ABC Dissemination Practices and
Screening Interview as a
Predictor of Parent Behavior Change

by

Michael Sanders

A thesis submitted to the Faculty of the University of Delaware in partial
fulfillment of the requirements for the degree of Bachelor of Science in Psychology
with Distinction

Spring 2016

© 2016 Michael Sanders
All Rights Reserved
ABC Dissemination Practices and Screening Interview as a Predictor of Parent Behavior Change

by

Michael Sanders

Approved:
Mary Dozier, Ph.D.
Professor in charge of thesis on behalf of the Advisory Committee

 Approved:
Caroline Roben, Ph.D.
Committee member from the Department of Psychological and Brain Sciences

Approved:
Cynthia Robbins, Ph.D.
Committee member from the Board of Senior Thesis Readers

Approved:
Hemant Kher, Ph.D.
Chair of the University Committee on Student and Faculty Honors
ACKNOWLEDGMENTS

I would like to thank Dr. Dozier, Dr. Roben, and Dr. Raby for all of their support and assistance through this process. I would also like to thank the graduate students, staff, and undergraduate students in the Infant Caregiver Project for their collection of data, supervisions, coding, and general support. Finally, I would like to thank my friends and family for their continued support. I would not be pursuing these goals were it not for their encouragement and reassurance along the way.
# TABLE OF CONTENTS

LIST OF TABLES .................................................................................................................. v
LIST OF FIGURES ................................................................................................................ vi
ABSTRACT .............................................................................................................................. vii

1 INTRODUCTION ................................................................................................................. 1
   Attachment and Biobehavioral Catch-up Intervention ...................................................... 2
   Dissemination in Clinical Psychology .............................................................................. 4
   Importance of Staff Selection in Implementation .......................................................... 7
   ABC Dissemination Practices .......................................................................................... 10
   Current Study .................................................................................................................. 11

2 METHOD ............................................................................................................................... 13
   Participants ..................................................................................................................... 13
   Procedure ....................................................................................................................... 14
   Measures ....................................................................................................................... 15

3 RESULTS ............................................................................................................................. 18
   Data Analytic Strategy .................................................................................................. 18
   ABC Effectiveness Strategy .......................................................................................... 18
   Screening Score as Level 1 Strategy .............................................................................. 21

4 DISCUSSION ....................................................................................................................... 24

REFERENCES ......................................................................................................................... 28

A Additional Data .................................................................................................................. 35
LIST OF TABLES

Table 1  Comparisons of parent behavior change effect sizes. ................................ 20
Table 2  Estimate of Fixed Effects of Mini-AAI on Parent Behavior ...................... 23
Table 3  Estimate of Fixed Effects of Session Vignettes on Parent Behavior........... 23
Table 4  Descriptive Statistics for Screening Interview Scores............................ 35
LIST OF FIGURES

Figure 1  Parent behavior change from pre- to post-intervention in ABC dissemination sites. .......................................................... 20
ABSTRACT

The Attachment and Biobehavioral Catch-up (ABC) Intervention, an attachment-based, preventative intervention program aimed at promoting sensitive caregiving in mothers of high-risk children has been found efficacious in several randomized clinical trials and is currently being disseminated nationally (Bick & Dozier, 2013; Bernard, Dozier, Bick, Lewis-Morrarty, et al., 2012; Lind, Bernard, Ross, & Dozier, 2014). However, the dissemination of evidence-based interventions generally does not show the same effectiveness as in the initial studies (Durlak & Dupre, 2008; Elliot & Mihalic, 2004). Among several other strategies, ABC has used one particular tactic, a screening interview found to improve fidelity and community effectiveness (Caron, Roben, Yarger, & Dozier, in progress). The current study examined both the general dissemination effectiveness findings compared to effect sizes from previous research as well as the associations between the ABC screening and later parent behavior change from pre- to post-intervention. Thirty-eight clinicians from five states participated in this study. Results indicated that the ABC dissemination efforts yield a similar effect size to previous randomized clinical trials for both parent following the child’s lead and intrusiveness. Contrary to expectations, results of hierarchical linear modeling indicated one aspect of the pre-screening interview was associated with changes in parent behavior, whereas another aspect was not.
Chapter 1
INTRODUCTION

Young children who have faced early adversity such as abuse, neglect, or maltreatment are at risk to develop abnormally psychologically, physiologically, and emotionally (e.g. Fisher, Gunnar, Chamberlain, & Reid, 2000; Shaw, Owens, Vondra, Keenan, & Winslow, 1996). These children may develop disorganized attachments to their caregivers, irregular diurnal cortisol production patterns, and poor self-regulation skills (Aber, Allen, Carlson, & Cicchetti, 1989; Gunnar & Vazquez, 2001; Kolk & Fisler, 1994). Developing an organized attachment is important for infants’ healthy, well-developed socio-emotional adjustment (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2008a; Smith, & Pederson, 1988), while developing appropriate self-regulation skills is also important in a child’s healthy academic and social growth (Kim & Cicchetti, 2010; Pintrich & De Groot, 1990). However, caregivers who respond appropriately and consistently to their child’s needs and emotions in a sensitive manner can reduce the occurrence of disorganized attachments in children and promote better self-regulatory skills (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2008a; Bernier, Carlson, & Whipple, 2010; Boom, 1994; Moss, Dubois-Comtois, Cyr, Tarabulsy, et al., 2011). Because sensitive caregiving is crucial in the development of high-risk children, researchers have developed interventions to improve sensitive caregiving in parents of children who have experienced early adversity.
Previous literature reviews, however, have demonstrated that implementing evidence-based interventions in the community often yields different results than the original efficacy studies (e.g. Durlak & DuPre, 2008; Elliot & Mihalic, 2004; Hallfors, Cho, Sanchez, Khatapoush, et al., 2006), and some might hold effectiveness studies to lower standards than those of efficacy studies (Flay, Biglan, Boruch, Castro, et al., 2005). Because most interventions in the community are delivered by staff (clinician, therapist, social worker, school staff, etc.) and quality of staff can influence intervention efficacy (Domitrovich, Bradshaw, Poduska, Hoagwood et al., 2008) staff selection is arguably one of the most important aspects of a successful implementation effort. Many different prevention programs and reports (e.g. Fixsen, Blase, Naoom, & Wallace, 2009; Greenwood & Welsh, 2012) have noted the importance and challenge of staff selection. In the Attachment and Biobehavioral Catch-up (ABC) intervention, which aims to improve maternal sensitivity for caregivers of young children who have experienced early adversity, staff-selection tools and fidelity measures are being used to improve intervention effectiveness and efficiency. This study examines the effectiveness of ABC in community sites and the associations between the staff-selection tool and effectiveness measures.

**Attachment and Biobehavioral Catch-up Intervention**

Mary Dozier and researchers in the Infant Caregiver Project at the University of Delaware developed an intervention that targets high-risk families and works to enhance caregivers’ sensitivity (Dozier & The Infant Caregiver Lab, 2003). This intervention, ABC, addresses problems associated with growing up in a high-risk environment such as developing disorganized attachments with caregivers (Dozier, Stoval, Albus, & Bates, 2001) as well as behavioral and biological dysregulation.
(Dozier, Manni, et al., 2006; Pears & Fisher, 2005). This 10-week, in-home, manualized intervention is relatively simple, efficient, and cost-effective. Generally, ABC addresses challenges with attachment and regulatory skills by focusing on three parenting behavior targets: nurturance, following the lead with delight, and reducing frightening behavior. Sensitive caregiving includes both following the child’s lead and nurturance; by responding to the child’s desires and cues in both distressing and non-distressing times, caregivers are responding sensitively to their children (Bick & Dozier, 2013). Recent research supports the notion that caregivers who are enrolled in the ABC intervention show higher levels of sensitivity than those enrolled in a control intervention (Bick & Dozier, 2013) and a larger enhancement of event-related potential (ERP) response for emotional faces relative to neutral faces than mothers who participated in a control intervention. This finding suggests that parents who received the ABC intervention better process both positive and negative dimensions of children’s emotion expression (Bernard, Simons, & Dozier, 2015). Children who participated in ABC also showed lower rates of disorganized attachment and higher rates of secure attachment post-intervention than children in a control intervention (Bernard et al., 2012). Additionally, children in the ABC intervention had more normative levels of cortisol as compared to children in the control intervention post-intervention (Bernard, Dozier, Bick, & Gordon, 2015; Bernard, Hostinar, & Dozier, 2015), expressed less negative affect during a challenging task post-intervention than did children in a control intervention (Lind et al., 2014), and showed more advanced executive functioning on the Dimensional Change Card Sort than children in a control intervention when the children were between four and six years of age (Lewis-Morrarty, Dozier, Bernard, Terracciano, & Moore, 2012).
While ABC is a manualized intervention with session-specific content for each of the 10 weeks, the primary mechanism of parent change is “in-the-moment” commenting (Meade & Dozier, 2012). ABC clinicians, called parent coaches, use this technique during intervention sessions to point out parent and child behaviors and state what the parent did well. An in-the-moment comment is composed of three components: a behavior description (“He handed you the ball and you took it”), an intervention target label (“That’s an example of following his lead”), and a possible outcome (“That shows him he has an effect on the world”). In-the-moment commenting allows parent coaches to give caregivers an idea of how they responded to the child, label the intervention target displayed, and connect the caregiver’s behavior with possible behavioral outcomes for the child (Bernard, Meade, & Dozier, 2013). This technique is crucial to the success of the intervention because the frequency of in-the-moment comments is associated with greater parent behavior change in one sample of parent coaches and families (Caron, Weston-Lee, Haggerty, & Dozier, 2015). While efficacy studies may yield positive results in randomized clinical trials, traditionally, those findings might not translate to effectiveness in the community (Dane & Schneider, 1998; Kerner, Rimer, & Emmons, 2005; Durlak, 2015; Durlak & DuPre, 2008). Previous literature and failed dissemination attempts remind us that the transition to widespread program implementation is very difficult.

**Dissemination in Clinical Psychology**

Regardless of the initial success a prevention program might have in efficacy studies or randomized clinical trials, there are serious obstacles that must be considered when discussing implementation. Various problems in dissemination work have been documented as early as the 1980s and continue into the present day. Many
researchers focus on fidelity as one of the primary factors in determining if a prevention program will achieve similar results in the community as it did in randomized clinical trials (Elliot & Mihalic, 2004; Fixsen, Naom, Blase, Friedman, & Wallace, 2005; Durlak & DuPre, 2008). Fidelity is the degree to which a program adheres to the original model. In an analysis of 162 prevention programs, Dane & Schneider (1998) reported that only 39 studies provided procedures for fidelity documentation and of the 39, just 13 conducted analyses that even took variations in integrity into consideration. The predominant notion in the current literature is clear: implementation indeed influences program outcomes, and the field of psychology implements poorly. Recently, Durlak and DuPre (2008) noted that an expectation of perfect or even near-perfect implementation of a preventative program is highly unrealistic. In their meta-analysis, they reported that fidelity levels around 60% have produced positive results, but there are few studies that have reached fidelity levels greater than 80% while no study has documented a fidelity level of 100% for every one of their providers. Durlak and DuPre also discuss the point that efficacious interventions often are not disseminated effectively. For example, Hallfors et al. (2006) reported that a follow-up study assessing an efficacious school-drop-out intervention for 1300+ teenagers showed either null or negative effects in most outcomes.

Because of the low rate of successful community implementation, it is crucial to identify factors that influence or guide effective prevention program implementation. Elliot and Mihalic (2004) as well as others (Durlak, 2015; Durlak & DuPre, 2008; Fixsen, Naom, Blase, Friedman, et al., 2005; Swain, Whitley, McHugo, & Drake, 2010) examined a number of previous implementation efforts and outlined
several key factors that influence effective prevention programs. One critical factor that Elliot and Mihalic (2004) and Fixsen, Naoom, Blase, and Friedman et al. (2005) identify is site selection and additionally, community buy-in. Variability in factors like site capacity, site preparation, and the readiness of a site can influence program outcomes within individual dissemination sites, and whether the program can be sustained by already-existing budget is an important consideration as well (Elliot & Mihalic, 2004). Careful attention must also be given to the process by which an intervention is adopted and the providers who are adopting it (Fixsen et al., 2005). Second, sustainability of an intervention partially determined the effectiveness of the intervention. Factors such as provision of training and technical assistance, monitoring of the quality and level of implementation, and providing immediate feedback to implementers affected the sustainability of a program (Elliot & Mihalic, 2004).

In their review, Swain et al. (2010) identified domains (i.e., factors) of implementation sites, and they reported that training and agency leadership were two of the four identified domains that were maintained in sustaining sites suggesting sustainability relies at least in part on the quality of the agency leaders themselves. Third, the clinicians, as well as the training provided at each site, can influence effective implementation. Selecting the right clinicians is absolutely critical to program success. Issues such as absenteeism and a high rate of local staff turnover can cripple a program trying to thrive in a new area (Elliot & Mihalic, 2004) and high staff variance and turnover can lead to lower levels of implementation (Woltmann, Whitley, McHugo, Brunette et al., 2008). Most notably, staff selection and maintenance seem to predict how well an intervention will do in the community. Swain et al. (2010) noted that agency leadership, staff support, and the presence of a local champion rated
among the highest factors by sustaining sites in their study. Together, these findings suggest that staff selection and maintenance are key components in a successful implementation effort.

**Importance of Staff Selection in Implementation**

Part of the variability in implementation effectiveness can be attributed to variability among clinicians. Likewise, clinician characteristics are a key element in models of implementation (Durlak & DuPre, 2008), but, like the core components of interventions, it may be hard to determine which implementation components and practitioner characteristics matter the most (Wieder, Boyle, & Hrouda, 2007). Durlak and DuPre (2008) also illustrated that there is typically a wide range of implementation levels between providers showing that some providers are much better at implementation than others. While it is easy to see how selecting good clinicians who will implement the intervention accurately and well would play an important role in program effectiveness, staff selection has not been discussed extensively in the literature. There does appear to be general agreement, however, that the selection process should address clinicians’ capabilities and readiness for program delivery and include protocols like vignettes and interviews (Wieder, Boyle, & Hrouda, 2007). Others have suggested that clinicians’ openness and reciprocity to talk about the intervention should be considered in the selection process as well (Bierman, Coie, Dodge, Greenberg, et al., 2002). The selection process is important to successful dissemination because selecting the right clinicians contributes substantially to program efficiency, effective use of financial and human resources, and long-term sustainability (Fixsen et al., 2009).
One research group examined clinician variables closely to try to understand more about what makes a good clinician. The Project MATCH Research Group (1998) divided clinician characteristics into attribute and process measures. Attribute measures are stable, lasting characteristics of clinicians such as experience, education, and ideals. Process measures assess less stable characteristics that are more intervention-specific and characterize how clinicians interact with clients, adhere to the intervention model, and implement treatments. Characteristics across both measures have been examined as predictors of clinicians’ successful implementation efforts; both measures may predict successful implementation and program effectiveness.

One attribute measure, attachment state of mind, could predict success in some interventions because previous attachment experiences and early relationships influence behaviors in future relationships (Fraley, Heffernan, Vicary, & Brumbaugh, 2011). Attachment state of mind is an assessment of one’s ability to talk about early attachment relationships. Especially in an attachment-based intervention such as ABC, attachment state of mind in clinicians could predict how well clinicians will implement the intervention. Clinicians with “autonomous” attachment states of mind (those who had strong, secure attachments to their caregiver) value attachment relationships and experiences and can easily and openly talk about past attachment-related experiences (Hesse, 2008). Dozier and Bates (2004) showed that the effects of some intervention strategies may be mediated by the level of trust the client feels toward the clinician. In such interventions, it would be important for the clinician to be willing and open to talk about attachment-related topics. Additionally, one’s attachment state of mind may relate to the ability to identify and respond to an infant’s
needs (Main & Goldwyn, 1998), so it may also relate to a clinician’s ability to help parents do the same. Finally, parents with an autonomous attachment state of mind are more likely to respond to their children in a sensitive, nurturing way than parents with non-autonomous states of mind (van IJzendoorn, 1995). It is reasonable to conclude that clinicians with autonomous states of mind might be better at implementing sensitivity-targeting interventions because of their own ability to respond sensitively to infants’ needs. The association between attachment state of mind and fidelity in ABC has been found in previous work (Caron, Roben, Yarger, & Dozier, in progress) and offers a plausible path for future study.

In addition to stable characteristics potentially predicting implementation success, work-sample types of screenings (for more intervention-dependent characteristics) may also predict implementation success. Durlak and DuPre (2008) nominated skill proficiency as one of the provider characteristics that influences implementation. Accordingly, the development of a standardized process measure has presented an easy way to assess potential clinicians’ proficiencies. These process measures present vignettes about clients to clinicians and ask how they might respond in each situation in either multiple choice or open response format. Vignettes of this form mimic (and thus might predict competency in) real-life intervention situations more accurately than other more stable measures (Lievens & Sackett, 2006). Additionally, a meta-analysis conducted by Roth, Bobko, and McFarland (2005) revealed that work-samples (e.g., vignettes, etc.) can be valid predictors of job performance in the field of psychology ($r = .33$ validity). In summary, vignettes offer the opportunity to assess clinician’s aptitude prior to training and hiring. Associations were found between process measure characteristics and fidelity to ABC in previous
work (Caron, Roben, Yarger, & Dozier, in progress) and are discussed in more detail later.

**ABC Dissemination Practices**

To avoid problems with inadequate fidelity to the original model, the ABC intervention has implemented rigorous fidelity measures such as in-the-moment commenting and strict fidelity and certification criteria. As Durlak and DuPre (2008) and Wieder, Boyle, and Hrouda (2007) recommended, parent coaches are screened prior to participation to enhance staff selection. Previous studies examining the screening interview found that it predicted clinician fidelity in the ABC intervention (Meade, Blackwell, Roben, & Dozier, 2013), and a follow-up study replicated these results across time and samples (Meade, Mondock, Roben, & Dozier, 2015). After being hired, as Bearman, Weisz, Chorpita, and Hoagwood et al. (2013) recommended, each parent coach is supervised weekly by trained researchers. In these meetings, they review intervention sessions that the parent coach conducts. In addition to weekly supervision, at the end of the training year, parent coaches must meet certain fidelity criteria of one on-target, in-the-moment comment per minute, 80% on-target comments, and one component per comment. The lab also reviews, codes, and provides feedback for parent behavior assessments conducted by parent coaches pre- and post-intervention.

In designing the ABC screening interview, the lab incorporated both an attribute measure and process measure to predict clinicians’ implementation of ABC. It was hypothesized that clinicians’ value of attachment would predict their own ability to deliver the intervention, specifically, to recognize infant signs, assess the quality of parents’ responses to those signals, and provide helpful feedback to the
parents about their behavior (Caron et al., in progress). Additionally, it was
hypothesized that the process measure would gauge initial aptitude in the crucial in-
the-moment commenting that has been shown to be the driving force of the ABC
intervention. Video-based session vignettes allow clinicians to first see session
examples then make their own in-the-moment comments in response to parent-child
interactions that occurred.

As stated earlier, in-the-moment comments are crucial to the success of the
ABC intervention because they have been found to predict parent behavior change
(Caron et al., 2015; Caron, Bernard, & Dozier, 2016). This screening interview has
been shown to predict clinicians’ frequency and quality of in-the-moment comments
(Meade et al., 2013; Meade et al., 2015); therefore, higher screening scores should
theoretically lead to larger changes in parent behavior from pre- to post-intervention.
Given that higher screening scores predict better and more in-the-moment comments,
and in-the-moment comments predict parent behavior change, the association should
hold from screening score to parent behavior change. The Infant Caregiver Project
uses practices and fidelity measures that are very similar to those recommended by the
experts for successful implementation (e.g. Elliot & Mihalic, 2004; Fixsen et al, 2005;
Wieder et al., 2007; Durlak & DuPre, 2008; Durlak, 2015). Using practices and
measures that have been shown to work in successful dissemination should lead to
significant outcomes for ABC in their community efforts.

**Current Study**

The goal of the current study is to further current implementation research by
answering the following two questions: 1) does the ABC intervention yields similar
results across dissemination sites as in randomized clinical trials? And 2) do screening
scores given to parent coaches prior to training in the ABC intervention predict change in parent behavior from pre- to post- intervention? This study examines the target behavior of parental following the child’s lead, intrusiveness, and delight. These associations are examined across a large sample of intervention dissemination sites collected over a period of two and a half years. In one community sample of ABC, Caron et al. (2015) reported a similar effect size as the randomized clinical trials of ABC, and this study seeks to replicate those findings across a wider range of dissemination sites. I hypothesize similar effectiveness outcomes for this study as compared to the efficacy trials. Additionally, because the screening tool for parent coaches accurately predicts at a very high level whether or not a parent coach makes high quality in-the-moment comments during intervention sessions, and Caron et al. (2015) showed that in-the-moment comments accurately predict behavior change in parents from pre- to post-intervention, I hypothesize that higher parent coach screening scores will predict higher following the lead scores and lower intrusiveness scores on the parent behavior assessment. Delight has not been found to change from pre- to post-intervention, so I do not expect changes. I also hypothesize that both the mini-AAI and vignette portions the ABC screening interview will independently predict change in parenting behavior from pre- to post-intervention.
Chapter 2

METHOD

Participants

Archived program effectiveness data from 37 clinicians across nine intervention sites in five U.S. States were used in this study. Almost all (n = 36, 97%) of the clinicians were female. As of April 2016, the Infant Caregiver Project has trained or currently is training coaches across 15 states in the United States and in several international locations. We have learned more with each dissemination site, as each set of coaches and circumstances has been different. For instance, our largest site is in North Carolina, where we have worked with approximately 45 coaches through Duke’s Center for Child and Family Health. We partnered with Duke faculty with the aim of creating a sustainable system of ABC coaching across the state of North Carolina. Coaches in North Carolina typically have master’s degrees in social work and are employed by the Department of Social Services or other state-funded early childhood agencies. As another site example, we have trained three coaches in Oklahoma through Oklahoma State University, where all have advanced degrees (including some Ph.Ds.), and all have had experience learning other evidence-based models for young, at-risk children. In contrast, at Forestdale, Inc., a family services organization in Queens, NY, which implements evidence-based models to break the cycle of poverty, we have trained coaches who have not had prior evidence-based intervention experience or extensive experience in clinical work with families or young children.
The sample included in the current study spans five states. All 37 parent coaches were trained in-person in a two-to-three day training by Mary Dozier and Caroline Roben. Coaches were then required to meet weekly for one year in two types of supervision in order to meet certification standards. Parent coaches engaged weekly in one hour of general-clinical group supervision with an advanced-degree supervisor. These general-clinical supervision sessions focused on case conceptualization and case-specific challenges. Parent coaches also participated in a half-hour of weekly, individual in-the-moment fidelity supervision, as described above. Both supervision sessions were integrated through communication between the two supervisors.

The data used to measure effectiveness here were originally collected for program evaluation purposes during the training year. Some dissemination sites chose not to participate in this data collection due to the use of their own site-specific measures for clinical or research purposes. The data used in the current study represent the changes in parenting behaviors from pre- to post-intervention in 110 parents seen by 37 of our most recently trained coaches in nine different training cohorts across five different states.

**Procedure**

Potential ABC intervention clinicians (parent coaches) from sites nationwide were screened with the ABC screening interview prior to their hiring. Clinicians who scored, on average, a 3 or above on a 5-point scale were considered. After their acceptance as trainees, clinicians implemented the ABC intervention with clients. They went to families’ homes and conducted pre-intervention visits, which included obtaining informed consent and administering the pre-intervention parent behavior assessment that was submitted for coding and feedback. Next, clinicians visited the
home for 10 weekly sessions. After the intervention sessions had ended, clinicians conducted the post-intervention parent behavior assessment. Pre- and post-intervention parent behavior assessments were coded between July 2013 and February 2016, and data were double-coded during January 2016.

**Measures**

*ABC screening interview.* The ABC Screening Interview consists of an attribute measure (mini adult-attachment interview) and a process measure (vignettes of an ABC intervention session) (Caron et al., in progress). Ratings are assigned on a scale of 1 to 5 for each component and averaged together for a total score. The lab uses a cut-off for determining whether or not the parent coach will be a candidate for training. Only parent coaches who scored an average of 3 or above are eligible for training (with the exception of one parent coach). 31 of the 37 parent coaches were given screening scores, but all parent coaches had pre- and post-intervention parent behavior assessment data. See Table 4 for descriptive statistics of the screening interview scores.

*Attribute Measure.* Selected questions from the Adult Attachment Interview (AAI) (George, Kaplan, & Main, 1985) were compiled to form what we called the “mini-AAI.” This measure focuses on attachment state of mind and rates clinicians on a 5-point Likert scale ranging from a dismissing state of mind to an autonomous state of mind. Questions and responses follow an interview format, and trained researchers score the interview. A score of 1 would indicate someone who does not value and is not able to talk clearly about early attachment experiences and who is closed to talking about his or her attachment influences. Likewise, a score of 5 would indicate someone who values attachment experiences and is open to talking about experiences and
influences. A clinician who scored a 1 would not be able to clearly describe early life experiences with his or her caregiver and might tend to idealize him or her. A clinician who scored a 5, on the other hand, could clearly describe and provide rich, believable descriptions of past episodic memories involving his or her caregiver and his or her responsiveness.

**Process Measure.** This measure introduces in-the-moment commenting, a core component of the ABC intervention, to clinicians. ABC sample intervention session clips were used for this measure. Two sample vignettes of an ABC intervention session are presented for the clinician. In the first vignette, an ABC parent coach makes a comment on a nurturing behavior and in the second on a following-the-lead behavior. The prospective clinician is told which ABC targets they will be commenting on, presented with four other session examples where a parent behavior occurs but in which the parent coach does not make a comment, and, after watching the videos twice, is asked to make a comment on these behaviors. Clinicians who score a 5 would be able to identify the correct parent behavior target presented, speak naturally, and make a comment not unlike a trained parent coach would make. Clinicians who score a 1 would not identify the intervention targets and make uncomfortable or vague comments that may or may not pertain to the intervention.

**Parenting Behavior Assessment.** The parenting behavior assessment (sometimes called the “play assessment”) is a 7 to 10 minute, semi-structured play session where parent are told to “play as they normally would” with their children using the toys provided. In this sample, all children received stacking cups, a rattle, and a squeaky toy with which to play. Parent behavior was coded in this assessment according to the measure below.
**Parent Behavior.** Parent behavior during the parent behavior assessment was coded by trained undergraduates in the Infant Caregiver Project using scales adapted from the NICHD Observational Record of the Caregiving Environment (ORCE; NICHD ECCRN, 1996). Feedback was given to parent coaches after each pre- and post-intervention parent behavior assessment. The observation uses three scales (following the lead, intrusiveness, and delight). Separate scales were maintained to assess sensitivity independently. ORCE original 4-point scales were expanded to 5-point scales to allow for greater variability in ratings. Coders were required to pass a reliability set of play assessments that included children 0 to 5 years of age in different caregiving contexts such as high-risk biological parents, foster caregivers, parents who adopted their child internationally, and low-risk biological parents. For this sample, 17% of play assessments were double-coded. Reliability was excellent across all scales, with one-way, random effects, single-measures intraclass correlations (ICCs) of .79 for following the lead, .81 for intrusiveness, and .80 for positive regard (.80 overall). One-way, random effects ICC is appropriate when a variety of play coders rate a subset of the sample (Shrout & Fleiss, 1979), and ICCs above .75 are considered excellent (Cicchetti & Sparrow, 1981).
Chapter 3

RESULTS

Data Analytic Strategy
Hierarchical linear models were conducted using an approach consistent with Raudenbush and Bryk (2002). This approach accounts for the nested structure of families within parent coaches and parent coaches within site.

ABC Effectiveness Strategy
To capture parent behavior change across the 10 sessions, we calculated difference scores for each family by subtracting the pre-intervention ratings of following the lead, intrusiveness, and delight from the corresponding post-intervention scores. Difference scores were then entered into HLM equations that lacked any predictor variables to test whether the average expected change score (i.e., model intercept) was significantly different from 0. Three models were specified, testing change in following the lead, intrusiveness, and delight and were of the following form:

\[ \text{BehaviorDifference}_{ijk} = \gamma_{000} + u_{00k} + r_{0jk} + e_{ijk} \]

in which \( \gamma_{000} \), the intercept, represents the estimated average amount of behavior change in each parent target; \( u_{00k} \) represents the dissemination site-level error term, \( r_{0jk} \) represents the parent coach-level error term; and \( e_{ijk} \) represents the case-level error term. The inclusion of site-level and parent coach-level error terms accounted for
the nested structure of the data while testing whether parent behavior change scores differed from 0.

*ABC Effectiveness.* Parents showed more following the lead behaviors, less intrusiveness, and marginally more delight at post-intervention than at pre-intervention ($\beta_{01} = 1.14, p < .05$), ($\beta_{01} = -1.00, p < .01$), and ($\beta_{01} = 0.25, p < .10$). Thus, following the lead increased by about 1.14 points from pre- to post-treatment, intrusiveness decreased by about 1.0 points, and delight increased by about 0.25 points, on 5-point scales. See Figure 1 for raw means and standard errors.

To estimate effect sizes, Cohen’s $d$ was computed by dividing the unstandardized coefficients for intervention effects by the within-group standard deviation (Cohen, 1988). Estimates of within-group standard deviation were computed using the raw data for pre-intervention to post-intervention change in parent behaviors. Based on conventions, the effect size for pre- to post-intervention change in following the lead was large, in intrusiveness was medium, and in delight was small ($d = 0.96, -0.72, and 0.21$, respectively). Table 2 presents effect sizes of behavior change found in this study compared with effect sizes from two randomized clinical trials of ABC and one community sample in Hawaii; effect sizes from the current study were comparable to those found in randomized clinical trials of ABC and the Hawaii community sample.
Figure 1  Parent behavior change from pre- to post-intervention in ABC dissemination sites.

Table 1  Comparisons of parent behavior change effect sizes.

<table>
<thead>
<tr>
<th></th>
<th>National dissemination sample</th>
<th>Community sample in Hawaii</th>
<th>Internationally adopting parents</th>
<th>Foster parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following the Lead</td>
<td>.96</td>
<td>.89</td>
<td>.49</td>
<td>.75</td>
</tr>
<tr>
<td>Intrusiveness</td>
<td>-.72</td>
<td>-1.21</td>
<td>-.35</td>
<td>-.71</td>
</tr>
<tr>
<td>Delight</td>
<td>.21</td>
<td>.41</td>
<td>.41</td>
<td>.13</td>
</tr>
</tbody>
</table>
Screening Score as Level 1 Strategy

Three models were specified for each type of screening score. The models analyzed change in following the lead, intrusiveness, and delight as predicted by the screening measure and were of the following form:

Level 1 Model:

\[
\text{ParentBehaviorChange}_{ijk} = \pi_{0jk} + e_{ijk}
\]

Level 2 Model:

\[
\pi_{0jk} = \beta_{00k} + \beta_{01k}(\text{ScreeningScore}_{ij}) + r_{0jk}
\]

Level 3 Model:

\[
\beta_{00k} = \gamma_{000} + u_{00k}
\]

\[
\beta_{01k} = \gamma_{010}
\]

In the level-1 model, ParentBehaviorChange_{ijk} represents the estimated average amount of behavior change in each parent target. \(\pi_{0jk}\) is the intercept or model-implied baseline level of behavior. \(e_{ijk}\) represents the case-level error term. In the level-2 model, \(\pi_{0jk}\), the intercept, is estimated by adding \(\beta_{00k}\) which represents the model-implied, fixed effect of dissemination site and \(\beta_{01k}\) which represents the effect of our level 2 predictor, ScreeningScore (which is measured by the Mini-AAI in half of our analyses and the Vignettes in the other half). \(r_{0jk}\) represents the parent coach-level error term. In the level-3 model, our level-2 intercept is predicted by \(\gamma_{000}\), the model-implied, fixed effect of dissemination site and by \(u_{00k}\), dissemination site-level error term. \(\beta_{01}\), the effect of our level 2 predictor, is predicted by the overall regression coefficient for the relationship between the dissemination site and the amount of parent behavior change.
**Mini-AAI as a Predictor.** We examined the mini-AAI as a predictor of parent behavior. The mini-AAI was associated with parent behavior change for both following the lead and intrusiveness. The results indicated that higher scores on the mini-AAI portion of the screening interview for clinicians were associated with significant gains for parent behaviors in following the lead ($\beta = .43; p < .05$) and moderate decreases in intrusiveness ($\beta = .35; p = .08$). Changes in delight were not significant ($\beta = .23; p = .20$). See Table 3.

**Screening Vignette as a Predictor.** We next examined the screening vignette scores as a predictor of parent behavior. Again, three models were specified, testing change in following the lead, intrusiveness, and delight as predicted by the vignettes and followed the form above (replacing Mini-AAI with Vignettes). The session vignettes were not associated with changes in following the lead ($\beta = -.15; p = .43$), intrusiveness ($\beta = -.04; p = .85$), or delight ($\beta = .21; p = .23$). See Table 4.
Table 2  Estimate of Fixed Effects of Mini-AAI on Parent Behavior

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For MINIAAI, $\beta_{01}$ INTRCPT3, $\gamma_{010}$ (FTL)</td>
<td>.429</td>
<td>.185</td>
<td>2.325</td>
<td>25</td>
<td>.028*</td>
</tr>
<tr>
<td>For MINIAAI, $\beta_{01}$ INTRCPT3, $\gamma_{010}$ (Int.)</td>
<td>-.347</td>
<td>.193</td>
<td>-1.800</td>
<td>25</td>
<td>.084</td>
</tr>
<tr>
<td>For MINIAAI, $\beta_{01}$ INTRCPT3, $\gamma_{010}$ (Del.)</td>
<td>.230</td>
<td>0.173</td>
<td>1.332</td>
<td>25</td>
<td>.195</td>
</tr>
</tbody>
</table>

Table 3  Estimate of Fixed Effects of Session Vignettes on Parent Behavior

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For VIGNETTE, $\beta_{01}$ INTRCPT3, $\gamma_{010}$ (FTL)</td>
<td>-.158</td>
<td>.197</td>
<td>-.803</td>
<td>25</td>
<td>.429</td>
</tr>
<tr>
<td>For VIGNETTE, $\beta_{01}$ INTRCPT3, $\gamma_{010}$ (Int.)</td>
<td>-.043</td>
<td>.224</td>
<td>-.193</td>
<td>25</td>
<td>.849</td>
</tr>
<tr>
<td>For VIGNETTE, $\beta_{01}$ INTRCPT3, $\gamma_{010}$ (Del.)</td>
<td>.214</td>
<td>.176</td>
<td>1.219</td>
<td>25</td>
<td>.234</td>
</tr>
</tbody>
</table>
Chapter 4
DISCUSSION

The current study examined two hypotheses: 1) whether the ABC intervention would produce similar results in the community as it did in randomized clinical trials, and 2) whether parent coach screening scores predicted later changes in maternal behavior from pre- to post-intervention. Hierarchical linear modeling revealed that the ABC intervention increased following the lead significantly, reduced intrusiveness significantly, and increased delight marginally. Analyses also revealed that the mini-AAI significantly predicted changes in following the lead from pre-to post-intervention. The screening vignettes did not predict changes in following the lead, intrusiveness, or delight from pre- to post-intervention.

Consistent with previous findings (Caron et al., 2015), the ABC intervention showed a similar effect size in the community as it did in initial randomized clinical trials. Given the current state of dissemination in psychology, seeing equivalent, significant changes in parenting behavior is impressive, especially with the high-risk nature of the sample. ABC’s adherence to commonly recommended implementation practices and fidelity measures accounts for much of the success seen in the current study. Because the literature suggests that more sensitive parents will see better outcomes for their children in areas previously discussed, having a relatively short, cost- and personnel-effective, efficient intervention that successfully targets and improves parental sensitivity could play an extremely important role in bettering the situations of high-risk families and children.
Another major finding in this study was the significant association between scores on the mini-AAI portion of the screening interview and changes in the parenting behaviors of following the lead and intrusiveness. The higher a clinician scored on the mini-AAI portion, the larger the behavior change in those clinicians’ clients. However, the lack of significance in the vignette portion is surprising. Previous research had suggested work-samples should improve clinician’s abilities to implement effectively, but we did not see associations between the vignette scores and parent behavior change. The vignettes, which measured in the moment commenting potential, reflect a crucial skill required for successful ABC implementation, so this measure was expected to predict parent behavior change. However, there might be several reasons for the significant association of mini-AAI and parent behavior change and the lack of an association between the vignettes and parent behavior change.

First, as discussed previously, attachment state of mind has been suggested to potentially play an important role in the delivery of attachment-based interventions. In this intervention, attachment state of mind represented the stable aspect of our clinicians’ characteristics. Stable characteristics might have more predictive power in interventions like this because they are harder to change through training and supervision; they remain the same regardless of circumstance. Clinicians with autonomous classifications are likely more able to identify children’s’ needs and emotions and connect with parents. In an intervention such as ABC, parent coaches’ mini-AAI scores could reflect their ability to relate the attachment components of the intervention, including the focus on sensitive caregiving, to the parents. Given these findings, more focus might be given to attachment predictors such as the mini-AAI score in future screening and recruiting efforts. If these types of characteristics
predicted intervention performance, future studies examining a wider range of attribute measure scores might reveal a stronger association.

On the other hand, the stressful nature of learning an intervention (sometimes combined with a previously existing job) might result in less stable characteristics not translating well before training. Especially in an intervention like ABC where it is difficult to make quality in-the-moment comments in live sessions, work-sample type screenings such as vignettes might not have translated as well as stable, attribute characteristics. Along that line of reasoning, the frequent and high-quality supervision provided to ABC clinicians may eliminate associations between the vignette score and parent behavior change. It is possible that the supervision improves parent coach commenting to such a degree that it is not associated with variability in parent coach behaviors. Clinicians who are initially less skilled at making in-the-moment comments could be “brought up to speed” by extremely efficient and effective training, while clinicians who are already skilled at making comments remain skilled.

Several limitations of this study should be discussed as well. First, the sample examined was limited by a truncated range. Because previous evidence suggested the predictive power of the screening interview, only one clinician who scored below the midpoint of the range was accepted. The restricted range problem would likely only reduce the ability to find an association between variables, yet the mini-AAI still predicted change in following the lead and intrusiveness. If we had included a full range of scores, we might have been able to see an association between the vignette scores and parent behavior change from pre- to post-intervention. Additionally, the small number of level-3 variables (sites) might make differences between sites appear
larger than they really are. Follow-up studies examining a broader range of clinicians and including more dissemination sites will help to confirm the findings of this study.

The current state of dissemination and implementation literature suggests that, although past efforts have produced mixed results, the path for future research is much clearer. Interventions that adhere to commonly recommended fidelity measures and use screening measures for potential clinicians that assess both stable and situation-dependent characteristics should see better results in the community than interventions that do not use these practices. Future work in this area should examine screening composite scores and clinician performance in a larger setting and range of clinicians to see if an association emerges. Additionally, the finding that attachment state of mind might predict intervention implementation in attachment-based interventions suggests that this is an area that should be more extensively studied in order to promote more efficient and effective interventions.
REFERENCES


Meade, E., & Dozier, M. (2012). “*In the moment*” commenting: A fidelity measurement and active ingredient in a parent training program. Unpublished manuscript, University of Delaware, Newark, DE.


### Appendix

#### Additional Data

**Table 4  Descriptive Statistics for Screening Interview Scores**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening Score Composite</td>
<td>31</td>
<td>2.75</td>
<td>5.00</td>
<td>4.0161</td>
<td>.69802</td>
</tr>
<tr>
<td>Mini-AAI</td>
<td>31</td>
<td>2.0</td>
<td>5.0</td>
<td>3.968</td>
<td>.8750</td>
</tr>
<tr>
<td>Vignettes</td>
<td>31</td>
<td>2.5</td>
<td>5.0</td>
<td>4.065</td>
<td>.7718</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>