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12-month follow-up outcomes for youth departing and integrated residential continuum of care

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Abstract

This study examined the 12-month post-departure outcomes for youth who exited a residential treatment program at differing levels of restrictiveness. Study participants were 120 youth who entered an integrated residential continuum of care at its most restrictive level and then either departed the program at the same level or stepped down and departed at a lower level of restrictiveness. Results indicate that youth who stepped down and exited at the lowest level of restrictiveness were the most likely to be living at home or in a homelike setting and experienced fewer formal post-departure out-of-home placements. However, there were no differences in post-departure rates of substance use, arrests, or being in school or having graduated. These results suggest that youth who were served in the integrated continuum and departed at the lowest level of restrictiveness had more positive outcomes at 12-month post-discharge.

Keywords

Integrated continuum of care; Residential care; Systems of care; Out-of-home follow-up; Follow-up outcomes

1. Introduction

In 2010, there were 408,425 children living in out-of-home care in the United States (U. S. Department of Health et al., 2011). Out-of-home care includes a wide range of treatment milieus with varying levels of restrictiveness including traditional foster care, treatment foster care, therapeutic group homes, residential treatment centers, and inpatient psychiatric units. These settings are designed to provide services to children that present with a wide array of problems and needs and that come from a wide range of referral sources (Garland, Hough, Landsverk, & Brown, 2001). The Adoption Assistance and Child Welfare Act (P.L. 96272) passed in 1980 mandated that a child removed from his or her home, must be placed

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in the least restrictive placement available which also appropriately meets the needs of that child and their family. Providers have oftentimes misinterpreted this mandate to mean that the first out-of-home placement should be in the least restrictive placement available as opposed to the most appropriate setting for the child (Sunseri, 2005). Frequently, more restrictive placements are seen as a “last resort” only after less costly community-based treatment options have been exhausted (Frensch & Cameron, 2002; Stuck, Small, & Ainsworth, 2000). However, when a child’s behavioral and mental health needs require a more intense intervention, the least restrictive placement many times is not the most appropriate placement. As a consequence, a child may experience several failed placements before they make their way to the setting that is most appropriate to meet their treatment needs (Dale, Baker, Anastasio, & Purcell, 2007; Whittaker, Fine, & Grasso, 1989).

Once in the child welfare system, children experience differing patterns of movement through systems of care (James, Landsverk, & Slymen, 2004; Usher, Randolph, & Gogan, 1999; Wulczyn, Kogan, & Jones-Harden, 2003). Some studies have indicated that movement to a more restrictive placement and an increase in the severity of behavior problems are correlated (Handwerk, Friman, Mott, & Stairs, 1998; Huefner, James, Ringle, Thompson, & Daly, 2010; Nash, Thompson, & Kim, 2006). Yet there is also countervailing evidence that a substantial number of children placed into the most restrictive settings have needs that are no more severe than those of children in lower level family-based care (Breland-Noble, Farmer, Dubs, Potter, & Burns, 2005; Farmer, Mustillo, Burns, & Holdern, 2008; James, Roesch, & Zhang, 2011; Lyons, Libman-Mintzer, Kisiel, & Shallcross, 1998). As youth step-up or step-down to more or less restrictive placements, they typically have to adjust to new caregivers, new rules, and different treatment models. Although it is well documented that such placement disruptions can have a negative impact on the child (Dunn, Culhane, & Taussig, 2010; Hyde & Kammerer, 2009), little is known about the outcomes of children that step-up or step-down within a continuum of care that integrates the same treatment model at all levels of restrictiveness. It could be argued that such an integrated continuum of care would be less disruptive to the child as the treatment they are receiving is consistent with their prior placement. They are just being administered a different “dosage.” Further, it seems that this consistency could be related to improved outcomes. In one of the few studies to examine an integrated continuum of care, Huefner et al. (2010) followed the continuum movement patterns of 701 youth who entered a residential treatment facility at one of three levels of setting restrictiveness and subsequently departed treatment at some point along that continuum. They found that almost 83% of youth that either entered the integrated residential continuum at its lowest level (i.e., family-style group care) or entered at a more restrictive level and then moved down to depart at its lowest level, returned home or to a home-like setting (e.g., independent living, living with relatives). This was significantly higher than those youth who departed from more restrictive levels of the continuum, where fewer than half returned home or to a home-like setting. According to the authors, this suggests that youth who depart from the more restrictive end of the continuum may not be ready for less restrictive community-based settings. Further, they suggest that an integrated continuum of care may minimize the negative outcomes associated with placement disruption. If youth who depart home or to a home-like setting are in fact more likely to succeed in community-based settings, then one would expect that these youth would be more likely to maintain their placement and have more lasting, positive post-departure outcomes than those youth who exit the continuum from more restricting settings.

The current study builds on the research of Huefner et al. (2010) in that we examine the 12-month post-departure outcomes of youth who enter an integrated continuum of care at its most intensive treatment level and then depart at varying levels of restrictiveness. We look to answer the question of whether youth who step-down through an integrated continuum of

care and depart at its lowest level (e.g., family-style group home) will have better post-departure outcomes than those who depart from more restrictive levels.

2. Method

2.1. Treatment and intervention

Youth in this study received treatment in a large, mid-western, residential services agency. The residential services model has its theoretical roots in the Teaching-Family Model developed at the University of Kansas in the 1970's (Wolf et al., 1976), which is one of the most widely used and researched treatment group home approaches (James, 2011). The Teaching Family Model is one of the few residential treatment models with a promising scientific evidence base for its effectiveness and has been described in detail elsewhere (Davis & Daly, 2003; James, 2011).

The intervention strategies developed for this family-style residential care have also been used to develop an integrated continuum of care to serve children with varying levels of need in mental health, juvenile justice, and child welfare systems. This continuum of care encompasses services which include a locked, medically supervised intensive residential treatment center and staff-secure therapeutic group homes with shift staff. Intervention methods have been modified to accommodate each of these different settings, but the same basic model of care has been maintained (Huefner et al., 2010).

The programs examined in this study were limited to three residential care programs as they serve the greatest number of common youth within the continuum and because they collect similar intake, during, and departure information. Each of the programs is described below, with the Locked, Intensive Treatment Residential Program being the most restrictive and the Teaching Family Homes being the least restrictive of the three. Youth can move up or down the integrated continuum based on their treatment needs. Continuum movements are determined by a committee of youth care administrators who make decisions on a case by case basis based on specified criteria and individual need.

2.1.1. Locked, Intensive Treatment Residential Program—This program is a 24-hour residential treatment program for youth with psychiatric disorders. It is a long-term residential program that is specifically designed to offer medically directed care for more seriously troubled youth who require supervision, safety, and therapy but do not require inpatient psychiatric care. This program provides round-the-clock supervision, locked/secure facilities, and numerous other safety and program features. Typically, admitted youth are unable to function in normal family or community settings. For many of these high-risk youth, placements in traditional treatment programs have repeatedly failed and reunification with the family holds little promise without stabilizing intervention.

2.1.2. Staff-Secure Group Home—This program is a medically directed and secure treatment program for youth ages 10 to 18 and is designed to provide treatment within a family-style environment for youth with psychiatric disorders. These homes are run by shift staff and have the capacity for 14 youth. The program offers support, care, and round-the-clock supervision to enable youth to progress in daily living skills and appropriate healthy socialization. These youth are unable to function in normal family or community settings. The goal of the program is to help children successfully transition to a less-restrictive level of care.

2.1.3. Teaching Family Homes—Teaching Family Homes are a family-style, community-based program serving six to eight males or females, usually ages 12 to 18. Married couples called Family-Teachers are the primary treatment agents. Family-Teachers

are responsible for structured supervision of youth in daily living and treatment activities. The couple and an assistant (Assistant Family Teachers) work on both treatment and skill building in the home as well as with community and family resources in the child's life. Clinical and medical supervision are an integral part of the program and professionals are available on a 24-hour basis. The teaching family home program is listed as having promising scientific evidence of effectiveness on FindYouthInfo (www.findyouthinfo.gov) and the OJJDP Model Programs Guide (www.ojjdp.gov/mpg/mpgProgramDetails.aspx%20).

2.2. Participants and youth characteristics

The initial sample consisted of 143 youth between the ages of 13 and 17 that were admitted to a Locked, Intensive Treatment Residential Program and departed care along one of three integrated continuum departure patterns (Locked Intensive, Locked Intensive to Staff-Secure, Locked Intensive to Staff-Secure to Teaching Family Home) between January, 2007 and September, 2009. Of this initial sample of youth, 120 (84%) had a 12-month follow-up survey information (see 12-month post-departure follow-up survey description in the Measures section). Table 1 shows the race, sex, admission age, and percentage of those with an DSM IV diagnosis by continuum departure pattern.

Overall, there were no significant differences in racial proportions among the departure patterns. However, there was a significant difference in the proportion of boys to girls in the continuum pattern; $\chi^2(2) = 14.01, p < .001$. Specifically, significantly more boys departed Locked Intensive facility than girls.

Further, a Multivariate Analysis of Variance model indicated a total length of stay difference; $F(2,112) = 76.38, p < .001$. The overall total length of stay was 13.3 months, with those departing the locked, intensive facility having a significantly shorter total length of stay than those departing Teaching Family Homes.

2.3. Measures

2.3.1. Twelve month post-departure follow-up survey—The 12-month post-departure follow-up survey has between 21 and 44 questions, depending on the respondent's answer pattern, and is designed to measure functional post-departure outcomes for youth who received residential services. In order to reduce the potential for a social desirability bias to occur, all follow-up interviews were conducted by third party crisis counselors at a national crisis hotline. Further, in order to complete the interview, the interviewee could either be the youth who received treatment or someone with direct knowledge of the youth. If the respondent has limited knowledge of the youth, efforts are made to find other, more knowledgeable contacts. As such, survey respondents included parents, grandparents, other relatives, foster parents, residential treatment staff members, social workers, and the youth themselves. When a respondent did not have knowledge of a particular component of the youth's functioning (e.g., relationships), their response was coded as "Don't Know" (i.e., missing data). Of particular interest for this study were five functional outcomes: currently living at home or in a homelike setting, currently in school or graduated, post-departure substance use, post-departure arrest and having been in a post-departure out-of-home formal placement.

2.3.2. Responder/non-responder analysis—We compared those with a 12-month follow-up survey to those without across seven variables using logistic regression. Logistic regression is a variation of ordinary regression that is used when the dependent variable is dichotomous (e.g., 0 = non-responder, 1 = responder) and the independent variables are continuous, categorical, or both (Hosmer & Lemeshow, 1989; Menard, 1995). Logistic

regression produces two statistics which bear explanation: Wald and Exp (B). The Wald statistic is the statistical test for each coefficient in the regression model and Exp (B) indicates the increase in odds that an event will occur (e.g., being a responder) for each unit increase in the predictor variable.

The predictor variables for this responder/non-responder analysis are: restrictiveness of placement prior to admission to the Locked Intensive Residential Treatment Program, sex (0 = female, 1 = male), age at admission in years, total continuum length of stay, race (0 = Caucasian, 1 = Other), referral source (0 = court/legal 1 = private/other), behavioral change score, and if they were a ward of the state at admission (0 = no, 1 = yes). This model was not significant.

2.3.3. Analysis—Because 12-month follow-up interviews are voluntary and because the survey respondent is sometimes someone other than the youth themselves, missing answers on questions were not uncommon. Choosing an appropriate method to handle missing data is crucial as this can reduce the efficiency of statistical estimates and can introduce systematic biases into the results (Rubin, 1987). In this study, Multiple Imputation (MI) was used to replace missing data using SPSS v.18. MI is thought to be the best imputation method for handling missing data for both predictor and outcome variables, especially when less than 25% of data is missing (Horton & Lipsitz, 2001; Saunders et al., 2006; Scheffer, 2002). In the current analysis, the variable with the greatest amount of missing data was post-departure substance use (16.7%), followed by currently living in a homelike setting (8.3%), post-departure arrest (8.3%), currently in school or graduated (7.5%), and having been in a post-departure out-of-home setting (3.3%). All available data were used to generate 20 imputed, complete data sets. All analyses were performed on each imputed dataset, and results were combined following Rubin's (1987) guidelines.

3. Results

A Multivariate Analysis of Covariance was performed to investigate if continuum departure pattern was predictive five 12-month follow-up outcome variables. The five outcome variables were: currently living at home or in a homelike setting (Homelike), any post-departure out-of-home formal placement (Formal), post-departure substance use (Substance), currently in school or have graduated (ISG), and post-departure arrest (Arrest). Sex, race, and age at admission were entered into the model as covariates. Transformations were performed on race and age at admission due to the skewed nature of the data. The overall model was significant (Wilks' Lambda $F=3.16$, $df=10, 218$, $p=.0014$), indicating that continuum departure pattern is related to the outcome variables. More specifically, between-subjects tests indicate that continuum departure pattern to be significantly predictive of currently living in a homelike setting ($F=6.22$, $df=2, 113$, $p=.004$) and having been placed in a post-departure out-of-home formal setting ($F=12.25$, $df=2, 113$, $p=.011$). However, post-departure substance use ($F=1.39$, $df=2, 113$, $p=.34$), currently in school or having graduated ($F=1.88$, $df=2, 113$, $p=.169$), and post-departure arrest ($F=.322$, $df=2, 113$, $p=.759$) did not reach significance. Comparison of the estimated marginal means indicates that those who departed the continuum Teaching Family Program were more likely than those who departed from the Locked Intensive Facility to be living in a homelike setting and less likely to have been placed in an formal out-of-home setting. Table 2 displays the comparisons for all continuum departure groups by the outcome variables.

3.1. Post hoc analysis

To try to determine if those who departed from the Locked Intensive Facility engaged in more disruptive behaviors than those youth who stepped down, we looked at a measure of behavior over the last two weeks before departure from the locked, intensive facility.

Described in detail elsewhere (e.g., Huefner et al., 2010), all programs in this study record and track all notable disruptive behavior (e.g., aggression) on a daily behavior incident checklist. The number of incidents checked can be used as a rough measure of problem behavior. Analysis of Variance did indicate differences among those who departed from the differing levels of restrictiveness ($F=8.05$, $df=2$, 116 , $p<.001$). Specifically, those who departed from the Locked Intensive Facility had on average significantly more disruptive behaviors during their last two weeks in the facility than those eventually departing from the Staff-Secure ($p<.001$) or the Teaching Family ($p<.001$) programs

4. Discussion

This study investigated the 12-month post-departure outcomes of youth who entered an integrated out-of-home continuum of care via an intensive residential treatment center and then departed treatment at varying levels of restrictiveness. One of the unique aspects of the youth in this study is that they had the opportunity to move along a continuum using an integrated treatment model. Findings from this study showed that youth who stepped down through the integrated continuum of care and departed at its least restrictive level (i.e., Teaching Family Program) were more likely to be at home or in a home-like setting and have fewer formal out-of-home placements at 12-months post-discharge. However, there were no differences among departure patterns for post-departure substance use, being in school (or graduated), or remaining arrest-free.

The finding that those who departed from the Teaching Family Program were more likely to be at home or a home-like setting suggests that these youth may have been better prepared to return to a normative living environment. These findings also suggest that stepping down from more intensive to less intensive treatment programs in an integrated continuum might be less disruptive than a similar step-down pattern across programs using different treatment models (c.f., Bickman, Lambert, Andrade, & Penaloza, 2000). Such continuity may help alleviate the disconnectedness experienced with placement disruption (Baker & Calderon, 2004).

A similar trend was found with fewer out-of-home post-discharge placements for youth continuing treatment down to the least restrictive setting. The percentage of youth who departed from the Locked, Intensive setting with an additional out-of-home placement was almost three times as great as for youth departing from the Teaching Family Program. Post-discharge permanence through reunification, guardianship, or adoption is a priority for youth leaving out-of-home care, and has been associated with continuity and stability while in care (del Valle, Bravo, Alvarez, & Fernanz, 2008; Holland, Faulkner, & Perez-del-Aguila, 2005; Schofield, Thoburn, Howell, & Dickens, 2007).

There was also a non-significant increasing trend for youth to either be in school or to have graduated with each step-down within the program (see Table 2), so the comments here are speculative in nature. The highest percentage (91%) was for youth who left the continuum from the Teaching Family Program, with the percentage decreasing for those departing from increasingly more restrictive settings. This rate was also much higher than the typical high school graduation rate for youth in out-of-home settings, which is typically near 54% (National Working Group on Foster Care & Education, 2006). Not completing high school has serious consequences for troubled youth (Cohen & Piquero, 2009), and is a special risk for youth in out-of-home settings (Blome, 1997; McMillen & Tucker, 1999).

Given the higher percentage of youth in a stable home-like setting at follow-up, it is perhaps surprising that departure pattern was not related to differences in post-departure arrest rates or substance use. Arrest rates across all patterns ranged from 23 to 40%, which is clearly above the 6.3% national norm for all adolescents (Office of Juvenile Justice & Delinquency

Prevention, 2009), but lower than the 55% for juvenile justice youth (Snyder & Sickmund, 2006), who are a closer behavioral match to the youth in this sample. Conversely, post-departure substance use ranged from 20 to 49%. At the upper end, these rates are similar to national rates, which indicate that 50% of high school students had at least one drink in the past 30 days and 54% had tried illicit drugs (Martin & Milot, 2007). Clearly, all youth in this study demonstrated significant risk for problems with post departure substance abuse and offending.

4.1. Clinical implications

While it was associated with a relatively stable return to home, stepping down through an integrated continuum did not seem to have a mediating effect on post-departure rates of arrests and substance use. Such elevated arrest rates and substance use seem to highlight the importance of focused treatment once a youth enters and moves through all levels of residential care. For example, research has shown that prior criminal behavior is predictive of being arrested at 5-years post-departure (Kingsley, Ringle, Thompson, Chmelka, & Ingram, 2008). As such, treatment goals for youth admitted to residential care with prior criminal activity should focus on addressing and changing criminogenic attitudes. Substance use/abuse assessment and treatment would also be available for youth entering all levels of residential care.

In addition to addressing these issues while in care, these data highlight the risk factors that are present in the post discharge environments of all of these young people. Enhanced support for these youth after discharge is a promising post departure intervention to help maintain treatment gains and should also be considered for all levels of residential placement (Chmelka, Trout, Mason, & Wright, 2011; Thompson, Ringle, Huefner, Peterson, & Way, 2010; Trout et al., 2010).

4.2. Limitations

The major threat to the internal validity of this study is selection bias. Because of practical and ethical issues it is very difficult to randomly assign youth to different patterns of care. As a result, youth in this study who had different patterns of care could have been systematically different which could have accounted for some or all of the results. For example, we found that youth who were discharged from the most restrictive setting had significantly more behavior problems prior to discharge than those who departed the least restrictive residential setting. On average, those departing directly from the Locked Intensive facility engaged in approximately three more weekly disruptive behaviors in the 2 weeks prior to departure than those who stepped down to depart from the Staff-Secure or Teaching Family Homes (3.06 and 3.05, respectively). Thus, it may be that those departing the locked, intensive facility had more behavioral issues than those who stayed in the integrated continuum and departed from less restrictive settings.

A second threat to the internal validity of the study is length of stay or dosage. Pattern of movement through the integrated continuum and length of stay were highly correlated ($r=.706$). As such, we cannot rule out the possibility that the differences observed were simply related to longer lengths of stay, rather than due to the intervention received.

5. Conclusion

Despite these limitations, the results of this study provide promising evidence for an integrated continuum of care utilizing the same treatment model, making placement decisions on explicit criteria and individual need, and supporting placement moves before and after the transitions. For example, in this particular setting, as youth behavior improves in the locked, intensive facility, they oftentimes will be allowed to visit the less restrictive

programs. It is possible that anticipation of stepping down can serve as a motivator for improved behavior. Previous research has found that significant reductions in problem behavior is related to stepping down within an integrated continuum (Huefner et al., 2010), and this supports the notion that some youth require more intensive treatment before they are ready for less intensive treatment in a less restrictive environment (Stuck et al., 2000). The authors propose that when placement moves are necessary, an integrated continuum may be the least disruptive. Regardless of how this is accomplished in practice, moving from more to less restrictive settings as behavior dictates takes time and planning. Making placement decisions carefully seems worthwhile as research suggests that placing a child in the wrong type of care can have negative consequences (Lyons, Terry, Martinovich, Peterson, & Bouska, 2001). Further, getting a child the right treatment at the right time can ultimately shorten their time out-of-the home by reducing multiple failed placements (Sunseri, 2005).

This study also revealed some practical implications for children entering residential care. The results underscore the need for more to be done during treatment to address prior criminogenic attitudes and to assess and treat for substance use/abuse. Future research can build upon this study to investigate the best way to provide services to youth who may need multiple levels of care over time.

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Table 1

Youth race, sex, age at admission, total length of stay and DSM diagnosis at admission by program departure.

	<u>Locked Intensive</u>	<u>Staff-Secure</u>	<u>Teaching Family Home</u>	<u>Total</u>
	n=45	n=32	n=43	n=120
Mean age at admission (SD)	15.6 (1.51)	15.3 (1.5)	15.6 (1.3)	15.6 (1.43)
Mean continuum length of stay-mos (SD)	5.1 (2.83)	8.6 (2.41)	25.2 (11.89)	13.3 (11.75)
Race (%)				
Caucasian	60.0	65.6	65.1	63.3
African-Am	24.4	18.8	11.6	18.3
Hispanic	4.4	6.3	4.7	5.0
Native Am	0	6.3	4.7	3.3
Other	11.1	3.1	13.9	10.0
Sex (%)				
Male	68.9	40.6	30.2	52.5
Female	31.1	59.4	69.8	47.5
DSM IV diagnosis (% yes)	100.0	100.0	93.0	98.0

Table 2

Percentages for the five measures of functioning at 12 months post program discharge by program departure.

	<u>12 months post-discharge</u>				
	Lives at home	Formal placement	Used substances	In school or graduated	Been arrested
Locked-Intensive	48%	93%	24%	76%	28%
Staff-Secure	65%	70%	20%	85%	40%
Teaching-Family	89% ^a	34% ^a	49%	91%	23%

All comparisons are based on the Locked-Intensive departure pattern as the comparison group.

^a p<.01.