Residential Treatment for Children & Youth, 32:195–207, 2015

ISSN: 0886-571X print/1541-0358 online
DOI: 10.1080/0886571X.2015.1080993

Routledge
Taylor & Francis Group

Are Restrictiveness of Care Decisions Based on Youth Level of Need? A Multilevel Model Analysis of Placement Levels Using the Child and Adolescent Needs and Strengths Assessment

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Youth entering into the foster care system face many challenges, not the least of which is finding an appropriate placement in which their behavioral and emotional needs can be addressed. This secondary data analysis of foster youth placed in residential care and treatment foster care will study the connection between youths' scores on a functional assessment and level of placement in the child welfare system using a multilevel model analysis. Data were obtained from an online case management system operated by a state child serving system. The dataset included information for 9,893 youth within 295 residential and foster care provider agencies, with 23,853 functional assessments at multiple time points. Initial findings show a linear relationship between scores on a functional assessment and a placement's level of restrictiveness; all of the level 2 program variables were significantly associated with the total CANS score for a youth at intake. These findings support prior literature and least restrictive placement policies.

KEYWORDS child welfare, decision-making, functional assessment, placement level, specialized foster care

Since the passing of the Adoption and Safe Family Act (ASFA) (Public Law 105–89) in 1997, child welfare discussions at the national, state, and local level have been defined by the call to succeed in the arenas of safety, permanency, and well-being.

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The Administration of Children and Families (ACF), a division of the United Stated Department of Health and Human Services (USDHHS), has placed a priority on addressing well-being for youth in care, especially the social and emotional well-being of youth in care (U.S. Department of Health and Human Services, ACF, ACYF, 2012). The reason for the emphasis on social and emotional well-being is twofold. First, the research indicates that youth in foster care are increasingly more likely to have behavioral and emotional health needs (Burns et al., 2004; Glisson & Green, 2006). Second, untreated mental health needs can negatively impact long term outcomes for those youth. These youth are not only less likely to have stability in their living situation, but are more likely to develop symptoms that will inhibit their ability to successfully transition into adulthood (Pecora, 2010).

Historically, children in care have not received services and care to address their emotional and behavioral needs (Burns et al., 2004; Villagrana, 2010). A barrier that prevents youth from receiving quality care is the inability for the frontline workforce to accurately assess youth need s and strengths upon entry into the system. After an initial assessment, cities and counties need to have a broad service array to meet the diverse needs of those youth. This secondary data analysis of youth placed in residential settings and treatment foster care families examines the connection between youth's scores on a functional assessment and level of placement in the foster care system.

Placement Level Decisions

For every child who comes into child welfare custody, decisions are made about the need for their initial removal from their primary caregiver and the placement setting that can provide the needed level of care. There has been considerable research into the factors associated with decisions to remove a child from their family of origin (Fluke, Chabot, Fallon, MacLaurin, & Blackstock, 2010; Horwitz, Hurlburt, Cohen, Zhang, & Landsverk, 2011; Katz, Hampton, Newberger, Bowles, & Snyder, 1986; Needell & Barth, 1998; Rivaux et al., 2008; Runyan, Gould, Trost, & Loda, 1981; Wulczyn, Hislop, & Harden, 2002; Zuravin & DePanfilis, 1997). Only recently has attention has been paid to the decisions around service intensity and placement level. Given that a considerable percentage of youth in the child welfare system have mental and behavioral health needs, people responsible for placement decisions have responsibility to ensure that youth with the highest levels of need are placed in settings that can best address those needs.

The "placement level" decision is one that has come under increasing scrutiny in the past few years (Fields & Ogles, 2002; James, Roesch, & Zhang, 2012). There are a number of reasons for this, not the least of which is financial (James et al., 2006). The cost for serving youth in more restrictive or treatment oriented placement settings, treatment foster care, and residential

care, can be significantly more than serving youth in traditional foster care or kinship care. In order to manage costs, child welfare systems have a financial incentive to ensure only the youth who really need this level of care are being served in more costly and restrictive settings (Courtney, 1998).

In addition to the financial incentives, the well-being of the youth, which can be addressed through the receipt of appropriate mental health services while in out-of-home care, is of primary clinical importance. Placement at the level of care that can best meet youth needs is a critical component to limiting placement disruption and preventing multiple placements while in care (James, Landsverk, & Slymen, 2004). The Adoption Assistance and Child Welfare Act of 1980 created a national mandate for youth to be placed in the least restrictive, most family-like environment to meet their needs. The more recently propagated systems of care philosophy for youth with mental health needs further emphasizes the importance of serving youth in the least restrictive environment in which their needs can be met (Fields & Ogles, 2002; Stroul & Friedman, 1986). Despite the consistency of this message, placement decision-making may be influenced by multiple factors. Some evidence suggests that in making placement decisions, child welfare workers may be influenced by multiple factors including a youth's age, time spent in care and prior placement history (Lee, Shaw, Gove, & Hwang, 2010). Little is known about how strongly the presenting behavioral health needs of the youth may be related to placement level of restrictiveness.

Conceptual models of placement decision-making acknowledge multiple factors at play. Baumann, Dalgleish, Fluke and Kern's (2011) Decision-Making Ecology identifies several of the factors that affect the decision to place a youth in an out-of-home care setting. The model splits the process of decision-making into case factors (e.g., identified youth and family needs), organizational factors (e.g., agency structure, culture), external factors (e.g., state level policies and regulations), and decision-maker factors (e.g., years of experience, education and training). This study will partially test the Decision-Making Ecology by exploring the respective roles of case factors (youth need) at the program level (organizational factor) on the decision-making process.

Program Level

State and tribal child welfare systems have a diverse collection of placement settings. For this study, a finite range of placement options are included, each placement type is defined on a continuum of restrictiveness from Treatment Foster Care (least restrictive) to Diagnostic and Evaluation Treatment Programs (most restrictive). These settings and the placement types between them are defined in greater detail in the following section.

Treatment Foster Care (TFC)

Treatment Foster Care (TFC) is intended to serve youth with serious emotional or behavioral disorders in a family environment. Treatment foster parents and TFC program staff typically have a higher level of training than their counterparts who provide regular foster care. TFC families typically have only one child in the home and TFC case managers usually carry 12 or fewer cases (Farmer, Burns, Dubs, & Thompson, 2002). By limiting the number of children with needs in a family home and keeping caseloads low, children in TFC settings get more individualized attention from parents and staff (Huefner, James, Ringle, Thompson, & Daly, 2010; Walter, Swaim, & Petr, 2003).

Group Home

Youth living in group home settings are typically in their teenage years or transition age youth and in need of a higher level of supervision that can be provided in a family setting. The need for a higher level of supervision is attributed to emotional disturbance or dependency (Lee & Thompson, 2008). The group home experience is defined as a residential setting with 24-hour staff supervision (Child Welfare League of America, 2004).

For this study, group homes are divided into two categories, regular group homes and therapeutic group homes. This split was based upon available data among the sample youth included in the study. As compared to regular group homes, therapeutic group homes are intended to offer an alternative to residential treatment centers or hospitalization. There is a lower staff to resident ratio in therapeutic group homes with a licensed mental health professional on site.

Diagnostic Evaluation and Treatment Programs (DETP)

Youth referred to DETP will often have a high intensity of needs that require further diagnostic psycho-social testing. Each DETP program provides a high level of supervision administered by a highly trained staff. Along with supervision, youth receive a battery of psych social diagnostic testing to determine treatment needs and interventions. This is the most restrictive level of care included in this study.

Objectives

This study explores the relationship between youth's scores on a functional assessment and the four levels of out-of-home placement settings in the state's child welfare system. The study assesses the amount of variation s in levels of identified need at intake that can be explained by

the placement setting. Youth demographics and each program's level of intensity will also be considered to determine if they impact the relationship between level of need and the program in which the youth is placed.

METHOD

Data Source

The data for this analysis were obtained from a state level online case management system operated in coordination with the state's child serving systems (child welfare, juvenile justice, and mental health). The data system houses youth case level information from all the child welfare contracted residential child care programs and treatment foster care providers in the state. The data are entered by providers and used for monitoring and evaluation by both State agencies and providers alike.

The dataset included family and youth information for all youth who were placed between July 2008 and April 2012. The data system comprised 9,893 youth and families, with 23,853 functional assessments completed by 295 provider agencies.

Sample

Youth Demographics

After cleaning and sample specification, the final sample consisted of 5,230 youth with a functional assessment at intake. These youth were placed with 219 provider agencies. The youth in the sample were on average 14.56 years of age (range 0 to 21 years; $SD = 3.553$) at the time their assessment was completed. The sample was approximately evenly split by gender (male = 53.9%; $n = 2817$) and predominantly African American (65.3%, $n = 3413$), with Caucasian (23.7%), Multi-racial (4.4%), Latino/Hispanic (2.1%), and other (0.7%) comprising the rest of the sample. The gender and racial distribution of the sample is consistent with the overall population of youth in out-of-home care in the state. Almost 4% of the sample was missing racial background information. Table 1 includes a complete breakdown of youth demographic information.

The sample includes 2,438 youth (46.62 %) placed with 57 different Treatment Foster Care providers; 1,577 youth (30.15 %) placed with 132 different regular Group Home providers; 335 youth (6.41 %) placed with 26 different Therapeutic Group Home Providers; and 880 youth (16.83 %) placed with 4 different Diagnostic Evaluation and Treatment Programs.

TABLE 1 Descriptive Statistics ($N = 5230$ Youth)

	M (*SD*)
Total CANS Score	34.47 (17.19)
Age	14.44 (3.61)
Total LOI Score	11.27 (2.6)
Race	% (*N*)
African American	65.3% (3413)
Caucasian	23.7% (1240)
Other	7.2% (377)
Missing	3.8% (200)
Gender	
Male	54% (2817)
Female	46% (2413)
Placement	
Treatment Foster Care	46.6% (2, 438)
Group Home	30.2% (1, 577)
Therapeutic Group Home	6.4% (335)
DETP	16.8% (880)

Measures

Youth Characteristics

The youth demographic variables of gender, race and age included in this analysis were obtained from the case level information in the database. Gender was captured as a dichotomous variable with "1" representing males and "0" representing female youth.

The database captures youth race and ethnicity information into two separate fields. These were condensed and recoded into three categories: African American, Caucasian, and Other. In the analysis, Race was dummy-coded into two dichotomous variables, White and Other. For youth identified as Caucasian/White the "White" variable was coded "1," for all other youth who identified as another race this variable was coded "0." For youth whose race was identified in the "Other" group, the "Other" variable was coded 1; for all other youth who identified as African American or Caucasian/White this variable was coded "0".

Youth age in years was calculated by subtracting the youth's date of birth from the date of the intake assessment.

Youth Functioning

Youth functioning was measured using the comprehensive version of the Child and Adolescent Needs and Strengths (CANS) Assessment (Lyons, 2009a). The CANS is a functional assessment that consists of 56 individual items separated into six domains that assess youth functioning, behaviors associated with mental health symptoms, risk behaviors, cultural stressors,

adequacy of caregiving, and child strengths and protective factors. Items are included in the assessment based upon their relevance to service planning. All items are rated on a 4-point scale assessing the level of action required by the clinical team (0 = no evidence, 1 = monitoring, 2 = action required, 3 = immediate action required).The strength items are rated using the strengths action scale (0 = centerpiece strength, 1 = identified and useful strength, 2 = identified, but not useful strength, 3 = absence of a strength).

To ensure reliability across raters, CANS assessors undergo annual training and must maintain an inter-rater reliability score greater than 0.70 on the certification test (Anderson, Lyons, Giles, Price, & Estle, 2003). Providers are required to complete an intake CANS assessment within 30 days of the youth's date of entry into the out-of-home placement setting. The initial intake assessment was used in this analysis in an attempt to understand the youth's needs at the time the placement level decision was made.

For this analysis, mean domain scores were calculated for five sections (life domain functioning, child behavioral/emotional needs, child risk behaviors, caregiver strengths and needs, and child strengths) by summing the scores of items in the section and then dividing by the number of items in the section. The quotient was then multiplied by 10 so that the range of possible scores for each section was between 0 and 30 (Lyons, 2009b). These domain scores were then summed to calculate the total CANS score, which could range from 0 to 150.

Program Level of Intensity

In order to assist workers making placement level decisions, the state child serving agencies, in partnership with the private provider community, developed a metric for determining a program's Levels of Intensity (LOI) rating. The LOI scores are determined based upon provider self-assessment that is reviewed by the contracting agency. These scores are provided to placing agencies to assist in differentiating between programs with the same placement type. The resulting LOI ratings are based upon the level of services, support and supervision provided by the program and scored in five domains (Twenty-Four-Hour Milieu Care and Supervision, Clinical Treatment Services, Education Services, Health/Medical Services; and Family Support Services). Each of the five domains is assigned a rating of low (1), medium (2), or high (3). These ratings were summed to obtain a program's total LOI Score (ranging from 5 to 15, with higher scores suggesting higher intensity of services and support).

Data Analysis

To examine the relationship between individual and group level factors on youth functional assessment scores (CANS scores), a multilevel regression analysis was conducted using linear modeling in the Mplus program

(Muthén & Muthén, 1998–2011). MPlus allows for identification of clustering or nesting variables to assess the relationship between individuals' within and between groups. For this analysis the focus was on the influence of both individual and group level factors on the identification of youth level of need as determined by the functional assessment (CANS).

Individual Level Variables

Youth's age, race, and gender were included in the analysis to control for the youth's scores on the CANS at intake.

Group Level Variables

The clustering variable used for this analysis was the program where the youth resided. The placement type and program level of intensity score were also included in the analysis as Level 2 variables. An interaction term was calculated to account for the interaction between the service category and the program's level of intensity score. The total LOI scores were multiplied by the program's service category to create the interaction term. This is critical to the interpretation of the LOI score which is used to differentiate between programs in the same service category. The interaction term allows for both the restrictiveness of the placement setting as well as the level of intensity (LOI) of the actual program to be considered in predicting the CANS score

Due to missing program LOI scores, MPlus excluded 56 programs (840 cases) from the multilevel analysis. To test for any bias that may have been introduced, differences in CANS scores were tested between the groups with an LOI score and these with a missing LOI score. The results were non-significant.

RESULTS

Multilevel Regression Model

A multilevel regression analysis was conducted to assess the role of youth and program characteristics in explaining the differences in Total CANS scores for youth being served across the four placement types. An initial "unconditional" model was created to evaluate the variance related to program with no youth or program predictors included in the model. Results of this model are included in Table 2. The intra-class correlation (ICC) for programs in this model is .349, meaning that almost 35% of the variance in total CANS scores at intake can be attributed to program assignment across the 219 programs included in the analysis. Subsequently, youth (Level 1) and program variables (Level 2) were added into the analysis to assess the

TABLE 2 Multilevel Variance Components and Intra-Class Coefficient for Unconditional Model

	B	Std. Error	*p*
Within Program Variance Component	210.6	15.59	.000
Between Program Variance Component	112.9	15.19	.000
	%		
% Total Variance or Intra-Program Correlation	34.9		

TABLE 3 Multilevel Regression Model of Youth and Program Impact on CANS Scores at Intake

	β	Std. Error	*p*
Intercept	−39.11	12.447	.002
Service Category	35.48	6.600	.000
Age	0.13	0.050	.005
Male	−2.02	1.950	.300
LOI Score	5.34	1.170	.000
LOI × Service Category	−.40	0.540	.000
White	1.16	0.540	.033
Other	0.63	0.740	.393

additional variation in CANS scores. Results from this model are detailed in Table 3.

The entire program and youth variables (with the exception of gender) were significantly associated with the total CANS score for a youth at intake ($p < .05$). Holding all other variables constant, a one-step increase in program level of restrictiveness (service category) increased a youth's Total CANS score by 35.48 points ($p < .001$). In practical terms, this means that a youth could have up to 12 additional items on their CANS assessment that were assessed to be in need of an action or intervention. The interaction term of a program's LOI score and service category were looked at together, their impact on CANS score at intake significantly decreased by 2.40 points ($p < .001$).

Youth age significantly impacted the CANS score as well. A random slope tested for CANS score by age was found to be significant ($\beta = .13$; $p < .05$), meaning the rate of increase in CANS scores by age varies across the 163 programs in the model. Although statistically significant, the difference in CANS scores by age is so slight it may not be practically meaningful. A youth's race being defined as white increased CANS scores ($\beta = 1.10$, $p < .05$) as is consistent with other literature the impact of race on placement in higher levels of care. As compared to African American youth, White youth had a CANS score that was 1.1 points higher when holding all other variables constant.

DISCUSSION

The finding of a linear relationship between scores on a functional assessment and a program's level of restrictiveness are consistent with prior literature (Bickman, Summerfelt, & Noser, 1997; Friman, Soper, Thompson, & Daly, 1993; Handwerk, Friman, Mott, & Stairs, 1998). Using a multilevel analysis to assess the relationship between functional assessment scores on placement level decisions is an approach that has been underutilized in the prior literature. The nested nature of youth data within programs and placement setting types makes this type of analysis a good fit because it is able to account for the dependence of observations and more accurately address the resulting error (Bickel, 2007). The use of MLM allows for insight into the functioning of the placement or referral system. A healthy system is potentially one in which level of need matches the hierarchy of placement type.

Although there is a need for further research in this area, that includes consideration of other factors identified in the Decision-Making Ecology model (Baumann et al., 2011), the findings here suggest that two components of the DME (case factors and organizational factors) are key pieces in placement decision-making. Additional studies should consider incorporating information about the referring agency (external factors) or placement decision maker to more fully test the assumptions of the DME.

For child welfare systems that have or intend to implement a functional assessment, the analytic approach presented here may be a helpful model to assess quality decision-making and a referral system based that is driven primarily by youth need. This analysis presents an opportunity for systems to increase the meaningful use of functional assessments, like the CANS, beyond simply case level decision-making (developing service plans).

An important implication of this study is the utility of the CANS assessment for placement level decision-making. Although using a total score approach with the CANS may not be well suited for every placement level decision, further research into the impact of specific items or clusters of items that can predict placement at each level of out-of-home care is suggested.

Limitations

Another way to conceptualize these findings would be to hypothesize that programs rate referred youth as having the needs that their program is designed to address. This is a potentially significant limitation both for research and the practice community. For research purposes, youth assessments should be independently completed, but this is an impractical approach for child serving systems. By design, the people who can most accurately assess youth functioning are immersed in the program setting and the objectivity of their assessments cannot be assured. The specific

design and successful implementation of the CANS assessment can account for this by relying on a consensus building approach for the completion of the assessment.

Going forward the inclusion of the youth and family voice in the assessment process is something that should be measured. Another way to account for this limitation is to measure the reliability of assessments completed by both the referral source and the specialized out-of-home care program.

Another limitation is the inability to describe the multitude of distinct categories among the heterogeneous group of congregate care providers is consistent with much of the literature on children living in group care (Lee & Barth, 2011). This negatively impacts the ability of this study to differentiate between programs geared towards serving children with varying types of needs. The lack of consistent terminology in the literature makes it difficult to explain differences in research findings when the populations served and program interventions could share very little in common with one another (Lee & Barth, 2011).

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