2013). Importantly, randomized studies during which mothers received training in elaboration have demonstrated that children of trained mothers displayed richer memories than did children of untrained mothers (Peterson et al., 1999; Reese et al., 1993; Reese & Newcombe, 2007; Salmon, Dadds, Allen, & Hawes, 2009). Moreover, when reminiscing training has included an emphasis on discussion of emotions, children of trained mothers demonstrated greater emotion knowledge than children of untrained mothers (Van Bergen, Salmon, Dadds, & Allen, 2009). These studies indicate that parents can effectively learn elaboration skills following a brief duration of treatment. Moreover, reminiscing-based interventions hold promise for enhancing child autobiographical memory and emotion knowledge, as well as other domains of functioning (Salmon & Reese, 2015; Wareham & Salmon, 2006).

The extent to which parents are able to provide *sensitive guidance* during discussions of past emotional events is another important dimension of reminiscing style that is distinct from elaborative quantity (Cleveland & Morris, 2014; Cleveland & Reese, 2005; Koren-Karie, Oppenheim, Haimovitch, & Etzion-Carasso, 2003). Whereas elaboration is a narrative dimension that may be extracted from co-constructed discussions of any past event, sensitive guidance reflects the quality of maternal input during discussions of children's past *emotional* events. Specifically, sensitive guidance refers to the overall affective tone, quality, support, and organization of emotion dialogues across positive and negative emotion discussions (Koren-Karie et al., 2003b; Hsiao, Koren-Karie, Bailey, & Moran, 2015). Mothers who are able to provide sensitive guidance during past emotional event discussions help their children understand emotions and facilitate their children's ability to freely explore the world of emotions and internal representations (Bretherton & Munholland, 1999; Thompson, 2006; Waters & Cummings, 2000). Sensitive guidance of both positive and negative emotions, including validation of children's feelings, explanation of emotions, and discussion of emotion resolution is positively associated with children's self-representations,

self-esteem, and attachment security (Bohanek, Marin & Fivush, 2008; Fivush et al., 2006; Laible, 2011). Thus, a focus on enhancing maternal sensitive guidance during emotion dialogues is relevant for relational interventions that seek to enhance the mother-child relationship during early childhood.

Training maltreating mothers in elaborative reminiscing and sensitive guidance may facilitate the protective effects of a positive parent-child relationship and address multiple developmental sequelae associated with maltreatment (Valentino et al., 2013). Maltreating mothers have been shown to engage in fewer verbal interactions with their children both during infancy and the preschool years (Alessandri, 1992; Valentino, Cicchetti, Toth, & Rogosh, 2006). During emotion dialogues, maltreating mothers engage in more emotion invalidation and are less likely to talk about the causes and consequences of emotion with their children, which is associated with poor emotional understanding (Shipman & Zeman, 1999). Importantly, analyses of mother-child reminiscing with the current sample at baseline have revealed that maltreating mothers of preschool-aged children engage in less elaboration and less sensitive guidance during reminiscing than do nonmaltreating mothers (Speidel, Valentino, McDonnell, Cummings & Fondren, 2019; Valentino, Hibel, Cummings, Comas, Nuttall, & McDonnell, 2015). Reduced maternal elaboration during reminiscing has been shown to mediate negative associations between maltreatment and children's emotion knowledge (Valentino et al., 2015). Additionally, both maternal elaboration and sensitive guidance are associated with maltreated children's autobiographical memory specificity (Lawson, Valentino, Speidel, & McDonnell, 2018). As such, RET was developed as a translational intervention that specifically targets the improvement of maternal elaboration and sensitive guidance during reminiscing among maltreating families.

RET was first tested in a study including 44 mother-child dyads who were randomly assigned to intervention or wait-list control conditions (Valentino, Comas, Nuttall, & Thomas, 2013). All mothers had substantiated maltreatment and were actively involved with Department of Child Services (DCS) at enrollment; children were 4–6 years of age and living with their mothers. Results at post-test indicated that mothers in the RET group were significantly better in their elaborative and emotionally supportive reminiscing compared to the control group, controlling for pre-test performance. These key findings demonstrated that maltreating mothers can be taught to utilize elaborative and emotionally supportive reminiscing skills.

In the current study, we report results on the first large, randomized controlled trial of the RET intervention, in which maltreating families were assigned to either Reminiscing and Emotion Training (RET) or a community standard (CS) condition in which families received case management and written parenting information. A third group consisting of demographically- matched nonmaltreating families was included as an additional comparison group (NC) so that we could determine whether maltreated children who received the intervention would approximate the functioning of their nonmaltreated peers following participation in RET.

Our primary hypothesis was that RET would lead to improvements in observed maternal elaboration and sensitive guidance compared to the maltreating families in the CS condition.

Given that previous work has demonstrated indirect effects of maltreatment on children's memory and emotion knowledge through maternal elaborative reminiscing and sensitive guidance (Lawson et al., 2018; Valentino et al., 2015), we expected improvements in these two domains as a function of the intervention at post-test. Although maternal elaboration and sensitive guidance during reminiscing may be related to children's emotion regulation (Shipman et al., 2007; Speidel et al., 2019), we did not include these outcomes in the current analyses, as we expect changes in maternal elaboration and sensitive guidance will promote these outcomes over time, rather than immediately following the intervention at post-test. Finally, we performed post-hoc analysis to examine the effects of maltreatment subtype on intervention outcomes.

Specifically, our a priori hypotheses were:

1. Mothers in the RET condition would demonstrate greater elaborative reminiscing and sensitive guidance at post-test than mothers in the CS group, and would be comparable to mothers in the NC group, controlling for pre-test performance.
2. Children in the RET condition would demonstrate greater memory performance and greater emotion knowledge at post-test than children in the CS group, and would be comparable to children in the NC group, controlling for pre-test performance.
3. Changes in maternal elaborative reminiscing and sensitive guidance would explain a significant proportion of variance in children's memory and emotion knowledge at post-test, controlling for child pre-test performance.

## Method

### Participants

Participants were 248 children (165 maltreated and 83 nonmaltreated) between the ages of 3- to 6-years-old ( $M = 4.90$ ,  $SD = 1.14$ ) and their mothers. Family Case Workers in the Department of Child Services (DCS) introduced the project to potentially eligible maltreating families. With maternal consent, Family Case Workers provided contact information of interested families to the research staff. Our staff then contacted interested mothers and conducted an initial screening for eligibility, which included having a child between the ages of 3- to 6-years-old, a history of involvement with DCS where the mother was a perpetrator of at least one instance of abuse or neglect, and both the mother and the child were primarily English speaking. Along with maternal reports, DCS records were reviewed to confirm the maltreating status of the families. All maltreating families had substantiated child maltreatment where the mother was the perpetrator of at least one instance of maltreatment. Data were collected in a mid-sized city in a Midwestern state that is nationally ranked among the top 10 states with the highest number of child maltreatment victims proportional to the states' population (USDHHS, 2018). A priori estimates of power were calculated to determine the sample size necessary to detect an effect size of half of a standard deviation difference among the three groups with 20% attrition; this effect size was informed by our previous study of the RET intervention (Valentino et al., 2013). With a sample of 240 dyads, power was estimated to be .99.

Nonmaltreating families were recruited within the community at locations that typically serve demographically similar families, such as Head Start, the Special Supplemental Nutrition Program for Women, Infants, and Children's office, and the housing authority. Nonmaltreating families did not have a history of child maltreatment nor previous involvement with DCS, which was verified with maternal interview and by DCS. All children lived with their mothers while enrolled in research activities. A CONSORT diagram is presented in Figure 1, which displays the flow of participants. In total, 315 families were assessed for eligibility. Of those assessed, 67 were excluded before enrollment including 26 who did not meet inclusion criteria and 25 who declined to participate.

Table 1 presents key demographic characteristics of the three groups. It should be noted that the average age of mothers was approximately 30 years, the average education level was a high school diploma or less, and annual family income was generally below \$12,000. To ensure the RET, CS and NC groups were demographically matched, ANOVA and Chi Square analyses were performed. The three groups were comparable on maternal and child age as well as child gender, family income, and maternal education. Significant differences emerged with respect to maternal marital status such that nonmaltreating mothers were more likely to report being married (33.1%) as compared to the RET (13.0%) or CS group (11.1%),  $\chi^2(2) = 16.63, p < .001$ . Differences also emerged with respect to child race such that 34.5% of children in the RET group and 23.7% of children in the CS group were Caucasian compared to 18.3% in the NC group,  $\chi^2(2) = 12.94, p = .012$ .

**Maltreatment Classification System (MCS).**—To further corroborate the nature of maltreatment within our sample, DCS records of maltreating families were coded in accordance with the MCS (Barnett, Manly, & Cicchetti, 1993). *Sexual abuse* was coded when records indicated attempted or actual sexual contact between the child and an adult. *Physical abuse* was coded if the child sustained non-accidental injuries. *Physical neglect* was identified when the caregiver failed to meet the child's basic needs for food, clothing, shelter, health care, hygiene, or safety. *Emotional maltreatment* was coded when records indicated chronic or extreme neglect or disregard for the child's emotional needs. Instances of witnessing domestic violence were coded as emotional maltreatment. *Moral-legal or educational maltreatment* was coded when caregivers exposed or encouraged their children to engage in illegal activities or if the child did not receive age-appropriate education. Approximately 20% of the DCS records of maltreating families ( $n = 32$ ) were double coded and inter-rater reliability was high ( $\kappa_s = .81 - 1.00$ ).

Consistent with the distribution of maltreatment subtypes in the general population (US DHHS, 2018), 4.3% of the maltreated children in the current sample experienced sexual abuse, 12.3% experienced physical abuse, 66.7% experienced physical neglect, 60.5% experienced emotional maltreatment, and 38.3% experienced moral-legal or educational maltreatment. The majority of maltreated children (61.7%) experienced multiple forms of maltreatment, a proportion consistent with previous findings regarding maltreatment subtype comorbidity (see Cicchetti & Valentino, 2006).

For post-hoc analyses of maltreatment subtype, a hierarchy representing the degree to which a particular form of maltreatment violates social norms was used for classification of the



maltreated children into mutually exclusive subtype groups, following previous research in other samples (e.g., Howes, Cicchetti, Toth, & Rogosch, 2000; Toth, Cicchetti, Macfie, Maughan, & Vanmeenen, 2000) and with the baseline data in the current sample (Lawson et al., 2018). Children who experienced sexual or physical abuse regardless of whether they also experienced any other subtype of maltreatment was classified as *abused* ( $n = 26$ ). Children who experienced physical neglect without physical or sexual abuse regardless of emotional and moral-legal or educational maltreatment were coded as *neglected* ( $n = 90$ ). Children who were emotionally maltreated without sexual abuse, physical abuse, or neglect, but regardless of moral-legal or educational maltreatment, were coded as *emotionally maltreated* ( $n = 37$ ). Children who only experienced *moral-legal or educational maltreatment* were coded as such ( $n = 9$ ), but were not included in the analyses involving subtype because of power limitations with the small subgroup. The average number of days between children's first documented experience of maltreatment and their participation in the current study was approximately eight months ( $Mdn = 230.50$  days), with a range of 9–2,111 days. There were no differences in time since maltreatment onset by maltreatment subtype.

## Procedure

All families participated in a baseline pre-assessment that included a home visit and a two-hour laboratory assessment. During the lab assessment, children and their mothers completed several measures in separate rooms with different researchers. Approximately halfway through the assessment, mothers and their children were reunited for reminiscing. At the conclusion of the baseline assessment, maltreating families were randomized, stratified by child age and gender, into the RET condition or the Community Standard (CS) case management condition. Families from the nonmaltreating community (NC) sample did not receive any intervention. Approximately 8-weeks after the baseline assessment (and following the completion of the intervention for families in the RET condition) all families participated in a post-assessment at the laboratory. All researchers involved with the baseline and post assessments were naive to the maltreating and intervention group status of the families. Institutional Review Board approval for this project, Fostering Healthy Development Among Maltreated Preschool-Aged Children, was received from the University of Notre Dame under protocol 12–06-376.

### Intervention conditions.

**Reminiscing and Emotion Training.:** Based on extant elaborative reminiscing interventions (Salmon et al., 2009; VanBergen et al., 2009), and our previous pilot intervention (Valentino et al., 2013), the RET condition includes six weekly, in-home training sessions in elaborative mother-child reminiscing and sensitive guidance for one hour each. In-home sessions were led by home visitors, herein referred to as family coaches. Each of the three family coaches had bachelor's degrees but no formal education in social work or clinical psychology. This choice was intentional, as RET was designed to be delivered without high educational requirements for providers. All coaches were female and had several years of home-visiting experience with low-income families in the local community; one was Caucasian, one African American and one Hispanic. Coaches were not matched to families based on ethnicity in part because ethnicity was not included with our referral information. For the purpose of enhancing rapport, the family coach who completed the



enrollment visit (prior to randomization) was maintained as the coach for the family throughout the duration of the project.

Specific target behaviors include training mothers to (a) increase mother-child time in narrative conversation, (b) ask more open-ended questions (e.g. “What happened next?” “Who was there?”), (c) use detailed descriptions that respond to and build on the children’s descriptions, (d) ask children to identify their emotions and/or label their children’s emotions, (e) make causal connections between children’s experiences and their children’s emotions (e.g., “I could tell you were feeling angry because...”), and (f) talk about resolutions for emotions (e.g. “How did you get over feeling scared?”, “We took a walk and then you felt better”). All target behaviors were related to both elaboration and sensitive guidance, as we aimed to increase the quantity (elaboration) and affective quality (sensitive guidance) of each behavior. Conversations focused on every-day past events, and explicitly did not target traumatic events; however, negative emotions such as sadness, anger and fear, were emphasized by encouraging mothers to practice reminiscing about each these emotions at least once across the intervention sessions. Examples of events typically discussed included feeling happy during a trip to the playground, and feeling scared when the power went out.

During the first session, mothers watched a training video explaining and demonstrating the reminiscing techniques. Mothers were also led through a training booklet by the family coach which summarizes each of the key skills. Mothers were given a copy of this booklet to keep and to use as a reference for practicing. The mother was then asked to practice the reminiscing skills with her child during the session, which was videotaped by the family coach and immediately viewed with the mother for feedback; this procedure has been associated with larger effect sizes in parenting interventions (Kaminski et al., 2008), and may be especially promising for use in increasing sensitivity among maltreating mothers (Moss et al., 2011). At the conclusion of the session, mothers were asked to practice the reminiscing skills with her child one time every day, and to record one practice session on the cell phone provided to them per week. To facilitate the mother-child conversations, families also received a blank scrap book containing several activity pages with conversation starters and prompts (e.g., “One time I felt sad was \_\_\_\_,” with space to illustrate the event). Families were encouraged to use the scrapbook throughout the intervention.

All subsequent sessions involved reviewing the prior week’s practice audio recording and engaging in live, videotaped parent-child reminiscing practice. The live videos were immediately viewed with the mother for feedback. If a mother failed to record a practice conversation during the week, two live reminiscing conversations were done during the weekly session so that all families received feedback on two reminiscing conversations each week. Family coaches were trained to find examples of positive parent-child communication and interaction throughout intervention sessions, and to provide mothers with praise and positive feedback regarding these specific moments. Typically, this feedback was provided while watching the videotaped reminiscing with mothers rather than during the live practice, although coaches were free to respond if mothers asked for assistance. Family coaches were also encouraged to model skills such as how to provide resolutions for children’s negative emotions, as necessary.

Informed by our pilot work, we expanded the number of sessions from 4 to 6 home visits to allow additional time for activities to explicitly train mothers and children on emotion identification, understanding and regulation and for consolidation of skills. Specifically, prior to each session's live reminiscing practice, Sessions 2–4 included one activity each to focus on emotion identification, emotion causes, and emotion regulation, respectively. These activities were added because maltreated preschool aged children have been shown to demonstrate less emotion knowledge compared to their peers (Valentino et al., 2015) and because maltreating mothers tend to engage in less discussion of children's emotional states than do nonmaltreating mothers (Shipman & Zeaman, 1999). Thus, we felt that it was essential for maltreating mothers and children to practice these foundational emotion skills together to support the dyad's ability to jointly discuss past emotional events. Session 2 included a mirror game, where mothers and children practiced showing each other their happy, sad, angry, and scared feeling faces and labeled emotions on the other's face. Session 3 included an activity about emotion causes (e.g., reading books about feelings and discussing what makes the child feel sad, scared, etc.). Session 4 included the turtle technique from Promoting Alternative Thinking Strategies (Greenberg, Kusche, Cook, & Quamma, 1995), which teaches children to stop (or go inside their shell), take a few deep breaths and problem solve before reacting when they feel angry. This was taught as an example of how to cope or resolve negative emotions. Sessions 5 and 6 focused on consolidating skills by having mothers and children continue to practice and receive feedback about the reminiscing skills. Between sessions, mothers received at least four text messages and one phone call per week from their family coach. The text message focused on the prior week's intervention session, and was selected from a premade list of messages tailored to the mother's identified strengths and needs.

To ensure treatment fidelity, family coaches completed a fidelity checklist following each session. Fidelity checklists were completed for over 90% of the treatment sessions. Of those completed, average fidelity per session ranged from 94.0% to 98.0%, with an average of 96.16% across sessions. Fidelity checks were supplemented by weekly, individual supervision with the first author. Supervision included reviewing all of the videotaped mother-child reminiscing session practice and the coaches' feedback as well as the fidelity checklists after each session.

**Community Standard:** Mothers and children randomized into the community standard condition did not receive a weekly home visiting intervention. Instead, these families received enhanced case management services and some written parenting materials. Utilizing mothers' responses on the Family Resource Scale (Dunst, Leet, & Trevette, 1986) obtained during the enrollment visit, mothers received referrals to community resources for all items rated as inadequate on this scale. Mothers were also provided with cell phones, which offered easy access to the Family Coaches for additional guidance, and a reliable means to contact service providers or other informal sources of support. Mothers also received basic information about effective parenting practices in written form. As in the RET condition, each mother was contacted with four text messages and received at least one phone call per week to check in regarding case management needs during the intervention phase. Examples of text messages for this group included notifying families of family-

friendly events in the community such as free events at the library as well as texts inquiring about their wellbeing.

### **Assessment procedures.**

**Mother-child reminiscing.** At the baseline and post laboratory visits, mothers and their children reminisced about four one-time events that they experienced together. Because reminiscing about everyday negative experiences (as opposed to reminiscing about positive events) tends to be more elaborative and is particularly critical for fostering development (Laible, 2011), we predominately focused on mother-child reminiscing about negative events by following the Autobiographical Emotional Events Dialogue procedure (AEED; Koren-Karie, Oppenheim, Haimovich, & Etzion-Carasso, 2003b). Mothers were instructed to reminisce with their children about times that their child felt happy, sad, scared, and angry. Before reuniting with their children, mothers were told to select a past event their children would likely remember for each emotion category. Discussions of traumatic events were discouraged given the potential for differential mother-child reminiscing for traumatic events compared with everyday emotional experiences (Fivush & Sales, 2006), similarly if mothers selected an event that occurred too early in development for children to recall (i.e., during infancy), mothers were encouraged to select another event. Mothers wrote brief descriptions of the events on index cards, which mothers could use for reference during reminiscing as a reminder of the events to discuss. Mothers were asked to talk with their children like they would at home. Reminiscing occurred in a private room with a couch and no examiner was present. The reminiscing task was self-paced and had no time restriction. Examples of events discussed include going to the playground (happy), losing a pet (sad), being chased by a dog (scared), and fighting with siblings (angry).

### **Assessment Measures**

#### **Primary outcomes.**

**Maternal elaborative quantity.** Video recordings of mother-child reminiscing were transcribed verbatim and coded for the quantity of maternal elaborations. Statements were partitioned into utterances, defined as subject-verb propositions. Following established frequency based coding schemes (e.g. Fivush & Sales, 2006; Reese & Newcombe, 2007; Van Bergen et al., 2009), maternal wh- questions (open-ended elaborations), yes or no questions (closed-ended elaborations), elaborative statements, and confirmations were identified. Provisions of new information were coded as elaborative statements. Affirmations of children's statements (e.g., "That's right!") were coded as confirmations. Repetitive utterances were also identified, but were not included in the current analysis; as such, a repetition did not count twice for the other coded categories. The number of non-repetitive wh- questions, yes or no questions, elaborative statements, and confirmations were summed across the four reminiscing conversations. Internal consistency of each of these elaborative maternal behaviors across the four emotion discussions was high ( $\alpha = .73-.85$ ). Coders were naïve to participant condition and maltreatment status. Interrater reliability on the total number of wh- questions, yes or no questions, elaborations, and confirmations was assessed with 50 transcripts (20% of the full sample) and reliability was established ( $ICCs = .77-.99$ ). Additionally, reliability was confirmed at the level of utterance (mean  $\kappa = .75$ ). Each

maternal elaborative quantity variable was square-root transformed to alleviate substantial skew.

**Maternal sensitive guidance.** Video recordings of the reminiscing task were viewed to code the sensitive guidance and affective quality of maternal reminiscing following the AEED protocol (Koren-Karie et al., 2003b). After viewing all four emotion discussions, the sensitive guidance of maternal reminiscing was rated on five dimensions: (1) Focus on the task (mother maintains focus on reminiscing and relevant details); (2) Acceptance and tolerance (mother allows her child to express a range of emotional themes without judgment and without becoming defensive); (3) Involvement and reciprocity (mother is positively engaged with her child and shows genuine interest in reminiscing); (4) Resolution of negative feeling (mother navigates discussions of negative experiences towards positive resolutions by emphasizing their child's emotional regulation abilities); and (5) Structuring (mother facilitates the co-construction of rich and coherent narratives). Each dimension was rated on a 9-point scale, with higher values indicating a higher level of the behaviors associated with a particular scale. Researchers provided ratings for each scale after watching the entire reminiscing task (see Koren-Karie et al., 2003 for further details). Interrater reliability was assessed with 21% ( $n = 51$ ) of the dyads in the full sample. Reliability was achieved ( $ICCs = .73-.93$ ).

### **Secondary outcomes.**

**Child memory.** Child memory during reminiscing was coded with a frequency-based scheme where each utterance (subject-verb proposition) was coded (see Fivush & Sales, 2006; Peterson et al., 1999; Reese & Newcombe, 2007; Van Bergen et al., 2009 for similar schemes). For the child, each utterance was coded for presence of unique memory contributions. Unique memory contributions were defined as instances where the child provided an independent memory elaboration that was not already provided by the parent (Reese & Newcombe, 2007). The total number of unique memory contributions made by each child was counted and summed across event discussions ( $\alpha = .73$ ). Interrater reliability with 20% of the full sample was established ( $ICC = .89-.97$ ). Additionally, reliability was confirmed at the level of utterance (mean  $\kappa = .80$ ). To alleviate positive skew, this variable was square-root transformed.

**Child emotional knowledge.** The Affect Knowledge Task (AKT; Denham, 1986) was used to measure multiple aspects of child emotion knowledge. Children's understanding of emotion (nonverbal recognition and verbal labeling of emotional expressions) was assessed using felt faces that depicted happy, sad, angry, and afraid expressions (Denham, 1986; Denham & Couchoud, 1990). Children were asked to identify happy, sad, angry, and afraid facial expressions verbally, by naming them. Children received 2 points for a correct answer, and 1 point for correctly specifying only the emotion's positivity or negativity (e.g., saying sad rather than angry). Children's expressive emotion knowledge was operationalized as the total score across the expressive task.

**Receptive language.** The Peabody Picture Vocabulary Test- Fourth Edition (PPVT-4; Dunn & Dunn, 2007) is an individually administered vocabulary test designed to assess receptive

vocabulary skills in individuals ranging from 2 years old to over 90 with well-established psychometric data. The PPVT-4 was administered to the mothers and children. Given the language based nature of our assessments and tasks, receptive language scores were utilized as a covariate in all analyses.

### Analytic Strategy

To address our first two hypotheses, we conducted multivariate or univariate analyses of covariance on post-test data with group (RET, CS, and NC) as the primary independent variable. All analyses covaried corresponding pre-test performance on each dependent variable, which is recommended over repeated measures analyses across time, to maximize power (Rausch, Maxwell, & Kelley, 2003). Analyses revealed that marital status, but not child race, was significantly related to the outcome variables of interest; because marital status also differed across groups, it was utilized as a covariate for substantive analyses. Additional covariates included standardized language scores given the language-based nature of the reminiscing tasks and child age. To address our third hypothesis, hierarchical linear regression analyses of children's post-test memory and emotion knowledge were conducted by entering children's pre-test performance, standard language scores, and age into the models in the first step. In the second step, elaborative reminiscing and sensitive guidance change scores were entered to determine whether changes in these maternal reminiscing qualities explained a significant proportion of children's post-test performance in memory and emotion knowledge domains. Finally, post-hoc analyses were conducted to examine whether there were intervention differences as a function of maltreatment subtype. For these analyses, we examined maltreatment subtype (abuse, neglect, emotional maltreatment) as the independent variable on maternal and child outcomes within the intervention group.

## Results

### Attrition

A total of 23 families did not complete the post-visit, representing a 9.3% attrition rate. There were no significant differences across the three groups with regard to attrition  $\chi^2(2) = 3.33, p = .19$ . Families who failed to complete the post assessment did not differ from the rest of the sample on all demographic characteristics assessed including maternal age, education, income, and marital status, as well as children's age, gender, and race.

### Primary Outcomes

#### 1) Intervention effects on elaborative reminiscing and sensitive guidance.—

To address our first hypotheses, two MANCOVA analyses were examined for maternal elaborative reminiscing quantity and maternal sensitive guidance, respectively. In both analyses, group (RET, CS, and NC) was the independent variable, and maternal language (PPVT-4 scores), marital status, child age, and pre-test reminiscing values were entered as covariates. The MANCOVA examining maternal elaborative quantity included the number of Wh-questions, Yes/No Questions, Elaborative Statements and Confirmations. Reminiscing data were analyzed for 220 of 225 participants; two dyads whose reminiscing

was not recorded at post-test and three mothers for whom language data were missing were excluded.

There was a significant multivariate effect of group on maternal post-test elaborative reminiscing,  $F(8, 416) = 5.63, p < .001$ . Univariate tests for each of the four reminiscing variables was significant; Wh-questions  $F(2, 210) = 7.91, p < .001$ ; Yes/No Questions,  $F(2, 210) = 16.90, p < .001$ ; Confirmations,  $F(2, 210) = 16.85, p < .001$ ; Elaborations,  $F(2, 210) = 8.34, p < .001$ . Subsequent pairwise analyses revealed that mothers in the RET group used more Wh-questions, Yes/No Questions, Elaborative Statements and Confirmations during reminiscing than did mothers in the CS and the NC groups, with medium to large effects (see Table 2). Positive changes in maternal total use of elaborative utterances were observed across the baseline and post-test assessments for 67.6% of the mothers in the RET group.

The MANCOVA examining maternal sensitive guidance during reminiscing included Maternal Shift of Focus, Acceptance and Tolerance, Involvement and Reciprocity, Closure of Negative Feelings, and Structuring. The multivariate effect of group on post-test maternal sensitive guidance, using all covariates, was significant,  $F(10, 412) = 3.34, p < .001$ . Subsequent univariate tests were significant for Involvement and Reciprocity,  $F(2, 209) = 5.86, p = .003$ , Closure of Negative Feelings,  $F(2, 209) = 11.82, p = .000$ , and Structuring,  $F(2, 209) = 4.49, p = .01$ , but not for Shift of Focus or Acceptance and Tolerance. Pairwise comparisons revealed that mothers in the RET were rated significantly higher than mothers in the CS group on Involvement & Reciprocity, Closure of Negative Feelings, and Structuring with medium to large effects (Table 2). Mothers in the RET were also rated significantly higher than the NC group on Closure of Negative Feelings.

## Secondary Outcomes

**2) Intervention effects on child memory and emotion knowledge.**—To address our second set of hypotheses, an ANCOVA examining children's unique memory contributions was examined with group (RET, CS, NC) as the independent variable and child language, age, marital status and pre-test values as covariates. The ANCOVA revealed a significant effect of group on child memory  $F(2, 210) = 9.12, p < .001$ . Pairwise comparisons revealed that children in the RET group contributed significantly more unique memories to the discussion than did children in the CS and NC groups, with medium to large effects (Table 2).

A parallel ANCOVA on child expressive emotion knowledge was examined with children's total expressive score on the Affect Knowledge Test by group with child language, age, marital status, and pre-test values as covariates. The ANCOVA revealed a marginal effect of group  $F(2, 210) = 2.43, p = .09$ . Planned pairwise comparisons revealed that children in the RET group performed significantly better than children in the CS group, and their performance was not significantly different than children in the NC group (Table 2).

**3) Change in maternal elaborative reminiscing and sensitive guidance on child memory and emotion knowledge.**—To determine whether changes in maternal elaboration and sensitive guidance explained a significant proportion of variance in child outcomes at post-test, two hierarchical regressions were conducted on child memory and



child emotion knowledge (Table 3). First, composite elaboration and sensitive guidance scores were created for maternal performance at pre-test and post-test. For elaboration, the composite score included the means of all four elaboration variables (Wh-questions, Yes/No questions, Elaborative statements and Confirmations;  $\alpha = .76$ ). For sensitive guidance, the composite scores included the means of Involvement and Reciprocity, Closure of Negative Feelings, and Structuring ( $\alpha = .80$ ). The Shift of Focus and Acceptance and Tolerance sensitive guidance variables were excluded from the composite because the prior analysis indicate they were not significantly related to the intervention. Next, difference scores for each composite were calculated.

In the first model, child pre-test performance, age, and standardized language scores accounted for a significant proportion of variance in children's unique memory contributions at post-test ( $R^2 = .31, p < .001$ ). In the second step, change in maternal elaboration ( $\beta = .425, p < .001$ ) and change in sensitive guidance ( $\beta = .114, p = .028$ ) each explained a significant additional proportion of variance in children's post-test memory scores, with more positive changes in mothers' behaviors relating to more child memories. In the second model, pre-test scores, child age, and language predicted a significant proportion of variance in emotion knowledge at post-test ( $R^2 = .516, p < .001$ ). Neither change in elaborative reminiscing or sensitive guidance predicted additional variance in the second step of the analysis. Finally, these two regressions were repeated excluding maternal confirmations from the elaboration composite variable, as some have reported that confirmations may better aligned with maternal support than with elaboration (Kelly, 2018); the pattern of results in both analyses remained the same such that change in maternal elaboration predicted child memory ( $\beta = .418, p < .001$ ), but not child emotion knowledge.

### Post-Hoc Analyses by Maltreatment Subtype

To address whether different subtypes of maltreatment affected post-test outcomes within the intervention group, two MANCOVA analyses assessed the effects for maternal elaborative reminiscing quantity and maternal sensitive guidance. In both analyses, maltreatment subtype (abuse, neglect, emotional maltreatment) was the independent variable, and maternal language, marital status, child age, and pre-test reminiscing values were entered as covariates. The multivariate effect of subtype on elaborative reminiscing was not significant  $F(8, 104) = 1.34, p = .2$ , nor was the effect of subtype on maternal sensitive guidance,  $F(10, 100) = 1.18, p = .30$ .

To address maltreatment subtype effects on child performance at post-test, an ANVOCA on child unique memory contributions was performed within the intervention group, with maltreatment subtype as the independent variable, and child language, child age, maternal marital status and pre-test memory as the covariates. The effect of maltreatment subtype was not significant for child memory,  $F(2, 55) = 2.45, p = .09$ , or for child emotion knowledge,  $F(2, 53) = .38, p = .68$ .

## Discussion

The current study is the first to demonstrate the effectiveness of Reminiscing and Emotion Training (RET), a brief, relational intervention for maltreating families, in a randomized



controlled trial design. The major finding was that RET had significant benefits for maternal elaborative quantity and sensitive guidance during reminiscing, in addition to having positive effects on children's memory and emotion knowledge. Moreover, increases in maternal reminiscing were related to more positive changes in children's memory. Our results add to a growing literature underscoring the benefits of brief, highly focused, relational interventions for maltreated children and their caregivers (i.e., Dozier et al., 2006; Moss et al., 2011; Valentino, 2017 for reviews), with a new intervention specifically focused on the preschool-age range.

Meta-analytic evidence of parenting programs have revealed that brief interventions focused on specific parent-child interactions may be more effective and less costly than longer-term parenting programs (Bakermans-Kranenburg et al., 2003). RET specifically targeted improvements in maternal elaboration and sensitive guidance during reminiscing given evidence that this mechanism is an important explanatory process linking maltreatment with subsequent problems in children's memory, emotion knowledge and self-regulation (Lawson et al., 2018; Speidel et al., in press; Valentino et al., 2015). Importantly, this brief intervention was well received, with only 14.4% attrition within the RET group. The high participation rate is consistent with our pilot data as well as with other reminiscing based interventions, when delivered in-home (Reese & Newcombe, 2007). Such high participation with brief interventions is encouraging for developing a variety of interventions with maltreating families, which often report attrition rates of up to 50% (Cicchetti, Rogosch & Toth, 2006), albeit with longer-term interventions. Beyond length of treatment, another important aspect of RET that may have facilitated parent engagement and motivation was its mode of implementation. By focusing on the provision of positive reinforcement for maternal reminiscing skills and the building of supportive relationships with mothers, RET may have served to enhance mothers' sense of competence and relatedness which are two primary psychological needs that, when supported, facilitate intrinsic motivation (Ryan & Deci, 2000) and may be especially critical for parenting interventions with mothers who have had a recent experience with DCS.

Maternal elaborative reminiscing plays a central role in supporting multiple aspects of child development including children's autobiographical memory and language (Nelson & Fivush, 2004; Salmon & Reese, 2015). As such, improvements in elaborative reminiscing among maltreating mothers, in particular, are especially important considering robust evidence of impairments in autobiographical memory and language among maltreated children (e.g., Eigsti & Cicchetti, 2004; Valentino, Toth, & Cicchetti, 2009; Valentino et al., 2015). Consistent with the findings in our initial pilot with the RET program (Valentino et al., 2013), the present results demonstrated that maltreating mothers who received the RET intervention engaged in significantly more elaborative reminiscing than maltreating mothers who did not receive the intervention, with medium to large effect sizes. Moreover, comparisons with the nonmaltreating mothers revealed that following brief training, mothers in the RET group also exceeded demographically-matched nonmaltreating mothers in their elaborative reminiscing. Thus, our findings replicate and extend past work through the inclusion of a randomized controlled trial design. Our findings also cohere with the broader literature on the effectiveness of reminiscing training, wherein parents of various sociodemographic backgrounds have been able to learn elaborative skills following brief

training (e.g., Boland, Haden, & Ornstein, 2003; Peterson et al., 1999; Reese & Newcombe, 2007; Salmon et al., 2009; Van Bergen et al., 2009).

Importantly, this study further extends prior research by being the first to demonstrate an association between maternal sensitive guidance and brief reminiscing training. Maternal sensitive guidance refers to the affective quality of maternal contributions to the emotion dialogue including the ability to sensitively discuss and provide resolutions for children's negative emotions. Supportive discussion of children's *negative* emotions, including validation of children's feelings, and explanations of the causes and resolutions of emotional conflict, is positively associated with children's emotion regulation (Fivush et al., 2006), self-esteem (Bohanek et al., 2008), and attachment security (Laible, 2011). In contrast, when parents do not engage in emotional discussions and are dismissing or avoidant of negative emotions, children are left without adequate coping skills and are at increased risk for psychopathology (Koren-Karie et al., 2008). In research with maltreated children, less sensitive guidance during reminiscing has been linked to poorer emotion regulation and inhibitory control (Speidel et al., 2019). Thus, improving maternal sensitive guidance among maltreating mothers may lead to subsequent improvement in children's emotion regulation and lessen the risk for psychopathology over time. In our study, RET was associated with maternal involvement and reciprocity during the reminiscing discussion, the resolution of negative feelings, and the structure of conversations in a more organized and coherent fashion. The ability to discuss how to resolve negative emotions is an important parenting skill that is often targeted during emotion socialization interventions (e.g., Havinghurst et al., 2009; 2010) and has been associated with positive benefits in child emotion knowledge and behavior.

We expected that improvements in maternal elaboration and sensitive guidance would lead to immediate benefits for maltreated children in cognitive and emotional domains, including memory and emotion knowledge. At the immediate post-test, we observed significant effects of RET with respect to children's developing autobiographical memory as well as their emotion knowledge. Following training, children in the RET group provided richer memories with more unique memory contributions to the emotion dialogue as compared with maltreated children in the CS group and with nonmaltreated children. This improvement in children's memory is especially important for maltreated preschool-aged children who have been shown to have impairments in memory recall during early and middle-childhood (Lawson et al., 2018; Valentino, Rogosch, & Toth, 2008; Valentino et al., 2009). Specifically, maltreated children demonstrated higher rates of overgeneral memory, characterized by greater difficulty in retrieving memories of discrete autobiographical events, compared to nonmaltreated children (Valentino et al., 2009). During the preschool years, maternal elaborative quantity and sensitive guidance are key mechanisms linking the experience of neglect, in particular, with overgeneral memory (Lawson et al., in 2018). Importantly, overgeneral memory has been identified as a significant predictor of both depressive and posttraumatic stress symptoms (see Hitchcock, Nixon, & Weber, 2014; Moore & Zoellner, 2007 for reviews), and of emotional adjustment during the preschool years (Valentino, McDonnell, Comas, & Nuttall, 2018). Thus, improvements in maltreated children's ability to contribute unique memory information to past event discussions with their mothers are important outcomes. Future research should examine whether such

improvements decrease risk for an overgeneral memory style and subsequent psychopathology such as depression and PTSD in middle childhood.

Another important outcome of the RET intervention was improvement in children's emotion knowledge. The ability to understand, identify, and label emotional states are critical skills of emotional development that facilitate children's subsequent emotion regulation. When focused on children's past emotions, mother-child dialogues provide an important context in which mothers can help children to identify their feelings, as well as to understand the causes, consequences and ways to cope with these emotions (Laible, 2004; Wareham & Salmon, 2006). Indeed, prior research with maltreated preschool-aged children has demonstrated that poor maternal elaborative reminiscing explains, in part, the association between maltreatment and poor expressive emotion knowledge (Valentino et al., 2015). It is notable that after training maltreating mothers in elaborative and emotionally supportive reminiscing and practicing these skills in-home with their children, maltreated children in the RET group demonstrated significantly better emotion knowledge than maltreated children in the CS condition, and were not significantly different than the nonmaltreated children at post-test. These results cohere with those of Van Bergen and colleagues (2009), who also reported improvements in child emotion knowledge following an intervention designed to improve emotional reminiscing with mothers. A critical next step for this research will be to evaluate whether enhancing maternal elaboration and sensitive guidance during reminiscing will lead to improvement in child emotion regulation over time, either directly or indirectly through initial improvement in children's emotion knowledge.

We evaluated the extent to which our hypothesized mechanisms of change, improving maternal elaborations and sensitive guidance during reminiscing, explained children's post-test performance. Consistent with socio-cultural theories of children's autobiographical memory development (Nelson & Fivish, 2004), results revealed that changes in elaboration and sensitive guidance each explained a unique proportion of variance in children's memory performance at post-test, after controlling for children's pre-test performance, language abilities and age. Testing specific mechanisms of change in the context of intervention science is essential for enhancing our understanding of how participation in specific interventions are beneficial (Cummings & Valentino, 2015). Our findings underscore the importance of both the elaborative quantity and sensitive guidance with which parents reminisce with young children about past emotional events for children's autobiographical memory development.

Changes in maternal elaboration and sensitive guidance did not explain a significant proportion of variance in children's post-test emotion knowledge, thereby suggesting that there are additional mechanisms involved. For example, participation in the emotion-focused activities embedded within the RET intervention may have had direct benefits on children's emotion knowledge rather than indirect effects via maternal elaboration and sensitive guidance. Alternately, it may be that more emotionally-focused components of elaborative reminiscing such as the number of emotional attributions and emotion questions may need to be distinguished from the broader elaboration construct to more precisely understand the mechanisms through which emotion knowledge was enhanced (Fivush, Marin, McWilliams, and Bohanek, 2009). Another possibility is that mother-child reminiscing during the

negative events only may be more predictive of child emotion knowledge at post-test. Indeed, prior research has shown that the quality of mother-child reminiscing about negative events is more influential in children's emotional understanding than is reminiscing about positive events (Laible, 2011). Ultimately, future longitudinal mediation research with additional time points is necessary to more clearly model how changes in maternal elaboration and sensitive guidance via the RET intervention lead to improvements in child outcomes over time.

We evaluated whether maltreatment subtype predicted post-test performance among the families who received the RET intervention. Our results indicated no significant effects of subtype on maternal or child outcomes, though it is important to note that this test was underpowered. Future research would benefit from consideration of additional individual differences beyond maltreatment subtype in relation to intervention effectiveness including maternal factors such as attachment orientation, sensitivity, or depressive symptoms, which may influence the extent to which maternal elaboration or sensitive guidance relate to child outcomes (e.g., McDonnell et al., 2016), or additional dimensions of narrative style that may influence child post-test performance including autonomy support and verbal synchrony (Cleveland & Morris, 2014; Kelly, 2018). Although maternal sensitive guidance is a broad construct that includes aspects of autonomy support, the extent to which mothers provide autonomy support (e.g., supporting children's perspectives and contributions, and following children's conversational leads during the emotion narrative) may more specifically relate to aspects of child narrative performance, as well as their engagement in past-event discussions (e.g., Cleveland & Morris, 2014; Kelly, 2018). Similarly, future research should consider additional dimensions of maltreatment experiences that may influence treatment outcomes such as the severity of experiences within each subtype, or the extent to which the child remains in contact with perpetrators of maltreatment beyond the mother.

Although the current investigation provides promising data about the effectiveness of the RET intervention for maltreated preschool-aged children and their mothers, there are a number of limitations to the current study. Foremost, our analyses focused on the extent to which the RET intervention was successful in targeting a specific parenting mechanism. Whereas repeated observational data of mother-child reminiscing are measurement strengths, we recognize that our results are limited to improvements in maternal behaviors observed in the laboratory setting and in the context of reminiscing. It will be crucial to evaluate the extent to which participation in RET and improvements in reminiscing generalize to observable changes in other parenting behavior and parent-child relationships outside the context of reminiscing, such as in free play. Similarly, with regard to the improvements in child memory, it will be important to examine whether improvements in memory contributions during shared mother-child past event discussions generalize to children's memory performance in other contexts such as the specificity of their autobiographical memory retrieval or their ability to recall central event details in forensic settings.

Additionally, there is a need to examine the functioning of this sample over a longer period of time to determine whether mothers in the intervention group maintain their skills in elaborative reminiscing and sensitive guidance, and if so, whether associated improvements

in children's cognitive, emotional, and physiological development occur. Rooted in theoretical and empirical support for the causal role of emotionally supportive parent-child communication in facilitating subsequent child development and parent-child relationships (Wareham & Salmon, 2006), we expect that training maltreating mothers in emotionally-supportive communication styles will ameliorate the destructive effects of maltreatment on child development, and improve parenting over time. Given the positive effects of RET at post-test on child autobiographical memory and emotion knowledge, and prior research indicating associations of each with emotion regulation abilities and psychopathology such as depressive and posttraumatic stress symptoms, the RET intervention may reduce risk for the emergence of such psychopathology. Furthermore, while RET appears promising in reducing some of the sequelae of child maltreatment, it remains to be seen whether improvement in maternal elaboration and sensitive guidance and the mother-child relationship will be associated with reduced reoccurrence of maltreatment over time. Longitudinal follow-up of these families over time is necessary to assess the potential long-term benefits of the RET intervention.

In sum, the current study provides a proximal evaluation of the RET intervention for maltreated preschool aged children and their mothers. Our findings indicated that the key mechanisms targeted by the RET interventions were enhanced, such that mothers who participated in the RET intervention were significantly better in elaboration and sensitive guidance during reminiscing than mothers who did not receive the intervention, controlling for baseline performance. At the immediate post-test evaluation, RET was additionally associated with benefits for child memory and emotion knowledge. Further longitudinal evaluation will be important for fully understanding the long-term value of this relational intervention as a cost-effective, brief intervention for maltreating families that has the potential to be broadly disseminated. Several of the existing evidenced-based interventions for maltreated children are intensive treatments that require 6–12 months of treatment with masters or doctoral level clinicians, which present practical challenges for widespread implementation compared to brief treatment models that may be implemented with paraprofessionals (Valentino, 2017). For example, paraprofessionals engaged in home-visitation and family case management could be trained to implement RET, facilitating its potential to reach many maltreating families. Tiered service delivery models may be ideal to serve the greatest number of families with limited resources (Valentino, 2017); in such a model, brief relational treatments, such as RET, could be provided first and only followed by more intensive services, such as Child Parent Psychotherapy or Parent Child Interaction Therapy, in families that do not sufficiently respond to the initial treatment.

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## References

- Alessandri S (1992). Mother-child interactional correlates of maltreated and nonmaltreated children's play behavior. *Development and Psychopathology*, 4, 257–270. doi:10.1017/S0954579400000134
- Bakermans-Kranenburg M, Van Ijzendoorn M, & Juffer F (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129, 195–215. doi:10.1037/0033-2909.129.2.195 [PubMed: 12696839]
- Barnett D, Manly JT, & Cicchetti D (1993). Defining child maltreatment: The interface between policy and research. In Cicchetti D & Toth SL (Eds.), *Advances in applied developmental psychology: Child abuse, child development and social policy* (pp. 7–73). Norwood, NJ: Ablex Publishing Corporation.
- Bohanek JG, Marin KA, & Fivush R (2008). Family narratives, self, and gender in early adolescence. *The Journal of Early Adolescence*, 28, 153–176. doi:10.1177/0272431607308673
- Boland AM, Haden CA, & Ornstein PA (2003). Boosting children's memory by training mothers in the use of an elaborative conversational style as an event unfolds. *Journal of Cognition and Development*, 4, 39–65. doi:10.1207/S15327647JCD4,1-02
- Bretherton I, & Munholland KA (1999). Internal working models in attachment relationships: A construct revisited. In Cassidy J & Shaver PR (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 89–111). New York, NY, US: The Guilford Press.
- Cicchetti D, Rogosch FA, & Toth SL (2006). Fostering secure attachment in maltreating families through preventive interventions. *Development and Psychopathology*, 18, 623–650. [PubMed: 17152394]
- Cicchetti D, & Valentino K (2006). An ecological-transactional perspective on child maltreatment: Failure of the average expectable environment and its influence on child development. In Cicchetti D & Cohen DJ (Eds.) *Developmental psychopathology: Vol 3. Risk, disorder, and adaptation* (2nd ed., pp. 129–201). Hoboken, NJ: Wiley.
- Cleveland ES, & Morris A (2014). Autonomy support and structure enhance children's memory and motivation to reminisce: A parental training study. *Journal of Cognition and Development*, 15, 414–436. doi: 10.1080/15248372.2012.742901
- Cleveland ES, & Reese E (2005). Maternal structure and autonomy support in conversations about the past: Contributions to children's autobiographical memory. *Developmental Psychology*, 41, 376–388. doi: 10.1037/0012-1649.41.2.376 [PubMed: 15769193]
- Cummings EM, & Valentino K (2015). Developmental psychopathology. In Overton WF & Molenaar P (Eds.). *Handbook of child psychology and developmental science, 7th edition: Theory & method, Vol.1.* (pp. 567–606). New York, NY: Wiley.
- Denham SA (1986). Social cognition, prosocial behavior, and emotion in preschoolers: Contextual validation. *Child Development*, 57, 194–201
- Denham SA, & Couchoud EA (1990). Young preschoolers' understanding of emotions. *Child Study Journal*, 20, 171–192.
- Dozier M, Peloso E, Lindhiem O, Gordon MK, Manni M, Sepulveda S, ... Levine S (2006). Developing evidence-based intervention for foster children: An example of a randomized clinical trial with infant and toddlers. *Journal of Social Issues*, 62, 767–785. doi:10.1111/j.1540-4560.2006.00486.x
- Dunn LM, & Dunn DM (2007). *Peabody Picture Vocabulary Test* (4th ed.). Minneapolis, MN: NCS Pearson.
- Dunst CJ, Leet HE, & Trivette CM (1988). Family resources, personal well-being, and early intervention. *Journal of Special Education* 22, 108–116.
- Eigsti IM, & Cicchetti D (2004). The impact of child maltreatment on expressive syntax at 60 months. *Developmental Science*, 7, 88–102. doi: 10.1111/j.1467-7687.2004.00325.x [PubMed: 15323121]
- Fivush R (2011). The development of autobiographical memory. *Annual Review of Psychology*, 62, 559–582. doi: 10.1146/annurev.psych.121208.131702
- Fivush R, Haden C, & Reese E (2006). Elaborating on elaborations: Role of maternal reminiscing style in cognitive and socioemotional development. *Child Development*, 77, 1568–1588. doi:10.1111/j.1467-8624.2006.00960.x [PubMed: 17107447]

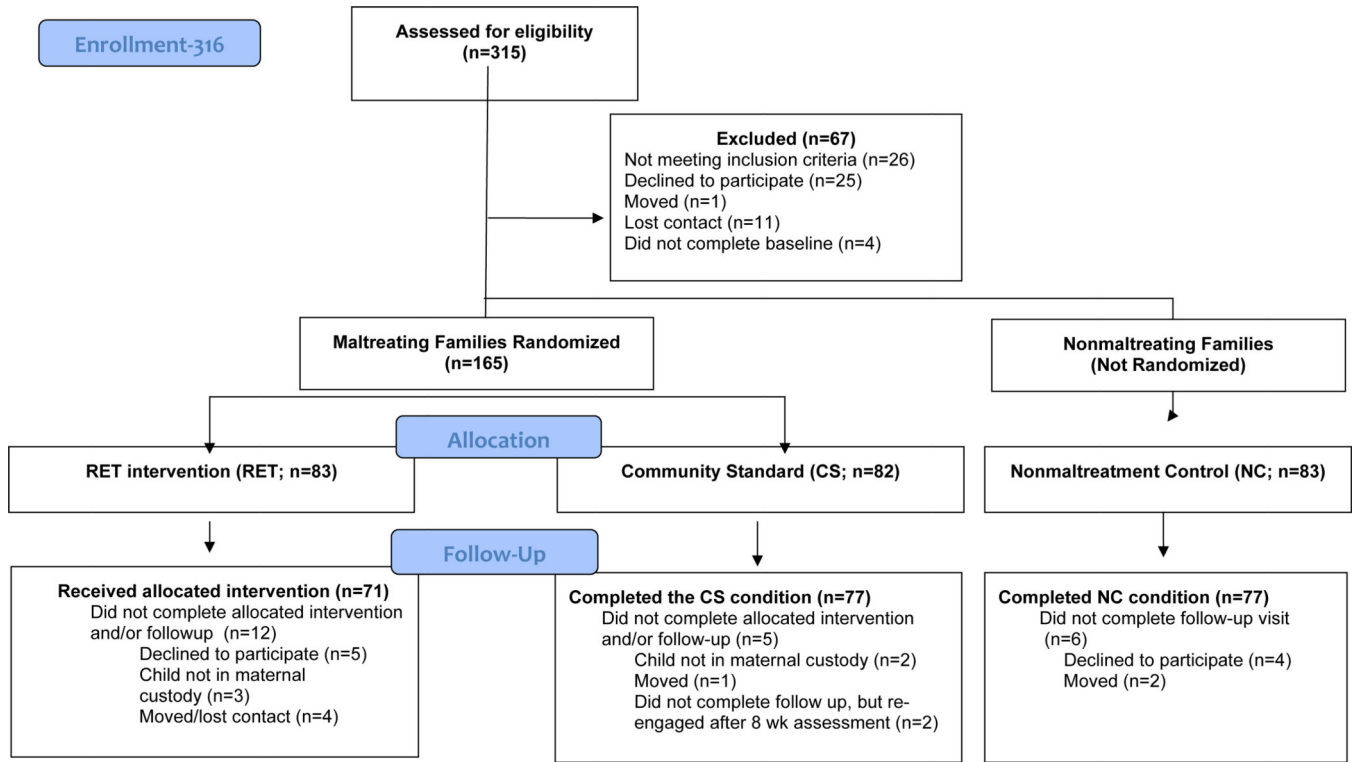


- Fivush R, & Sales JM (2006). Coping, attachment, and mother-child narratives of stressful events. *Merrill-Palmer Quarterly*, 52, 125–150. doi: 10.1353/mpq.2006.0003
- Greenberg MT, Kusche CA, Cook ET, & Quamma JP (1995). Promoting emotional competence in school-aged children: The effects of the PATHS curriculum. *Development and Psychopathology*, 7, 117–136. doi: 10.1017/S095459400006374
- Gunnar M, & Vazquez D (2006). Stress neurobiology and developmental psychopathology. In Cicchetti D, & Cohen D (Eds.), *Developmental psychopathology* (2nd ed.) ( pp. 533–577). Hoboken, NJ, US: John Wiley & Sons.
- Havighurst SS, Wilson KR, Harley AE, & Prior MR (2009). Tuning in to kids: An emotion-focused parenting program—initial findings from a community trial. *Journal of Community Psychology*, 37, 1008–1023. doi: 10.1002/jcop.20345
- Havighurst SS, Wilson KR, Harley AE, Prior MR, & Kehoe C (2010). Tuning in to kids: Improving emotion socialization practices in parents of preschool children—findings from a community trail. *The Journal of Child Psychology and Psychiatry*, 51, 1342–1350. doi: 10.1111/j.1469-7610.2010.02303.x [PubMed: 20735794]
- Hitchcock C, Nixon RDV, & Weber N (2014). A review of overgeneral memory in child psychopathology. *British Journal of Clinical Psychology*, 53, 170–193. doi: 10.1111/bjc.12034
- Hsiao C, Koren-Karie N, Bailey H, & Moran G (2015). It takes two to talk: Longitudinal associations among mother-infant attachment, maternal attachment representations, and mother-child emotion dialogues. *Attachment & Human Development*, 7, 43–64.
- Kaminski JW, Valle LA, Filene JH, & Boyle CL (2008). A meta-analytic review of components associated with parent training program effectiveness. *Journal of Abnormal Child Psychology*, 36, 567–589. doi: 10.1007/s10802-007-9201-9. [PubMed: 18205039]
- Kelly KR (2018). Maternal autonomy support and dyadic verbal synchrony during narrative coconstruction: Links with child attachment representations and independent narrative competence. *Infant and Child Development*, 27, 2074–2079.
- Koren-Karie N, Oppenheim D, & Getzler-Yosef R (2008). Shaping children’s internal working models through mother-child dialogues: The importance of resolving past maternal trauma. *Attachment & Human Development*, 10, 465–483. doi: 10.1080/14616730802461482 [PubMed: 19016053]
- Koren-Karie N, Oppenheim D, Haimovich Z, & Etzion-Carasso A (2003a). Autobiographical Emotional Event Dialogues: Classification and scoring system. Unpublished measure.
- Koren-Karie N, Oppenheim D, Haimovich Z, & Etzion-Carasso A (2003b). Dialogues of seven-year-olds with their mothers about emotional events: Development of a typology. In Emde RN, Wolf DP & Oppenheim D (Eds.), *Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent-child narratives* (pp. 338–354). New York, NY: Oxford University Press.
- Laible D (2004). Mother-child discourse in two contexts: Links with child temperament, attachment security, and socioemotional competence. *Developmental Psychology*, 40, 979–992. doi:10.1037/0012-1649.40.6.979 [PubMed: 15535752]
- Laible D (2011). Does it matter if preschool children and mothers discuss positive vs. negative events during reminiscing? Links with mother-reported attachment, family emotional climate, and socioemotional development. *Social Development*, 20, 394–411. doi: 10.1111/j.1467-9507.2010.00584.x
- Lawson M, Valentino K, McDonnell CG, & Speidel R (2018). Maternal attachment is differentially associated with mother-child reminiscing among maltreating and nonmaltreating families. *Journal of Experimental Child Psychology*, 169, 1–18. doi: 10.1016/j.jecp.2017.12.005 [PubMed: 29306182]
- Lawson M, Valentino K, Speidel R, McDonnell CG, & Cummings EM (2018). Reduced autobiographical memory specificity among maltreated preschoolers: The indirect effect of neglect through maternal reminiscing. *Child Development*. Advanced online publication. doi: 10.1111/cdev.13153
- Leichtman M, Pillemer D, Wang Q, Koreishi A, & Han J (2000). When Baby Maisy came to school: Mothers’ interview styles and preschoolers’ event memories. *Cognitive Development*, 15(1), 99–114. doi:10.1016/S0885-2014(00)00019-8



- McCabe A, & Peterson C (1991). Getting the story: A longitudinal story of parental styles in eliciting narratives and developing narrative skill. In McCabe A, & Peterson C (Eds.), *Developing narrative structure* (pp. 217–253). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Melzi G, & Caspe C (2017). Research approaches to narrative, literacy, and education. In: King K, Lai YJ, May S (Eds) *Research Methods in Language and Education. Encyclopedia of Language and Education* (3rd ed.) pp 241–253. Springer, Cham
- Moore SA, & Zoellner LA (2007). Overgeneral autobiographical memory and traumatic events: An evaluative review. *Psychological Bulletin*, 133, 419–437. doi: 10.1037/0033-2909.122.2.419 [PubMed: 17469985]
- Moss E, Dubois-Comtois K, Cyr C, Tarabulsy G, Laurent D, & Bernier A (2011). Efficacy of a home-visiting intervention aimed at improving maternal sensitivity, child attachment, and behavioral outcomes for maltreated children: A randomized control trial. *Development and Psychopathology*, 23, 195–210. doi:10.1017/S0954579410000738 [PubMed: 21262048]
- Nelson K, & Fivush R (2004). The emergence of autobiographical memory: A social cultural developmental theory. *Psychological Review*, 111, 486–511. doi: 10.1037/0033-295X.111.2.486 [PubMed: 15065919]
- Peterson C, Jesso B, & McCabe A (1999). Encouraging narratives in preschoolers: An intervention study. *Journal of Child Language*, 26(1), 49. doi:10.1017/S0305000998003651 [PubMed: 10217889]
- Rausch JR, Maxwell SE, & Kelley K (2003). Analytic methods for questions pertaining to a randomized pretest, post-test, follow-up design. *Journal of Clinical Child and Adolescent Psychology*, 32, 467–486. [PubMed: 12881035]
- Reese E, Haden C, & Fivush R (1993). Mother-child conversations about the past: Relationships of style and memory over time. *Cognitive Development*, 8(4), 403–430. doi:10.1016/S0885-2014(05)80002-4
- Reese E, & Newcombe R (2007). Training mothers in elaborative reminiscing enhances children's autobiographical memory and narrative. *Child Development*, 78, 1153–1170. doi: 10.1111/j.1467-8624.2007.01058.x [PubMed: 17650131]
- Ryan RM, & Deci EL (2000). Self determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78.
- Salmon K, Dadds M, Allen J, & Hawes D (2009). Can emotional language skills be taught during parent training for conduct problem children? *Child Psychiatry and Human Development*, 40, 485–498. doi:10.1007/s10578-009-0139-8 [PubMed: 19373551]
- Salmon K, & Reese E (2015). Talking (or not talking) about the past: The influence of parent-child conversation about negative experiences in children's memories. *Applied Cognitive Psychology*, 29, 791–801. doi: 10.1002/acp.3186
- Shipman KL, Schneider R, Fitzgerald MM, Sims C, Swisher L, & Edwards A (2007). Maternal emotion socialization in maltreating and non-maltreating families: Implications for children's emotion regulation. *Social Development*, 16, 268–285. doi: 10.1111/j.1467-9507.2007.00384.x
- Shipman KL, & Zeman J (1999). Emotional understanding: A comparison of physically maltreating and nonmaltreating mother-child dyads. *Journal of Clinical Child Psychology*, 28(3), 407–417. [PubMed: 10446690]
- Shipman KL, & Zeman J (2001). Socialization of children's emotion regulation in mother-child dyads: A developmental psychopathology perspective. *Development and Psychopathology*, 13, 317–336. [PubMed: 11393649]
- Speidel R, Valentino K, McDonnell CG, Cummings EM, & Fondren K (2019). Mother-child reminiscing quality in the context of child maltreatment: Implications for child regulatory processes. *Developmental Psychology*, 55, 110–122. [PubMed: 30335434]
- Stronach EP, Toth SL, Rogosch FA, & Cicchetti D (2013). Preventive interventions and sustained attachment security in maltreated children: A 12-month follow-up of a randomized controlled trial. *Development and Psychopathology*, 25:4(1), 919–930. [PubMed: 24229539]
- Thompson R (2006). Conversation and developing understanding: Introduction to the special issue. *Merrill-Palmer Quarterly*, 52, 1–16.

- Toth S, Cicchetti D, & Kim J (2002). Relations among children's perceptions of maternal behavior, attributional styles, and behavioral symptomatology in maltreated children. *Journal of Abnormal Child Psychology*, 30, 487–501. [PubMed: 12403152]
- Toth SL, Gravener-Davis JA, Guild DJ, & Cicchetti D (2013). Relational interventions for child maltreatment: Past, present and future perspectives. *Development and Psychopathology: 25th Anniversary Edition*, 25:4(2), 1601–1617.
- U.S. Department of Health and Human Services. (2018). *Child maltreatment 2016*. Washington, DC: US Government Printing Office.
- Valentino K (2017). Relational interventions for maltreated children. *Child Development*, 88, 359–367. [PubMed: 28138967]
- Valentino K, Cicchetti D, Toth SL, & Rogosch FA (2006). Mother-child play and emerging social behaviors among infants from maltreating families. *Developmental Psychology*, 42, 474–485. doi: 10.1037/0012-1649.42.3.474 [PubMed: 16756439]
- Valentino K, Cicchetti D, Rogosch F, & Toth S (2008). Memory, maternal representations, and internalizing symptomatology among abused, neglected, and nonmaltreated children. *Child Development*, 79, 705–719. doi:10.1111/j.1467-8624.2008.01152.x [PubMed: 18489422]
- Valentino K, Comas M, Nuttall AK, & Thomas T (2013). Training maltreating parents in elaborative and emotion-rich reminiscing with their preschool-aged children. *Child Abuse & Neglect*, 37, 585–595. doi: 10.1016/j.chiabu.2013.02.010 [PubMed: 23548682]
- Valentino K, Hibbel LC, Cummings EM, Nuttall AK, Comas M, & McDonnell CG (2015). Maternal elaborative reminiscing mediates the effect of child maltreatment on behavioral and physiological functioning. *Development and Psychopathology*, 27, 1515–1526. doi: 10.1017/S0954579415000917 [PubMed: 26535941]
- Valentino K, McDonnell CG, Comas M, & Nuttall AK (2018). Preschoolers' autobiographical memory specificity relates to their emotional adjustment. *Journal of Cognition and Development*, 19, 47–64. doi: 10.1080/15248372.2017.1418745
- Valentino K, Nuttall A, Comas M, McDonnell CG, Piper B, Thomas TE, & Fanuele S (2013). Mother-child reminiscing and autobiographical memory specificity among preschool-age children. *Developmental Psychology*, 50, 1197–1207. doi: 10.1037/a0034912 [PubMed: 24219316]
- Valentino K, Toth SL, & Cicchetti D (2009). Autobiographical memory functioning among abused, neglected, and nonmaltreated children: The overgeneral memory effect. *Child Psychology and Psychiatry*, 50, 1029–1038. doi: 10.1111/j.1469-7610.2009.02072.x
- Van Bergen P, Salmon K, Dadds MR, & Allen J (2009). The effects of mother training in emotion-rich, elaborative reminiscing on children's shared recall and emotion knowledge. *Journal of Cognition and Development*, 10, 162–187. doi: 10.1080/15248370903155825
- Wareham P, & Salmon K (2006). Mother-child reminiscing about everyday experiences: Implications for psychological interventions in the preschool years. *Clinical Psychology Review*, 26, 535–554. doi:10.1016/j.cpr.2006.05.001 [PubMed: 16815615]
- Waters E, & Cummings EM (2000). A secure base from which to explore close relationships. *Child Development*, 71, 164–172 [PubMed: 10836570]



**Figure 1.**  
CONSORT 2010 Flow Diagram

**Table 1**

## Sample Characteristics by Intervention Group

Variable	RET ( <i>n</i> = 83)		CS ( <i>n</i> = 82)		NC ( <i>n</i> = 83)	
	<i>M</i> ( <i>SD</i> )	%	<i>M</i> ( <i>SD</i> )	%	<i>M</i> ( <i>SD</i> )	%
Maternal age	29.87 (5.31)		29.30 (5.41)		30.37 (6.85)	
Child age	4.97 (1.11)		4.88 (1.20)		4.86 (1.13)	
Child gender						
Male		47.0		53.7		50.6
Maternal ethnicity						
African American		32.5		50.0		41.0
Caucasian		50.6		36.6		32.5
Hispanic/Other		16.9		13.4		26.5
Child ethnicity <sup>*</sup>						
African American		28.9		51.2		41.0
Caucasian		34.9		23.2		18.0
Hispanic/Other		36.1		25.6		41.0
Family income						
\$12,000/year		54.2		61.0		54.2
Marital status <sup>***</sup>						
Married		13.3		11.0		33.7
Some high school						
Some high school		28.9		39.0		21.7
High school/GED		37.3		29.3		30.1
Some trade/college		22.9		23.2		31.3
Completed trade/college		10.8		7.3		14.5
Master's degree		0.0		1.2		2.4
Language (PPVT-4)						
Maternal <sup>*</sup>	86.59 (13.20)		81.99 (11.92)		86.22 (12.64)	
Child <sup>***</sup>	87.28 (14.56)		86.81 (16.71)		97.02 (14.53)	

Note. RET = Reminiscing and Emotion Training. CS = Community Standard. NC = Nonmaltreating Comparison. PPVT-4 = Peabody Picture Vocabulary Test Version 4.

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

**Table 2**  
Means, Standard Deviations, Analysis of Variance, and Pairwise Comparison Effect Sizes

Measure	Pre-Test Values				Post-Test Values				Post-Test Analyses	
	Maltreated (RET & CS)		NC	CS	RET	NC	ANOVA	Cohen's <i>d</i> for Pairwise Comparison		
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>F</i>	RET & CS	RET & NC	
Maternal Elaboration <sup>a</sup>										
Wh- questions	2.60(1.19)	2.75(1.20)	3.11(1.01)	2.55(1.01)	2.50(1.04)	7.98***	0.56***	0.61***		
Yes/No questions	3.83(1.28)	4.20(1.30)	4.35(0.98)	3.45(0.99)	3.62(1.00)	16.90***	0.90***	0.73***		
Elaborative statements	3.34(1.39)	3.82(1.41)	4.33(1.26)	3.17(1.26)	3.43(1.29)	16.85***	1.16***	0.90***		
Confirmations	0.95(0.88)	1.15(0.89)	1.46(0.95)	0.97(0.95)	0.84(0.98)	8.34***	0.49**	0.62***		
Maternal Sensitive Guidance <sup>a</sup>										
Shift of focus	6.04(1.21)	6.05(1.23)	6.09(1.17)	6.10(1.19)	6.35(1.20)	1.08	-0.02	-0.26		
Acceptance & Tolerance	5.10(1.25)	5.48(1.26)	5.73(1.21)	5.40(1.14)	5.51(1.25)	1.39	0.33	0.22		
Involvement & Reciprocity	5.21(1.39)	5.36(1.40)	6.05(1.23)	5.36(1.24)	5.79(1.26)	5.86**	0.70***	0.27		
Closure of feelings	4.14(0.88)	4.23(0.89)	4.87(0.89)	4.19(0.89)	4.32(0.91)	11.82***	0.68***	0.55***		
Structuring	4.82(1.31)	5.11(1.33)	5.54(1.19)	4.97(1.20)	5.39(1.21)	4.49*	0.57**	0.15		
Secondary Child Outcomes <sup>b</sup>										
Memory contributions	2.52(1.32)	2.83(1.35)	3.14(1.16)	2.49(1.17)	2.33(1.22)	9.12***	0.65***	0.81***		
Emotion knowledge	5.22(1.92)	5.62(1.97)	6.82(1.56)	6.24(1.60)	6.47(1.64)	2.43 <sup>†</sup>	0.58*	0.35		

Note. Means are adjusted for covariates.

<sup>a</sup>Covariates for maternal elaboration and sensitive guidance: child age, maternal receptive language (PPVT-4), marital status.

<sup>b</sup>Covariates for secondary child outcomes: child age, child receptive language (PPVT-4), and marital status. Pre-test values are covariates on all post-test values and analyses.

<sup>†</sup>  $p < .10$ ,

\*  $p < .05$ ,

\*\*  $p < .01$ ,

100%  $d$   
\*\*\*

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**Table 3**

Change in Maternal Elaborative and Sensitive Guidance on Child Memory and Emotion Knowledge

	Child Memory			Child Emotion Knowledge		
	b(SE)	<i>p</i>	<i>R</i> <sup>2</sup>	b(SE)	<i>p</i>	<i>R</i> <sup>2</sup>
Block 1			.31***			.516***
Pre-test values	0.46(0.06)	<.001***		0.49(0.09)	<.001***	
Child language	0.01(0.01)	.066		0.02(0.01)	.024*	
Child age	.12(.08)	.142		.31(.11)	.007**	
Block 2			.52***			.52***
Pre-test values	0.58(0.06)	.001***		0.49(0.06)	<.001***	
Child language	0.01(0.01)	.008**		0.02(0.01)	.019*	
Child age	0.09(.06)	.183		.31(.11)	.007**	
Change in elaboration	0.64(0.08)	<.001***		0.15(0.12)	.22	
Change in sensitive guidance	0.14(0.06)	.028*		-0.08(0.10)	.43	

Note.

\*  
*p* < .05\*\*  
*p* < .01\*\*\*  
*p* < .001