Published in final edited form as:

J Fam Psychol. 2018 September ; 32(6): 804–815. doi:10.1037/fam0000431.

Intervention effects on reflectivity explain change in positive parenting in military families with young children

Megan M. Julian¹, Maria Muzik^{1,2}, Michelle Kees², Marcia Valenstein², Casey Dexter³, and Katherine L. Rosenblum^{1,2}

¹University of Michigan Center for Human Growth & Development

²University of Michigan Department of Psychiatry

³Berry College, School of Education and Human Sciences

Abstract

Military families with young children often experience stress related to the unique circumstances of military families (e.g., deployment), and there is a need for interventions that are specifically tailored to military families with young children. The Strong Military Families (SMF) intervention responds to this need, and consists of two versions: A Multifamily Group ($N = 34$), and a Homebased psychoeducational written material program ($N = 42$; treated as the comparison group in this report). The Multifamily Group utilized an attachment-based parenting education curriculum and in vivo support of separations and reunions, encouraged peer support among parents, and connected families to additional services. In the present nonrandomized trial, we examine intervention effects on observed parenting behavior and affect, and test whether changes in parenting reflectivity account for intervention-related changes in observed parenting. Observed parenting behavior and affect were coded from the Caregiver-Child Structured Interaction Procedure (Crowell & Fleischmann, 1993), and parenting reflectivity was coded from the Working Model of the Child Interview (Zeanah & Benoit, 1995). Results suggest that relative to Homebased participants, Multifamily Group participants showed pre-post improvements in aspects of positive parenting (Emotional Responsivity, Positive Affect), but no decreases in negative parenting. The efficacy of the SMF Multifamily Group intervention does not appear to depend on parent risk level or pre-intervention parent behavior and affect. Further, a mediation model demonstrated that the intervention effects on parents' observed positive affect in an interaction task with their child were partially accounted for by intervention-related changes in their parenting reflectivity.

Keywords

intervention; military families; parenting reflectivity; positive parenting

Corresponding author: Katherine L. Rosenblum, PhD, Department of Psychiatry, University of Michigan, Ann Arbor, MI 48103, katier@med.umich.edu.

Disclosures of Conflicts of Interest: none.

Military families with young children face unique challenges in coping with the demands of military life, yet most military families are remarkably resilient (Rosen, Teitelbaum, & Westhuis, 1993). The lengthy separations inherent to deployments are difficult for any family, but especially so for those families with young children who may not yet be capable of holding onto the memory of their deployed parent, and for whom attachment relationships with parents play such a central role. Deployments may constitute a significant portion of a young child's life, and it can be challenging for young children to reconnect to their parent when they return. Further, non-deployed parents in military families frequently report high levels of stress related to parenting, which can be associated with mood symptoms and adjustment difficulties (Bender, 2008). Despite the resilience of most military families, their unique circumstances can be challenging, and supportive interventions can be beneficial. While several interventions exist to help military families throughout the deployment cycle, there remains a need for interventions specifically targeted to the needs of parents with young children (DeVoe, Paris, & Acker, 2016).

The current study aims to evaluate a parenting intervention designed specifically for military families with young children. The Strong Military Families (SMF) program has two versions — a multifamily therapeutic group (“Multifamily Group”), and a homebased psychoeducational materials program (“Homebased”) that serves as the comparison group. This study examines the effect of the intervention on observed parenting behavior and affect. We assessed both observed positive parenting behavior and affect (Behavioral Responsiveness, Emotional Responsiveness, Positive Affect) and negative parenting behavior and affect (Withdrawn/Depressed, Irritability/Anger) before and after participating in the SMF program, and examined parents' reflective functioning as a potential mediator of the association between the SMF program and observed parenting outcomes.

Parenting in military families with young children

While most military families report levels of distress that are low and do not require clinical treatment (Rosen et al., 1993), it is theorized that the military setting can affect parents (e.g., with regard to stress, deployment, etc.), and parent-child interactions can affect children's functioning (Wadsworth & Riggs, 2011). Military families report having high levels of parenting stress, and are specifically concerned about the impact of deployment on their family (e.g., managing separations and reunions, and reconnecting with children after deployment), and managing the very different demands of military life and family life (Walsh et al., 2014). For families with young children, deployments pose unique challenges. A deployment can constitute a significant portion of a young child's life, and the deployed parent may return to a child in a different developmental stage, and requiring a different set of parenting skills, than when they left.

For deployed parents, a central challenge of their return is adapting from military culture to family life. Military culture places a high value on routine and obedience, and often discourages emotional expression. Raising young children, on the other hand, requires flexibility and creativity, and parents frequently must regulate both their own and their children's emotions (Walsh et al., 2014). Service members, particularly those who have faced combat, may have learned to maintain emotional distance to protect themselves from

loss. But, this style of emotional coping, although often appropriate and adaptive in military settings, may pose problems in family life. Prior research shows that experiential avoidance PTSD symptoms in service members (Brockman et al., 2016; Snyder et al., 2016), and hyperarousal and hypervigilance symptoms (Lieberman, 2004; Zerach, Greene, Ein-Dor, & Solomon, 2012) can both interfere with parenting older children. Service members report that their children's negative emotions can trigger difficult memories from their time in the military (Dayton, Walsh, Muzik, Erwin, & Rosenblum, 2006). Thus, while most military families are functioning well, military service members and their partners who are parents of young children may struggle with re-connecting to their children after deployments, providing nurturance and emotional support to their children, and managing their own and their children's emotions in the context of parenting (Walsh et al., 2014).

Attachment, sensitive parenting and parenting reflectivity

Caregiver-child relationships are foundational to children's development, and children who have secure attachment relationships (i.e., able to seek comfort and support from their caregiver, and use their caregiver as a secure base in times of exploration) have better developmental outcomes than those with insecure early attachment relationships (Lyons-Ruth, Alpern, & Repacholi, 1993; Shaw, Keenan, Vondra, Delliquadri, & Giovannelli, 1997; Sroufe, 2005). According to attachment theory, internal working models, or mental representations of relationships, are at the root of parenting behaviors that promote attachment (Bowlby, 1969). Parents make attributions and interpretations of their child's behavior that are informed by their own experiences in relationships, including any history of maltreatment or trauma. Parents' ability to reflect on their child's internal state and motivations ("parenting reflectivity") is associated with their behavioral sensitivity (Rosenblum, McDonough, Sameroff, & Muzik, 2008), and a related construct of mothers' representations of their infants is also related to their child's attachment security (Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994). A parent's reflective function (i.e., a broader construct representing an individual's ability to think about one's own and others' mental states) is associated with his or her own attachment history (Slade, Grienenberger, Bernbach, Levy, & Locker, 2005), can change in response to later experiences or interventions (Bretherton & Munholland, 2008; Julian, Muzik, Kees, Valenstein, & Rosenblum, in press), and is often a major target of therapeutic work with parents of young children (Slade, 2007).

The type of parenting a child experiences, which is a function of his parent's subjective experience of him, relates strongly to his later outcomes. Specifically, sensitive parenting is widely known to promote children's development in numerous domains (Bretherton & Munholland, 2008; Kopp, 1989). Parenting characterized by positive emotions, affection, and enjoyment is associated with adaptive emotion regulation in young children (Zeman, Cassano, Perry-Parrish, & Stegall, 2006). Children practice regulating their own emotions in the context of the caregiving relationship, and this development is facilitated by sensitive and responsive parenting (Kopp, 1989). Positive parenting during early childhood is associated longitudinally with adaptive outcomes in middle childhood (Kochanska, Boldt, Kim, Yoon, & Philibert, 2015) and adulthood (Raby, Roisman, Fraley, & Simpson, 2015). Importantly, positive parenting can serve as a buffer for children at higher risk of difficulties (Kochanska et al., 2015; Raby et al., 2015), and mothers with a higher reflective capacity can better

regulate their child's fear (Kelly, Slade, & Grienberger, 2005). This suggests that positive parenting can play an especially important role in the context of military families who are under a high level of stress.

Interventions for military families with young children

Several intervention programs exist for military families (e.g., Gewirtz, Pinna, Hanson, & Brockberg, 2014; Lester et al., 2011), and a small subset of these can be used with families who have children 5 years of age and younger. Two interventions target military families with children in a wide age range. Families OverComing Under Stress (FOCUS) is a resilience-enhancing program for military families with children aged 3 to 17. FOCUS helps families develop a narrative about their experience of deployment, and provides psychoeducation and coping strategies. The intervention is 8 sessions long, with some sessions dedicated to parents, some to children (ages 6 and up), and some to the family as a whole (Lester et al., 2011). Participation in FOCUS is associated with improvements in distress for military service members and their family (Saltzman, Lester, Milburn, Woodward, & Stein, 2016), but studies have not yet evaluated whether FOCUS is effective specifically for families with young children. The After Deployment, Adaptive Parenting Tools (ADAPT) intervention is a group-based, web-enhanced parenting program for military families with children ages 4 to 12 (Gewirtz et al., 2014). It is adapted from the Parent Management Training Oregon Model, and lasts 14 weeks. Results from a randomized controlled trial suggest that ADAPT is associated with significant improvements in observed parenting, parent locus of control and emotion regulation, parent psychological distress and suicidal ideation, and child adjustment (Gewirtz, DeGarmo, & Zamir, 2016, 2017; Piehler, Ausherbauer, Gewirtz, & Gliske, 2016).

Two additional interventions for military families are specifically targeted at families with younger children. Strong Families, Strong Forces (SFSF; DeVoe, Ross, & Paris, 2012) is an in-home intervention designed specifically for families with young children, and delivered by a trained clinician. A recent randomized controlled trial of SFSF found that this intervention was associated with reductions in parenting stress and mental health distress, greater perceived parental efficacy for those with more posttraumatic stress symptoms, and improvements in parental reflective capacity (DeVoe, Paris, Emmert-Aronson, Ross, & Acker, 2017). Baby Boot Camp, an intervention targeting military wives who are pregnant for the first time, is a 4-week childbirth and parenting preparation program (Schachman, Lee, & Lederma, 2004). Baby Boot Camp aims to enhance resilience and connects families with resources specific to military families. A randomized controlled trial compared Baby Boot Camp to a traditional childbirth education program and found that parents reported more internal and external resources immediately after the intervention, but results faded to nonsignificant by 6 weeks postpartum (Schachman et al., 2004). While several intervention programs exist that can be implemented in military families with young children, few are specifically designed to address parenting issues that are unique to young children, and few have been designed to enhance parents' reflective capacity.

The current study

This study aims to assess whether the Strong Military Families (SMF) intervention enhances observed parenting in military families with young children. SMF, which is adapted from an existing civilian parenting program (Mom Power; Muzik et al., 2016; Rosenblum et al., 2017), has two versions— a multifamily therapeutic group (“Multifamily Group”), and a homebased psychoeducational materials program (“Homebased”; treated as the comparison group in this report). The SMF Multifamily Group includes a parent group with approximately 6 parents along with a simultaneous “child team” in which children engage in child-directed play with team members. The Multifamily Group consists of 10 parent group sessions and 1-3 individual parent sessions with facilitators over the course of 10-12 weeks. Sessions are led by two group facilitators, one of whom is a masters-level clinician. Drawing from attachment theory and trauma theory, the parent group provides parent education, especially focused on the parent-child relationship, with specific attention to the experiences of military families with young children. Parents are taught about attachment using a “tree” metaphor, and they are asked to think about whether their child is having a “strengthening roots” (connection) moment or a “branching out” (exploration) moment. This metaphor allows parents to reframe their child’s challenging behaviors as expressing connection-related or exploration-related needs, and parents are coached to respond to their child in a way that is consistent with the need they are expressing. Group leaders provide opportunities for supported parent-child interaction during separations and reunions (i.e., when children separate from and return to the parent group), so parents learn how to parent responsively and sensitively both through psychoeducational content and in vivo guidance. A core aim of the curriculum is to enhance parents’ reflective capacity. Group facilitators help parents to enhance their observational skills, and differentiate what they *see* versus what they *interpret* in video clips of parent-child interactions. By creating more space to think about interactions between parents and children, group members gain experience in considering how their own mental states and their children’s mental states and behaviors are intertwined, and thus build their reflective capacity. Through the Multifamily group, parents are also introduced to self-care and stress reduction techniques aimed at reducing mental health symptoms, and the group context increases social support and social connectedness among participants. Individual parent sessions allow group facilitators to build rapport with parents, and develop an individualized plan for referrals to other community resources that may be indicated after completion of the group. The SMF Homebased program consists of mailed psychoeducational materials that are parallel to the information that is provided in the Multifamily Group.

Previous work suggests that the parent intervention program, Mom Power, is associated with improvements in mental health symptoms and parenting stress, a shift toward more “balanced” maternal representations (Muzik et al., under review; Rosenblum, Lawler, Alfara, Miller, & Muzik, under review), as well as activation of brain circuitry relevant to parental empathy (Swain et al., in press; Swain, Ho, Rosenblum, Morelen, & Muzik, 2016). Further, the Strong Military Families Multifamily Group is associated with improvements in parenting reflectivity (Julian et al., in press). It is not yet known whether observed parenting

behavior and affect changes as a function of participation in the Strong Military Families program.

Study Hypotheses

We hypothesized that participants in the SMF Multifamily Group, relative to the Homebased program, would show improvements in observed parenting behavior and affect after participating in the SMF program. Specifically, we expected that parents would show more positive parenting behavior and affect (i.e., Behavioral Responsiveness, Emotional Responsiveness, Positive Affect), and fewer negative parenting behavior and affect (i.e., Withdrawn/Depressed, Irritability/Anger), after the intervention compared to pre-test parenting. We examined whether there were any interactions between intervention condition, parent risk factors, and pre-test parenting behavior and affect, but these analyses were exploratory. We also hypothesized that the association between intervention condition and observed parenting behavior and affect would be mediated by reflective parenting.

Methods

This was a quasi-experimental study in which military families with young children were recruited to participate in a parenting intervention program, and parents were subsequently enrolled in either a Multifamily Group or the Homebased program. This study was approved by the [removed for blind review] Institutional Review Board, and all adults provided written informed consent. Parents were each compensated up to \$90 for completing study assessments; compensation was equal for both Multifamily Group and Homebased participants.

Recruitment strategies for this study included flyers, contacts at community events, and referrals from agencies serving military families. To be included in this study, participants or their partners had to be either service members or veterans with a history of deployment, with one or more children 7 years old. Both parents were invited to participate, together or separately. Participants were 44 mothers, 29 fathers, and 3 grandparents; grandparents were included when they were identified as serving the role of a parent to the focal child. Mothers, fathers, and grandparents are all referred to as parents in this study. About half of participants were military service members whereas the remainder were spouses or other family members.

This study had a quasi-experimental design. All eligible families were offered the opportunity to participate in a Multifamily Group. However, for a variety of logistical reasons, many parents were not able to enroll immediately in a Multifamily Group. Reasons for choosing to not participate immediately in a Multifamily Group included geographic dispersion of families and the distance required to attend, timing of the group not fitting the family schedule, enrolling in the study prior to the start of a Multifamily Group in their region, and/or preference for the at-home written materials. Families who did not enroll in a Multifamily Group were enrolled in the Homebased waitlist comparison group. Families in the Homebased condition were invited to participate in a subsequent Multifamily Group if offered in their region and of interest, however, data presented here reflect only the initial

condition – either Homebased or Multifamily Group – on study entry ($N = 107$; Figure 1). Those who were eligible to attend the Multifamily Group but were not able to attend were also enrolled in the Homebased condition. Parents who did not complete baseline ($N = 15$) or post-test ($N = 15$; $N = 13$ from Homebased) Crowell assessments, and parents who withdrew from the study prior to the intervention ($N = 1$), were excluded from this report. This study includes 42 parents who completed the Homebased condition, and 34 who completed the Multifamily Group condition in eight multifamily groups in varying geographic regions across the state.

The majority of parents were 22 to 40 years old (86.8%) and were married, engaged, or living with their partner (90.8%; sample characteristics by intervention condition in Table 1). A small number (5.3%) identified as single parents. Most were Caucasian (78.7%), and 12.9% identified as Hispanic or Latino(a). Most parents were employed (71.1%), had at least some college education (89.5%), and had a family income of at least \$50,000 per year (56.0%). Parents completed questionnaires in reference to their oldest child who was 7 years of age or younger. Children in this study were split evenly by gender with an average age of 3.82 years ($SD = 1.61$). Most households had 1 (31.6%), 2 (36.8%), or 3 (22.4%) children.

Assessments

Data were collected during home visits at baseline (before any intervention participation) and two months after groups (Multifamily Group) or mailings (Homebased) were completed. Parents completed questionnaires that assessed demographics and their military service history, completed the Working Model of the Child Interview, and were videotaped in interaction tasks with their child.

Measures

Demographic Questionnaire—Parents completed a questionnaire containing questions about their household composition, deployment history, and resources. In line with prior work suggesting that the accumulation of risk factors, rather than single risk factors, are most associated with outcome variance (e.g., Rutter, 1979; Sameroff, Seifer, Baldwin, & Baldwin, 1993), a composite “parent risk” variable was created. This variable ranges from 0 to 3, with one point allotted for each of the following: age < 30 years, income < \$30,000 per year, GED/HS Diploma or less.

Working Model of the Child Interview (WMCI; Zeanah & Benoit, 1995)—The WMCI is a widely validated semi-structured narrative-based interview that assesses parents’ reflective capacity related to parenting of their young children. The interview consists of a series of open-ended questions and typically lasts 45 to 60 minutes. Interviews were audio-recorded and transcribed for later coding. The current study utilized the WMCI Parenting Reflectivity Scale, which is a single-item 5-point scale (1 = Extremely Limited, 2 = Limited, 3 = Moderate, 4 = High, 5 = Very High) assessing the parents’ ability to take into account their child’s mental states and motivations. This scale has previously been found to relate to parents’ behavioral sensitivity and mind-minded comments during interactions with their child, and changes from pre- to post- a parenting intervention (Julian et al., in press; Muzik et al., 2015; Rosenblum et al., 2008). In this study, two independent WMCI coders who were

blind to intervention condition were trained to code the Parenting Reflectivity Scale, and obtained strong interrater reliability ($ICC = .85$) on a set of 20 WMCI transcripts.

Observed parent behavior and affect—The Caregiver-Child Structured Interaction Procedure (Crowell; Crowell & Fleischmann, 1993) is a standard set of interactive tasks commonly used to measure parents' behavior and affect when interacting with their child aged 1 to 6 years old; in this study, it was administered up to age 7. The set of tasks varies from easy to challenging (i.e., free play, clean-up, bubbles, 4 progressively more difficult "teaching tasks", and a separation/reunion) and last about 45 minutes total. Interactions were videotaped for later coding. Each task is coded on 5 parent behavior and affect domains assessed on 7-point anchored scales for each task (1 = none of the stated behavior or affect, 7 = a very high degree of the stated behavior or affect). *Behavioral Responsiveness* reflects parents' level of instrumental support and ability to match support to the child's age and/or developmental level. *Emotional Responsiveness* reflects parents' emotional support and responsiveness (e.g., interest, enthusiasm) in regards to task completion. *Positive Affect* reflects parents' smiles, laughs, animation, and delight when interacting with the child. *Withdrawn/Depressed* reflects parents' withdrawal from the child due to depression or sadness, and can be characterized by a lack of expressiveness or disinterest in the child. *Irritability/Anger* reflects the parents' irritability, anger, or hostility toward the child (e.g., frustration or threats directed at the child). The Caregiver-Child Structured Interaction Procedure shows pre-post intervention changes in parent behavior and affect (Osofsky et al., 2007), and is associated with clinician-rated parent-infant relationship quality (Aoki, Zeanah, Heller, & Bakshi, 2002). Two independent coders who were blind to intervention condition established reliability on $N = 27$ Crowell observations, with ICCs (mixed models for absolute agreement, single measures) of .76 for Behavioral Responsiveness (96% inter-rater agreement within 1), .81 for Emotional Responsiveness (96% inter-rater agreement within 1), .82 for Positive Affect (96% inter-rater agreement within 1), .80 for Withdrawn/Depressed (89% inter-rater agreement within 1), and .48 for Irritability/Anger (89% inter-rater agreement within 1). Irritability/Anger scores above 1 (none) occurred with low-frequency in this dataset ($N = 6$ at pretest, $N = 3$ at posttest) and both Irritability/Anger and Withdrawal/Depression had limited range (see Table 2) so these results should be interpreted with caution.

Analysis plan

Analyses were conducted in SPSS Version 24 (IBM Corp., Armonk, NY). T-tests, chi-squared tests, and bivariate correlations were used to determine whether the Homebased and Multifamily Group conditions differed at baseline on demographic variables or parent behavior and affect variables (i.e., Behavioral Responsiveness, Emotional Responsiveness, Positive Affect, Withdrawn/Depressed, Irritability/Anger), and whether the sample included in analyses differed from those lost to follow-up. Bivariate correlations also examined associations between parent behavior and affect variables and demographic variables. Due to significant associations between target outcome variables and parent age, income, and education, a "Parent Risk Factors" variable was created (see above). Bivariate correlations examined the relation between this Parent Risk Factors variable and intervention condition and parent affect and behavior variables.

T-tests were used to compare Homebased and Multifamily Group participants at post-test on each of the parent behavior and affect variables. Then, hierarchical linear regressions were run to determine whether change in parent behavior and affect from pre to post related to intervention condition. A separate regression was run for each of the 5 parent behavior and affect variables (Behavioral Responsiveness, Emotional Responsiveness, Positive Affect, Withdrawn/Depressed, Irritability/Anger). Parent Risk Factors and pre-test parent behavior and affect variable were entered in Step 1. In Step 2, Condition (Homebased, Multifamily Group) was added to the model to determine how much variance in post-intervention parent behavior and affect scores can be attributed to intervention condition, over and above parent risk factors and pre-intervention scores. In Step 3, interactions (Condition $\times$ Parent Risk Factors, Condition $\times$ Pre-intervention parent behavior or affect, Parent Risk Factors $\times$ Pre-intervention parent behavior or affect) were added to the model.

Next, a series of hierarchical regression analyses were performed to test whether reflective parenting mediates the association between Condition and post-test observed parenting behavior and affect. For each observed parent behavior and affect variable that had a significant intervention effect, two regression analyses were conducted. First, with a post-test observed parent behavior and affect variable (e.g., Emotional Responsiveness) as the dependent variable, Parent Risk Factors, pre-test Reflective Parenting, and the pre-test observed parent behavior and affect variable (e.g., Emotional Responsiveness) were entered in Step 1. Condition was added in Step 2 to determine how much variance in post-intervention parent behavior and affect scores can be attributed to intervention condition, over and above parent risk factors and pre-intervention scores (Total Effect of Condition on parent behavior and affect = c). Post-test Reflective Parenting was added to the model in Step 3 to determine to what extent pre-post changes in Reflective Parenting account for the association between Condition and pre-post differences in observed parent behavior and affect (Direct Effect of Condition on parent behavior and affect = c'; effect of reflective parenting on post-test parent behavior and affect = b). In the second regression, post-test reflective parenting was the dependent variable. Parent Risk Factors, pre-test Reflective Parenting, and pre-test observed parent behavior and affect were entered in Step 1, and Condition was entered in Step 2 (effect of Condition on post-test reflective parenting = a). The statistical significance of the mediated path was assessed using the Sobel test (i.e., $z\text{-value} = a*b / (b^2*s_a^2 + a^2*s_b^2)$; Sobel, 1982), which evaluates whether the reduction in effect c' relative to effect c is a significant reduction. Given the conservative nature of the Sobel test (MacKinnon, Warsi, & Dwyer, 1995) and our small sample size, we also calculated the effect size of the mediated path, κ^2 , in accord with Preacher and Kelley's (2011) recommendations. κ^2 is a measure of the proportion of the total possible indirect effect attributable to the mediated path, and small, medium, and large effect sizes of κ^2 are defined as .01, .09, and .25, respectively (Preacher & Kelley, 2011).

Results

Preliminary analyses

There were no baseline differences between intervention conditions (Multifamily Group, Homebased) on demographic characteristics such as child age or gender, parent age, parent

gender, marital status, single parent status, parent education or employment status, military status, ethnicity, or parent type (e.g., mother, father, other). However, Multifamily Group participants ($M = 2.32$) had significantly more children per household than Homebased participants ($M = 1.83$), $t(52) = -2.09$, $p = .04$. At baseline, intervention conditions did not differ from each other on any parent behavior and affect variables, or on Parent Risk Factors. The sample included in analyses did not differ from those lost to follow-up with respect to parent age, income, gender, marital status, employment status, military status, ethnicity, parent type, Emotional Responsiveness, Behavioral Responsiveness, or Withdrawal/Depression, but those lost to follow-up had less education, $t(102) = -2.25$, $p = .03$, lower Positive Affect, $M = 4.94$ vs. 5.32 , $t(37.7) = -2.86$, $p < .01$, and lower Irritability/Anger, $M = 1.00$ vs. 1.08 , $t(75) = -2.54$, $p = .01$.

There were significant associations between baseline parent behavior and affect variables and several demographic variables. Parent Emotional Responsiveness was positively associated with both parent age ($r = .25$, $p = .03$) and child age ($r = .23$, $p = .05$). Both parent Emotional Responsiveness and parent Positive Affect were higher among higher-income families (parent Emotional Responsiveness: $r = .29$, $p = .01$; parent Positive Affect: $r = .30$, $p = .01$) and families with higher levels of educational attainment (parent Emotional Responsiveness: $r = .33$, $p < .01$; parent Positive Affect: $r = .40$, $p < .01$). Table 2 shows the means, standard deviations, and ranges for key variables.

Main analyses

Significant intervention condition differences were detected at posttest for both parent Emotional Responsiveness, $t(74) = -3.26$, $p < .01$ and Positive Affect, $t(74) = -2.33$, $p = .02$, but not parent Behavioral Responsiveness, Withdrawal/Depression, or Irritability/Anger. Parent Risk Factors were found to be negatively associated with parent Emotional Responsiveness, Behavioral Responsiveness, and Positive Affect at pre-test, but not at post-test (Table 2). Further, there were significant positive intercorrelations between parents' pre- and post-test Emotional Responsiveness, Behavioral Responsiveness, and Positive Affect. Parent negative behavior and affect variables (Withdrawal/Depression, Irritability/Anger) had low frequencies in this dataset, and had fewer associations with other variables. However, parents' post-intervention Withdrawal/Depression was negatively associated with parents' post-intervention Emotional Responsiveness, and parents' pre-intervention Irritability/Anger was negatively associated with parents' pre-intervention Positive Affect.

Regression analyses examining the effect of intervention condition on parent behavior and affect, over and above pre-intervention ratings and Parent Risk Factors detected significant effects of intervention condition for both parent Emotional Responsiveness and parent Positive Affect, but not parent Behavioral Responsiveness, parent Withdrawal/Depression, or parent Irritability/Anger (Table 3). All interaction effects were nonsignificant in all models, so results are reported from Step 2, which examines main effects of intervention condition over and above Parent Risk Factors and pre-intervention scores. Intervention condition explained a significant amount of variance in post-test parent Emotional Responsiveness over and above baseline parent Emotional Responsiveness and Parent Risk Factors, $\beta = .31$, $t = 2.97$, $p < .05$ (Figure 2). Similarly, intervention condition explained a significant amount

of variance in post-test parent Positive Affect over and above baseline parent Positive Affect and Parent Risk Factors, $\beta = .23$, $t = 2.22$, $p < .05$. In both cases, Homebased participants showed no differences in parent behavior and affect between baseline and post-test, but Multifamily Group participants showed increases in these positive parent behavior and affect variables over the course of the intervention. Because of the significant association between child age and Emotional Responsiveness, models were also run with child age included in the Parent Risk Factors variable; no intervention condition results changed when child age was included.

Mediation analyses were conducted with both post-test parent Emotional Responsiveness and Positive Affect as the outcome measure. For Emotional Responsiveness, the total effect (c) of Condition was significant, $\beta = .32$, $t = 3.04$, $p < .01$, and the direct effect (c') remained significant when post-test Reflective Parenting was included in the model, $\beta = .26$, $t = 2.34$, $p < .05$. The effect of Condition on post-test Reflective Parenting (a) was significant, $\beta = .29$, $t = 2.91$, $p < .01$, and the effect of post-test Reflective Parenting on post-test Emotional Responsiveness (b) was marginally significant, $\beta = .22$, $t = 1.74$, $p = .09$. The overall mediation effect was nonsignificant, Sobel test = 1.49, $p = .14$, but had a small effect size, $\kappa^2 = .04$. For Positive Affect, the total effect (c) of Condition was significant, $\beta = .26$, $t = 2.62$, $p < .05$, and the direct effect (c') became nonsignificant when post-test Reflective Parenting was included in the model, $\beta = .17$, $t = 1.65$, $p = .10$ (Figure 3). The effect of Condition on post-test Reflective Parenting (a) was significant, $\beta = .29$, $t = 3.05$, $p < .01$, as was the effect of post-test Reflective Parenting on post-test Positive Affect, $\beta = .33$, $t = 2.64$, $p < .05$. The overall mediation effect was significant, Sobel test = 1.99, $p < .05$, with a small effect size, $\kappa^2 = .07$.

Discussion

The current study had four main findings. First, relative to the Homebased condition, the SMF Multifamily Group intervention was associated with parents' increased Emotional Responsiveness and Positive Affect from baseline to post-intervention. This suggests that the Multifamily Group format, and in vivo supported parent-child interactions provided a significant benefit to families over and above the psychoeducational content of the written materials alone. It is also likely that the interactive nature of the group helped parents to more deeply understand and apply the intervention's psychoeducational material, resulting in greater improvement in their positive parenting skills.

Second, no intervention effects were detected for parents' Behavioral Responsiveness, Withdrawal/Depression, or Irritability/Anger in interaction with their young children. Thus, intervention effects appear to be specific to aspects of parenting related to positive emotionality and enthusiasm, with no apparent effects on aspects of parenting related to negative or flat emotionality or instrumental support. Because negative parent behavior and affect (Withdrawal/Depression, Irritability/Anger) occurred with low frequency in this dataset, it is also possible that the limited variability of these scales contributed to their null effects. Similarly, the relatively low reliability of the Irritability/Anger variable in this dataset may have contributed to the lack of findings for this aspect of parenting. An alternate possibility is that the supportive, positive nature of the SMF intervention lent itself more to

improvements in parents' positive behavior and affect, while showing less influence on parents' negative behavior and affect. Much of the SMF intervention's focus is on helping parents to better understand the needs that their child may be communicating, and helping them to think about their child in ways that are sensitive to their child's needs. Discussions about these ideas naturally focus more on how parents can be more sensitive and in-tune with their child's needs, and less on decreasing parents' negative emotionality and behavior. Positive parenting, which includes positive affect and enthusiasm, plays an especially critical role in children's development; positive parenting protects children who are otherwise at higher risk for difficulties, and is associated longitudinally with adaptive outcomes in middle childhood and even adulthood (Kochanska et al., 2015; Raby et al., 2015). In military families, the military culture of limited emotional expression may be more prevalent (Walsh et al., 2014), so it is notable that this intervention appears to effectively improve this specific aspect of parenting. Emotional distance and avoidance-numbing PTSD symptoms are prevalent among military service members, and these symptoms can reduce effectiveness when parenting young children (Ruscio, Weathers, King, & King, 2002).

Third, we found that the efficacy of the SMF Multifamily Group intervention does not depend on parent risk level or pre-intervention parent behavior and affect. Thus, the intervention appears to work equally well for all military families with young children and may be a beneficial preventive intervention even in families that do not show clear parenting difficulties.

Fourth, intervention effects on Reflective Parenting significantly mediated the effect of the intervention on observed Positive Affect, though the magnitude of the effect is small. While the mediation effect for Emotional Responsiveness also had a small effect size, it did not reach statistical significance, and the pathway from post-test reflective parenting to post-test Emotional Responsiveness was marginal; future work with larger samples is necessary to elucidate this result. Prior work demonstrated that the SMF Multifamily Group intervention (Julian et al., in press) and some other therapeutic interventions (Katznelson, 2014) are associated with benefits to parenting reflectivity. Parenting reflectivity is known to relate to parents' behavioral sensitivity (Rosenblum et al., 2008) and children's attachment security (Zeanah et al., 1994), but it was not known whether intervention-related changes in reflective capacity explain improvements in observable parenting behavior. The current study demonstrates that not only does the SMF intervention improve observed parenting behavior, but the effects on Positive Affect are partially mediated through reflectivity.

Much of the SMF Multifamily Group's focus is on helping parents to shift their mindset related to their child's behavior, and learn to see their child's behavior as expressing connection or exploration-related needs. This study suggests that the SMF Multifamily Group intervention helped parents to become more aware of their child's internal needs and motivations (i.e., higher parenting reflectivity), and this change in mindset was associated with more Positive Affect during an interaction task with their child. It is likely that the focus on shifting parents' mindsets related to their child's behavior, the guided interactions around separations and reunions, and the "homework" of having fun with their child each day all contributed to the increase in positive parent behavior and affect that was associated with the SMF Multifamily Group intervention.

Limitations & Strengths

A strength of this study is its inclusion of a comparison group, particularly because the comparison group also received an informational intervention. However, it was not possible to randomly assign participants to groups or match participants across groups, and the sample size is relatively small. Nevertheless, the Multifamily Group and Homebased conditions did not differ meaningfully on outcome variables at baseline, yet did show significant differences post-intervention. We also examined differences between participants with complete data versus those lost to follow-up, and while small differences were detected on some scales, the pattern of results was not systematic. While some demographic factors (i.e., parent age, income, education, child age) were associated with differences on parenting variables, we included a Parent Risk Factors variable in analyses to account for these relationships. It remains possible, however, that systematic group differences may exist between intervention groups or between participants with complete data versus those lost to follow-up on unmeasured factors such as motivation to change. Further, because some families had two parents participating in the SMF program, participants were not completely independent of one another. It is possible that parent behavior and affect is partially elicited by the child, who is shared by both parents. Our study examined multiple aspects of positive and negative parenting, but the observed variability on some scales (i.e., Withdrawal/Depression, Irritability/Anger) was low; while this limited variability is consistent with results of other studies with larger samples (Loop, Mouton, Brassart, & Roskam, 2017), it is possible that the psychometric properties of these scales limited our ability to detect intervention effects on these scales. Although our statistical models demonstrated that intervention effects on parents' Emotional Responsiveness were partially mediated by Parenting Reflectivity, Emotional Responsivity and Parenting Reflectivity were assessed at the same time point; future work is needed to determine the time course of intervention-related changes to parents' mindsets and behavior.

Despite these limitations, this study had several notable strengths. From a scientific perspective, the use of observational measures of parenting behavior and affect in a home setting strengthens the study's ecological validity. The SMF intervention is specifically tailored to the needs of military families with young children. The experience of deployment is acknowledged and discussed, and families are able to examine how their experiences as military families might relate to their parenting and their children's behavior. Further, military families—particularly those with a parent suffering from PTSD, depression, or suicidality—are known to benefit from increased social support (Jakupcak et al., 2010; Pietrzak et al., 2010), and the SMF Multifamily Group intervention fosters a sense of community and social support among group members. The SMF intervention's focus on children's attachment makes it particularly relevant and helpful for families with young children who have experienced parental separation due to deployment. The SMF Multifamily Group intervention is brief, manualized, and can be implemented by trained community providers; providers in several regions of the USA have been trained and are currently implementing this intervention program.

Acknowledgments

The research presented was supported through funds from the Ethel & James Flinn Foundation (PI: Rosenblum), Eunice K. Shriver National Institute of Child Health and Human Development (5 R21 HD072375-02; PI: Rosenblum), and Welcome Back Veterans, an initiative of Major League Baseball and the McCormick Foundation (PI: Greden). We thank the community agencies (Easter Seals in Oakland County, Judson Center in Macomb County) and their clinicians serving the families for participating in this trial. We thank the families who participated in this project. We acknowledge the valuable efforts of the Strong Military Families and the University of Michigan Military Support Programs and Networks project staff in program development, implementation and data collection. T32 postdoctoral fellowship funding (HD079350; PI: J. Lumeng) supported the primary author. This study was approved by the University of Michigan Institutional Review Board, and written informed consent was obtained from all adults.

References

- Aoki Y, Zeanah CH, Heller SS, Bakshi S. Parent-infant relationship global assessment scale: A study of its predictive validity. *Psychiatry and Clinical Neurosciences*. 2002; 56(5):493–497. DOI: 10.1046/j.1440-1819.2002.01044.x [PubMed: 12193237]
- Bender E. APA survey documents extent of MH problems in military. *Psychiatric News*. 2008; 43(11)
- Bowlby J. Attachment and loss: Attachment. New York: Basic Books; 1969.
- Bretherton I, Munholland KA. Internal working models in attachment relationships: Elaborating a central construct in Attachment Theory. *Handbook of Attachment*. 2008:103–129.
- Brockman C, Snyder J, Gewirtz AH, Gird SR, Quattlebaum J, Schmidt N, DeGarmo D. Relationship of service members' deployment trauma, PTSD symptoms, and experiential avoidance to postdeployment family reengagement. *Journal of Family Psychology*. 2016; 30(1):52–62. DOI: 10.1037/fam0000152 [PubMed: 26437144]
- Crowell JA, Fleischmann MA. Use of structured research procedures in clinical assessments of infants. In: Zeanah CH, editor *Handbook of Infant Mental Health*. 1st. New York, NY: Guilford Press; 1993. 210–221.
- Dayton CJ, Walsh TB, Muzik M, Erwin MS, Rosenblum KL. Strong, safe, and secure: Negotiating early fathering and military service across the deployment cycle. *Infant Mental Health Journal*. 2006; 27(1):5–25. DOI: 10.1002/imhj [PubMed: 28640426]
- DeVoe ER, Paris R, Acker ML. Prevention and Treatment for Parents of Young Children in Military Families. In: Gewirtz AH, Youssef AM, editors *Parenting and Children's Resilience in Military Families*. Switzerland: Springer International Publishing; 2016. 213–227.
- DeVoe ER, Paris R, Emmert-Aronson B, Ross A, Acker M. A randomized clinical trial of a postdeployment parenting intervention for service members and their families with very young children. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2017; 9(Suppl 1):25–34. DOI: 10.1037/tra0000196
- DeVoe ER, Ross AM, Paris R. Build it together and they will come: The case for community-based participatory research with military populations. *Advances in Social Work*. 2012; 13(1):149–165.
- Gewirtz AH, DeGarmo DS, Zamir O. Effects of a Military Parenting Program on Parental Distress and Suicidal Ideation: After Deployment Adaptive Parenting Tools. *Suicide and Life-Threatening Behavior*. 2016; 46(April):S23–S31. DOI: 10.1111/sltb.12255 [PubMed: 27094107]
- Gewirtz AH, DeGarmo DS, Zamir O. After Deployment, Adaptive Parenting Tools: 1-Year Outcomes of an Evidence-Based Parenting Program for Military Families Following Deployment; *Prevention Science*. 2017. 1–11.
- Gewirtz AH, Pinna KLM, Hanson SK, Brockberg D. Promoting parenting to support reintegrating military families: After deployment, adaptive parenting tools. *Psychological Services*. 2014; 11(1): 31–40. DOI: 10.1037/a0034134 [PubMed: 24564441]
- Jakupcak M, Vannoy S, Imel Z, Cook JW, Fontana A, Rosenheck R, McFall M. Does PTSD moderate the relationship between social support and suicide risk in Iraq and Afghanistan War Veterans seeking mental health treatment? *Depression and Anxiety*. 2010; 27(11):1001–1005. DOI: 10.1002/da.20722 [PubMed: 20721901]

- Julian MM, Muzik M, Kees M, Valenstein M, Rosenblum KL. Strong Military Families intervention enhances parenting reflectivity and representation. *Infant Mental Health Journal*. (n.d.).
- Katznelson H. Reflective functioning: A review. *Clinical Psychology Review*. 2014; 34(2):107–117. DOI: 10.1016/j.cpr.2013.12.003 [PubMed: 24486522]
- Kelly K, Slade A, Grienenberger JF. Maternal reflective functioning, mother-infant affective communication, and infant attachment: Exploring the link between mental states and observed caregiving behavior in the intergenerational transmission of attachment. *Attachment & Human Development*. 2005; 7(3):299–311. DOI: 10.1080/14616730500245963 [PubMed: 16210241]
- Kochanska G, Boldt LJ, Kim S, Yoon JE, Philibert RA. Developmental interplay between children's biobehavioral risk and the parenting environment from toddler to early school age: Prediction of socialization outcomes in preadolescence. *Development and Psychopathology*. 2015; 27(3):775–790. DOI: 10.1017/S0954579414000777 [PubMed: 25154427]
- Kopp CB. Regulation of distress and negative emotions: A developmental view. *Developmental Psychology*. 1989; 25(3):343–354. DOI: 10.1037/0012-1649.25.3.343
- Lester P, Mogil C, Saltzman W, Woodward K, Nash W, Leskin G, Beardslee WR. Families overcoming under stress: implementing family-centered prevention for military families facing wartime deployments and combat operational stress. *Military Medicine*. 2011; 176(1):19–25. DOI: 10.7205/MILMED-D-10-00122 [PubMed: 21305955]
- Lieberman AF. Traumatic stress and quality of attachment: Reality and internalization in disorders of infant mental health. *Infant Mental Health Journal*. 2004; 25(4):336–351. DOI: 10.1002/imhj.20009
- Loop L, Mouton B, Brassart E, Roskam I. The Observation of Child Behavior During Parent-Child Interaction: The Psychometric Properties of the Crowell Procedure. *Journal of Child and Family Studies*. 2017; 26(4):1040–1050. DOI: 10.1007/s10826-016-0625-0
- Lyons-Ruth K, Alpern L, Repacholi B. Disorganized Infant Attachment Classification and Maternal Psychosocial Problems as Predictors of Hostile-Aggressive Behavior in the Preschool Classroom. *Child Development*. 1993; 64(2):572–585. DOI: 10.2307/1131270 [PubMed: 8477635]
- MacKinnon DP, Warsi G, Dwyer JH. A Simulation Study of Mediated Effect Measures. *Multivariate Behavioral Research*. 1995; 30(1):41–62. DOI: 10.1207/s15327906mbr3001_3 [PubMed: 20157641]
- Muzik M, Rosenblum KL, Alfara EA, Schuster MM, Miller NM, Waddell RM, Kohler ES. Mom Power: Preliminary outcomes of a group intervention to improve mental health and parenting among high-risk mothers. *Archives of Women's Mental Health*. 2015; 18(3):507–521. DOI: 10.1007/s00737-014-0490-z
- Muzik M, Rosenblum KL, Schuster MM, Kohler ES, Alfara EA, Miller NM. A mental health and parenting intervention for adolescent and young adult mothers and their infants. *Journal of Depression and Anxiety*. 2016; 5(3)doi: 10.4200/2167-1044.1000233
- Osofsky JD, Kronenberg M, Hammer JH, Lederman JC, Katz L, Adams S, Hogan A. The development and evaluation of the intervention model for the Florida Infant Mental Health Pilot Program. *Infant Mental Health Journal*. 2007; 28(3):259–280. DOI: 10.1002/imhj.20135 [PubMed: 28640467]
- Piehler TF, Ausherbauer K, Gewirtz AH, Gliske K. Improving Child Peer Adjustment in Military Families Through Parent Training: The Mediational Role of Parental Locus of Control; The *Journal of Early Adolescence*. 2016. 1–22.
- Pietrzak RH, Johnson DC, Goldstein MB, Malley JC, Rivers AJ, Morgan CA, Southwick SM. Psychosocial buffers of traumatic stress, depressive symptoms, and psychosocial difficulties in veterans of Operations Enduring Freedom and Iraqi Freedom: The role of resilience, unit support, and postdeployment social support. *Journal of Affective Disorders*. 2010; 120(1–3):188–192. DOI: 10.1016/j.jad.2009.04.015 [PubMed: 19443043]
- Preacher KJ, Kelley K. Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods*. 2011; 16(2):93–115. DOI: 10.1037/a0022658 [PubMed: 21500915]
- Raby KL, Roisman GI, Fraley RC, Simpson JA. The enduring predictive significance of early maternal sensitivity: Social and academic competence through age 32 years. *Child Development*. 2015; 86(3):695–708. DOI: 10.1111/cdev.12325 [PubMed: 25521785]

- Rosen LN, Teitelbaum JM, Westhuis DJ. Children's reactions to the Desert Storm deployment: initial findings from a survey of Army families. *Military Medicine*. 1993; 158(7):465–9. [PubMed: 8351048]
- Rosenblum KL, Lawler JM, Alfafara E, Miller N, Schuster M, Muzik M. Improving Maternal Representations in High-Risk Mothers: A Randomized, Controlled Trial of the Mom Power Parenting Intervention. *Child Psychiatry & Human Development*. 2017.
- Rosenblum KL, McDonough SC, Sameroff AJ, Muzik M. Reflection in thought and action: Maternal parenting reflectivity predicts mind-minded comments and interactive behavior. *Infant Mental Health Journal*. 2008; 29(4):362–376. DOI: 10.1002/imhj.20184 [PubMed: 28636158]
- Rosenblum KL, Muzik M, Morelen DM, Alfafara EA, Miller NM, Waddell RM, Ribaud J. A community-based randomized controlled trial of Mom Power parenting intervention for mothers with interpersonal trauma histories and their young children. *Archives of Women's Mental Health*. 2017.
- Ruscio AM, Weathers FW, King LA, King DW. Male war-zone veterans' perceived relationships with their children: The importance of emotional numbing. *Journal of Traumatic Stress*. 2002; 15(5): 351–357. DOI: 10.1023/A:1020125006371 [PubMed: 12392222]
- Rutter M. Protective factors in children's responses to stress and disadvantage. Vol. 8. *Annals of the Academy of Medicine*; Singapore: 1979. 324–38.
- Saltzman WR, Lester P, Milburn N, Woodward K, Stein J. Pathways of Risk and Resilience: Impact of a Family Resilience Program on Active-Duty Military Parents. *Family Process*. 2016; 55(4):633–646. DOI: 10.1111/famp.12238 [PubMed: 27597440]
- Sameroff AJ, Seifer R, Baldwin A, Baldwin C. Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. *Child Development*. 1993; 64(1):80–97. [PubMed: 8436039]
- Schachman KA, Lee RK, Lederma RP. Baby Boot Camp: Facilitating maternal role adaptation among military wives. *Nursing Research*. 2004; 53(2):107–115. DOI: 10.1097/00006199-200403000-00006 [PubMed: 15084995]
- Shaw DS, Keenan K, Vondra JI, Delliquadri E, Giovannelli J. Antecedents of preschool children's internalizing problems: A longitudinal study of low-income families. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1997; 36(12):1760–1767. DOI: 10.1097/00004583-199712000-00025 [PubMed: 9401338]
- Slade A. Reflective Parenting Programs: Theory and Development. *Psychoanalytic Inquiry*. 2007; 26(4):640–657. DOI: 10.1080/07351690701310698
- Slade A, Grienenberger J, Bernbach E, Levy D, Locker A. Maternal reflective functioning, attachment, and the transmission gap: A preliminary study. *Attachment & Human Development*. 2005; 7(3): 283–298. DOI: 10.1080/14616730500245880 [PubMed: 16210240]
- Snyder J, Gewirtz AH, Schrepferman L, Gird SR, Quattlebaum J, Pauldine MR, Hayes C. Parent-child relationship quality and family transmission of parent posttraumatic stress disorder symptoms and child externalizing and internalizing symptoms following fathers' exposure to combat trauma. *Development and Psychopathology*. 2016; 28(4pt1):947–969. DOI: 10.1017/S095457941600064X [PubMed: 27739388]
- Sobel ME. Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models. *Sociological Methodology*. 1982; 13(1982):290. doi: 10.2307/270723
- Sroufe LA. Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment & Human Development*. 2005; 7(4):349–367. DOI: 10.1080/14616730500365928 [PubMed: 16332580]
- Swain JE, Ho SS, Rosenblum KL, Morelen D, Dayton CJ, Muzik M. Parent-child intervention decreases stress and increases maternal brain activity and connectivity during own baby-cry: An exploratory study. *Development and Psychopathology*. 2017; 29(2):535–553. DOI: 10.1017/S0954579417000165 [PubMed: 28401845]
- Swain JE, Ho SS, Rosenblum KL, Morelen D, Muzik M. 39.4 Emotion processing and psychopathological risk in the parental brain: Psychosocial intervention increases activity and decreases stress. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2016; 55(10):S320–S321. DOI: 10.1016/j.jaac.2016.07.350

- Wadsworth SM, Riggs D. Risk and resilience in U.S. Military families; Risk and Resilience in U.S. Military Families. 2011. 1–369.
- Walsh TB, Dayton CJ, Erwin MS, Muzik M, Busuito A, Rosenblum KL. Fathering after military deployment: Parenting challenges and goals of fathers of young children. *Health and Social Work*. 2014; 39(1):35–44. DOI: 10.1093/hsw/hlu005 [PubMed: 24693602]
- Zeanah CH, Benoit D. Clinical applications of a parent perception interview in infant mental health. *Child and Adolescent Psychiatric Clinics of North America*. 1995; 4:539–554.
- Zeanah CH, Benoit D, Hirshberg L, Barton ML, Regan C. Mothers' representations of their infants are concordant with infant attachment classifications. *Developmental Issues in Psychiatry and Psychology*. 1994; (1):9–18.
- Zeman J, Cassano M, Perry-Parrish C, Stegall S. Emotion regulation in children and adolescents. *Developmental and Behavioral Pediatrics*. 2006; 27(2):155–168.
- Zerach G, Greene T, Ein-Dor T, Solomon Z. The relationship between posttraumatic stress disorder symptoms and paternal parenting of adult children among ex-prisoners of war: A longitudinal study. *Journal of Family Psychology*. 2012; 26(2):274–284. DOI: 10.1037/a0027159 [PubMed: 22309816]

Figure 1.
Participant flow diagram.

Figure 2. Intervention effects on observed parenting (Emotional Responsiveness, Positive Affect), controlling for pre-intervention parenting and Parent Risk Factors.

Figure 3.
Post-test Reflective Parenting as a mediator of the effect of intervention Condition on post-test observed Positive Affect.

* $p < .05$, ** $p < .01$

Table 1

Sample demographics ($N = 76$; $MG = 34$, $HB = 42$)

Parent Characteristic	MG		HB		Child Characteristic	MG		HB	
	%	%	%	%		% or M (SD)	% or M (SD)	% or M (SD)	% or M (SD)
Female	61.8	59.5			Female	58.8		45.2	
Age					Age	3.74 (1.73)		3.88 (1.52)	
18-21	0.0	4.8			# of children in household				
22-30	38.2	45.2			0*	2.9		0.0	
31-40	50.0	40.5			1	26.5		35.7	
41-50	8.8	7.1			2	26.5		45.2	
51-60	0.0	2.4			3	26.5		19.0	
> 60	2.9	0.0			4	14.7		0.0	
Ethnicity					5	2.9		0.0	
African American	0.0	7.3							
Caucasian	85.3	73.2							
Native American	5.9	4.9							
Multi-ethnic	5.9	2.4							
Other	2.9	12.2							
Hispanic or Latino(a)	2.9	18.9							
Marital Status									
Married	79.4	88.1							
Engaged/Cohabiting	8.8	4.8							
Divorced/Separated/Widowed/Single	11.8	7.1							
Single parent	5.9	4.8							
Education									
GED/HS Diploma	8.8	11.9							
Some college/Technical Certificate/Associate Degree	52.9	45.2							
Bachelor's degree	32.4	28.6							
Graduate degree (MA, MS, MD, JD, PhD, etc.)	5.9	14.3							
Employed	64.7	76.2							

Parent Characteristic	MG		HB		Child Characteristic	MG		HB	
	%	%				% or M (SD)	% or M (SD)		
Family Income									
< \$20,000	5.9	7.3							
\$20,001 - \$30,000	29.4	14.6							
\$30,001 - \$40,000	5.9	14.6							
\$40,001 - \$50,000	5.9	4.9							
\$50,001 - \$75,000	26.5	36.6							
\$75,001 - \$100,000	17.6	9.8							
> \$100,000	8.8	12.2							
Military status									
Military service member	47.1	54.8							
Spouse or other (e.g., grandparent)	52.9	45.2							
Relation to child									
Mother	55.9	59.5							
Father	35.3	40.5							
Other (e.g., grandparent)	8.8	0.0							

MG = Multifamily Group. HB = Homebased.

* Note: Parents who reported 0 children in their household had a non-residential child or children.

Table 2

Bivariate correlations, means, and SDs for intervention condition (Homebased, Multifamily Group), Parent Risk Factors, and parent pre- and post-intervention behavior and affect variables.

Intervention Condition		1	2	3	4	5	6	7	8	9	10	11	M (SD)	Range
Parent Risk Factors	2	-.01											.83 (.93)	0-3
	3	.13	-.44*										4.5 (.81)	2-6
Parent Emotional Responsiveness	4	.35*	-.14	.38*									4.70 (.92)	3-6
	5	.14	-.32*	.69*	.33*								4.41 (.80)	3-6
Parent Behavioral Responsiveness	6	.17	-.22	.43*	.74*	.39*							4.59 (.92)	3-6
	7	.09	-.33*	.71*	.34*	.46*	.24*						5.32 (.70)	3-6
Parent Positive Affect	8	.26*	-.20	.35*	.74*	.22	.54*	.46*					5.43 (.74)	3-7
	9	-.15	.21	-.21	-.13	-.08	-.11	-.19	-.21				1.03 (.16)	1-2
Parent Withdrawal/Depression	10	.06	-.05	.02	-.23*	-.05	-.04	-.03	-.11	-.03			1.07 (.34)	1-3
	11	-.07	-.05	-.18	-.12	-.15	-.03	-.28*	-.17	-.05	-.06		1.08 (.27)	1-2
Parent Irritability/Anger	12	-.18	-.11	-.04	-.15	.15	-.06	.00	-.12	-.03	-.04	-.06	1.04 (.20)	1-2

*
p < .05

Regressions assessing the effect of intervention condition on parent affect and behavior, over and above pre-intervention ratings and Parent Risk Factors.

Table 3

	Intervention condition						Effect of intervention condition		
	Homebased (N = 42)			Multifamily Group (N = 34)			β	<i>t</i>	<i>R</i> ²
	Pre	Post		Pre	Post				
Parent emotional responsiveness	4.40 (.80) ^f	4.40 (.86)		4.62 (.82)	5.06 (.89)		.31	2.97*	.24 .09*
Parent behavioral responsiveness	4.31 (.81)	4.45 (.89)		4.53 (.79)	4.76 (.96)		.12	1.13	.18 .02
Parent positive affect	5.26 (.67)	5.26 (.63)		5.38 (.74)	5.65 (.81)		.23	2.22*	.26 .05*
Parent withdrawal/depression	1.05 (.22)	1.05 (.31)		1.00 (.00)	1.09 (.38)		.06	0.50	.01 .00
Parent irritability/anger	1.10 (.30)	1.07 (.26)		1.06 (.24)	1.00 (.00)		-.19	-1.63	.05 .04

^f Mean (SD)

* *p* < .05