Promoting Parent-Infant Responsiveness in Families Experiencing Homelessness

Janette E. Herbers

Villanova University

J. J. Cutuli

Rutgers University – Camden

Center for Healthcare Delivery Science, Nemours Biomedical Research

Perrin B. Fugo, Elke R. Nordeen, Michael J. Hartman

Villanova University

This study was funded by the National Science Foundation (grant number 1654245).

The authors declare that we have no conflict of interest. We wish to express our appreciation for collaboration with Ileen Henderson, as well as for the many contributions of our late colleague, Dr. Staci Perlman, whose brilliance and determination set this collaboration in motion.

Correspondence regarding this article should be addressed to Janette Herbers, Department of Psychological and Brain Sciences, Villanova University, 800 E. Lancaster Ave, Villanova, PA 19085, USA. E-mail: janette.herbers@villanova.edu, Phone: 610-519-8895, Fax: 610-519-4269

Abstract

My Baby's First Teacher is an intervention designed specifically for parents with infants staying in emergency homeless shelters. Infants are over-represented in shelter populations and face considerable risk to their development, including mental health. We utilized a randomized controlled design across three family shelters to evaluate the program's effectiveness with 24 dyads assigned to the intervention compared to 21 dyads in care-as-usual. Dyads were randomized by round at each site to account for shelter effects. We used path analysis to illustrate change over time and in relation to intervention assignment.

Key Findings: Results indicated improvements in observed parent-infant responsiveness related to the intervention at post, controlling for initial levels of responsiveness. Findings were consistent between an intent-to-treat model and a model testing actual intervention participation. We found no significant effects for parenting stress or parent distress, though trends suggested higher scores for intervention families.

Implications for Practice and Policy: We present findings considering challenges unique to contexts of homelessness for infant mental health. This work can inform efforts of service providers who encounter families experiencing homelessness as well as policy regarding resources for programming in emergency housing.

Keywords: family homelessness, parenting intervention, responsiveness

Promoting Parent-Infant Responsiveness in Families Experiencing Homelessness

Children who experience homelessness face high risk for poor health, mental health, and other developmental problems concurrently and across childhood (Bassuk, DeCandia, Beach, & Berman, 2014; Cutuli & Herbers, 2014). Infants under 12 months of age make up about 6% of the overall United States population, but about 11% of the population of children served by family homeless shelters (HUD, 2018). One study indicated that homelessness during infancy predicted academic difficulties in second grade, beyond effects of associated risk factors such as income level, birth risks, and maltreatment (Perlman & Fantuzzo, 2010). Infants and toddlers experiencing homelessness also have shown elevated rates of developmental delays and social-emotional difficulties compared to population norms (Garcia Coll, Buckner, Brooks, Weinreb, & Bassuk, 1998; Haskett, Armstrong, & Tisdale, 2015). Generally, however, infants are not well represented in the research literature on homelessness despite their considerable vulnerability.

The specific challenges associated with homeless episodes in addition to chronic poverty stressors may be especially detrimental during infancy, a period of rapid development and corresponding neuroplasticity (Cutts et al., 2018; David, Gelberg, & Suchman, 2012; Perlman et al., 2012; Shonkoff & Garner, 2012; Volk, 2014). In all contexts, infants rely on their caregivers to support their healthy development. Caregivers coping with financial stress, domestic or community violence, and depression are less likely to engage infants with sensitivity and responsiveness (David et al., 2012; Lovejoy, Gracyzyk, O'Hare, & Neuman, 2000). Parents who experience homelessness report more recent stressful life events than non-homeless parents and less social support, both of which could contribute to feelings of distress and helplessness (Cutuli & Herbers, 2014; Fertig & Reingold, 2008; Masten, Miliotis, Graham-Bermann, Ramirez, & Neemann, 1993). Living in shelters for homeless families can involve scrutiny of parenting by

staff and other parents, crowding, lack of privacy, and restrictive rules such as curfews that interfere with family routines (David et al., 2012; Friedman, 2000; Mayberry, Shinn, Benton, & Wise, 2014; Perlman, Cowan, Gewirtz, Haskett, & Stokes, 2012). While no studies have documented unique impacts of homelessness on parent-infant relationships, homelessness has been associated with adverse parenting practices among preschool-aged children (Park, Ostler, & Fertig, 2015).

Meanwhile, studies with older children have affirmed positive parenting as a protective factor, predicting resilience despite homelessness (Herbers, Cutuli, Supkoff, Narayan, & Masten, 2014). Parents who approach their children with warmth, sensitivity, and responsiveness provide experiences of positive co-regulation, in which parent and child alter their behaviors in response to and anticipation of each other (Fogel, 1993; Herbers et al., 2014). These positive exchanges support social, emotional, and cognitive development as young children internalize the experiences. For all children, from infancy through childhood, positive co-regulation can set the foundation for a secure attachment relationship and predicts later competence in social skills, conduct, and academic achievement (Calkins & Hill, 2007; Zimmer-Gembeck et al., 2015). As with older children, positive co-regulation can be especially potent as a protective factor for infants developing in contexts of substantial risk and adversity (Eisenberg et al., 2005; Julian, Lawler, & Rosenblum, 2017; Lengua, Honorado, & Bush, 2007; Raver, 2004).

Efforts to intervene with children who experience risk often seek to promote positive parenting while preventing harsh and insensitive parent behaviors (Julian et al., 2017). Challenges particular to homeless shelters must be considered in the design and implementation of intervention programs within these settings. Because many shelters provide emergency housing with the intention of moving families to stable housing as quickly as possible, stays for

most families are brief and busy. Effective parenting interventions in the context of family homeless shelters also should be brief and focused, aiming to capitalize on existing strengths and, when warranted, initiate a cascade of change by tapping into malleable factors within the parent-child relationship. Families in shelter differ in their profiles of strengths and challenges; although the risk for family difficulties is heightened, many families demonstrate resilience with competent functioning despite these risks (Herbers et al., 2014). Group formats have been particularly well-received in these contexts, where parents can learn from each other and foster positive role models and social support (Donlon, Lake, Pope, Shaw, & Haskett, 2014; Haskett, Loehman, & Burkhart, 2014).

Financial resources of shelters are limited, and most staff are paraprofessionals without advanced degrees or specialized training in child development, mental health, or therapeutic interventions. Though committed to serving the needs of homeless families, staff are frequently underpaid, overworked, and prone to burn-out and high turnover (Bassuk, Richard, & Tsertsvadze, 2015; Volk, 2014). Thus, interventions that depend upon specialized skills or costly, intensive training of staff are unlikely to be sustainable. While a number of programs have been designed to teach parenting skills and thereby support the healthy development of children in shelters, few have focused on infants specifically, and very little rigorous evidence exists to demonstrate whether these programs are effective (Haskett et al., 2014; Herbers & Cutuli, 2014). We aim to address this gap by evaluating an existing intervention, My Baby's First Teacher (MBFT).

MBFT is an educational curriculum designed to teach homeless and other at-risk parents the importance of their role during infancy (Herbers & Henderson, 2019). The course aims to help parents see themselves as teachers, provide information about infant development, and teach skills to

enhance the quality of the parent-infant relationship. MBFT is brief, delivered in five weekly group sessions, and designed specifically to be sustainable in the shelter context. With a detailed facilitator manual and video-guided lessons, MBFT can be learned quickly and delivered by agency staff persons without advanced degrees or substantial training costs.

Each cycle of MBFT includes up to ten parent-infant pairs with five weekly group sessions lasting 60-90 minutes each. The curriculum aims to teach core concepts of the links between sensory experiences and brain development, attachment relationships, developmental milestones, and the importance of healthy early development to prevent later problems. The sessions are not didactic but informal and comfortable, located in child-friendly playrooms. Participants view video demonstrations in which similar families, filmed in similar shelters, model skills and appropriate interactions. Skills include observing infant signals and cues to respond sensitively, placing infants on their tummies for active play to develop their core muscles, and massaging infants to encourage soothing touch and sharing of affection. The video for each session includes prompts for staff facilitators to pause the video for in vivo practice and coaching. Parents who participate receive quality gifts at each session, including baby blankets for tummy time, age-appropriate toys, and infant carriers to use during sessions and keep for individual practice and use. Staff facilitators reinforce the information presented in the videos, model skills, and note participant strengths, efforts, and successes. Facilitators also encourage parents to coach and support one another, observing and expressing understanding of the unique difficulties these parents face.

Emergency shelters across the country have implemented MBFT successfully, with results of qualitative evaluations suggesting benefits to families and the overall shelter communities (Herbers & Henderson, 2019). In particular, the brief and simple format of the groups appeals to parents in

shelter, who vary considerably in their needs and preferences. Staff have found that the program fits well within the confines of their limited resources and capacity.

For the current study, we employed a randomized controlled design to test the impact of MBFT on three key outcomes: parent-infant responsiveness, parenting stress, and parent symptoms of internalizing distress. With a pre-post design including residents from three different family shelters, we considered change resulting from the intervention as well as change over time in the adaptive functioning of parents experiencing homelessness with their infants. We expected to find positive effects wherein parents who participated in the MBFT intervention would show greater reduction in self-reported parenting stress and internalizing distress along with greater increases in observed responsiveness with their infants compared to parents assigned to care-as-usual.

Method

Participants and Procedures

Participants were 45 mother-infant dyads recruited while residing in three emergency shelters in Philadelphia. Children (62% male) in the sample ranged in age from 0 to 12 months ($M = 6.07$, $SD = 3.43$) with mothers ranging in age from 17 to 42 years ($M = 28.0$, $SD = 6.18$). Most mothers (75%) described their ethnicity as African American. Parents other than biological mothers were eligible for the study and the intervention; however, there were no fathers or other types of primary caregivers with infants present in the shelters at the times of recruitment.

Dyads completed two assessments, the second occurring about eight weeks after the first to allow ample time for the 5-week MBFT program. The initial assessment (T1) was conducted onsite at the shelters prior to the start of MBFT for the intervention group, or within a span of three weeks, for the comparison group. The second assessment (T2) was conducted onsite for dyads still residing in the shelters (80%) and offsite in community locations such as public libraries for dyads who had

moved to other housing. Retention rates were adequate, with 69% completing T2. There was no significant difference in retention rates at T2 based on intervention assignment. Families who had moved out of shelter were less likely to complete the measures at T2. Assessments involved structured interviews of parents as well as a 15-minute free play interaction, when researchers left dyads alone in a private room with a small bin of age-appropriate toys such as balls, rattles, and board books. The interactions were video recorded for later observational coding.

Randomization

We conducted two rounds of data collection at each of the three family shelters. Randomization occurred at the level of the shelter to simplify the process for shelter staff and to enable reasonable group sizes of 5-8 families for the MBFT rounds at each site. The first round at each shelter was randomly assigned by flipping a coin to either the MBFT or care-as-usual (CAU) condition. Approximately nine months after the first round at each shelter, we conducted a second round of data collection for the counterbalancing condition. In this manner, dyads were assigned to condition based on the shelter's condition assignment during their stay. No family could participate in both conditions because no family stayed in the shelters during more than one cycle of the study. Dyads who participated during an MBFT cycle made up the intervention group according to intent-to-treat. Those who participated during rounds when MBFT was not offered made up the CAU comparison group. Parents in the intervention group were encouraged, but not required, to attend MBFT. Based on attendance recorded by staff at each session, 14 of the 24 dyads in the intervention group participated in at least three of five sessions of the MBFT program. Twelve of these 14 dyads completed all five sessions. As such, we defined participation as attending three or more sessions. In comparison to those who took part in the MBFT intervention, participants who were eligible but chose not to take part in MBFT had been staying in shelter longer ($t = 3.23$, $p = .004$), had older

infants ($t = 2.12$, $p = .039$), and reported higher levels of initial parenting stress ($t = 2.99$, $p = .007$) on average.

Measures

Parent-Infant Responsiveness. Observational coding of the parent-child free play interaction indexed responsiveness within the parent-child relationship. Coders rated the degree of mutually responsive orientation (MRO), defined as close, mutually binding, cooperative, and affectively positive interactions (Kochanska, 2002). Raters attended to coordinated routines, harmonious communication, mutual cooperation, and emotional ambiance. Scores range from 1-5 on overall degree of responsiveness, with higher scores indexing more responsiveness in the relationship. In a comprehensive review of 24 observational parenting measures, MRO was judged to have good inter-rater reliability, test-retest stability, and sensitivity to developmental change (Lotzin et al., 2015). Two separate teams of raters assessed MRO at T1 and T2, respectively, with ICC = .72 and .86. Raters were blind to other participant data and to condition assignment of the dyads.

Parenting Stress. At both T1 and T2, parents responded via interview to the Parenting-Stress Index-Short Form (PSI-4-SF; Abidin, 2012). We utilized *T*-scores generated by the Parent-Child Dysfunctional Interaction subscale to indicate perceived parenting stress related to the relationship. Parents responded to each item on a scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Example items include, “My child smiles at me much less than I expected” and “When I do things for my child, I get the feeling that my efforts are not appreciated very much.” Raw scores were converted to *T*-scores with higher scores denoting more parenting stress. The subscale had good internal reliability at both time points, $\alpha = .88$ and .83, respectively.

Parent Distress. Parents responded via interview to the Hopkins Symptom Checklist-25, reporting on 25 symptoms of anxiety and depression experienced within the past week (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). The measure describes symptoms such as "feeling tense or keyed up" and "feeling blue." Respondents rated their experience of each symptom on a 4-point Likert scale from 1 (*not at all*) to 4 (*extremely*). Scores for all items were averaged as a continuous measure of current distress at both T1 and T2, with α = .91 and .90, respectively.

Adversity. At T1, parents responded via interview to the Lifetime Life Events Questionnaire (Gest, Reed, & Masten, 1999), indicating whether any of a list of stressful events had occurred in their lifetime. Sample items include having been a victim of violence, having witnessed violence, and having lost parents, siblings, and other close family members. The sum of unique negative life events formed each total adversity score.

Demographics and Risk. At T1, parents reported on age, gender, and ethnicity of themselves and their children as well as certain parent risk factors: educational attainment of less than a high school degree or GED, having been younger than 18 years when their first child was born, and being currently unemployed.

Plan for Analysis

We took two different approaches to the data analyses to consider group differences in outcomes as well as relations among key variables and change over time. We conducted our primary analyses with an intent-to-treat approach, defining groups by assignment to condition, and we conducted additional analyses based on actual participation in the intervention. Prior to testing for impacts of MBFT, we compared the MBFT and CAU groups on demographic and other key variables assessed at T1 to examine the effectiveness of the random assignment by

round (see Table 1). The two groups did not differ significantly on child gender, age, or ethnicity. They did not differ based on parent education, parent younger than 18 years at birth of first child, distress, parenting stress, or parent-infant responsiveness assessed at T1. There was a significant group difference in parent unemployment, with 88% unemployed in MBFT compared to 60% in CAU, χ^2 (1) = 4.40; p = .04. We also found a non-significant trend regarding adversity, with M = 4.63 in MBFT compared to M = 6.25 in CAU, t(1) = 1.90; p = .07. As such, we controlled for unemployment and adversity in our models. We also estimated cross-sectional correlations between responsiveness and parenting stress at T1 and at T2, and we estimated the pathway from T1 parent distress to T2 responsiveness based on *a priori* theoretical expectations.

We utilized path analysis with MPlus version 8 (Muthen & Muthen, 2017) to test for impacts of MBFT on responsiveness, parenting stress, and parent distress simultaneously by predicting T2 measures with T1 measures and intervention condition. We utilized this approach to capitalize on the pre-post design and to estimate the effects of other T1 measures on T2 measures. Missing data appeared to conform to assumptions of missing at random, supported by Little's MCAR test, $\chi^2(115) = 108.5$, p = .65. As such, we accounted for missing data using full information maximum likelihood estimation. We considered fit statistics based on a threshold for adequate fit of RMSEA < .08, TLI > .80, and CFI > .80 following guidance from the field (Cangur & Ercan, 2015).

Results

Descriptive statistics overall and by intervention group are displayed in Table 1. Bivariate correlations appear in Table 2.

Overall, the path analysis model with groups based on intent-to-treat had evidence of adequate fit, with $\chi^2(15) = 18.8$, p = .22, *RMSEA* = .07, *TLI* = .83, *CFI* = .88. Results including

all estimated regression pathways with unstandardized estimates are presented in Table 3, and the model is depicted in Figure 1. The pathway from MBFT assignment to T2 responsiveness was positive and significant, $\beta = .44$, $p = .01$. The pathway from MBFT assignment to T2 parenting stress was not significant, $\beta = .23$, $p = .19$. The pathway from MBFT assignment to T2 distress showed a positive, non-significant trend, $\beta = .33$, $p = .08$. The direction of this moderate effect was contrary to expectations, and because the trend could suggest a possible negative impact of the program, we examined mean differences at T1 (pre-test) and T2 (post-test) by group for this nonsignificant result as well as for the significant results with responsiveness (see Figure 2). T1 distress predicted T2 responsiveness, $\beta = -.45$, $p = .001$, and T1 unemployment predicted T2 parenting stress, $\beta = -.33$, $p = .049$.

In addition to examining results based on intent-to-treat, we considered effects of actual participation in the MBFT intervention. First, we compared demographic and descriptive variables for the 14 parents who were assigned to MBFT and chose to participate to the 10 parents who were assigned to MBFT but did not participate. The only significant differences observed were weeks in shelter at T1, child age in months, and parenting stress at T1. Those who did not participate in MBFT reported having been in shelter longer at T1, $t(22) = 3.22$, $p = .004$, older children, $t(22) = 2.20$, $p = .039$, and more parenting stress, $t(22) = 2.99$, $p = .007$.

The path analysis model for actual MBFT participation compared parents who attended the intervention sessions compared to a group made up of those who were assigned but did not attend to those who were assigned to CAU. This model also showed evidence of adequate fit, with $\chi^2(15) = 21.2$, p = .13, RMSEA = .09, TLI = .76 and CFI = .83. The pathway from MBFT participation to T2 responsiveness was significant, $\beta = .47$, $p = .001$. The pathway from MBFT participation to T2 distress showed a non-significant trend, $\beta = .31$, $p = .057$. The pathway to T2

parenting stress was significant, $\beta = .31$, $p = .038$. T1 parent distress significantly predicted T2 responsiveness, $\beta = -.39$, $p = .009$, and there was a nonsignificant trend for the pathway from T1 unemployment to T2 parenting stress, $\beta = -.34$, $p = .051$. Full model results are presented in Table 3.

Discussion

Findings provide preliminary evidence for positive impacts of My Baby's First Teacher, a parenting intervention designed specifically for parents of infants staying in family emergency shelters. Parents assigned to the intervention showed significant increases in observed responsiveness towards their infants compared to parents assigned to care-as-usual after just two months. This supports the intervention's primary goal of promoting responsive parenting to improve the quality of parent-child relationships.

This change in parent-infant responsiveness was achieved through MBFT, a series of group sessions facilitated by typical shelter staff with support of a manual and video-guided lessons. These features should enable sustainability in shelter contexts because the intervention is focused, brief, and does not depend on specialized training or advanced degrees for staff facilitation. This design is practical for the constraints typical of family shelter settings. The physical and financial resources at shelters are limited, and programs focus primarily on the central issue of housing. High staff turnover can further challenge the continuity in any programming that goes beyond housing goals. Family stays are often brief, as appropriate for emergency housing, and even when stays last several months, parents tend to be quite busy as they seek to secure more permanent housing and pursue related goals such as employment, skills training, and childcare.

While the findings regarding parent-infant responsiveness aligned with the intervention's goals, findings for the other two key outcomes were unexpected. First, there was no evidence of improvements in parenting stress for the MBFT group. Though it is not unusual to discover different patterns with self-reported versus observational measures of parenting (Herbers, Garcia, & Obradović, 2017), it is noteworthy that a significant effect emerged in the observational rather than self-report measure. Others have suggested that interventions might first produce changes in parent attitudes or knowledge that more gradually influence their actual behaviors (Hawes & Dadds, 2006; Sheller, Hudson, Bloch, Biddle, Ewing, & Slaughter-Acey, 2018). In MBFT, parents may first learn the responsive behaviors modeled by the videos, facilitators, and other parents rather than adjusting their cognitions to information presented more didactically.

We confirmed that responsiveness with young infants was malleable in response to the MBFT intervention, with increases in observed parent-infant responsiveness related to MBFT assignment. Results of our pre-post design indicated a lack of continuity in responsiveness from T1 to T2 compared with strong stability for parenting stress and parent distress across time. Parent distress at T1 also predicted responsiveness at T2, indicating that aspects of parent functioning also influenced the developing quality of the parent-infant relationship.

In addition to responsiveness, we expected the MBFT intervention to improve parent-reported internalizing distress. However, we found a non-significant trend suggesting the opposite; parents assigned to MBFT reported *more* distress following the intervention compared to parents in the comparison condition. Examining the average scores, we found that this difference did not reflect an increase in distress for intervention parents, but rather a decrease in distress for parents randomized to CAU. The decrease for the CAU group is consistent with

previous findings of reductions in distress for parents in shelter over time (Alleyne-Green, Kulick, & DeLoach McCutcheon, 2019; Herbers et al., 2017).

It remains unclear why or how assignment to MBFT maintained levels of parent distress. In the model considering actual MBFT participation, we also found a significant positive effect of MBFT on self-reported parenting stress. It is possible that, while parents were learning more responsive approaches to parenting, they were internalizing negative perceptions about the challenges of parenting in shelters or regretting their prior approaches. Adapting to more positive parenting behaviors may be stressful in the short term. Perhaps as parents gain experience and comfort with responsiveness, and as their infants respond in kind to make the efforts more rewarding, parent distress will reduce. These explanations are speculation that go beyond the current data, and more research is warranted to investigate this possibility. It is also necessary to consider whether some aspects of MBFT are distressing to parents, and how to remedy any problematic components.

It is worth noting that parents who could have joined MBFT but chose not to differed from those who chose to be in the program in a few significant ways. On average, they had been staying in the shelters longer, had older infants, and had higher initial levels of self-reported parenting stress. These mothers were part of the MBFT group based on intent-to-treat but not participation. This information can inform future implementation efforts seeking to encourage more families with infants in shelters to take advantage of programming. For example, additional outreach efforts could be useful for families who have been residents longer and are coping with more acute parenting stress. Future work should also interview parents about their decisions regarding whether to participate in such programs to better understand the barriers from their own perspective.

Strengths, Limitations, and Conclusion

Findings from our study contribute to the sparse literature on infants experiencing family homelessness and represent some of the only research evidence for effectiveness of any intervention for quality of parent-child relationships in shelters. The unique risks of this context make intervention research simultaneously more challenging and more important. Many young children stay in shelters, yet we know little about their needs or how to respond effectively. Strengths of this effort included the randomized controlled design, use of both parent-report and observational measures, and the focus on a program designed specifically for parent-infant dyads in family shelters.

Despite these strengths, our study involved a small sample from only three different shelters in one municipality. Participants were randomized by round at each shelter rather than by dyad, so we cannot rule out the possibility that the provision of any program in the shelters, rather than the program itself, was responsible for the observed effects. We do not have information about fidelity to the MBFT program, though the videos that guide the lessons to provide their core content were the same for all participants. It is possible that differences in characteristics of program facilitators could have impacted effectiveness. We also examined outcomes only at post-test, just after completion of the brief intervention and only a few months after the initial assessment. With these data, we could not assess whether additional changes would be evident or whether the observed improvements in responsiveness would be sustained over longer periods of time. We suspect that changes in parenting would likely produce subsequent differences in child characteristics (e.g., self-regulation) as the caregiver better supports the child through responsive parenting over the first year of life and beyond. Finally, our initial evaluation of MBFT did not assess all its varied goals (see Herbers & Henderson,

2019). We focused first on the central goal of enhancing parent-infant responsiveness, with plans to examine fidelity and more systems-level impacts on shelter staff and environments in future efforts.

Overall, this work represents the beginning of an endeavor to build the evidence base for parenting interventions in contexts of family homelessness, with a focus on the youngest children who stay in shelters. Substantially more efforts are necessary to understand the challenges, strengths, and protective factors that can be leveraged by carefully designed interventions to support healthy development in this context of both chronic and acute risk.

References

Abidin, R. R. (2012). *PSI-4 professional manual*. Luts, FL: Psychological Assessment Resources.

Alleyne-Green, B., Kulick, A., & DeLoach McCutcheon, K. P. (2019). Parenting satisfaction among homeless caregivers. *Journal of Family Issues, 40*, 33-47.

Bassuk, E. L., DeCandia, C. J., Beach, C. A., & Berman, F. (2014). *America's youngest outcasts: A report card on child homelessness.* Waltham, MA: The National Center on Family Homelessness at American Institutes for Research.

Bassuk, E. L., Richard, M. K., & Tsertsvadze, A. (2015). The prevalence of mental illness in homeless children: A systematic review and meta-analysis. *Journal of the American Academy of Child & Adolescent Psychiatry, 54*, 86-96.

Calkins, S. D., & Hill, A. (2007). Caregiver influences on emerging emotion regulation: Biological and environmental transactions in early development. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 229-248). New York: Guilford Press.

Cangur, S., & Ercan, I. (2015). Comparison of model fit indices used in structural equation modeling under multivariate normality. *Journal of Modern Applied Statistical Methods, 14*, 152-167.

Cutts, D. B., Bovell-Ammon, A., de Cuba, S. E., Sheward, R., Shaefer, M., Huang, C., ... & Frank, D. A. (2018). Homelessness during infancy: Associations with infant and maternal health and hardship outcomes. *Cityscape, 20*, 119-132.

Cutuli, J. J. & Herbers, J. E. (2014). Promoting resilience for children who experience family homelessness: Opportunities to encourage developmental competence. *Cityscape, 16*, 113-139.

David, D. H., Gelberg, L., & Suchman, N. E. (2012). Implications of homelessness for parenting young children: A preliminary review from a developmental attachment perspective. *Infant Mental Health Journal, 33*, 1-9.

Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist: A self-report symptom inventory. *Behavioral Science, 19*, 1-15.

Donlon, P., Lake, J., Pope, E., Shaw, C., & Haskett, M. E. (2014). Community action targeting children who are homeless (CATCH): Addressing the mental health and developmental needs of children experiencing homelessness. *Families in Society, 95*, 163-170.

Eisenberg, N., Zhou, Q., Spinrad, T. L., Valiente, C., Fabes, R. A., & Liew, J. (2005). Relations among positive parenting, children's effortful control, and externalizing problems: A three-wave longitudinal study. *Child Development, 76*, 1055-1071. doi: 10.1111/j.1467-8624.2005.00897.x

Fertig, A. R., & Reingold, D. A. (2008). Homelessness among at-risk families with children in twenty American cities. *Social Service Review, 82*, 485-510.

Fogel, A. (1993). Two principles of communication: Coregulation and framing. In J. Nadel & L. Camaioni (Eds.), *New perspectives in early communicative development.* London: Routledge.

Friedman, D. H. (2000). Parenting and Public Assistance. In R. Clark, B. Farrell, D. Gray, M. Kahan, M. Leonard, M. Lewis, N. Schwoyer, & E. Ward (Eds.), *Parenting in public: Family shelter and public assistance* (pp. 7-39). New York, NY: Columbia University Press.

Garcia Coll, C. Buckner, J. C., Brooks, M. G., Weinreb, L. F., & Bassuk, E. L. (1998). The developmental status and adaptive behavior of homeless and low-income housed Infants and toddlers. *American Journal of Public Health, 88,* 1371-1374.

Gest, S. D., Reed, M.-G. J. & Masten, A. S. (1999) Measuring developmental changes in exposure to adversity: A Life Chart and rating scale approach. *Development and Psychopathology, 11,* 171-192.

Haskett, M. E., Armstrong, J. M., & Tisdale, J. (2015). Developmental status and social-emotional functioning of young children experiencing homelessness. *Early Childhood Education Journal, 44,* 119-125.

Haskett, M. E., Loehman, J., & Burkhart, K. (2016). Parenting interventions in shelter settings: A qualitative systematic review of the literature. *Child & Family Social Work, 21*, 272-282.

Hawes, D. J., & Dadds, M. R. (2006). Assessing parenting practices through parent-report and direct observation during parent-training. *Journal of Child and Family Studies, 15*, 554-567.

Herbers, J. E. & Cutuli, J. J. (2014). Programs for homeless children and youth: A critical review of evidence. In M. Haskett, S. Perlman, & B. Cowan (Eds.) *Supporting Families Experiencing Homelessness: Current Practices and Future Directions* (pp. 187-207). Springer: New York.

Herbers, J. E., Cutuli, J. J., Kolarova, L., Albu, A., & Sparks, L. A. (2017). Mental health and adaptation of children experiencing family homelessness. In M. E. Haskett (Ed.) *Child and Family Well-Being and Homelessness: Integrating Research into Practice and Policy,* (pp. 7-26). New York: Springer International Publishing.

Herbers, J. E., Cutuli, J. J., Supkoff, L.S., Narayan, A. J., & Masten, A. S. (2014). Parenting and co-regulation: Adaptive systems for competence in children experiencing homelessness. *American Journal of Orthopsychiatry, 84*, 420-430.

Herbers, J. E., Garcia, E. B., & Obradovic, J. (2017). Parenting assessed by observation versus self-report: Moderation by parent distress and family socioeconomic status. *Journal of Child and Family Studies, 26,* 3339-3350.

Herbers, J. E., & Henderson, I. (2019). My Baby's First Teacher: Supporting parent-infant relationships in family ahelters. *ZERO TO THREE, 39*(4), 35-41.

Julian, M. M., Lawler, J. M., & Rosenblum, K. L. (2017). Caregiver-child relationships in early childhood: Interventions to promote well-being and reduce risk for psychopathology. *Current Behavioral Neuroscience Reports, 4*, 87-98.

Kochanska, G. (2002). Mutually responsive orientation between mothers and their young children: A context for the early development of conscience. *Current Directions in Psychological Science, 11*, 191–195.

Lengua, L. J., Honorado, E., & Bush, N. R. (2007). Contextual risk and parenting as predictors of effortful control and social competence in preschool children. Journal of Applied Developmental Psychology, 28, 40-55.

Lotzin, A., Lu, X., Kriston, L., Schiborr, J., Musal, T., Romer, G., & Ramsauer, B. (2015). Observational tools for measuring parent–infant interaction: A systematic review. *Clinical Child and Family Psychology Review, 18*, 99-132.

Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review, 20*, 561-592.

Masten, A. S., Miliotis, D., Graham-Bermann, S. A., Ramirez, M. L., & Neemann, J. (1993). Children in homeless families: Risks to mental health and development. *Journal of Consulting and Clinical Psychology, 61,* 335-343.

Mayberry, L. S., Shinn, M., Benton, J. G., & Wise, J. (2014). Families experiencing housing instability: The effects of housing programs on family routines and rituals. *American Journal of Orthopsychiatry*, *84*, 95-109.

Muthén, L. K. and Muthén, B. O. (2017). *Mplus User's Guide*. Eighth Edition. Los Angeles, CA: Muthén & Muthén.

Park, J. M., Ostler, T., & Fertig, A. (2015). Physical and psychological aggression toward a child among homeless, doubled-up, and other low-income families. *Journal of Social Service Research, 41*, 413-423.

Perlman, S., & Fantuzzo, J. (2010). Timing and influence of early experiences of child maltreatment and homelessness on children's educational well-being. *Children and Youth Services Review, 32*, 874-883.

Perlman, S., Cowan, B., Gewirtz, A., Haskett, M., & Stokes, L. (2012). Promoting positive parenting in the context of homelessness. *American Journal of Orthopsychiatry*, *82*, 402-412.

Raver, C. C. (2004). Placing emotional self-regulation in sociocultural and socioeconomic contexts. *Child Development*, *75*, 346-353.

Sheller, S. L., Hudson, K. M., Bloch, J. R., Biddle, B., Ewing, E. S. K., & Slaughter-Acey, J. C. (2018). Family Care Curriculum: A parenting support program for families experiencing homelessness. *Maternal and Child Health Journal, 22*, 1247-1254.

Shonkoff, J. P., & Garner, A. S., (2012) The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129,* e232 - e246.

U. S. Department of Housing and Urban Development (HUD; 2018). The 2017 Annual Homelessness Assessment Report to Congress.

Volk, K. T. (2014). The developmental trajectories of infants and young children experiencing homelessness. In M. Haskett, S. Perlman, & B. Cowan (Eds.) *Supporting Families Experiencing Homelessness: Current Practices and Future Directions* (pp. 23-36). Springer: New York.

Zimmer-Gembeck, M. J., Webb, H. J., Pepping, C. A., Swan, K., Merlo, O., Skinner, E. A., ... & Dunbar, M. (2015). Review: Is parent–child attachment a correlate of children's emotion regulation and coping? *International Journal of Behavioral Development*, *41*, 74–93.

Table 1
Descriptive statistics for study variables

Variable	Overall		Intervention (MBFT)		Care as Usual (CAU)	
	M	SD	M	SD	M	SD
Child age (months)	6.07	3.43	5.75	3.15	6.43	3.78
Parent age (years)	27.98	6.18	26.17	5.61	30.05	6.28
Weeks in shelter	18.02	12.43	19.60	13.42	16.23	11.26
Adversity	**5.36**	**2.78**	**4.63**	**1.84**	**6.25**	**3.45**
Teen parent (%)	31.11		29.17		33.33	
Less than HS education (%)	34.09		29.17		40.00	
Unemployment (%)	**75.00**		**87.50**		**60.00**	
Completed T2 (%)	68.89		70.83		66.67	
T1 Responsiveness	2.59	0.65	2.71	0.73	2.44	0.53
T2 Responsiveness	**2.79**	**0.99**	**3.07**	**0.98**	**2.46**	**0.92**
T1 Parent distress	1.63	0.45	1.60	0.48	1.66	0.42
T2 Parent distress	**1.51**	**0.40**	**1.63**	**0.48**	**1.36**	**0.22**
T1 Parenting stress	44.68	6.29	43.50	5.46	46.10	7.03
T2 Parenting stress	45.30	6.36	45.38	5.37	45.21	7.55

Note. Variables with statistically significant differences or non-significant trends between intervention assignment conditions of MBFT and CAU are presented in boldface.

Table 2
Bivariate correlations

		1	2	3	4	5	6	7	8
1	Responsiveness T1	-							
2	Responsiveness T2	.10	-						
3	Parent distress T1	-.26	-.42*	-					
4	Parent distress T2	-.10	-.11	.61**	-				
5	Parenting stress T1	-.32*	-.21	.18	-.12	-			
6	Parenting stress T2	-.11	-.23	.12	.05	.59**	-		
7	Adversity	.01	-.10	.22	.03	-.20	-.07	-	
8	Unemployment	.05	.18	-.21	.01	-.20	-.38*	-.08	-
9	MBFT assignment	.24	.41*	-.08	.29	-.21	-.02	-.29	.32**
10	MBFT participation	.34*	.44*	-.16	.25	-.29	.08	-.22	.28

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

Table 3

Estimates from the path model based on intent-to-treat

	Responsiveness T2 Estimate (*SE*)	Parent Distress T2 Estimate (*SE*)	Parenting Stress T2 Estimate (*SE*)
Responsiveness T1	-0.15 (0.47)	-	-
Parent Distress T1	-1.07 (0.34)**	0.57 (0.14)**	-
Parenting Stress T1	-	-	0.57 (0.14)**
Adversity	0.05 (0.05)	0.01 (0.02)	0.18 (0.36)
Unemployment	-0.09 (0.33)	0.05 (0.11)	-4.91 (2.46)*
MBFT assignment	0.92 (0.35)**	0.27 (0.15)^{t}	2.80 (2.15)
R^2	.38*	.46**	.45**

Estimates from the path model based on participation

	Responsiveness T2 Estimate (*SE*)	Parent Distress T2 Estimate (*SE*)	Parenting Stress T2 Estimate (*SE*)
Responsiveness T1	-0.32 (0.42)	-	-
Parent Distress T1	-0.91 (0.38)*	0.62 (0.15)**	-
Parenting Stress T1	-	-	0.64 (0.14)**
Adversity	0.05 (0.06)	0.01 (0.02)	0.30 (0.35)
Unemployment	-0.10 (0.35)	0.06 (0.11)	-4.99 (2.65)^{t}
MBFT participation	1.06 (0.38)**	0.28 (0.15)^{t}	4.29 (2.23)^{t}
R^2	.38*	.46**	.45**

** $p < .01$, * $p < .05$, ^{t} $p < .10$.