Academic Gains by Youth in Residential Treatment

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Children entering residential treatment often present with significant mental health and behavioral problems (Child Welfare Information Gateway, 2009). For example, in 2005, the Child Welfare League of America (CWLA) evaluated the characteristics of 1,321 youth living in 19 residential care facilities. Mental health records revealed that 93% had been given a psychiatric diagnosis, 40% were on antipsychotic medication, over half had experienced previous psychiatric hospitalizations, and on average, youth reported 5.4 prior placements. Behavioral records indicated that nearly one third had multiple school suspensions, over half had criminal histories, and a large percentage exhibited clinical levels of internalizing (40%) and externalizing (60%) behaviors (CWLA, 2005; Connor, Doerfler, Toscano, Volungis, & Steingard, 2004; James et al., 2006; Baker, Kurland, Curtis, Alexander, & Papa-Lentini, 2007).

While behavioral and mental health risks are often the primary concern for youth at program entry, recent studies have also revealed significant levels of co-occurring deficits in academic functioning (Trout, Hagaman, Casey, Reid, & Epstein, 2008; Griffith, Trout, Epstein, & Garbin, in press; Wurtele, Wilson, & Prentice-Dunn, 1983). Specifically, in a 2008 investigation of 127 youth (mean age = 15.3 years) at the time of intake into a residential facility, results revealed youth scores of approximately two thirds of a standard deviation below mean on overall academic performance, with the lowest scores on measures of general academic knowledge, applied problems, calculation, reading fluency, and passage comprehension (Trout, Hagaman, Chmelka, et al., 2008). Similarly, in a study of 211 youth with emotional and behavioral problems placed in residential settings across Alabama, Wurtele, Wilson, and Prentice-Dunn (1983) revealed that 66% were rated by program administrators as functioning at least one year below grade level upon program entry, and nearly one third were rated as functioning more than two years behind. These findings are consistent with the results of a comprehensive literature review on the academic performance of children and youth in out-of-home care, which revealed that youth in residential settings often performed below grade level and scored in the low- to low-average range on academic measures (Trout, Hagaman, Casey, et al., 2008).

Though it is well documented that youth enter care with academic concerns, little is known about academic progress made by youth while in treatment. In a search of the published literature, researchers found little information about academic gains made while in care or the types of education provided in these settings. Given the considerable negative short- and long-term impact of poor academic performance, this knowledge gap is a problem for service providers and researchers who are developing and implementing comprehensive treatments for youth in care.

The importance of academic achievement to a youth's future is well documented, and it is known that academic failure can lessen the chances of long-term success. To illustrate, youth who lack basic academic skills such as reading, writing, and math are less likely to complete high school, to attend postsecondary school, or to become gainfully employed (National Assessment of Educational Progress, 2006). For those who also present co-occurring histories of behavior problems and mental health issues, the risks for school dropout, criminal activity, antisocial and delinquent behavior, substance abuse, and pregnancy are even greater (Ary et al., 1999; Baker et al., 2007). In contrast, studies reveal that youth who complete high school are more likely to find and keep employment over time and to continue their education beyond secondary school, and are less likely to be economically insecure or become involved with illegal activities (U.S. Department of Education, 2005, 2007).

Given the significant negative repercussions of school failure and, conversely, the protective influence of academic success, the academic abilities of youth need to be systematically evaluated while in care and interventions made that may improve their educational outcomes. This study sought to address some of the limitations in the literature by examining the academic gains made by youth from intake to one-year follow-up at the Boys Town Treatment Family Home Program, a large-scale residential treatment program in the Midwest.[1]

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Program Description

Boys Town residential group homes use a modification of the teaching family model, called the Boys Town Treatment Family Home Program, in which married couples (known as family teachers) live with up to eight youth in a home environment (Davis & Daly, 2003). The Boys Town teaching model is a behaviorally-based treatment model that incorporates five critical elements: (1) teaching skills, (2) building healthy relationships, (3) supporting moral and spiritual development, (4) creating a positive family-style environment, and (5) promoting self-government and self-determination (Davis & Daly, 2003). Positive support systems are in place for every youth in order to create an environment that will provide treatment for a youth's behavior problems (Larzelere, Daly, Davis, Chmelka, & Handwerk, 2004).

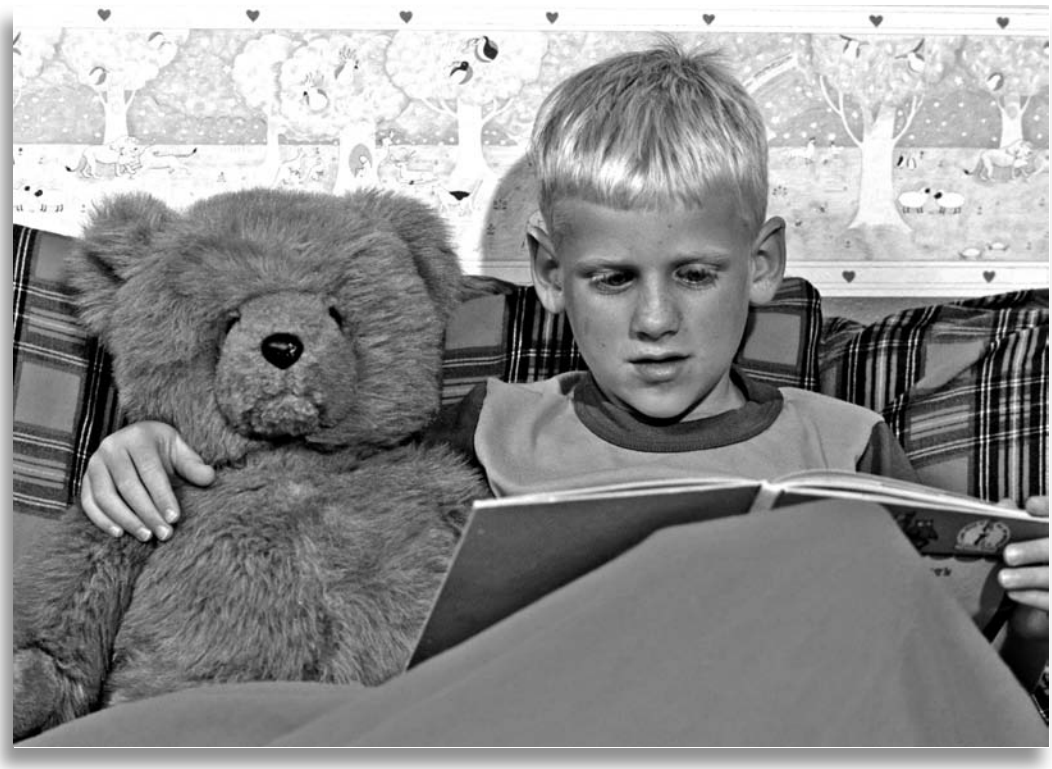
In addition to family, peer, and neighborhood support systems at Boys Town, the Boys Town educational model (BTEM) is integrated into the Treatment Family Home Program (Connolly, Dowd, Criste, Nelson, & Tobias, 1995). The BTEM comprises four components: (a) social skills curriculum, (b) teaching interactions, (c) motivation systems, and (d) administrative intervention. The social skills curriculum includes 16 social behaviors targeting adult relations, peer relations, school rules, and classroom behaviors. The teaching interactions component allows for a brief interactive instructional sequence with a student when a behavior occurs (Connolly et al., 1995). The third component, motivation systems, encourages behavior change in youth by allowing access to privileges and tangible items using a token economy that results in point rewards for positive behavior, or conversely, consequences when a student exhibits negative behavior. Finally, the administrative intervention component allows school administrators to act as change agents for students who have been removed from the classroom by using teaching interactions and behavioral rehearsals to teach alternative ways of responding to stressful school situations (Connolly et al., 1995).

The process of identifying and meeting individual academic needs of youth occurs through communication and instruction. Frequent communication through the use of school notes between school staff and family teachers helps to identify specific academic and social skills the youth are learning. This communication also helps assess if youth generalize these skills to different settings (Davis & Daly, 2003), ensures high rates of attendance as dictated by a stringent attendance policy, and facilitates collaboration between the school and the family home. Youth are screened for reading, writing, and math difficulties upon entrance to the school and are grouped according to ability level in a fluid system that permits movement among groups based on individual needs. To evaluate progress, youth are assessed using curriculum-based measurements (CBM) and receive feedback on their strengths and areas of need. Approximately one third of the instructors at the Boys Town schools have special education endorsements, and all are specifically trained in the Boys Town teaching model (Davis & Daly, 2003), Boys Town educational model (Hensley, Powell, Lamke, & Hartman, 2004), the elements of effective instruction, and cooperative learning to ensure that each classroom is consistent with others. Classrooms have a student-to-teacher ratio of 8:1, and youth receive systematic, explicit instruction in all academic subjects. To assist in after school studying, youth are provided with a mentor at school to help youth practice skills and participate in a homework/study hour in the family home each afternoon.

Method

Participants

Participants included the first 64 youth (33 boys and 31 girls) admitted to the Boys Town home campus Treatment Family Home Program between October 2006 and May 2007. Youth were primarily Caucasian (56.3%) and were an average age of 15.1 years old (SD=1.61; range = 11 to 18 years). At entry, participants had 1.65



(SD = 2.61) prior placements and an average age at first placement of 13.2 years (SD = 3.15). Nineteen participants (29.7%) were wards of the state. Over a quarter (26.6%) of the youth had been prescribed psychotropic medication, 53.4% had received one or more mental health diagnoses on the Diagnostic Interview Schedule for Children-IV (DISC-IV), and just over a third (n = 23; 35.9%) had been given a special education diagnosis.

Measure

The Woodcock-Johnson Test of Achievement, 3rd Edition (WJ–III; Woodcock, McGrew, & Mather, 2001) was used to measure the academic achievement of youth at intake and again at 12 months into treatment. The WJ–III is a psychometrically sound, individually administered, norm-referenced assessment with a mean of 100 and standard deviation of 15. To obtain a comprehensive, yet efficient, indication of youth academic competence, youth completed seven subtests of the WJ–III: (1) Reading Fluency, (2) Passage Comprehension, (3) Writing Fluency, (4) Spelling, (5) Calculations, (6) Applied Problems, and (7) Academic Knowledge. These subtests have a reliability coefficient range of .77 to .94 (Woodcock et al., 2001). Scores on the WJ–III are interpreted as follows: 69 and below = very low, 70–79 = low, 80–89 = low average, 90–110 = average, 111–120 = high average, 121–130 = superior, and 131 and above = very superior.

Procedure

Intake Assessment

Within four weeks of arriving at the Boys Town Treatment Family Home Program, youth were referred to one of four graduate students for assent to participate in the study, and to complete the initial WJ–III screening. Testing time varied between 45 minutes and two hours.

Prior to data collection, the four graduate students completed standardized training. Training included a week-long seminar led by experienced data collectors on (a) obtaining consent and assent, (b) confidentiality, (c) data collection procedures, and (d) administration and scoring of the WJ–III. Students were required to demonstrate 90% fidelity prior to administering the WJ-III to youth. Following the start of data collection, an outside evaluator familiar with the WJ–III administration procedures conducted follow-up fidelity checks every three months to ensure fidelity was maintained.

Data Analysis

Paired sample t-tests were conducted to establish mean differences between intake and follow-up assessment scores. Hedge's *g* effect sizes were calculated to determine the magnitude of differences between the mean academic achievement scores at intake and one year later. According to Cohen's standard (1988), 0.2–0.49 is a small effect size (ES), 0.5–0.79 is medium, and ≥ 0.8 is large.

Results

Academic Gains

Table 1 presents means, standard deviations, total change, t-test values, and effect sizes (*g*) for the seven subtests of the WJ–III at intake and one-year follow-up. All subtests showed positive changes from intake to follow-up (total change range = .22 to 5.29). The Reading Fluency, Writing Fluency, Calculation, and Academic Knowledge subtests revealed statistically significant positive changes with medium to large effect sizes (ES range = .55 to .93). Spelling was statistically significant with a small effect size (ES = .47). While not statistically significant, youth demonstrated positive gains on Passage Comprehension and Applied Problems subtests.

Discussion

Results indicate that youth who were served in the home campus Boys Town Treatment Family Home Program demonstrated significant academic gains over a one-year period. Overall, youth improved their academic performance in all basic skills, with greater significant gains in reading fluency, writing fluency, math calculation, and academic knowledge. Youth also revealed improvements, albeit smaller ones, in applied areas such as spelling, passage comprehension, and applied problems. Because little work has been done previously to evaluate the academic growth of youth served in residential settings (Trout, Hagaman, Chmelka, et al., 2008; Thompson et al., 1996), these results are an important first step in the investigation of changes over time and provide a base for the further evaluation of factors that may aid in youth academic growth during placement in care.

While the results of this study were found in a unique setting that offers supports that may not be representative of all residential programs, the approaches used are evidence-based and could be replicated in other settings. For example, while living in a family style home, youth were enrolled in the on-campus schools that implement the Boys Town education model (Thompson et al., 1996). This model, successfully implemented in hundreds of schools and districts across the nation (Bishop, Rosen, Miller, & Hendrickson, 1996), incorporates basic behavior management practices, relationship-building techniques, and social skills instruction, strategies that each have decades of empirical support for youth with and at risk of behavioral disorders. Second, the Boys Town Treatment Family Home encorporates a model that relies heavily on a point card system and token economy that is used during the academic school day and throughout the residential program. Previous research with similar populations of children who had or were at risk of behavioral disorders has found the use of token economies to be powerful behavioral change agents, which may significantly affect the academic achievement of high-risk youth (Gable & Strain, 1981). Third, in the academic setting, the whereabouts of youth were monitored closely, and school attendance rates were exceedingly high (on average 97%). These high attendance rates, coupled with the broad, evidence-based engagement and curricular

approaches that are also core to the BTEM (e.g., low student-to-teacher ratios, frequent progress monitoring through the use of curriculum-based measurements, a daily study hour, and daily home-school communication), likely influenced youths' academic gains over the one-year treatment period.

Limitations

As with any other study, there are several limitations that should be noted. Perhaps the most significant limitation was lack of a comparison or randomly assigned control group. Without a comparison group, we were unable to determine if the academic gains were greater than what would be found with youth served in other residential settings for the same duration of time. Similarly, random assignment of youth to treatment and control groups would allow for the systematic evaluation of the effects of this particular educational model. Second, due to the limited size of the sample, we were unable to evaluate possible differences between subgroups of youth in care. Specifically, given the heterogeneous nature of youth served in residential settings (Hagaman, Trout, Chmelka, Thompson, & Reid, in press), we would expect that youth who enter with co-morbid academic disabilities or special education diagnoses might present different patterns of gain. Finally, although the WJ–III is a well known and widely used method for examining academic knowledge, this was the only type of assessment used to measure academic performance.

Future Research

Future research should focus on four areas. First, a randomly assigned control or comparison group is needed to identify a relationship between academic gains and the academic intervention. In doing so, researchers may be able to link academic gains of youth in residential treatment programs to a specific intervention, such as the Boys Town Treatment Family Home and Boys Town educational model. Second, in addition to random assignment, a larger sample size would allow for more complex analyses, such as comparisons across groups, behavior incidents, and potential differences across subpopulations of youth in care (e.g., youth identified with disabilities, differences between males and females). Third, this study focused on gains made by youth over a one-year period. Given this time frame, we were unable to determine the gains made by youth who were served in this setting for longer or shorter durations. Future studies might employ more frequent measures of academic functioning to determine if there is a linear correlation between time in care and academic performance. Finally, in addition to a standardized assessment for overall academic performance, the use of curriculum-based measurements may be valuable in identifying and elaborating on a youth's strengths and limitations across time.

Implications

The findings reveal that youth with elevated levels of academic, behavioral, and mental health risks living in a residential program can make significant academic gains over a one-year period. These findings suggest several implications for practice. Establishing comprehensive supports for positive behavior in the treatment and educational settings may allow for an approach that continually reinforces positive behavior and extinguishes negative behavior. Further, consistent communication between the treatment home and school could allow for continuous and accurate monitoring of youths' academic progress and school engagement behaviors. Youth who receive academic screeners for the purpose of identifying their

Table 1. Academic Gains as Measured Using the *Woodcock-Johnson Test of Academic Achievement, Third Edition:* Intake and One-Year Follow-up

	Intake	Follow-up	Total N= 64		Effect Size N= 64		Change	*T*	*g*
	M		SD	M	SD				
Reading Fluency	91.61		14.07	96.64	15.75	5.03	5.27**	.93*	
Passage Comprehension	90.86		12.17	92.56	12.01	1.70	1.81**	.32*	
Writing Fluency	94.14		16.24	99.17	14.56	5.03	3.72**	.66*	
Spelling	98.86		14.86	100.95	13.45	2.09	2.65**	.47*	
Calculation	91.19		12.61	96.48	12.77	5.29	4.13**	.73*	
Applied Problems	91.31		8.80	91.53	9.08	0.22	0.33**	.06*	
Academic Knowledge	85.33		13.32	87.97	11.74	2.64	3.12**	.55*	

Note. * $p \leq .01$, ** $p \leq .001$

specific strengths and limitations may allow better placement in classes that meet their individual needs. Finally, monitoring homework and providing a study hour should be considered for youth in residential treatments programs. Access to homework assistance might help establish accountability for the youth as well as monitor and address difficult concepts with which youth are struggling. We suspect that these strategies, while comprehensive, may reveal a significant impact on the academic functioning of this high-risk population who too often fail in the system and too frequently demonstrate dispiriting long-term educational outcomes.

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