

CHAPTER 31

Attachment and Biobehavioral Catch-Up

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Gloria was enrolled in the Attachment and Biobehavioral Catch-Up (ABC) intervention through a program in her city that was intended to reduce the incidence of foster care placement. Following her participation in the intervention, what is immediately striking about Gloria is that she lights up when interacting with her 2-year-old son, Nathan. When he pushes his toy truck under her feet, she says, “That truck is moving fast, Natie!” Later, when he pricks his finger on a sharp edge of the truck, Gloria says, “Oh sweetie. I know that hurts,” and hugs him. These types of interactions are very different from her interactions several months earlier. When she enrolled in the program, Gloria felt overwhelmed by the challenges of raising Nathan. As a single mother with few resources, she had lived in shelters, motel rooms, and friends’ living rooms since his birth. Her own upbringing had not prepared her to be a sensitive or responsive parent. Her birth mother had struggled with alcoholism and had been both distant and punitive. Her birth father seemed a bright memory, but he had died when Gloria was very young. Nathan had come to feel like a burden to her. She rarely commented on his play other than to tell him not to do something. When he was hurt or frightened, she told him not to be a baby. Sometimes without knowing it, she reacted strongly and in ways that frightened Nathan. She was an ideal match with ABC’s targets.

Overview of ABC

ABC is a 10-session parenting intervention delivered in parents’ homes. It was originally developed for parents of infants between ages 6 and 24 months. We have now also adapted the intervention for parents adopting children internationally, and for parents of toddlers (24–36 months old). ABC focuses on three specific targets: nurturing the distressed child, following the child’s lead with delight, and avoiding harsh or frightening behavior. Parent coaches present manualized intervention content in each of the 10 weekly sessions. Videos of other parents and children are used to illustrate concepts, especially early in the intervention. The sessions are video-recorded, both for supervision purposes and to allow for presentation to parents. Brief video clips are used to illustrate strengths of parents relative to particular intervention targets, and as time goes on, areas that need work.

Key to the intervention are “in-the-moment” comments by parent coaches, which direct parents’ attention to the targeted behaviors. Parent coaches are expected to make comments at least once per minute, which, relative to most other interventions, represents a stunningly high rate. We think that providing parents feedback and practice in implementing targeted behaviors is key to helping them carry their learning into their everyday lives.

In this chapter, we first provide an account of how the intervention was developed. We describe the intervention, then move on to present results of efficacy trials, and provide an overview of our efforts to disseminate the intervention nationally and internationally.

Intervention Targets

The ABC intervention was developed to address issues that we identified through our research findings, as well as the research findings of others, as critical for young children who have experienced adversity, such as abuse or neglect and disruptions in care. The conceptual model is presented in Figure 31.1.

Intervention Target 1: Importance of Nurturance

The first issue we identified is how critical it is for children who have experienced adversity to have nurturing caregivers. When children have parents with autonomous states of mind, they typically develop secure attachments (Verhage et al., 2016). “State of mind” refers to parents’ way of thinking about and processing attachment-related memories and experiences, and is assessed through discourse analysis of a semi-structured interview (Main & Goldwyn, 1998). There are three types of nonautonomous states of mind—dismissing, preoccupied, and unre-

solved—but only the unresolved state of mind predicts child disorganized attachment (Verhage et al., 2016). Disorganized attachment is particularly concerning because it is predictive of a range of problematic outcomes, including externalizing and dissociative symptoms (Carlson, 1998; Fearon et al., 2010). Parents with unresolved attachment may behave in frightening ways, which has been suggested as a possible mechanism for the development of disorganized attachment (Main & Hesse, 1990; Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999).

In a study conducted nearly 20 years ago, we found that many (55%) young foster children developed disorganized attachments when their foster parents had dismissing states of mind (Dozier, Stovall, Albus, & Bates, 2001). Ordinarily, one would expect children to have avoidant attachments (i.e., turning away from parents when distressed) if their parents had dismissing states of mind. We were surprised to find that they had developed disorganized attachments. What distinguishes parents with dismissing states of mind is that they tend to discount the need for nurturance (Hesse, 2016). The biological children of such parents can organize their attachments, though, showing avoidant attachments that although perhaps not optimal, are well suited to the parent. Foster children, however, seemed unable to organize their attachments, underscoring the importance

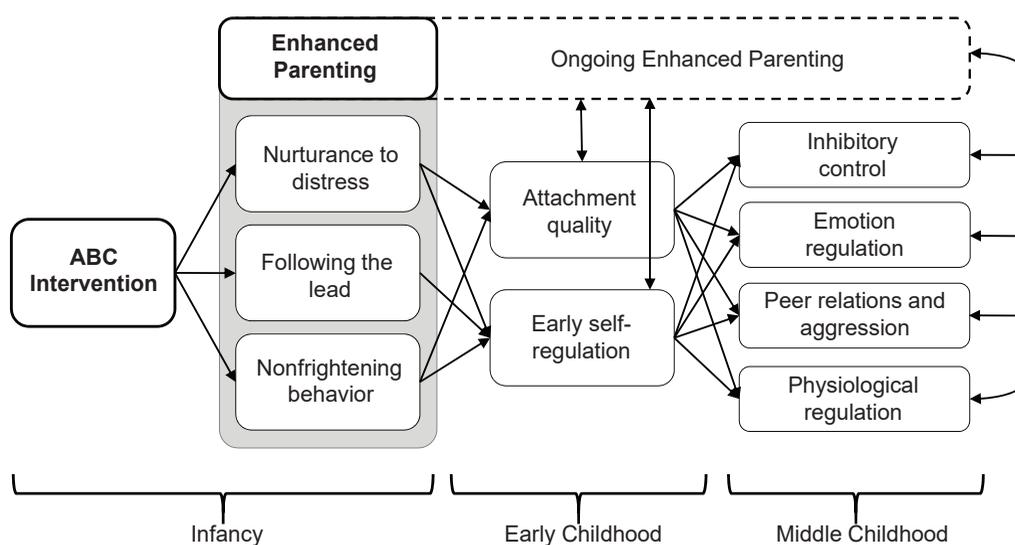


FIGURE 31.1. Anticipated effects of ABC across developmental periods.

of nurturing care following adversity. For this reason, we included parental nurturance as the first component of the ABC intervention.

Our findings and the findings of others suggested two things that could interfere with parents providing nurturance. The first is that children who experience adversity often behave in ways that fail to elicit nurturance from their parents. For example, when young foster children were hurt, they often acted as if they did not need their foster parents. What is striking was that this led foster parents to respond in kind—and fail to provide nurturance. Of course, young children living with birth parents would be likely to send similar signals if birth parents had previously been rejecting of their bids for reassurance, even if their parents had subsequently made changes and become nurturing. The task for such parents is therefore not only to respond sensitively but also to be therapeutic—that is, to provide nurturance even if it is not elicited.

The second issue that can interfere with providing nurturance is that nurturance does not “come naturally” to some parents. When parents have autonomous states of mind, that is, states of mind in which they can freely evaluate earlier attachment experiences, they are likely to behave in ways that are nurturing. However, when parents have nonautonomous states of mind, that is, when they are either dismissing of the importance of earlier attachment experiences or are caught up and preoccupied with those experiences, they are often not nurturing in consistent ways when their children are distressed.

Therefore, the first intervention component is directed toward helping parents provide nurturance to distressed children, even when children do not elicit nurturance or when nurturance does not come naturally to parents.

Intervention Target 2: Importance of Following the Child's Lead with Delight

We began studying children's biological outcomes after becoming aware of nonhuman research findings that seemed relevant. Levine and colleagues (Wiener, Bayart, Faull, & Levine, 1990) found that nonhuman primate infants showed glucocorticoid reactions to separations, and never habituated to these separations. Glucocorticoids (cortisol in primates, and corticosterone in rodents) are an end product of the hypothalamic–pituitary–adrenal (HPA)

axis. When experiencing an uncontrollable stress, human adults and many other mammals show an increase in cortisol as the result of a sequence of reactions involving this axis. This stress reactivity is one of two key functions of the HPA axis: The second function is the maintenance of a diurnal (in the case of humans) pattern. High levels of cortisol are secreted in the morning, reflecting greater metabolism of glucose and ready energy supply, and low levels at night. This diurnal patterning represents one of the contributors to helping humans function as diurnal creatures, awake when other members of the species are awake and asleep when other members of the species are asleep. Although human infants typically do not mount a cortisol response to threat, effects of challenging conditions can nonetheless be seen on the diurnal patterning of cortisol.

We studied the diurnal production of cortisol in children who had experienced adversity, examining children's cortisol level at wake-up and bedtime over several days (Bernard, Butzin-Dozier, Rittenhouse, & Dozier, 2010). Young children who were living under low-risk conditions showed high morning cortisol values and low bedtime cortisol values. Young children living in foster homes showed a more blunted pattern of cortisol production than did low-risk children, with higher wake-up values. But children living with parents involved with child protective services (CPS) showed the flattest slopes of all, with the highest wake-up values. It seemed that the more adverse conditions children were living under, the more disrupted their production of diurnal cortisol.

We reasoned that if adverse experiences can disrupt the functioning of the HPA axis in such a way, then remediation through enhanced parenting should help normalize functioning. It was not immediately clear just what aspect of parenting was most relevant, though. We searched the literature and found evidence that when parents are very responsive and well tuned to children's signals, children develop better regulatory capabilities (Raver, 1996). Although there was not yet evidence that such parenting would lead to more normative cortisol production, we thought it likely.

Therefore, we incorporated parents' becoming very responsive partners to their children as the second intervention target. More specifically, we think of this as parents following their children's lead. For example, when a child picks up a toy to show his mother, she might say, “Oh,

you have your bus!” Or if the child is pushing his car into a box, the mother could do the same.

As we implemented this second component, we found it important to tweak it somewhat. Some parents began following their children’s lead, but they did so in rote ways. In previous work, we had found that foster parents with higher levels of commitment, or emotional investment, in their children showed greater delight during interactions with their children than did foster parents who expressed low levels of commitment (Bernard & Dozier, 2010). Furthermore, we observed that high-risk birth parents, who often felt overwhelmed by stressors or experienced elevated depression, struggled to enjoy their time with their children. Thus, we incorporated delight into expectations for following the lead.

Intervention Target 3: Importance of Avoiding Harsh and Frightening Behavior

At an anecdotal level, we observed parents behaving in harsh or frightening ways for a variety of reasons. Sometimes parents’ harsh and frightening behaviors, such as glaring angrily, smacking or grabbing children, or threatening children verbally, appeared to be attempts to control children’s behavior. Sometimes parents responded harshly when they became overwhelmed by chaotic environments (e.g., children yelling, dogs barking). And other times parents behaved in frightening ways without being aware they were doing so. Indeed, parents’ own histories of trauma, especially when they have unresolved states of mind with regard to loss or abuse, are associated with frightening behaviors (Jacobvitz, Hazen, Zaccagnino, Messina, & Beverung, 2011; Jacobvitz, Leon, & Hazen, 2006).

We were aware of the consequences of such behavior from the research on frightening behavior. When parents are frightening, children are at risk for developing disorganized attachments (Lyons-Ruth, Bronfman, & Parsons, 1999; Schuengel et al., 1999), and for having difficulty regulating physiology and behavior (Bernard & Dozier, 2010; Fearon et al., 2010; van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999).

We thought it likely that parents could make impressive progress with regard to our first two intervention targets (nurturing children and following the lead), with this progress undermined by frightening behavior. Therefore, we included

avoiding harsh and frightening behavior as our third intervention component.

The ABC Approach

Manualized

ABC is a manualized intervention, which means that a manual guides the presentation of the intervention content. Parent coaches are expected to become very familiar with intervention content so that they can discuss it comfortably with parents while attending to parent–child interaction. We modified the order of presentation topics over time as it became apparent which topics could be introduced early on and which required more “buy in.” Sessions are described briefly below.

Sessions 1 and 2 introduce parents to the importance of nurturing their child. In the first session, parents are asked to consider commonly held ideas about parenting, such as whether one can spoil a baby, and that responding to babies’ cries makes them cry more. Research evidence is presented that challenges these ideas. Although it is not expected that parents will change their ideas, this discussion gently opens a dialogue about the challenges of nurturing in response to children’s distress.

Additionally, parents are helped to see how children’s signals may make it challenging to respond in nurturing ways. The key idea presented is that children’s behaviors elicit complementary, or “in kind,” behaviors from parents; that is, there is a powerful pull to respond in a nurturing way to a baby who is easily soothed, but there also is a powerful pull to turn away from a baby who appears not to need the parent. Parents’ jobs are made harder if their children turn away from them (i.e., are avoidant) or are fussy and inconsolable (i.e., are resistant). Parents view video clips of children showing avoidant and resistant behaviors, and are helped to consider how these signals are confusing and may elicit non-nurturing responses. The intervention is less threatening than it might otherwise be because the parent is presented (accurately) as having a challenging job. Parents are helped to see that nurturance is important for their child, even if the child fails to elicit it.

Sessions 3 and 4 focus on the importance of following the child’s lead. Parents are given several activities (i.e., reading a book, building with blocks, and making pudding). The activi-

ties were selected because they often elicit parents “taking charge” or leading the interaction. Parents are challenged to follow the lead even though their tendency may be to do things such as turn the pages of the book in order, build a high tower, and direct the child through steps of making pudding. Before trying these activities, parents see videos of parents who have followed their children’s lead effectively, and those that have not, with the specific behaviors highlighted.

Sessions 5 and 6 move from consideration of following the lead to intrusive behaviors and eventually to frightening behaviors. In Session 5, parents are asked to recall times when they experienced intrusive behaviors when they were children. Most adults report that they did not like to be tickled as children, with this providing a useful “in.” We talk with them about how, as adults, we often assume children enjoy such behaviors, but to children these behaviors are often overwhelming and dysregulating. Parents are shown videos of a mother overwhelming her child with a puppet, then a parent responding to her child’s cues that he was frightened of the puppet. Parents then are asked to play with puppets and other such toys with their own child, while being mindful to follow the child’s lead rather than be intrusive.

Session 6 is concerned with behaviors that are frightening. The parent coach tailors the session to issues observed in the first five sessions. Parents are asked to think of times in their lives when caregivers were frightening, and to consider how these behaviors affected them as children. They are then gently asked to think about conditions that elicit frightening behaviors from themselves, and to think about how they are sometimes able to avoid behaving in frightening ways. Video examples of times when they were able to avoid behaving in frightening ways, and times when they behaved in frightening ways are often presented. Parents are helped to see that frightening behaviors, even if infrequent, have the potential to undo all of their efforts to be nurturing in response to their child’s distress and to follow their child’s lead.

Sessions 7 and 8 are intended to help parents think about how issues from their past can affect their current parenting. We talk about this with parents, about how “voices from the past” affect how they parent. Whereas it might be tempting to think of “voices from the past” as a weakness, we encourage parents to recognize that everyone has “voices,” and that recognizing the

voices allows parents to override these voices and to behave in nurturing, sensitive ways. For example, when a mother’s child cries, her automatic response is to say, “Hop up, you’re okay.” She recognizes through this discussion, though, that this automatic response is consistent with her own mother’s voice, saying to her when she was little, “You’re not hurt. Get up—you’re not a baby.” When she can recognize this, instead of quickly urging her child to move on when hurt, she can stop herself and recognize that she is hearing her “voice from the past”—and that she can choose to behave in a different (more nurturing) way.

The discussion in these sessions is based on our observations of which targets are challenging for the parent. Parent coaches approach the sessions quite prepared, with a good sense of where the parent struggles most (with nurturing, following the lead, and/or avoiding frightening behavior). They consider comments the parent may have made or other suggestions for connections between earlier challenges and current parenting. One video is typically shown in which the parent behaved in a nurturing or sensitive way, followed by a video in which the parent did not behave with nurturance or sensitivity. Attention can first be given to the nurturing or sensitive video, with a focus on the parent’s ability to override “voices from the past.” Then, when considering the other video, the parent is asked to consider what “voice from the past” interfered, and, moving forward, how to override his or her automatic response.

Sessions 9 and 10 help consolidate gains from previous sessions, and continue to work on issues that remain problematic. In Session 10, parents receive a montage of brief video clips highlighting moments throughout the sessions when they provided nurturance and followed the child’s lead.

In the Home

We consider it very important that ABC is implemented in the home. We invite everyone who is in the home (e.g., boyfriend, grandmother, other children) to join in the sessions. Our interest is in changing parents’ behavior in the context in which they live, which includes challenges of multiple children to attend to, commentary by other family members, and other sources of distraction. Changes to parents’ behavior are expected to be more sustainable when practice occurs in the environment in which they live.

In-the-Moment Comments

In-the-moment comments are a key part of the intervention. These comments provide feedback to parents regarding how their behaviors fit with intervention targets, and the importance of the behaviors for the child's development. The comments provide the parent extensive practice behaviorally with intervention targets throughout the 60-minute intervention session. Parent coaches are expected to make comments at a very high rate (about once per minute) regarding parental nurturance and following the lead. Anytime the parent has an opportunity to behave in a nurturing way or in a responsive way, regardless of whether the parent does or does not behave in such a way, the parent coach then has the opportunity to comment. For example, if the child bumps his head and the parent says, "Oh, do you need a hug, honey?" the parent coach has an opportunity to comment on the parent's nurturance. In response, the parent coach might say, "He bumped his head and you asked him if he needed a hug. That's such a great example of your nurturing him. That is the kind of thing that will let him know you're there for him." If the child hands a toy to the parent, and the parent says, "Thanks for the truck," the parent coach has the opportunity to comment on the parent's following the lead. Such a comment may similarly describe the parent's behavior, label the intervention target, and link the behavior to outcomes of following the lead, such as the child's sense of self-esteem or ability to attend.

In early sessions, we expect parent coaches to make only positive comments, so that parents feel supported. These comments are powerful in engaging parents in the intervention. As time goes on, parent coaches are helped to make comments that scaffold or shape behavior, such as, "He might need you to hold him right now," when the parent does not behave in a nurturing way, for example. Even in later sessions, parent coaches maintain a higher ratio of comments that focus on positive behaviors of nurturance or following the lead than comments that focus on times when parents fail to behave in these ways.

Efficacy of ABC

The ABC intervention has now been tested in three large randomized clinical trials, and sev-

eral smaller trials. The results of these trials have supported the intervention's efficacy in enhancing attachment quality, cortisol production, and executive functioning, as described below. For our larger randomized clinical trials, parents were randomly assigned to either the ABC intervention or to a control intervention (Developmental Education for Families [DEF]) that focused on motor and cognitive development. The interventions were structurally very similar, with 10 weekly sessions conducted in the homes with parents and children included in sessions. Most of the results described below are for CPS-involved parents and their infants. These families had been referred as part of a program intended to reduce the incidence of foster care placement in a large city in the mid-Atlantic region.

Attachment

A key outcome of the intervention was improved child attachment quality. We were aware that children who experience adversity are at risk for developing insecure and disorganized attachments; therefore, a key goal was enhancing attachment outcomes.

To test whether the ABC intervention could affect attachment quality, we examined children's attachment quality in the Strange Situation at postintervention among 120 CPS-involved children (Bernard et al., 2012). All the parents had been referred to CPS because of concerns regarding maltreatment (primarily neglect), but the concerns were not considered sufficiently serious to lead to children's removal from their homes. Nonetheless, all were eligible for services through the city's diversion from foster care program. In the ABC condition, 52% of the children were classified as having secure attachments to their mothers, as contrasted with 33% of children in the DEF condition. Similarly, only 32% of children in the ABC intervention condition were classified as having disorganized attachments, in contrast with 57% of children in the DEF condition. Both of these effects represent statistically significant differences. Thus, children in the ABC intervention were more likely than control children to seek out their mothers and to be soothed readily (i.e., to show secure attachments) than children in the control condition. They were less likely to show anomalous behaviors when distressed, such as freeze or stay still, turn in circles, or wander aimlessly (i.e., show disorganized at-

tachments), than children in the control intervention. The effectiveness of ABC in enhancing secure and organized attachment is exciting given that attachment quality is predictive of later well-being across domains of social-emotional well-being, academic achievement, and physical health (Anderson, Gooze, Lemeshow, & Whitaker, 2012; Raby, Roisman, Fraley, & Simpson, 2015).

Diurnal Cortisol Production

Children's cortisol production was also an important outcome, signaling whether the ABC intervention could remediate effects of adversity on children's physiological regulation. Given that adversity was associated with a flatter diurnal pattern, we wanted to assess whether ABC resulted in a steeper pattern of cortisol production. CPS-involved parents collected saliva

samples from children soon after waking and at bedtime across several days, and these samples were assayed for cortisol levels. Indeed, when sampled several months postintervention, we found that ABC resulted in a steeper diurnal slope, with higher morning values than those seen among children in the DEF condition (see Figure 31.2a; Bernard, Dozier, et al., 2015).

Given that the intervention is only 10 sessions long and that families live under very high-risk conditions, there were many reasons to think that effects might not be seen in cortisol several years after the intervention. What is striking, though, is that effects were as large 3 years postintervention as they were soon after the intervention's completion. Again, the cortisol rhythm was steeper with higher morning values for children in ABC condition than in the control condition (See Figure 31.2b; Bernard, Hostinar, & Dozier, 2015).

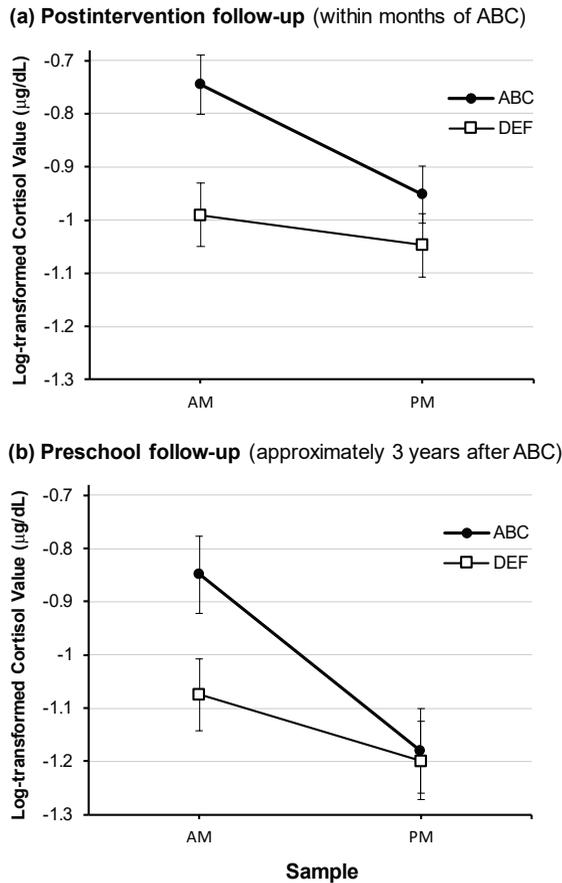


FIGURE 31.2. Effects of ABC on children's diurnal cortisol rhythms at short-term and long-term follow-up.

Children's Behavioral Regulation

A key task for children as they go into preschool and kindergarten is being able to control their behavior. More specifically, being able to inhibit the urge to do things that one should not do, and to do things that one is supposed to do, is more important to success in school than knowing numbers and letters (Blair & Razza, 2007; Viterbori, Usai, Traverso, & De Franchis, 2015). We tested children's "inhibitory control" by presenting children of CPS-involved parents with an array of attractive toys that they were instructed not to touch. While parents completed questionnaires, children were given crayons and a coloring book (i.e., a boring task compared with playing with the toys). During this "wait" task, fewer of the children in the ABC condition touched the toys than did children in the DEF condition (34 vs. 56%, respectively) (Lind, Bernard, Yarger, & Dozier, 2016). They also touched the toys a smaller percentage of the time, and even among the subgroup that touched the toys, had a longer latency to touch the toys, than did children in the DEF condition. Again, this outcome was assessed several years after the intervention was implemented.

Table 31.1 describes other outcomes as a result of ABC, across the different samples, including reduced expression of negative affect (assessed behaviorally in a frustrating task) and improved cognitive flexibility (assessed through the Dimensional Change Card Sort; Zelazo, 2006). For effects to be seen on child outcomes, such as attachment, inhibitory control, and cortisol regulation, and to be seen over time, one would think that parental behaviors would have to change in sustained ways. We have assessed parental sensitivity and parental brain activity, with findings that suggest this to be the case.

Sensitivity

We have examined parental sensitivity by assessing whether parents followed children's lead in play. Foster parents who received the ABC intervention showed greater increases in sensitivity during play interactions from pre- to postintervention than did foster parents in the DEF group (Bick & Dozier, 2013). Furthermore, when assessing session-by-session changes in parenting, CPS-involved mothers who received ABC showed greater increases in sensitivity and decreases in intrusiveness than did mothers who received DEF, with most change in

these parenting behaviors occurring in the first five sessions (Yarger, Hoye, & Dozier, 2016). Among a subset of CPS-involved mothers assessed approximately 3 years postintervention, ABC mothers still showed higher sensitivity (i.e., following the lead) than did DEF mothers; furthermore, ABC mothers were indistinguishable from a low-risk comparison group (Bernard, Simons, & Dozier, 2015).

Parental Brain Activity

Rodrigo and colleagues (2011) found that neglecting mothers failed to show differentiated neural processing of crying, laughing, and neutral child facial expressions, as assessed via event-related potentials (ERPs), which are changes in the brain's electrical activity in response to a stimulus, such as seeing a picture. Whereas control mothers showed larger ERP responses, particularly the N170 (negative deflection occurring at approximately 170 ms poststimulus), to crying faces than neutral faces, neglectful mothers showed similar responses across conditions (Rodrigo et al., 2011). Using a similar facial viewing task, we found that ABC mothers showed larger ERP responses, including the N170 and late positive potential (LPP, a prolonged positive deflection that reflects sustained attention to emotional stimuli), to emotional faces than to neutral faces. ABC mothers' ERP responses were similar to those of a low-risk comparison group, whereas DEF mothers failed to show this differentiated processing of emotional faces, similar to neglectful mothers in the Rodrigo and colleagues study. Taken together, these behavioral and neural data from parents suggest that the ABC intervention is affecting parenting at multiple levels, likely serving as a mechanism by which key child outcomes are improved.

Dissemination

Having developed an efficacious intervention, we recognized the importance of making the intervention available to agencies nationally and internationally. When interventions are disseminated, however, effect sizes are often much smaller than in the original setting (Durlak & DuPre, 2008). One explanation for the drop-off in effect sizes seems to be fidelity to the model (Fairburn & Cooper, 2011; Hulleman & Cordray, 2009).

TABLE 31.1. Overview of Key Child and Parent Outcomes

Reference	Intervention sample	Outcome	Mean child age at time of assessment	Description of finding (ABC compared to DEF)
Bick & Dozier (2013)	Infants in foster care	Foster parent sensitivity	11.1 months	Greater improvements in pre- to postintervention parent sensitivity
Yarger et al. (2016)	CPS-involved infants living with birth parents	Biological parent sensitivity	14.1 months	Increase in parent sensitivity (following the lead) and decrease in parent intrusiveness across 10 sessions
Bernard, Dozier, et al. (2015)	CPS-involved infants living with birth parents	Diurnal cortisol	17.6 months	Higher wake-up cortisol and steeper decline in cortisol from wake-up time to bedtime
Bernard et al. (2012)	CPS-involved infants living with birth parents	Attachment quality	19.1 months	Increased likelihood of secure attachment and reduced likelihood of disorganized attachment
Lind et al. (2014)	CPS-involved infants living with birth parents	Negative affect expression	28.2 months	Lower expression of anger, anger at parent, and global negative affect during a problem-solving task
Lind et al. (2016)	CPS-involved infants living with birth parents	Inhibitory control	38.4 months	Fewer children touched prohibited toys, less time spent touching, and longer latency to first touch
Bernard et al. (2017)	Infants in foster care	Receptive vocabulary	39.5 months	Higher receptive vocabulary scores on Peabody Picture Vocabulary Test
Lind et al. (2017)	Toddlers in foster care	Cognitive flexibility; attentional problems	47.6 months	Higher cognitive flexibility and lower parent-reported attention problems, with ABC children scoring similarly to a non-foster-care group
Bernard, Hostinar, et al. (2015)	CPS-involved infants living with birth parents	Diurnal cortisol	50.7 months	Higher wake-up cortisol and steeper decline in cortisol from wake-up time to bedtime
Bernard, Simons, et al. (2015)	CPS-involved infants living with birth parents	Parent brain activity; parent sensitivity	58.6 months	Larger ERP responses to emotional child faces than neutral child faces; higher parent sensitivity
Lewis-Morrarty et al. (2012)	Infants in foster care	Cognitive flexibility	60.3 months	Higher cognitive flexibility, with ABC children performing similarly to a non-foster-care group

Fidelity is critical, but often challenging to define and to measure in a way that is not subject to reporting bias. Over the years, we came to see making in-the-moment comments as the critical aspect of fidelity. Nearly every parent coach was able to learn the intervention manual content; delivering this content is not what distinguished strong parent coaches from weak parent coaches. What did distinguish coaches, though, was whether they made in-the-moment comments.

There were many obstacles to making comments, including the difficulty of attending to two things (i.e., manualized content and ongoing parent–child interactions) at the same time, feeling as though they might interrupt the interaction, feeling unsure about what comments to make, and so on. Without clear rules for making comments and a system for ensuring that parent coaches were making such comments, it was clear that we would not succeed in getting parent coaches to make comments, especially when implemented outside of our own team.

We have developed a system for quantifying these parent coach behaviors, which provides weekly feedback to parent coaches as they learn to implement the intervention, and provides quantifiable fidelity criteria. A 5-minute video clip from one of each parent coach's sessions is identified for coding each week. The parent coach and a coding supervisor then code this same clip. The supervisor works with the parent coach to ensure that the parent coach is coding behaviors in a way consistent with our criteria, and then to provide suggestions and practice in other types of comments that could be made.

This ongoing fidelity monitoring not only serves as a valuable tool for supervision but also results in rich data that can be used to examine mechanisms of parent change. Using fidelity data collected in the context of community-based implementation efforts, we found that the frequency and quality of parent coaches' commenting predicted the magnitude of change in parent sensitivity and parent intrusiveness at postintervention, as well as the likelihood of parents completing ABC (Caron, Bernard, & Dozier, 2016). These data provide strong evidence of in-the-moment commenting as an active ingredient of change, and further highlighted the importance of focusing training, supervision, and certification around this critical component.

Although no randomized clinical trials have yet been conducted at dissemination sites, we

have collected pre- and postintervention data regarding parental sensitivity. We have found large effects (e.g., $d = 0.83$ – 0.89) at these dissemination sites (Caron, Weston-Lee, Haggerty, Dozier, 2016; Roben, Dozier, Caron, & Bernard, 2017), effects that are as large as those in clinical trials. This is exciting, suggesting that the ABC intervention can be disseminated with little drop-off in effectiveness. We attribute this to the strong fidelity assessment tool that allows monitoring of fidelity with regular feedback to parent coaches.

Case Examples

Brenda

Brenda lived in a motel room with her two children, 3-year-old Darin and 8-month-old Sarah. When we first met the family, the baby was emotionally flat and interacted little with her environment. Instructed to play with her child “as she normally would,” Brenda moved toys around in front of the baby and put Sarah's hands on the toys to direct her, but Sarah appeared more like a doll than an infant. It was disturbing to see a child of this age so disengaged. It seemed likely that she interacted very little with others.

Brenda responded openly and quickly to the intervention. In the first session, even before defining the ABC targets, the parent coach said, “She handed you that and you took it right from her. That may not seem like a big deal, but you're following the lead when you do that. That's so important for helping her develop a sense of confidence. We'll be talking more about that in the next several weeks.” Brenda beamed—and right away, she started becoming more engaged with Sarah and with Darin. When Brenda then commented on a toy that Sarah put in her mouth, the parent coach again commented. The shift in Brenda was dramatic. She “got it” and found the new interactions with her children and the feedback from the parent coach so rewarding that she was able to change the way she interacted with her children relatively quickly. When the parent coach arrived for the third session, Sarah seemed like a different child—she was alert, active, and interactive.

What was easy about Brenda was that she did not resist the intervention or the parent coach, and she found changes in her interactions with her children rewarding. She had more work to

do—to consolidate gains and to work to avoid frightening the children—but the changes she made early on were impressive, and were solidified over time. Brenda continued to live in a small motel room; she had little support from family or friends, and many other struggles. Although it can be tempting to allocate time and attention to dealing with these other challenges, our coaches are laser-focused on the three parenting targets. With such targeted support, the shifts that Brenda made in her parenting fundamentally changed the world in which her children lived.

Carla

“So we’re *not* gonna make the pudding?” By Session 4, when parents are given pudding supplies as a way to practice following the child’s lead, many parents have already shown remarkable change. This was not the case for Carla. Her parent coach introduced the pudding activity as another way for Carla to practice following 14-month-old Edwin’s lead, suggesting that she could bang a spoon when Edwin banged a spoon or say “shake shake shake” as Edwin shook the pudding box. Carla rolled her eyes as she picked up a spoon. Her coach commented, “There you go! He’s banging the spoon and you picked up a spoon! When you follow his lead like that it helps him feel like he matters and has an effect on his world.” Carla had heard comments like this many times in previous sessions, but she continued to appear uncomfortable following Edwin’s lead. She was a young, first-time mother, who had been referred to us by her CPS caseworker; she often seemed more interested in her phone than her baby.

In Session 1, when Carla’s coach asked her whether she thought picking up her baby could spoil him, Carla confidently claimed that not only would it spoil him, but she had seen it happen to her friend’s baby. In Session 3, when her coach introduced the idea of following the lead with delight, Carla said that Edwin preferred to play on his own and boasted that he was smart and independent. Carla’s coach worked hard to find moments to comment on, given the lack of interaction, but Carla appeared to ignore the comments most of the time.

It was not until Session 5 that things started to change. Carla was given puppets, which, similar to pudding, pull for parents to take the lead. Carla slipped a puppet on her hand and used a deep voice as she quickly pushed the puppet to-

wards Edwin’s face. Startled, Edwin fell backward off the bed. As she quickly scooped Edwin up, Carla exclaimed, “Oh no! That scared you!” This moment marked a notable shift in behavior, and suggested that perhaps Carla had been hearing the feedback despite her apparent resistance. Her coach immediately commented on how Carla’s nurturing response to Edwin’s distress in that moment made him feel safe and would help him learn to trust her. Throughout the remaining sessions, the coach continued to highlight times when Carla was nurturing or followed Edwin’s lead. Although these behaviors did not come naturally, they became more frequent—offering more and more opportunities for the coach to comment.

Carla’s resistance is not something we frequently encounter, or at least, when we do, it is typically relatively fleeting; it is hard to be hostile toward a coach who is constantly pointing out specific strengths. In the face of such resistance and lack of positive parent–child interactions, it is critical that coaches maintain a high rate of commenting. Indeed, in this case, the coach’s persistence in “spotlighting” the positive seemed to gradually disarm Carla, allowing her to recognize and own her important role in Edwin’s healthy development.

Arthur and Dan

Jason, a 24-month-old, was placed with Arthur and Dan through the state’s foster care system following chronic neglect. Arthur and Dan were hopeful that they would eventually be able to adopt Jason. Despite their obvious commitment to Jason, both men struggled with the intervention targets. In particular, Dan and Arthur overwhelmed Jason by tickling him at times, throwing him up in the air, and other such games. Although Jason invited these games, he often seemed frightened as they played roughly. When he then became dysregulated and out of control, his parents often fussed at him, and he was unable to go to them for comfort. Given that infants and toddlers in foster care are already at risk of physiological and behavioral dysregulation, overstimulating interactions like this can quickly spiral out of control. Furthermore, without caregivers who can serve as coregulators in the face of distress or dysregulation, risk for later behavioral and emotional problems is exacerbated.

Arthur made faster progress than Dan. By Session 4, Dan continued to fuss at Jason when

he cried, reminding the child that he should not have been standing on the chair (or whatever the upset involved). Progress seemed very slow until Session 7, when Dan was able to link his struggles with his own mother's urging him to toughen up as a child. Both Arthur and Dan were aware of present-day interactions with Dan's mother, in which she worked very hard to get beyond distress as fast as possible. By recognizing this "voice from the past"—that is, his automatic tendency to disregard Jason's distress—Dan was able to develop strategies for overriding his non-nurturing responses. Dan expressed motivation to provide Jason with what he himself did not receive growing up. When opportunities arose for nurturing comments, the coach continued to link their nurturing responses to those valued outcomes for Jason of developing trust, turning to them in times of need, and being more easily soothed. In Session 10, the coach showed Dan and Arthur a montage of sensitive moments throughout the 10 sessions, which beautifully highlighted their hard work and changes. She pointed out what a lucky child Jason was to have parents who delighted in him, followed his lead, and responded in nurturing ways to his distress.

For parents like Dan, who have not had a history of sensitive care themselves, it can be especially challenging to provide the therapeutic care that foster children so desperately need to develop organized attachments and healthy self-regulation. In the case of Dan and Arthur, the intervention came at a critical time in Jason's development.

Summary

The ABC intervention focuses on nurturance, following the lead, and avoiding harsh and frightening behavior in parents who experience challenges in parenting. Challenges may come in the form of parents' own experiences of adversity, or in adversity the child has experienced that puts him or her at increased risk for later problems. Outcomes from randomized clinical trials include enhanced attachment security, as well as improved biological and behavioral regulatory capabilities. We attribute these impressive outcomes to the critical role played by parents in the early years of a child's life—if parents can learn to interact in sensitive, nurturing, and nonfrightening ways, children often will thrive.

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