

Effects of a Foster Parent Training Program on Young Children's Attachment Behaviors: Preliminary Evidence from a Randomized Clinical Trial

Mary Dozier · Oliver Lindhiem · Erin Lewis ·
Johanna Bick · Kristin Bernard · Elizabeth Peloso

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Abstract Young children who enter foster care experience disruptions in care and maltreatment at a point when maintaining attachment relationships is a key, biologically based task. In previous research, we have found that young children experience challenges as they form attachments with new caregivers. They tend to push their new caregivers away, even though such children are especially in need of nurturing care. Further, many caregivers do not respond in nurturing ways when their children are distressed, which we have found is problematic for young children in foster care. We developed an intervention that is designed to help caregivers provide nurturance even when children do not elicit it, and even when it does not come naturally to them. This paper presents preliminary findings of the effectiveness of this intervention on children's attachment behaviors. Forty-six children were randomly assigned to either the experimental intervention or to an educational intervention. For three consecutive days, attachment behaviors were reported across three distress-eliciting situations. Children whose parents had received the experimental intervention showed significantly less avoidance than children whose parents had received the educational intervention. These preliminary results suggest that the intervention is successful in helping children develop trusting relationships with new caregivers.

Keywords Foster children · Attachment · Intervention

Introduction

Infants are biologically prepared to develop attachments to primary caregivers. Over the first year of life, forming and maintaining attachments is a key biologically

M. Dozier (✉) · O. Lindhiem · E. Lewis · J. Bick · K. Bernard · E. Peloso
University of Delaware, Newark, DE, USA
e-mail: mdozier@udel.edu

based developmental task. From an evolutionary perspective, this makes sense. Under conditions perceived as threatening, infants feel the need to be close to caregivers such that caregivers are readily available to provide protection if necessary. Bretherton (1995) has observed that human infants' attachment behaviors develop prior to their ability to crawl or walk. By the time infants are capable of moving away from caregivers, they do not *want* to move away under threatening conditions. Indeed, attachment needs can be seen as more urgent than most other needs. Again, from an evolutionary perspective, infants in the wild would not survive long without the presence of parents.

Maltreatment and disruptions in care represent fundamental failures in the caregiving system. In our research program, we have studied how young children cope with these failures. We have found that the task of forming secure, trusting relationships with new caregivers is complicated for these children. We have developed an intervention program that helps caregivers be sensitive to children's needs so that children can overcome the challenges in developing trusting relationships. In this paper, we first provide an overview of how attachment is assessed, then describe our findings regarding the process by which children in foster care form new attachments. We describe our intervention program, and present preliminary data on the first post-intervention sample.

Attachment Quality Among Normally Developing Infants

Infants form expectations of caregivers based on their history of experiences with caregivers (Bowlby 1969/1982). When caregivers are responsive to children's bids for reassurance, children develop expectations that caregivers will be available for them when needed. Therefore, when distressed, these infants tend to turn to caregivers for reassurance, and are soothed with relative ease. Infants who directly seek out the caregiver for the reassurance needed are said to have secure attachments. Ainsworth et al. (1978) first operationally defined these secure attachments.

In both Uganda (Ainsworth 1964) and in the United States (Ainsworth et al. 1972), Mary Ainsworth spent many hours observing mothers and infants in interaction with one another. Ainsworth et al. (1978) developed a laboratory procedure that elicited attachment behaviors consistent with those observed naturalistically. This procedure, the Strange Situation, consists of a series of episodes that increasingly stress the child. The parent leaves the child alone with a stranger for one episode, and entirely alone in a separate episode. Of primary consideration in coding is the child's behavior upon reunion with the parent following each of two separations.

Ainsworth (1964) initially expected that all infants would show secure behaviors toward parents when distressed. Direct displays of attachment behavior under conditions of distress seemed advantageous in terms of maintaining maximum proximity to the caregiver. She recognized in her naturalistic observations, however, that some infants turned away from caregivers when distressed, and other infants appeared resistant and inconsolable when distressed. Although this was at odds with original expectations, she observed that the child's behavior was designed to maximize proximity with the parent. When parents were rejecting of children's bids for reassurance, children tended to turn away, or avoid their caregiver. This avoidant

behavior could be seen as adaptive in allowing children to maintain proximity to parents who were not comfortable providing nurturance. When parents were inconsistent in response to children's bids for reassurance, children tended to be inconsolable and resistant. This resistant behavior could be seen as adaptive in maximizing the likelihood of response from an inconsistent caregiver.

Secure (i.e., seeking the caregiver out directly), avoidant (i.e., turning away from caregiver), and resistant (i.e., fussy and resistant to caregiver) attachments were included in Ainsworth et al.'s (1978) original system. These can be thought of as organized strategies for responding to distress in the parent's presence. Subsequently, Main and Solomon (1990) identified a category of behaviors that was classified as disorganized attachment. Children with disorganized attachments show a breakdown in strategy when distressed and in their parents' presence. Main and Solomon (1990) first observed this disorganized behavior among children who had been maltreated by their parents. These children appeared to want to approach their caregivers but to be frightened at the same time, leaving them with "an unsolvable dilemma," according to Main and Solomon.

Disorganized attachment has been linked with a host of problematic outcomes, including most especially dissociative symptomatology, but also externalizing and internalizing problems (e.g., Carlson 1998; Lyons-Ruth 1996). Carlson (1998) has found that disorganized attachment in infancy predicts dissociative symptoms among young adults. Therefore, although it may not be optimal for children to develop avoidant or resistant attachments, disorganized attachments appear most problematic in terms of long-term developmental outcomes.

Attachment Among Foster Infants

The Process of Forming Attachments

Whereas under typical conditions, children form attachments to caregivers so gradually that it is difficult to characterize the process, such is not the case for children in foster care. Infants and toddlers in foster care are placed in the care of adults with whom they do not have prior relationships, but at developmental points when they would otherwise have fully developed attachments. Thus, we anticipated that we could observe the process by which these children formed attachments. To do so, we (Stovall and Dozier 2000) developed a diary methodology for assessing attachment quality on a daily basis. We chose situations that occurred frequently and were likely to elicit attachment behaviors. In particular, caregivers were asked to recall an incident during the day when their children had been frightened, hurt, and separated from the caregiver. Parents described the incident with a brief narrative, and reported children's initial behaviors, parents' response, and children's response to the parents on a checklist.

We found that children who were placed earlier than about a year of age developed stable attachments relatively quickly (Stovall and Dozier 2000; Stovall-McClough and Dozier 2004). Children who were placed later than a year of age showed a preponderance of avoidant and resistant behaviors for the 2 months we followed them. More troubling, it seemed that it was the child and not the parent

who was “driving” the interaction. That is, when children behaved in avoidant ways, parents responded as if the children did not need them. When children behaved in resistant ways, parents responded in a fussy, irritable way.

Our intervention targets two issues related to attachment. The first of these targets what the child brings to the relationship. With this first intervention component, we help caregivers see that their children need them even though it may appear otherwise. We help caregivers to understand why children may act avoidant or resistant, and to re-interpret the behaviors. This is designed to help caregivers provide nurturing care when the child does not elicit nurturance.

The Quality of the New Attachments

In addition to studying the process by which children develop new attachments, we were interested in the quality of attachment eventually formed. For this assessment, we used Ainsworth et al.’s (1978) Strange Situation, which is the standard laboratory assessment of attachment. We had anticipated that children who were placed into care later than about a year of age would not form secure attachments to foster parents. To our surprise, we found that children’s attachment was predicted by caregiver characteristics, *regardless* of when children were placed into foster care (Dozier et al. 2001).

The strongest predictor of attachment among children in intact dyads is parent “state of mind with regard to attachment” (Main et al. 2002; van Ijzendoorn 1995). Parent state of mind refers to the manner in which adults process attachment related thoughts, memories, and feelings. Parents of secure children tend to be coherent in their presentation of attachment related events. These parents of secure children are said to have “autonomous states of mind” (Main et al. 2002). Parents of avoidant children tend to be dismissive of attachment related issues, and are said to have “dismissive state of mind.” Parents of resistant children tend to be caught up in earlier attachment issues, and are said to have “preoccupied states of mind.” Parents who have unresolved issues regarding loss or trauma are said to have “unresolved states of mind” and are most likely to have children with disorganized attachments. As mentioned above, it is children with disorganized attachments that we are most concerned about because disorganized attachment is most highly related to later psychopathology (Carlson 1998; Lyons-Ruth 1996).

We found that when foster parents had autonomous states of mind, their foster children were likely to have secure attachments. In fact, the likelihood that children would have secure attachments was similar to the likelihood expected for children from intact dyads (Dozier et al. 2001). However, when parents were not “autonomous” with regard to attachment, children were at greatly increased risk for forming disorganized attachments. Whereas parents with “dismissive” or “preoccupied” states of mind would have been expected to have children with avoidant or resistant attachments, respectively, these parents disproportionately had foster infants with disorganized attachments. We interpreted these findings as indicating that children who had experienced early adversity were unable to organize their attachments unless they had a caregiver who was nurturing (characteristic of an autonomous caregiver).

Table 1 Objectives covered in each of the ten sessions

Session objective	Session number
<i>Directly targeting nurturing behaviors</i>	
Providing nurturance	
When child pushes away	1, 2
When difficult for parent	6, 7
Reducing parent's frightening behavior	9
<i>Targeting children's self-regulation</i>	
Following child's lead	3, 4, 5
Touching, holding child	8
Responding to child's negative emotion	10

Given that disorganized attachment is a significant risk factor for later psychopathology and that foster children are at risk for disorganized attachments unless caregivers have autonomous states of mind, our second intervention component targeted this issue. It was not feasible to only select foster parents with autonomous states of mind (all available foster parents are needed by child welfare agencies), or to attempt to alter foster parents' state of mind (this is expected to take a long period of time, and attempts have generally not been very successful [e.g., Korfmacher et al. 1997]). Rather, we chose to help foster parents become aware of their own issues that interfered with their providing nurturing care, and to "over-ride" these issues. Whereas behaving in a non-nurturing way was automatic for some parents, we helped them to become aware of thoughts and behaviors that led to these behaviors. Then, we reasoned that they could decide how to behave, with the recognition that the child in their care needed nurturance.

Our intervention thus consisted of two components that targeted parental nurturance. The first helped caregivers to provide nurturance even when children did not elicit nurturance. The second helped caregivers to provide nurturance when it did not come naturally to them. The intervention is manualized and is conducted over 10 weekly sessions. Each session is highly interactive, with the parent discussing concepts, practicing with her baby, and discussing successes and failures in the use of concepts from the prior weeks. All sessions are videotaped so that the trainer can be supervised and fidelity can be assessed. In addition, parent and child are videotaped while interacting during the session so that the parent can see her progress in applying concepts. (These involve a second videotape camera so that supervision and fidelity assessments are not interrupted.) Table 1 indicates where each treatment objective is covered.

Present Study

This paper presents findings from the first 46 children who completed post-intervention assessments as an example of developing evidence-based practice in the foster care system. All 46 children were randomly assigned to receive the Attachment and Biobehavioral Catch-up intervention or an educational intervention. The educational intervention, Developmental Education for Families, targets

cognitive development, particularly the development of language for the young child. Both interventions consist of 10 individually administered sessions carried out at approximate weekly intervals. Foster parents were compensated \$100 for the completion of the training and additionally received parent training credit hours from their child welfare agency. This paper reports findings from the first follow-up, 1 month after the completion of the intervention. The primary outcome measure is the assessment of avoidance from the Attachment Diaries. Additional measures, such as assessment of children's attachment in the Strange Situation, and children's handling of frustration in a challenging task, are being collected for these children. These measures have not yet been coded and are not available for this report. Further, in that participants are still being enrolled in this study, this report provides data for only a sub-sample of the full sample. Thus, this paper reports short-term preliminary evidence for the intervention's effectiveness.

Method

The primary sample included the first 46 children who completed the experimental or control intervention. Children from two mid-Atlantic states were included in this randomized clinical trial. Foster families were referred to the project at the time of initial infant placement. In order for children to participate, both foster parent and birth parent (or proxy) consent were required. Foster parents consented to their own participation, and birth parents (or proxies) consented to children's participation. The university's Institutional Review Board approved all procedures. Consent was high for foster parent agreement (86%), and very high for birth parent or proxy agreement (98%).

After enrollment, children were randomly assigned to one of the two intervention groups (Attachment and Biobehavioral Catch-up or Developmental Education for Families). Foster parents and birth parents were blind to condition, as were researchers responsible for entering data, assaying cortisol samples, and analyzing data.

Interventions

For both interventions, parent trainers were professional social workers or psychologists with at least 5 years clinical experience. They administered ten training sessions according to a structured training manual. All sessions were videotaped, allowing assessments of fidelity to the manual. Sessions took place in foster parent homes. To the extent possible, the format, duration, and frequency of the interventions were similar for the two interventions.

Experimental Intervention: Attachment and Biobehavioral Catch-up Intervention (ABC)

The Attachment and Biobehavioral Catch-up intervention is designed to help children develop regulatory capabilities. It targets three specific issues: helping

caregivers learn to re-interpret children's alienating behaviors, helping caregivers over-ride their own issues that interfere with providing nurturing care, and providing an environment that helps children develop regulatory capabilities. The intervention is manualized, with the same issues introduced across the ten sessions, regardless of child age. Intervention principles are held constant, but specific activities are varied to be appropriate for children of different ages or issues.

Control Intervention: Developmental Education for Families (DEF)

The Developmental Education for Families intervention is of the same duration (10 hour-long sessions) and frequency (weekly) as the Attachment and Biobehavioral Catch-up intervention. The educational intervention was borrowed partly from the home visitation component of the early intervention program developed by Ramey and colleagues (Ramey et al. 1982, 1984). This intervention was designed to enhance cognitive, and especially linguistic, development. The intervention has been successful in improving intellectual functioning when provided intensively and for a long duration in day care settings (Brooks-Gunn et al. 1993). Components that involve parental sensitivity to child cues were excluded in our version of the intervention so as to keep the interventions distinct. Although the intervention is manualized, specific activities take into account child's developmental level.

Participants

Children ranged in age at the time of the post-intervention assessments from 3.6 to 39.4 months. (See Table 1.) Half of the children were boys and half girls. Most (63%) of the children were African-American, with 26% non-Hispanic White, 3% Hispanic, and 7% biracial. Thirty-eight of the children were placed with foster caregivers of their same ethnicity, and 8 children were placed with caregivers of differing ethnicity. Two of the children were placed a second time during the study period with a different caregiver and continued participation in the study, whereas all the remaining children resided with the same caregiver throughout the period reported. In the cases where child placement changed, the complete intervention was repeated with the new caregiver. Forty-two of the participating caregivers were female, and four of the caregivers were male. Descriptive statistics for the sample are presented in Table 2.

Measures

Attachment Diaries. Parent Attachment Diary

This measure allows for daily recording of infants' behaviors when they are distressed (e.g., hurt, scared, and separated) and in the presence of their primary caregiver. For this reason we describe the behaviors indicated in the diary as attachment behaviors. For each incident, foster parents used a check-list to record infants' initial help-seeking behavior (or lack thereof), their own behavioral responses, and infants' behavioral response to the foster parents. Foster parents were

Table 2 Descriptive statistics

Child ethnicity	<i>N</i>	%		
African-American	29	63		
White, non-Hispanic	12	26		
Hispanic	2	4		
Bi-racial	3	7		
	Mean	SE	Min.	Max.
Child age (months)	18.9	1.8	3.9	39.4
Caregiver education	11.6	.90	9.5	13.8
Caregiver income (thousands)	44.3	1.7	20	100

also asked to provide a brief narrative describing the incident. Foster parents were asked to complete the diary for a period of 3 days. Coders assessed whether each child behavior involved proximity seeking/contact maintenance, successful calming by the parent, avoidance, or resistance. Behaviors considered proximity seeking included moving toward the parent, signaling for the parent, and wanting to be held by the parent. Successful calming was indicated by quickly being soothed by the parent without the display of angry or ambivalent behavior. For all analyses, proximity seeking/contact maintenance and successful calming scores were summed to yield one score for secure behavior. Behaviors coded as avoidant included the child acting as if he or she was not hurt or scared, ignoring the parent, and moving away from the parent when in need. Behaviors coded as resistant included angry behaviors while in distress such as kicking, hitting, or biting the parent, and showing a continual fussiness or inability to be soothed by the parent. Each behavior indicated by the mother was assigned a classification, unless it was determined that the situation itself was not sufficiently distressing to be considered relevant to the assessment of attachment (e.g., If the parent leaves the child with a familiar caregiver during a separation). In this case, the data was considered missing.

Two raters coded the diaries. Interrater reliability on a subset (26%) of subjects was .88 for coding secure behaviors, 1.00 for avoidant behaviors, and .86 for resistant behaviors. For a more comprehensive discussion of the use and scoring of the Parent Attachment Diary, see Stovall and Dozier (2000) and Stovall-McClough and Dozier (2004).

Validation of Parent Attachment Diary

The behaviors in the diary were coded in a way that was theoretically and methodologically consistent with attachment theory and the scoring of individual differences in the Strange Situation. Validation of the diary was examined by comparing the overall means of secure, avoidant, and resistant behavior as measured in the diary with continuous Strange Situation scores in a separate sample. Avoidant scores on the diary proved to be the strongest predictor of both secure attachment

(inverse association) and avoidant attachment in the Strange Situation (Stovall-McClough and Dozier 2004). Avoidant diary scores were correlated $-.74$ and $-.67$ with proximity seeking and contact maintenance scores on the Strange Situation (the two component scores for security). Avoidance as coded from the diary correlated $.58$ with avoidance scores on the Strange Situation. Associations between security scores from the diary and from the Strange Situation were significant, but lower ($.46$ and $.53$) than for avoidance. Associations between resistance in the diary and Strange Situation scores were not significant. Therefore, we expected avoidance to be the strongest outcome measure in the present study.

Results

Preliminary Analyses

The Attachment and Biobehavioral Catch-up intervention group and the Developmental Education for Families Intervention group did not differ significantly with regard to child age, gender, or ethnicity, or with regard to parental income or education, p values $>.10$. These variables were therefore not included in subsequent analyses.

Attachment Behaviors

Primary analyses were conducted as analyses of variance, including intervention group (Attachment and Biobehavioral Catch-up/Developmental Education for Families) as the independent variable and avoidance and security as the dependent variable in separate analyses. Table 3 presents descriptive statistics for avoidance and security by intervention type.

A main effect of intervention group emerged when avoidance was included as the dependent variable, $F(1, 44) = 5.02$, $p < .05$. See Table 4. Children whose foster parents had completed the Attachment and Biobehavioral Catch-up intervention were reported to show less avoidance than children whose foster parents had completed the Developmental Education for Families Intervention. Scores on security did not approach significance, $p > .10$.

Table 3 Post-intervention attachment behaviors by intervention type

Intervention	Attachment behavior	Mean	SD	Min.	Max.
ABC ($N = 22$)	Avoidant	.12	.24	.00	1.00
	Secure	1.30	.30	.83	2.00
DEF ($N = 24$)	Avoidant	.35	.41	.00	1.00
	Secure	1.18	.54	.00	2.00
Total ($N = 46$)	Avoidant	.24	.36	.00	1.00
	Secure	1.24	.44	.00	2.00

Table 4 Analysis of variance for attachment behavior

		Sum of squares	<i>df</i>	Mean square	<i>F</i>	Sig.
Avoidant	Between groups	.586	1	.586	5.019	.030
	Within groups	5.142	44	.117		
	Total	5.728	45			
Secure	Between groups	.154	1	.154	.791	.379
	Within groups	8.594	44	.195		
	Total	8.748	45			

Discussion

The results of this study are exciting in suggesting that a ten-session intervention for foster parents is effective in enhancing foster children's ability to seek support directly from their caregivers. Caregivers who received the Attachment and Biobehavioral Catch-up intervention reported that their children showed less avoidance when distressed than reported for children of caregivers who received the control intervention.

Given that these findings are based on parental report of child behaviors, we recognize that they could be attributable to one of two things. On the one hand, children whose parents have received the experimental intervention may actually behave in less avoidant ways than children whose parents received the control intervention. On the other hand, it is possible that parents who have been through the experimental intervention begin to see that children need them even when it may not be apparent. We actually strive to affect both parents' and children's behaviors. Indeed, we expect that changes in children's behaviors will be mediated by changes in parents' interpretations and corresponding behaviors. The present study does not allow a fuller test of this hypothesis. Nonetheless, given the very specific and behavioral nature of parents' ratings, we expect that these effects reflect changes in children's behaviors. We look forward to seeing whether strange situation results parallel the diary findings.

The results of this study are consistent with preliminary findings of the intervention's effects on other aspects of children's functioning (Dozier et al. 2006). The Dozier et al. paper has reported that children in the experimental intervention develop better behavioral and biological regulation than the control intervention children. Thus, these findings suggest that the intervention specifically targets the issues it is intended to target, and which prove troublesome for young children in foster care.

This intervention was designed to target issues that have been identified through previous research findings as critical for these children. We suggest that this process of empirically identifying key issues is essential to the design of effective intervention programs. Developing an evidence base for the intervention through randomized clinical trials should follow. Short- and long-term effects of the intervention can then be assessed. This paper presents short-term findings that support the efficacy of this intervention.

The intervention we have developed is specific to the needs of infants and toddlers. Attachment issues continue to be salient for preschoolers and older children in the foster care system. However, those issues become more complicated to address over time because behavioral problems are often so salient (e.g., Fisher et al. 2005).

Limitations

The results of this study should be interpreted cautiously given the small sample size, the brief time-frame, and the reliance on parental report. We look forward to extending these findings as we continue to enroll children in the study and continue to follow children post-intervention. It will be particularly important to examine conditions under which the intervention is most and least effective as the sample size is increased, questions that cannot be examined with the current small sample.

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