Getting to the Bull’s-Eye: Pre-Post Family Functioning Changes of Adolescents in Residential Treatment

Kenneth M. Coll, Brenda J. Freeman, Stacey Scholl & Nicole Hauser

To cite this article: Kenneth M. Coll, Brenda J. Freeman, Stacey Scholl & Nicole Hauser (2018) Getting to the Bull’s-Eye: Pre-Post Family Functioning Changes of Adolescents in Residential Treatment, Residential Treatment for Children & Youth, 35:1, 47-59, DOI: 10.1080/0886571X.2018.1448738

To link to this article: https://doi.org/10.1080/0886571X.2018.1448738

Published online: 19 Apr 2018.

Submit your article to this journal

Article views: 28

View Crossmark data
Getting to the Bull’s-Eye: Pre-Post Family Functioning Changes of Adolescents in Residential Treatment

Kenneth M. Coll\textsuperscript{a}, Brenda J. Freeman\textsuperscript{b}, Stacey Scholl\textsuperscript{c}, and Nicole Hauser\textsuperscript{c}

\textsuperscript{a}Counseling and Educational Psychology, University of Nevada, Reno, NV, USA; \textsuperscript{b}Counseling and Educational Psychology/Cooperative Extension, University of Nevada, Reno, NV, USA; \textsuperscript{c}Clinical Services, Cathedral Home for Children, Laramie, WY, USA

\textbf{ABSTRACT}

Although the notion of involving families in residential treatment is not new, relatively little research has specifically examined youth perceptions of improvement in family functioning as an outcome of adolescent residential treatment. This study investigated youth perceptions of family functioning (as measured by the Family Adaptability and Cohesion Evaluation Scales-III and indicated via the Circumplex Model) at admission and after at least 5 months of treatment. Posttest results specify significant perceptual improvement with families that indicated functional challenges per the Circumplex Model, and family functioning was maintained for youth (baseline) perceiving of their families as healthy.

\textbf{KEYWORDS}

Circumplex Model; family functioning; adolescent; residential treatment; FACES-III; adaptability; cohesion

Though family functioning has been accepted as a critical metric for measuring youth mental health (Olson, 2000; Stewart, Coll, & Osguthorpe, 2013), research on the effectiveness of residential treatment for adolescents in relation to family functioning is a neglected area in professional literature. Family functioning, for the purposes of this study, is defined as the degree to which a family unit is adaptable, flexible, and cohesive (Freeman et al., 2016; Olson, 2000). Adolescent residential treatment centers (RTCs) are defined here as out-of-home facilities for school and mental health treatment that are more structured than group homes, but are less restrictive than inpatient psychiatric units or juvenile detention centers. A number of RTC studies show evidence for improving the well-being of severely troubled youth who have not been successfully treated in less restrictive treatment settings (Butler & McPherson, 2007; Preyde, Adams, Cameron, & Frensch, 2009). Yet, RTCs are not without controversy, especially related to their cost, and lack of integration with youths’ community (ASTART, 2012). While controversies exist, RTCs have therapeutic potential for improvement of well-being more generally and family functioning specifically (ASTART, 2012; Butler & McPherson, 2007).
There have been some notable studies related to family participation and outcomes in residential treatment (Brown et al., 2011; Preyde et al., 2009). Some studies indicate the value of requiring youth and family participation in governance as a way to increase treatment outcomes (Brown et al., 2011), while others indicate the urgent need for redefining residential treatment to become family driven (ASTART, 2012). Studies also indicate that current knowledge, research, and values in RTCs clearly point to family-centered residential treatment (Preyde et al., 2009). One notable outcome study found that youth in residential treatment indicate significant improvements from admission to discharge on the Child and Adolescent Functional Scale and the Brief Child and Family Phone Interview, both of which include family functioning-related questions (Preyde et al., 2009).

As indicated, while family functioning has been studied within the context of residential treatment (Brown et al., 2011; Preyde et al., 2009), the use of the Family Adaptability and Cohesion Evaluation Scales-III (FACES-III) and the Circumplex Model related to overall residential treatment as a device for influencing family functioning has not been a topic of published research.

Most adolescent residential treatment programs typically provide therapeutic components for youth that include individual counseling, group counseling, and family counseling (to the degree possible); psychoeducational groups; and academic support conducted in a therapeutic education context. Indeed, some RTCs do not offer any family therapy (Brown et al., 2011). The reasons may include issues such as lack of funding, difficulty in maintaining consistent contact, families having competing priorities, limited resources, distrust of providers, and geographic distance (Brown et al., 2011). The standardization of services varies per facility, although agency accreditation increases the likelihood of higher consistency, and family therapy being offered (Brown et al., 2011; Butler & McPherson, 2007; Preyde et al., 2009).

Promoting strategies for family connectedness and, when possible, family counseling in residential treatment is strongly encouraged, though in some circumstances such engagement may only involve letter writing and/or phone calls (Crowley & Bishop, 2008). Indeed, Crowley and Bishop (2008) noted that when residential treatment does not encompass family involvement to some degree, adolescents often suffer and may experience added confusion and increased problematic behaviors. Residential treatment without family involvement certainly represents missed opportunities to further reduce emotional and behavioral problems in youth (Coll et al., 2015; Preyde et al., 2009). Conversely, the involvement of caregivers and parents at any level and through any number of strategies in residential treatment has been shown to increase healthy youth functioning (Bettmann & Jasperson, 2009; Gorske, Srebalus, & Walls, 2003).
Despite the positive associations between youth improvement and the involvement of families in residential treatment, one persistent concern is that residential treatment may actually damage family relations (ASTART, 2012). This criticism has evolved from the perspective that the physical absence of the youth from the home coupled with insights youth may develop about their families while in residential treatment may highlight negative family interactions and dynamics (ASTART, 2012; Coll, Powell, Thobro, & Haas, 2010; Green et al., 2001). For residential treatment to continue to remain viable, such concerns need to be studied utilizing reliable and valid assessments and processes (Coll, Juhnke, Thobro, Haas, & Robinson, 2008; Lyons, Kisiel, Dulcan, Cohen, & Chesler, 1997; The Joint Commission, 2012).

Circumplex Model: getting to the bull’s-eye

The Circumplex Model, based on Olson’s theory of family systems, is used as the primary conceptual model for this study. Based on where respondents fall on two scales – Cohesion and Adaptability – their family is categorized in one of 16 classifications, with typically three broad categories utilized: balanced, midrange, and extreme. The balanced classification is optimal for family functioning with extreme classification being suboptimal. The midrange classification falls between these two in desirability. The ideal axis of intersection is between level of cohesion and level of adaptability in Figure 1, i.e., ‘the bull’s-eye’. On the other hand, if a youth indicates perceptions in the extremes of the model then high-risk behaviors are significantly correlated (Piercy, Volk, Trepper, Sprenkle, & Lewis, 1991; Schultheiss & Blustein, 1994). (See Figure 1 with dark shade indicating balanced, medium shade indicating midrange, and lighter shade indicating extreme).

Olson (1986) described youth indicating a ‘balanced family system’ as in the ‘bull’s-eye’ when they meet two criteria. First, they perceive their families as exhibiting effective communication and negotiation skills, being self-controlled, showing cooperation and appropriate assertion, not being emotional reactive, and having fair, thoughtful goals. Second, they demonstrate shared leadership, democratic discipline, role sharing, and change when necessary. This ‘bull’s-eye’ functioning is the optimal family system and predicts positive individual mental health and functioning and productive lives (Olson, 1986; see Figure 1). If youth perceive their families in the bull’s-eye, then research indicates that this is a powerful protective factor (Maynard & Olson, 1987; Olson, 1986, 2000; Piercy et al., 1991; Schultheiss & Blustein, 1994), especially against substance abuse, depression, and aggressive behaviors.
Purpose of this study

This study aims to investigate the outcomes of inclusion of family functioning measures in RTC treatment by investigating youths’ perceptions of family functioning at admission and at sixth month of treatment (as measured by the FACES-III and illustrated by the Circumplex Model). Particular attention is paid to the following questions: (1) Do youths’ perceptions of their families improve through residential treatment? and (2) Do youth who perceive their families as functioning in a healthy manner at admission maintain this view in treatment 6 months later? (as illustrated by the Circumplex Model).

Method

Residential treatment milieu

The participant RTC site is accredited by The Joint Commission (TJC) for behavioral health. Such accreditation is a mark of excellence, and indicates uniformity, rigorous and ongoing quality improvement in all aspects for treatment including therapies, education, medical, and safety (Coll, Sass, Freeman, Thobro,
& Hauser, 2014; TJC, 2012). Residential treatment components for each youth at this facility include monthly meetings with a psychiatrist, weekly individual and group counseling, and family therapies whenever feasible, either live and/or via telephone or some combination thereof, and ongoing academic work delivered by a fully accredited school. The therapeutic processes (individual, group, and family) were scaffolded by ongoing clinical supervision that included documenting and tracking therapeutic foci for each session, monitoring the current phase of the therapeutic process, as well as monitoring goals for future sessions (Coll et al., 2017).

**Instrument: FACES-III**

The Faces-III has 20 items (with a Likert-type scale ranging from 1 to 4 with 1 = almost never, 2 = once in a while, 3 = sometimes, 4 = frequently, and 5 = almost always) and these items were developed to be readable and understandable to adolescents as young as 12 years old. The FACES-III consists of two scales: (1) Cohesion and (2) Adaptability (Olson, 1986). The Cohesion Scale consists of the 10 odd-numbered items of the FACES-III, with sample questions such as “Family members like to spend free time with each other” and “Family members ask each other for help.” As previously indicated, the Cohesion Scale, especially, has been found to be highly predictive of at-risk behaviors (e.g., substance abuse and depression; Maynard & Olson, 1987). The Cohesion Scale score is defined as “the emotional bonding that family members have toward one another” (Olson, 1986, p. 4). The Cohesion Scale includes four categories: disengaged, separated, connected (optimal), and enmeshed – with normed cutoff scores indicated for each category.

The Adaptability Scale is defined as the extent to which the family system is flexible and has the ability to change (Olson, 1986). The Adaptability Scale includes four categories: rigid, structured, flexible, and chaotic – with cutoff scores indicated for each category. The Adaptability Scale consists of the 10 even-numbered items of the FACES-III, with sample questions such as “Family members have a role in deciding discipline” and “Family members know who the leader is.” The Adaptability Scale has also been found to be predictive of at-risk behaviors, although somewhat less so than the Cohesion Scale (Olson, 1986).

Internal consistency estimates for the FACES-III, based on a national sample of more than 3,700 adults and adolescents (age 12–19 years), is .77 (Maynard & Olson, 1987). Test–retest estimates are .83. FACES-III measures and scales have also discriminated between numerous types of dysfunctional families and control groups (Olson et al., 1985).

The FACES-III (Maynard & Olson, 1987) including its diagnostic companion, the Circumplex Model (Piercy et al., 1991), has emerged as a consistently viable tool for the assessment of family functioning, including pre-posttesting.
As Olson (1986, 2000) notes, the Circumplex Model of Family Systems was particularly developed in an attempt to bridge the gap that typically exists between research, theory, and practice. Research indicates that the Circumplex Model is particularly useful as a “relational diagnosis” because family functioning populations are successfully discriminated by the FACES-III, and it is system-focused, and integrates cohesion and adaptability that have repeatedly been highly relevant for clinical assessment, treatment planning, and outcome effectiveness (Olson, 1986, 2000).

Participants

This study incorporated completed FACES-III assessments from 154 youth (all youth involved in a full 6 months of treatment during that period, except 4% (n = 6) of youth who refused to complete the assessment) who were treated at the RTC. Their average age was 14.5 years at intake, with a range of 12–18 years. They included 55% boys and 45% girls, 5% were African-American, 10% were Native American, 10% were Latino, and the remaining 75% were non-Hispanic, Euro-American. Primary Diagnostic and Statistical Manual of Mental Disorders (DSM) diagnoses at intake were depressive disorders (30%), with smaller percentages of attention deficit hyperactivity disorder (21%), and disruptive disorders (e.g., conduct, oppositional defiant) (20%). Many youth had secondary diagnoses as well. On average, they had experienced three to four different placements during the year before coming to the RTC.

About half of the youth in treatment were referred from child protection services and half from the juvenile justice system. Medicaid was utilized for about one third of the youth. State agencies paid for the other youth in treatment. Family situations varied widely, with some youth from intact families (about one third) to youth with no viable caregiver presently (one third). Most youth (80%) were from lower middle to lower social economic status. There were no discernable patterns by referring agency, family configuration, or social economic status from the FACES-III assessments. Youth lived in ‘cottages’ of no more than 12 at the RTC, with 24 hour monitoring by rotating youth workers. They stayed in treatment at the RTC for an average treatment duration of 6 months.

Procedures

The study was reviewed and approved by the University of Nevada, Reno’s Institutional Review Board. The FACES-III data were collected as part of the overall intake processes, with parental/caregiver approval, and was primarily used for clinical purposes. The data used for research were de-identified. Other data collected included assessment of substance abuse, behavioral problems, assets, and prior history. All youth were given the option to participate. Data
were collected as part of the assessment and treatment planning process within the first 2 or 3 weeks of admission, then repeated at the sixth month of treatment. All youth were free to define ‘family’ while completing the FACES-III. Some indicated their family as consisting of siblings, aunts, grandparents, and some indicated a more traditional family structure (e.g., mother, father, siblings).

Data analyses

Per directions in scoring the FACES-III, individual items for each youth were summed to provide a composite score for each of the two scales. Paired sample t-tests were then utilized. In a paired sample t-test, each subject was measured twice, resulting in paired observations (McDonald, 2014). Paired t-tests are considered a robust statistical analysis because individual changes are taken into account (McDonald, 2014). To estimate the practical significance, effect size was calculated as well (McDonald, 2014).

Results

This study explored if residential treatment as described helps move those describing their families as less functional toward a more balanced ‘bull’s-eye’ over a period of 6 months. The study also explored whether residential treatment helped youth maintain and strengthen their family functional position if already in the bull’s-eye.

The results for youths’ FACES-III scores were categorized in relation to where the scores fell on the Circumplex Model – in the bull’s-eye (functional) or not (less functional). Fifty-eight percent (n = 85) of the participants indicated that their families were low functional on the Circumplex Model (disengaged and structured) called Structurally Disengaged, at admission (see Figure 2). Disengaged scores represent the highest level of separation (very low attachment and very low support), and indicate that these youth perceive their families as having forced emotional distance, with artificial barriers established between family members, especially related to goals and needs. Other characteristics of Structurally Disengaged include distancing attitudes and distancing communication patterns as well as emotional over-reactivity (e.g., consistent overt displays of negative emotions such as anxiety, anger, and guilt). A Structurally Disengaged Family System is considered less extreme than a rigid system, but such families still exhibit much inflexible (uncompromising) and stilted communication styles. These family structures are characterized by little negotiation or power sharing in the family, and typically one-way communication style (e.g., top-down).

Forty-two percent (n = 69) of the participants indicated that their families were in the bull’s-eye, descriptive of healthy family functioning, at the time of
bull’s-eye functioning is specifically labeled Flexibly Separated in the Circumplex Model. Flexibly Separated scores represent strong attachment and support, and indicate that these youth perceive their families as engaging in effective communication, possessing strong negotiation skills, and utilizing adult-to-adult interactions. In contrast to the Structurally Disengaged, families scoring in the bull’s-eye are characterized by appropriate emotional closeness coupled with low emotional over-reactivity. Flexibly Separated families have a strong sense of closeness and loyalty, nonauthoritarian communication patterns, and an equal sharing of responsibility for family functioning (see Figure 3).

Youth who indicated higher levels of family functioning did not necessarily discharge sooner or had an immediate viable transition option to home.

Pairwise t-test analyses were utilized to explore youth differences with regard to family functioning as measured by the FACES-III and illustrated by the Circumplex Model at admission and at the sixth month of treatment. The results for both groups indicate statistically significant positive outcomes.

<table>
<thead>
<tr>
<th>Admission (Mean scores)</th>
<th>After 6 mo. (Mean scores)</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohesion = 24.5 (disengaged)</td>
<td>Cohesion = 30.2 (separated)</td>
<td>p&gt;.001; d = .82</td>
</tr>
<tr>
<td>Adaptability = 21.5 (structured)</td>
<td>Adaptability = 25.5 (flexible)</td>
<td>p&gt;.001; d = .70</td>
</tr>
</tbody>
</table>

**Figure 2.** Structurally Disengaged group. Fifty-eight percent of total sample CHC. Source: From Olson (2000).
Youth perceiving less family functioning at admission improved 6 months later, per the FACES-III, and youth in the healthy ‘bull’s-eye’ category at admission remained there (see Figures 2 and 3).

Cohen (1988) suggested that effect sizes ($d$) of .20, .50, and .80 should be considered small, medium, and large, respectively. As specified by Cohen, the greater the effect size, the more practical significance (Cohen, 1988).

The Structurally Disengaged youth (at admission) improved dramatically, and moved to the more healthy Flexibly Separated category (Cohesion Scale = $p < .001$; (effect size) $d = .82$; Adaptability Scale = $p < .001$; $d = .70$), indicating significantly more attachment and support, greater family engagement in effective communication and negotiation skills, and lower emotional over-reactivity. In addition, after 6 months of residential treatment, these youth perceived a stronger sense of family closeness and loyalty, and better division of responsibilities in the family. The effect sizes ($d$) of .82 and .70
indicate a ‘large’ change, representing not only a statistically significant change but a practical one as well (Cohen, 1988).

The Flexibly Separated group (at admission) remained there with some significant improvements in cohesion, moving toward the more ideal – Flexibly Connected (Cohesion Scale – \( p < .003; d = .72 \); Adaptability Scale – \( p < .338; d = .13 \)), with the cohesion effect size indicating a large change and no change for adaptability (Cohen, 1988).

**Discussion**

The aim of this study was to investigate the outcomes of family functioning in residential treatment by investigating youths’ perceptions of family functioning at admission and at 6 months of defined residential treatment (as measured by the FACES-III and illustrated by the Circumplex Model). Overall, the results of this study support the power of residential treatment to bring about change in youth. Conceptualized from the lens of perceptions of family structure as a short-term outcome variable, the overall results show that youth in the study made measurable gains. The study also supports the use of the FACES-III as an outcome measure for residential treatment environments, where family cohesion and structure are often not encompassed in the measurement of youth outcomes.

Of particular interest in the results was the possibility that those youth who at baseline perceived their families as less healthy might improve over the course of treatment. Also of interest was the investigation of the possibility that those families perceived as healthy at baseline might actually be perceived as less healthy later in treatment because of the residential treatment process (ASTART, 2012). As illustrated by the Circumplex Model, both unhealthy families and healthy families at baseline were perceived as significantly improving in family functionality over the course of residential treatment. The results of this study provide some evidence that quality residential treatment is not adversely impacting youth’s perceptions of their health functioning families, as suggested by some (ASTART, 2012), and can be considered stabilizing and strengthening of healthy family functioning.

These results are particularly meaningful in the context of quality residential treatment (TJC, 2012; Coll et al., 2014), because as youth work to become stronger and more resilient, they are best served by families taking the journey with them. In addition, this study offers evidence that the FACES-III may be a useful outcome measure as part of measuring overall effectiveness of residential treatment. Staff training related to assessment, outcome measurement, and quality assurance is an important aspect of using the FACES-III or other outcome measures in residential treatment settings (Bettmann & Jasperson, 2009; Coll et al., 2014).
In this study, the research team was surprised to find that a high proportion of the youth was from disengaged and structured families. If the finding that RTC youth are more often from such families is confirmed in other studies, specialized training for RTC staff in working with disengaged and structured families is needed. It is a plausible assumption that many RTC counselors and other staff come from more cohesive family systems. Therefore, they may have a natural tendency to judge the disengaged families of the youth, a bias that could lead to a poor treatment outcomes in relation to family integration. Training could likely mitigate the potential biases and increase positive outcomes in working with disengaged families of RTC youth.

Future studies should focus on the perception of the family members (e.g., primary caregivers, siblings) of the changes in the family structure from pre to posttesting, perhaps including follow-up studies 6 months after discharge for youth who return to the home environment. Given that it is collectively understood that families are critical to the sustainability of youth changes made in RTC, gaining a clearer understanding of RTC family factors post-discharge is worthy of future research.

**Limitations**

There were several limitations to this study. A significant limitation is the lack of inclusion of other variables (e.g., disparity of family environments). Another limitation is that while the paired \( t \)-test allows for the determination of change, it does not allow inclusion of other salient variables. In addition, data on the perceptions of family functioning were only collected for youth in treatment and not from other members of their families. The sample size was adequate but a larger sample may yield different results.

The study also did not test to determine if variations in dosage of family contact was an intervening variable. For future research, it could be advantageous to explore outcomes of specific related family intervention as well (e.g., therapy, parenting classes, parental visits). Another limitation is that the participants in the study were limited to one agency, in one part of the country. For future research, it would be important for participants to be chosen from multiple agencies in different parts of the country. Finally, future research should be conducted to continue to explore the usefulness and effectiveness of adolescent residential treatment in general.

**References**


