The Institute for Attachment and Child Development Therapeutic Treatment Model for Children with Developmental Trauma Disorder: Theory, Assessment, Treatment and Research

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Theory and Foundation of the IACD Model

Just as bodily harm and disability can limit human physical functioning, trauma can hinder people developmentally and cognitively (Siegel, 2012). The principles deployed in the Institute for Attachment and Child Development (IACD) model to treat the effects of trauma and foster an individual’s ability to attach are primarily based upon the human development and neuroscience research of Erik Erikson, Bessel van der Kolk, Bruce Perry, and Daniel J. Siegel. The IACD model is based on the culmination of trauma and attachment research as well as the knowledge, experience, and education of IACD clinicians. Central to this model is the belief that human relationships are essential to the growth and learning of all individuals; a person's environment during his early development, as well as his personality, greatly influences his ability to attach to others throughout his lifetime; and that trauma impacts the brain and nervous system and impedes an individual’s ability for healthy attachment.

Human Development Theory

Relationships during the earliest years are most critical to how people will or will not attach to others later in life. Specifically, early experiences frame how they will interact with others and their world. Based on Erikson’s psychoanalytic theory of psychosocial development, the first two stages of development are most critical in this regard. During the first stage (birth - 18 months of age), children learn either to trust or mistrust their parent-figures, particularly primary caregivers. If these adults provide consistency with nurturance and physical safety, children learn to trust their environments and caregivers. When such needs are provided inconsistently or withheld, however, children learn to mistrust their surroundings and caregivers.

In the second phase of development (18-36 months of age), children’s experiences help to create either feelings of autonomy or of shame and doubt. As children become mobile, they begin to explore their environments. With encouragement from their caregivers, children learn boundaries while gaining self-confidence and autonomy. Children during this phase of
development who have no boundaries or are mocked or scolded for their attempts at self-sufficiency do not successfully resolve this phase of development resulting in shame and self-doubt (Robbins, Chatterjee, & Canda, 2011).

Children who do not experience healthy attachment in their first three years of life are at risk for developing developmental trauma disorder (DTD). Four different attachment patterns develop, according to Siegel, based upon children’s unique responses to their individual trauma experiences as well as their perceptions of safety. Each subtype includes characterized symptomatic behaviors:

**Avoidant subtypes** display signs of isolation and avoid closeness, seldom seek comfort, avoid relationships, act passive-aggressively, avoid feelings, and feel intense sadness and loneliness. **Anxious subtypes** display signs of emotional emptiness. They often lack the ability to discriminate between when they lie or tell the truth. Individuals in this category have abilities to act differently from their true selves depending on the moment and the people around them. This subtype can convince therapists that their problems are solely caused by their caregivers and that they themselves have no need for therapeutic services.

**Disorganized subtypes** have chaotic thinking patterns and experience unpredictable behaviors and moods. They may display behaviors that are typically associated with other psychiatric disorders such as self-stimulation, hoarding, unpredictable moods, excessive excitability, and frequent sensory or neurological problems. Disorganized attachments are sometimes associated with dissociative symptoms.

**Ambivalent subtypes** are openly angry, defiant, destructive, and dangerous. This subtype may be superficially charming, lack empathy, or perform delinquent acts. This is the most prevalent subtype in mental health systems (Siegel, 2012).

Regardless of their subtypes, all children who struggle in this regard have difficulties attaching to others and developing healthy relationships.
Neuroscience Theory

Just as individual experiences affect attachment, individual experiences also impact the brain and nervous system. For those who have experienced trauma, the impacts are long-lasting (De Bellis & Zisk, 2014; Ludy-Dobson & Perry, 2010; Siegel, 2012; van der Kolk et al., 2016). Traumatic stress can be linked with lasting changes in the areas of the amygdala, hippocampus, and prefrontal cortex (Siegel, 2012). Emotional memory, central to healthy attachment, is processed through the interaction of the hippocampus and the amygdala. When an individual experiences traumatic stress, increased levels of cortisol and norepinephrine are present (Bremner, 2006). The increase in cortisol triggers survival mechanisms. These mechanisms can lead to significant behavior changes that include flight, fight or freeze responses or cognitive changes regarding feelings of safety and trust of other individuals (Siegel, 2012).

Children with DTD are commonly diagnosed with reactive attachment disorder as well as post-traumatic stress disorder (PTSD). Individuals who have experienced trauma are likely to respond to trauma triggers the way they did at the time of the initial trauma. Their physical responses that may have been appropriate at the time are no longer logical or appropriate responses to triggers (Siegel, 2012). In his theory of DTD, van der Kolk (2005) explains how people can experience internal feelings of on-going danger due to their early experiences of abuse and insufficient care even when they do not demonstrate symptoms of PTSD. According to clinicians at IACD, DTD is the most accurate diagnose to express the impact of complex trauma during childhood.

Children need the ability to regulate their physical and mental states through healthy emotional connection with their parents. By reading their parents’ emotional states, they ‘internalize’ their parents. Children’s brains learn from their parents how to regulate through this communication. The autonomic nervous system assists with the regulation of the body and includes two branches referred to as the sympathetic nervous system. The sympathetic branch
is activated through energy consuming states such as an excitement or arousal. The parasympathetic branch regulates de-escalation, energy conserving, or inhibitory activities. Both branches are developing in the first two years of life. When a child is subject to inappropriate parenting, abuse or neglect during this time, they receive mixed messages about regulation (Siegel, 2012).

Early childhood experiences have a significant impact on neurodevelopment because they occur during the crucial period in which the brain is growing and developing at a rapid rate. Major structural changes in the brain, as well as brain growth and development, take place in the first four years of life. Traumatic experiences that occur in this timeframe can have permanent impact to the organization and vital neural networks within the brain (Ludy-Dobson & Perry, 2010).

**Relationship Impacts**

As disruptions during early development leave children behind emotionally, developmentally and neurologically and with a mistrust in caretakers, the children often have a difficult time adapting in family environments. Children with DTD often display behaviors representative of children much younger than their chronological ages. Maladaptive behaviors are also common. Such behaviors stem from their initial adaptive responses that allowed them to survive during early traumatic experiences. The behaviors are not compatible for building and maintaining healthy relationships throughout a lifetime. Some children also display behaviors associated with misdiagnosed mental illness. Without proper support, families struggle to thrive with the addition of a child with DTD. Challenges include problems in marriages and negative impacts on other children in the home (Follan & McNamara, 2014; Wimmer, Vonk, & Reeves, 2010). Although legal guardians typically desire to help the children with DTD heal, they often do not have the resources required to support these efforts, lack appropriate education and training to do so and, experience emotional triggers of their own that inhibit effective parenting. Thus, living environments can further contribute to the fear and resistance children with DTD feel toward caregivers. Without the appropriate
resources in place, challenges towards family integration for a child with DTD significantly increases.

It is imperative for families of children with DTD to establish effective intervention. This goal is critical because “correcting attachment problems requires close attention to improving the stability and increasing the positive quality of the parent-child relationship and parent-child interactions,” (Chaffin et al., 2006, p. 77). Studies have shown that children who are given exposure to healthy parents have opportunities to develop secure attachments resulting in the development of constructive social, emotional, and cognitive abilities (Siegel, 2012). Without effective support and resources, the entire family can experience considerable hardship— which ultimately deteriorates the very structure that gives children with DTD the best chance to heal.

**Treatment**

The IACD model was created and has evolved over time with one goal in mind-to keep children with DTD in, or prepare them for, successful long-term family environments. The milieu at IACD comprises a comprehensive approach that includes proper diagnoses, a therapeutic foster care environment for the children, respite and parent training for their legal guardians, therapy, psychiatric evaluation and medication if necessary, and non-pharmacological treatments. IACD clinicians and staff work with the children alongside their legal guardians whenever possible and applicable. Throughout their work, the IACD clinicians and therapeutic treatment parents focus on aiding children in healing from their trauma rather than concentrating upon their behavioral symptoms, in congruence with van der Kolk’s theory of developmental trauma (van der Kolk, 2005). The IACD model depends upon each of its components as no one element is as effective without the others.

**Diagnostic Procedure**

The clinicians at IACD; trained and licensed professionals in the areas of mental health, child development, and psychiatry; evaluate all children prior to placement in the IACD program. Based on interviews with parents, IACD clinicians gather as much
information as possible about where and with whom the children lived and for what length of time and the quality of their care during the first-three years of life. In addition, they identify children's developmental adjustments in their permanent families from the date of placement through their current ages. They also assess the current symptoms of the children based on the Child Behavioral Check List (CBCL) (Achenbach & Rescorla, 2001), an evaluation tool widely used around the world for clinical and research purposes. The CBCL is completed by the children’s legal guardians. Studies support the reliability and validity of the CBCL across many different clinical samples (Berubé & Achenbach, 2010). The children’s legal guardians also complete the MCMI-III (Dumont et al., 2014). This screening tool is used to provide insight into their personalities and emotional triggers. Such data is incorporated into the overall treatment plans designed uniquely for each child and family.

At intake, the IACD neurotherapist administers a quantitative electroencephalography (QEEG), also known as brain mapping, to determine appropriate protocols for improving brain functioning. Brain mapping is a procedure that records electrical activity within the brain and provides information about the functional organization and disorganization of the brain and its normal development (Budzynski, Budzynski, Evans, & Abarbanl, 2009).

The IACD psychiatrist administers evaluations of the children, reviews their past and current medications, evaluates clinical recommendations from IACD clinicians, assesses complete histories of symptoms related to possible psychological and mental illness. The IACD psychiatrist determines the final diagnoses of DTD and co-morbid disorders, if applicable.

**Therapeutic Foster Care Environment**

Children in the IACD inpatient program live with therapeutic treatment parents to learn how to live successfully in their own, often adoptive, families as well as in neighborhood communities. The IACD therapeutic treatment parents act as emotionally safe “practice parents” for the children. Given the natural temperament of the vetted IACD treatment parents, in addition to their training, respite, and support through IACD, they remain calm under all circumstances and do not get emotionally triggered by the children. As a result, the children learn to feel safe with parent-figures while outside of their own emotionally-charged
and sometimes chaotic adoptive or foster home environments. While in their homes, the IACD therapeutic treatment parents closely supervise the children and guide them through the practice of healthy, productive, and appropriate behavior and expression of feelings and emotions. Simultaneously, the therapeutic treatment parents help the children to build their self-esteem and confidence as contributing members of a family through age-appropriate chores and fun and cooperative play. In these calm and positive family environments, the children learn how to express their feelings rather than act them out in inappropriate ways. They also learn to trust a structured and empathic parenting style.

**Primary Therapy and Supportive Interventions**

IACD therapists provide therapy and lead the treatment team to ensure comprehensive and high-quality care to meet the individual needs of children and their families. They create, inform, and guide the IACD therapeutic treatment team through plans and strategies in the home environment; work with local educators and other staff to meet the needs of the children and provide strategies in the public school environment; coordinate and communicate the children’s overall treatment plans with the IACD psychiatrist and neurotherapist and; work with the children’s legal guardians in regard to the behavioral and emotional issues occurring within their families.

**Parent training and support.** Children with DTD have greater opportunities to feel calm and safe in relationship when their caregivers also feel calm as well as confident in their parenting abilities. A large component of the IACD model includes the training and support of the children’s legal caregivers. IACD recognizes and understands the overwhelming challenges involved in raising children with DTD and aids parents in this regard. In order for their children to experience success in the IACD program, caregivers must commit to working alongside the IACD treatment team and with the children as well as to making changes of their own if necessary.

During the time children live with IACD therapeutic treatment parents, their legal caregivers have opportunities to heal after living in chaotic home environments; to undergo
their own self-discovery; and learn how to respond in healthier ways emotionally; all in preparation for family therapy and for the children to return home upon completion of the program. Clinicians utilize the MCMI-III tool completed during the initial IACD intake packet to help caregivers understand their own life experiences, traumatic or not. The way adults perceive how they grew up can help them to identify and work through their own triggers when parenting children with DTD. This can make powerful and positive impacts on the children’s own attachments. The IACD therapists and therapeutic treatment parents also teach caregivers empathic parenting styles to help them parent more effectively (Bakermans-Kranenburg, van IJzendoorn & Juffer, 2003).

**Psychiatry.** The IACD psychiatrist assesses children for and treats existing comorbid diagnoses, psychological and/or genetic with medication, if applicable. With appropriate psychiatric diagnosis and pharmaceutical treatment, children with DTD and mental illnesses typically report feeling calmer and thus more available for therapeutic parenting and family therapy (Hornor, 2008).

**Neurofeedback.** According the International Society for Neurofeedback & Research, “neurofeedback, also known as EEG biofeedback, is a process in which sensors are placed on the scalp and devices are used to monitor and provide moment-to-moment information that is fed back to the individual about his or her physiological brain activity for purposes of improving brain functioning” (Hammond et al., 2011, p. 55). In accordance to standards and recommended guidelines (Hammond et al., 2011), the IACD neurospecialist works with psychotherapist Robert Coben in developing individual neurofeedback treatment protocols for all children in the IACD program to help calm their brains.

To date, neurofeedback is a therapeutic intervention most comprehensively investigated for the treatment of attention-deficit/hyperactivity disorder (Albrecht, Uebel-von Sandersleben, Gevensleben, & Rothenberger, 2015; Arns et al., 2009). Research indicates that neurofeedback training is also widely used as a therapy for certain mental, cognitive, and behavioral disorders (Fisher, 2014; Hammond et al., 2011). It is utilized to decrease inattention, impulsivity, hyperactivity, stress, depressive symptoms and anxiety (Arns, de
Fisher (2009) has described several case studies and the effects of neurofeedback among patients with DTD. Fisher’s clinical experience supports that neurofeedback training addresses even the stark baseline fear which is the affective underpinning of DTD, as well as its multiple manifestations or co-morbidities: sleep disorder, hyperactivity, learning disabilities, explosive disorder, oppositional defiant disorder and conduct disorder (Fisher, 2009).

Therapy. While children live with therapeutic treatment parents, IACD therapists help them to identify their feelings, learn ways to act appropriately upon their feelings, and gain the capacity to share their feelings with the therapeutic treatment parents as well as with their legal caregivers. Therapy includes the children’s legal caregivers as soon as the caregivers and children can participate productively. This often occurs after the initial IACD interventions begin including calm living environments for the children as well as their legal caregivers, parent support, consultation, and training for legal caregivers; psychiatry for children if applicable; and neurofeedback for the children. At that point, children often feel proud of their progress, are more confident, and have a desire to work on their relationships with family. Their legal guardians also tend to feel calmer and more self-aware. They also witness the positive changes in the children and, therefore, often become less guarded toward them (Timmer et al., 2011). Likewise, the children see differences in their legal caregivers. They see calm and empathetic, not angry, parents. These calm demeanors present opportunities for family work.

When children and their legal caregivers seem emotionally available to reconnect, IACD therapists guide the family through repair. It begins with the therapists’ clinical understanding of the likely defenses the children and their parents have toward one another. The therapists apply tDTDitional family therapy techniques to help the family members identify and work through such defenses. In addition, the therapists direct the therapeutic treatment parents how to aid the children accordingly during their stay in the treatment homes.
Other therapeutic techniques IACD therapists apply to aid family repair includes eye movement desensitization and reprocessing therapy, cognitive emotional behavioral therapy, cognitive behavioral therapy, relational therapy, psychodynamic therapy, internal family systems therapy, and couples’ therapy.

When the children feel safe with their families, the IACD therapists encourage them to express their emotions and the effects they recognize within themselves related to their trauma histories. Children learn that their fears are normal due to their early trauma. As children and their caregivers practice relationship, they build confidence with one another with the support of the treatment team. The treatment team simultaneously gains insight to proceed with continued family therapy.

Research

Objectives. Clinicians at IACD recently concluded an uncontrolled program evaluation to determine the effectiveness of the intervention deployed at IACD. Data are collected during the intake interview and at the completion of program. The study evaluated the IACD program by comparing changes in children’s short-term outcomes (anxious/depressed problems, withdraw/depressed problems, somatic complaints, social problems, thought problems, attention problems, rule breaking behaviors, and aggressive behavior) through pre-post assessments.

Measurement. The IACD study included data from the CBCL caregiver report that measures maladaptive social, emotional and overt behaviors (Achenbach & Rescorla, 2001). Eight different scales were used: anxious/depressed problems, withdraw/depressed problems, somatic complaints, social problems, thought problems, attention problems, rule breaking behaviors, and aggressive behaviors.

Sample. The sample for this analysis was selected from the larger data set designed to conduct an ongoing evaluation of the IACD program. More specifically, this study sample was limited
to: 1) all clients of the inpatient program between 2013 and 2017 and; 2) includes only those individuals for whom both pre-and post CBCL test results were available. A total of 35 cases met the study eligibility criteria. The entire sample was diagnosed with DTD either prior to or at the time of admission into the IACD program. Of the 35 clients 54.4% were females (n=19) between the ages of 6-16 years, and 45.7% were males (n=16) aged between 6 and 17 years old.

**Results.** Assumption testing showed that the CBCL variables did not represent a normal distribution so raw scores were transformed into new variables using a square root conversion. The transformed data, which resulted in a normal distribution, were then used to analyze the data. Table 1 presents the CBCL before and after entrance into the IACD program. This table also contain mean difference scores, change over time measured by paired t-tests, and effect sizes. Pre-post effect sizes (Cohen’s \( d \)) were calculated using the formula suggested by Rosenthal (1984) for matched-pairs data (\( d = t/\sqrt{df} \)). To protect from Type I Error, a Bonferroni correction was conducted, the p-value was set to be \( p < .006 \). per test (.05/8).

**Table 1**

*Means, Standard Deviations and Results of Paired T-Test of Differences Between Pre – to Posttest Assessments of Child Behavior Checklist (CBCL) in inpatient clients (N=35)*

<table>
<thead>
<tr>
<th>Achenbach’s (CBCL)</th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>( t )</th>
<th>( d )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious/Depressed</td>
<td>9.71 (5.46)</td>
<td>6.80 (5.14)</td>
<td>2.31</td>
<td>0.39</td>
</tr>
<tr>
<td>Withdrawn/Depressed</td>
<td>6.57 (3.10)</td>
<td>3.46 (2.76)</td>
<td>4.76***</td>
<td>0.80</td>
</tr>
<tr>
<td>Somatic Complaints</td>
<td>4.55 (2.74)</td>
<td>1.51 (1.10)</td>
<td>5.87***</td>
<td>0.98</td>
</tr>
<tr>
<td>Social Problems</td>
<td>9.85 (3.75)</td>
<td>6.77 (3.90)</td>
<td>4.77***</td>
<td>0.80</td>
</tr>
<tr>
<td>Thought Problems</td>
<td>10.45 (4.99)</td>
<td>5.48 (4.61)</td>
<td>6.33***</td>
<td>1.07</td>
</tr>
<tr>
<td>Attention Problems</td>
<td>12.35 (4.29)</td>
<td>7.77 (4.64)</td>
<td>5.76***</td>
<td>0.98</td>
</tr>
<tr>
<td>Rule Breaking Behavior</td>
<td>14.71 (5.19)</td>
<td>7.54 (7.53)</td>
<td>4.76***</td>
<td>0.80</td>
</tr>
<tr>
<td>Aggressive Behavior</td>
<td>22.37 (6.86)</td>
<td>11.48 (7.88)</td>
<td>8.79***</td>
<td>1.48</td>
</tr>
</tbody>
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*Note.* *** \( p < .001 \).
As presented in Table 1 the pretest scores showed that upon entrance into the program clients were identified as in the clinical range 5 of the 8 behavior categories: Social problems, thought problems, attention problems, rule breaking behavior, and aggressive behavior. Posttest scores showed that, upon completion of the program, clients were in the clinical range in 2 of the 8 categories. Those being identified as the somatic complaints and attention problems. Child participants in the IACD program significantly improved on all of the 8 subscales of the CBCL: Anxious/depressed, withdrawn/depressed, somatic complaints social problems, thought problems, attention problems, rule breaking behavior, and aggressive behavior. Although preliminary, the data suggest that the treatment program deployed by IACD is followed by improvements for youth with DTD, as assessed by the CBCL. Further evaluation is being conducted to determine other impacts to the outcomes including length of time in treatment, number of placements prior to adoption and age at adoption.
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