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# Wraparound Retrospective

## Factors Predicting Positive Outcomes

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While research regarding the effectiveness of the wraparound process is steadily mounting, little is known about how this service delivery model works and for whom. Using data gathered on 176 youth who participated in the wraparound process, the authors examine client and service factors associated with outcomes. Bivariate logistic regression analyses were conducted to determine the likelihood of treatment success based on select child and service characteristics. Results reveal that youth who exhibited lower levels of impairment at service entry were most successful in transitioning to and preserving a home placement, while those who possessed higher numbers of collateral supports were more likely to attain treatment goals. Findings also underscore the value of a planning process that promotes youth and family involvement in community activities. High adherence to this element of practice was found to predict both goal attainment and youth success in transitioning to a home setting. Implications for the implementation of the wraparound process with youth who are in residential care or at risk of out-of-home placement are discussed.

**Keywords:** *wraparound; outcome predictors; children's mental health*

The wraparound process is a promising practice that is widely implemented with children and adolescents who display emotional or behavioral disorders (Walker & Bruns, 2006). Recent estimates indicate that approximately 100,000 youth and their families are served annually by 900 wraparound programs that span at least 38 states in the nation (Sather, Bruns, & Stambaugh, 2008). While known by varying terminologies (e.g., Child and Family Teams, Care Coordination, Individualized Service Planning), such programs commonly embody a strengths-focused, needs-driven, team-based, and collaborative approach to service planning and delivery. Furthermore, they share a focus on eliminating the need for psychiatric hospitalization, incarceration, or residential care for youth served.

The past decade has seen a surge of interest in fine-tuning theories of change that guide the implementation of the wraparound process. Building on early conceptual frameworks offered by VanDenBerg and Grealish (1996) and Goldman (1999), authors have specified principles of this service delivery approach (Bruns et al., 2004), as well as its phases and activities (Walker et al., 2004). Additionally, the National Wraparound Initiative has

advanced a model that defines the anticipated short- and long-term outcomes of these principles and activities (Walker, 2008). For instance, when the wraparound provider builds on the natural supports of the family by engaging team members who care about the child, the family is expected to achieve the intermediate outcome of increased social support and the long-term outcome of an improved ability to cope with stress (p. 10). Similarly, when youth and family members are integrated into home and community life, they are expected to attain the intermediate outcome of increased resources and capacities for coping and the long-term outcome of improved youth and family resilience (p. 9). Developers of this model recognize, however, that because the wraparound process involves individualized service planning, mechanisms of change may take varying "routes" for differing children and families (p. 3).

Numerous studies of the effectiveness of the wraparound process have been conducted during the past several years, with mixed results. A recent evaluation of

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a congressionally mandated wraparound demonstration project used a longitudinal quasi-experimental design (Bickman, Smith, Lambert, & Andrade, 2003). Requirements for a youth's inclusion in the study included severe emotional disturbance and placement in residential or inpatient care. Results indicated that children who participated in the wraparound process spent fewer days in residential treatment during the study period than did youth who received treatment as usual, but did not differ from their comparison group counterparts in mental health outcomes. Although continuity of care and service use was assessed in this investigation, no psychometrically sound measure of wraparound fidelity was administered.

Other studies have examined the impact of the wraparound process on juvenile offenders. Using a pre-post test control group design, Carney and Buttell (2003) found no significant differences in arrest or incarceration rates between experimental and control participants. However, youth in the wraparound group missed school significantly less, were suspended less frequently, and ran away less often than did participants in the control group. Differing results were obtained in a quasi-experimental study of juvenile offenders with mental health difficulties conducted by Pullmann et al. (2006). Here, youth who participated in the wraparound process were found to be less likely to recidivate at all and less likely to recidivate with a felony offense, while serving less detention time than did children and adolescents who received traditional mental health services.

Other research has examined the outcomes of youth referred to the wraparound process from probation, special education, child welfare systems, and state-operated facilities. Anderson, Kooreman, Mohr, Wright, and Russell (2002) found a clinically significant reduction in functional impairment during a 6-month period for youth referred to wraparound services from all these sources. Finally, Kutash, Duchnowski, Sumi, Rudo, and Harris (2002) evaluated the effectiveness of a school-based wraparound program for children with moderate emotional disturbance, with outcomes gathered at baseline, as well as 12 and 18 months postenrollment. Fidelity of program implementation was monitored through the use of a team meeting observation form designed for the study. Findings revealed a significant reduction in discipline referrals for participants in the program, better retention in community schools, and modest improvements in emotional functioning. These investigators call for more "rigorous empirical tests demonstrating the effectiveness of these collaborative models of service delivery in order to facilitate the change process" (p. 106).

Research has also begun regarding the association between overall fidelity to wraparound principles and outcomes for children and families served. For instance, Bruns, Suter, Force, and Burchard (2005) examined the relationships between adherence data gathered using caregiver and facilitator versions of the *Wraparound Fidelity Index* (WFI; Bruns, Ermold, Burchard, 2001) and youth and family outcomes. Results showed that facilitator reports of wraparound adherence were more strongly associated with outcomes than caregiver reports were. Specifically, facilitator scores of overall fidelity were significantly correlated, in the hypothesized direction, to ratings regarding the restrictiveness of living environment and behavioral strengths obtained at 6 months following WFI administration. Studies have also examined relationships between program- or system-level variables and fidelity to the wraparound process. Most notably, Bruns, Suter, and Leverentz-Brady (2006) investigated the associations between wraparound fidelity, as measured by the WFI, and service system data obtained through a standardized phone interview with program administrators. Results highlight the importance of organizational and system supports in promoting a high-quality wraparound process. Despite these advances, the literature offers minimal evidence pertaining to the characteristics of youth and families who are treated most successfully with a high-fidelity wraparound process. Even less is known about the relative importance of particular elements of this service delivery approach in promoting positive outcomes for children and families.

This retrospective study aims to fill this gap through an analysis of client, service, and outcome data that had been accumulated by a large, community-based organization in Sacramento, California. Data were gathered on all youth served in the agency's wraparound program between mid-2004 and mid-2007. The organization was one of several in the region that contracted with the county's department of mental health to implement the wraparound process with children in residential care in an effort to expedite their transition to a home and community-based setting (foster care or home of a biological family member). Outreach to parents, relatives, or other natural helpers was attempted in order to engage them in a team-based process of service planning and delivery. All the youth served in this program had serious emotional or behavioral disorders, and many had been in group homes or other residential programs for lengthy periods prior to referral. Thus, transition to a home setting was dependent on a variety of factors, including youth improvements in mental health functioning, family preparedness for parenting, or the youth's formation of a

relationship with a foster or adoptive family that was capable of providing care.

The purpose of the current research is to identify factors associated with several of these key outcomes: improvements in emotional and behavioral functioning, treatment goal attainment, and successful transition of youth from residential care to a home setting and/or maintenance of placement in a home living situation. Following a description of the study sample, measures used, and statistical analyses performed, we discuss the implications of our findings. In addition, we offer recommendations for further research as it relates to the implementation of the wraparound process.

## Method

### Study Sample

Participants in this study included all 176 youth who were clients in the wraparound program during the 3-year study period. The mean length of services delivered in this process was 482 days ( $SD = 284$ ), ranging from 23 to 1,856 days. Participants ranged in age from 7 to 18 years ( $M = 14.6$  years). A slight majority were male (56.7%), and most were Caucasian (55.6%) or African American (32.6%). All of the youth held at least one mental health diagnosis included in the *Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV;* American Psychiatric Association, 1994). More than one third were diagnosed with an Anxiety Disorder (39%), with fewer holding a primary diagnosis falling into the category of Mood Disorder (29%), Attention-Deficit or Disruptive Behavior Disorder, or Psychotic Disorder (8%). A sizable proportion of the participants were referred for wraparound by Child Protective Services (67.4%), with 27% referred by Mental Health and 5.6% by probation departments. Most (89%) were in residential care at enrollment in wraparound services and in need of assistance in preparing for transition to a home and community-based living situation. Client variables such as age, gender, and ethnicity, the number of days in residential care prior to referral, as well as *DSM-IV* diagnosis, level of impairment at service entry (as measured by the *Child and Adolescent Functional Assessment Scale [CAFAS]*), and the number of collateral or natural supports available to youth at discharge, as identified by the wraparound facilitator, were included in data analyses.

### Setting

All participants were enrolled in a wraparound process that was coordinated by the Sacramento, California,

service site of a large nonprofit organization. The agency has been in operation for more than 100 years and its Sacramento office for 10 years. This organization's primary purpose is to provide strength-based, individualized, and community-based services to high-risk youth and families. Many of the children served have been physically abused, sexually abused, and/or exposed to domestic violence or family substance abuse. This agency's service menu includes outpatient therapy, foster care, intensive home-based therapy, and therapeutic behavioral services, in addition to the wraparound process. The Sacramento office alone provides services to roughly 300 children per year.

### Procedures

On a client's entry into the wraparound service system, data collection was carried out for purposes of program evaluation, with informed consent provided by the legal guardian. For research purposes we later accessed this extant program data in anonymous form. Two institutional review boards approved this investigation, with one review performed by the Sacramento County Mental Health Department and the other by the administration of the service-providing organization.

### Dependent Variables

*CAFAS (Hodges, 1990)*. The CAFAS was completed by the wraparound facilitator at service entry and discharge. It measures the negative effects of youth emotional and behavioral difficulties on functioning across real-life domains, including Role Performance, Thinking, Behavior Toward Self and Others, Mood/Emotions, and Substance Abuse. For each domain, the extent of difficulty is rated on a 4-point scale, in which 30 corresponds to *severe*, 20 to *moderate*, 10 to *mild*, and 0 to *minimal or none*. Scores in these dimensions are summed to produce a total CAFAS score, with a value of 140 or greater indicating severe impairment; 100 to 130, marked impairment; 50 to 90, moderate impairment; and 0 to 40, minimal impairment. The CAFAS has demonstrated high interrater reliability (.92), adequate internal consistency (.63–.68), and concurrent validity with independent ratings made by parents, teachers, and youth regarding specific problem behaviors (odds ratio [OR] = 1.43–8.38; Hodges & Wong, 1996). Higher impairment scores on this instrument have been found to predict risk factors (Hodges, Doucette-Gates, & Liao, 1999), restrictiveness of care, cost of services, and total number of services received (Hodges & Wong, 1997).

*Goal attainment.* Goal attainment was measured by accessing discharge summaries maintained in the agency's electronic charting system. The reason for each youth's discharge from wraparound was identified by the wraparound facilitator, who selected from the following options: met goals/graduated, drop-out/lack of participation, absent without leave, need for higher level of care, and family declined services. A dichotomous variable was created in which the response met goals/graduated was assigned a value of 1 and all others were assigned a value of 0.

*Success in transitioning to a home setting and/or maintaining placement.* The living situation of each participant at case closure had been identified by the wraparound facilitator in the discharge summary. Options included home of biological parent or relative, foster or adoptive home, group home, hospital, juvenile hall, and AWOL (whereabouts unknown). Based on this information, the investigators created a second dichotomous outcome measure, in which home living situations were defined as those provided by biological family members or foster/adoptive parents and residential living situations were defined as those involving group or institutional care (i.e., group home, hospital, juvenile hall). Successful transition was defined as one in which the youth remained in a home living situation at discharge and was not AWOL.

### Treatment Fidelity

Throughout the wraparound process, adherence to wraparound principles was measured with the third version of the *Wraparound Fidelity Index* (WFI-3; Suter Burchard, Bruns, Force, & Mehrtens, 2002). This structured interview tool measures the implementation of wraparound elements on a case-by-case basis. Responses to four items for each of 11 elements (Caregiver Voice and Choice, Youth and Family Team, Community-Based Services and Supports, Cultural Competence, Individual Services and Supports, Strengths-Based Services and Supports, Natural Supports, Continuation of Services and Supports, Collaboration, Flexible Services and Funding, and Outcome-Based Services and Supports) are ranked on a scale from 0 (*low fidelity*) to 2 (*high fidelity*). These item scores are summed to produce total element scores ranging from 0 to 8. A *Total Fidelity* score is obtained by averaging the 11 element scores. The WFI-3 has demonstrated good psychometric properties, including test-retest reliability, interrater agreement, and internal consistency (Bruns & Sather, 2008). In this study, it was administered to wraparound facilitators and

caregivers by a research specialist employed by the service-providing organization (at 6-month intervals following service entry). This employee had participated in a local training workshop dedicated to the administration and scoring of this fidelity tool. Data collection was hampered, however, by limited access to parents, resulting in a very small sample of caregiver interviews. Thus, only the most recent facilitator scores were entered into analysis.

### Data Analyses

All data were analyzed using the Statistical Package for Social Sciences (SPSS; Version 16.0). Descriptive statistics were computed for all variables to summarize data. Nonparametric and parametric tests were performed to assess between-group differences. First, analysis was performed to examine differences between youth who attained service goals and those who did not. Second, it focused on differences between youth who successfully transitioned to a home setting and those who remained in residential care at case closure. Independent *t* tests were employed for continuous variables, and chi-square analyses were used for categorical data. Analysis also focused on relationships between service variables and outcomes. Spearman's rank correlation was used to assess the relationship between improvements in functioning (as measured by CAFAS) and length of time spent in residential care, while independent *t* tests were performed to determine whether youth who were successful in wraparound services differed from those who were not on the basis of this service variable. Mann-Whitney *U* was used to assess the relationship between WFI-3 scores and dichotomous outcomes.

Finally, dichotomous variables were created and entered into a series of bivariate logistic regression analyses in order to assess their ability to predict outcomes. Those predictors included high- versus low-baseline CAFAS scores, with the cut point placed at the median for the sample (110); a high versus a low degree of collateral support, with the cut point placed at the mean number of natural helpers for the sample (thus distinguishing between youth who had zero to two persons available and those who had three or more); and high versus low adherence to the wraparound principle of community involvement, with the cut point set midway within the revised WFI-3 adherence domain entitled Community Involvement (*low adherence* = 0 to 3; *high adherence* = 4 to 7). ORs were examined for each of these independent variables, and 95% confidence intervals were calculated.

## Results

### Client Variables

Descriptive statistics demonstrated that the youth participants in the study displayed a relatively high level of functional impairment at service entry. The mean total CAFAS score at enrollment was 114.49 ( $SD = 31.31$ ), indicating a likely need for services more intensive than outpatient therapy. Participants were also found to have an average of 2.7 collateral supports, with this number ranging from 0 to 15.

### Dependent Variables

At discharge, the mean CAFAS score for participants was 79.27 ( $SD = 45.72$ ), revealing a possible need for services beyond outpatient care. The mean change in CAFAS scores during the service period was 36.2 points, slightly greater than the average CAFAS change score evidenced by participants receiving wraparound-only in a recent study of a system-of-care demonstration site (Stambaugh et al., 2007). In our investigation, 62% of the youth who started services in the marked- or severe-impairment range moved into the minimal-to-moderate range by termination.

At closure, 59% were determined to have met service goals, and 59% were living in a home setting, but not all youth who attained one of these outcomes also attained the other. Roughly half of the participants (51%) met both of these program objectives, 16% met only one, and 33% met neither. Further examination of the discharge data revealed that on case closure, approximately 35% of the study youth resided in the home of a biological parent or relative, 24% in a foster home, 22% in a group home, 6% in jail or juvenile hall, and 1% in a psychiatric hospital, and 12% were AWOL. With only 57% of participants discharging to a home setting, this investigation falls short of lending strong support for the overall effectiveness of wraparound in expediting the transition of youth from residential care to a community-based living situation.

Analysis then focused on comparing the characteristics of children and adolescents who were successful in completing the wraparound process with those who were not (see Table 1). Chi-square tests revealed that participants who met treatment goals did not differ significantly on the basis of gender, ethnicity, or diagnosis from those who did not. Similarly, participants who lived in a home setting at discharge did not differ from those who remained in group care on these demographic/diagnostic

variables. Independent  $t$  tests found that youth age was not significantly associated with either of these outcomes. They also showed, however, that functional impairment at service entry was significantly lower for youth who went on to attain or maintain placement in a home setting ( $t = 2.00$ ,  $df = 1.34$ ,  $p = .048$ ). Mean CAFAS score at enrollment in wraparound services was 110.24 ( $SD = 27.7$ ) for youth who were living in a home setting at closure and 121.13 ( $SD = 35.5$ ) for those who remained in a residential program. Additionally,  $t$  tests revealed that youth who met treatment goals had a significantly higher number of collateral supports than those who did not ( $t = -3.242$ ,  $df = 108.06$ ,  $p = .001$ ). Those who met goals had an average of 3.43 natural helpers ( $SD = 2.8$ ), while those who failed to attain goals had 1.95 ( $SD = 2.0$ ). Likewise, children who lived in a home setting at discharge had a significantly greater number of natural supports ( $t = -2.753$ ,  $df = 116$ ,  $p = .007$ ) than those who remained in residential care. The mean number of collateral helpers was 3.3 ( $SD = 2.7$ ) for those who attained this outcome, as compared with 2.0 ( $SD = 2.1$ ) for those who did not.

### Service Variables

We examined data concerning when the wraparound process was used in the service trajectory of study participants. Youth spent, on average, 721 days in residential care prior to enrollment in wraparound services, with that number ranging from 0 to 3,035. However, lengthy prior stays in residential facilities did not appear to negatively affect wraparound outcomes, as had been hypothesized by the wraparound agency administrators. Results of non-parametric correlations (Spearman's rho) revealed that the number of days youth spent in prior placement was not significantly associated with changes in functioning from program enrollment to closure, as measured by the CAFAS. Similarly, independent  $t$  tests indicated that youth who met treatment goals or remained in a home setting at discharge did not differ significantly in the length of prior residential placement from those who were unsuccessful in attaining these outcomes.

### Treatment Fidelity

Review of WFI data showed that the services provided to the study sample adhered reasonably well to wraparound principles, as evidenced by a mean Total Fidelity score of 6.6 out of a maximum of 8. Element adherence scores ranged from a fairly low 3.8 for Natural Supports to a quite high 7.8 for Individual Services and

**Table 1**  
**Participant Characteristics by Outcome**

Variable • <sup>2</sup>	Goal Attainment				Variable • <sup>2</sup>	Successful Transition Home				Variable • <sup>2</sup>
	Yes <i>n</i> = 104		No <i>n</i> = 72			Yes <i>n</i> = 104		No <i>n</i> = 72		
	<i>n</i>	%	<i>n</i>	%		<i>n</i>	%	<i>n</i>	%	
Gender					0.22					0.22
Male	57	54.8	42	58.43		57	54.8	42	58.3	
Female	47	45.2	30	41.7		47	45.2	30	41.7	
Ethnicity					9.94					9.11
African American	31	29.8	25	34.7		31	30.1	25	34.7	
Caucasian	60	57.7	39	54.2		59	57.3	40	55.6	
Hispanic	8	7.7	6	8.3		8	7.8	6	8.3	
Asian	3	2.9	2	2.8		3	2.9	2	2.9	
Other	2	1.9	0	0						
DSM Disorder					7.34					5.21
Mood	32	30.8	16	22.2		32	30.8	16	22.2	
Anxiety	35	33.7	18	25.0		33	31.7	20	27.8	
Psychosis	6	5.8	8	11.1		7	6.7	7	9.7	
Disruptive behavior	27	26.0	22	30.6		28	26.9	21	29.2	
Referral source					1.41					3.60
Child Welfare	70	67.3	49	68.1		66	63.5	53	73.6	
Probation	4	3.8	5	6.9		5	4.8	4	5.6	
Mental Health	24	23.1	1	18.1		24	23.1	13	18.1	
Other	6	5.8	5	6.9		9	8.7	2	2.8	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Age	14.5	2.4	14.7	2.1	0.51	14.5	2.5	14.6	2.1	0.21
Prior residential days	754	587	671	593	-0.91	691	528	764	670	0.77
Collateral supports	3.43	2.80	1.95	2.00	-3.24***	3.30	2.74	2.02	2.13	-2.75**
Child and Adolescent Functional Assessment Scale (entry)	112	29.4	118	34.0	1.05	110	27.7	121	35.5	2.0*

\**p* ≤ .05. \*\**p* ≤ .01. \*\*\**p* ≤ .001.

Supports. Results of analyses focusing on the relationship between adherence to wraparound principles and outcomes are presented in Table 2. To summarize, significant and positive correlations were found between improvements in child functioning (pre-post CAFAS change scores) and adherence to the principles of Child and Family Team ( $r = .274, p = .024$ ) and Strengths-Based Services ( $r = .243, p = .046$ ). Mann-Whitney *U* tests revealed that adherence to the element of Community-Based Services and Supports was significantly higher for youth who met treatment goals ( $z = -3.470, p = .001$ ) and for those who lived in a home setting at discharge ( $z = -3.708, p = .000$ ) than for those who failed to attain these outcomes. The latter finding may not be surprising given the similarity between constructs measured by this fidelity score and the outcome

of transitioning to or sustaining placement in a home and community-based setting. In fact, close examination of the WFI-3 domain of Community-Based Services and Supports reveals that it includes items asking for the number of hours per week the youth spent at a regular community school and a paying job or a job training program, whether the services the family needs are hard to reach because they are far away, whether the team helps the youth get involved in community activities, and the number of days the youth spent living in community-based versus institutional settings. Because of the large overlap between this last adherence item and the outcome referred to as “home living situation at discharge,” the former was eliminated from the scoring of the WFI-3 element of Community-Based Services and Supports. The newly scored wraparound principle was

**Table 2**  
**Relationships Between Wraparound Fidelity Index, Third Version Scores and Outcome Measures**

Adherence Measure	Pre-Post <i>Child and Adolescent Functional Assessment Scale</i> ( <i>n</i> = 92)	Goal Attainment ( <i>n</i> = 111)	Home at Discharge ( <i>n</i> = 111)
Voice & Choice	$r = -.102$	$z = -.620$	$z = -.346$
Child & Family Team	$r = .274^*$	$z = -1.880$	$z = -.943$
Community Based Services	$r = .174$	$z = -3.470^{***}$	$z = -3.708^{***}$
Cultural Competence	$r = .047$	$z = -0.393$	$z = -0.613$
Individualized Services	$r = .056$	$z = -0.147$	$z = -0.832$
Strengths-Based Services	$r = .243^*$	$z = -0.702$	$z = -0.845$
Natural Supports	$r = .019$	$z = -0.094$	$z = -0.192$
Continuation of Care	$r = .109$	$z = -0.105$	$z = -0.990$
Collaboration	$r = -.055$	$z = -0.568$	$z = -1.204$
Flexible Resources	$r = .017$	$z = -0.991$	$z = -1.332$
Outcome Based Services	$r = .196$	$z = -1.390$	$z = -1.115$
Total <i>Wraparound Fidelity Index</i> , Third Version	$r = .162$	$z = -1.642$	$z = -1.282$

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

titled Community Involvement and analyzed in relation to outcomes. Findings revealed that youth who met treatment goals and those who resided in a home setting at discharge scored significantly higher than their counterparts did on this revised adherence element ( $z = 2.427, p = .015$ , and  $z = -2.657, p = .008$ , respectively).

### Outcome Predictors

The results of bivariate logistic regression analyses show that the child's level of impairment at service entry did not make a significant contribution to the prediction of goal attainment, whereas the number of collateral supports ( $B = 1.372, p = .001$ ) and adherence to the principle of community involvement ( $B = 1.132, p = .017$ ) were found to be significant predictors of this outcome. Youth impairment was, however, found to make a significant contribution to the prediction of living situation at closure ( $B = -.967, p = .008$ ), as was the number of collateral supports ( $B = 1.028, p = .009$ ) and adherence to the element of community involvement ( $B = 1.020, p = .031$ ).

When baseline CAFAS scores were held constant, collateral supports continued to serve as a significant predictor of goal attainment ( $B = 1.250, p = .010$ ) but did not reach significance as a predictor of successful discharge to a home setting. Community involvement continued to emerge as a significant predictor of both goal attainment and living situation at closure ( $B = 1.396, p = .01$ , and  $B = 1.055, p = .051$ , respectively).

Next, beta-weights were exponentiated to  $e$  in order to obtain ORs for the significant predictors. An OR of 1 shows that the outcome is equally likely for youth who

scored high and those who scored low on the predictor variable. An  $OR > 1$  demonstrates that the outcome is more likely for youth who scored in the identified range on the independent variable, while an  $OR < 1$  indicates the reverse. Results reveal that the odds of discharge to a home living situation were substantially less for youth who were highly impaired at service entry ( $OR = .380$ ). When odds were converted to probabilities, they revealed that less than half (49.2%) of youth with high CAFAS scores at enrollment were predicted to close wraparound in a home setting, as contrasted with 71.8 % of youth who were assessed as relatively less impaired at entry. When CAFAS scores were held constant, the odds of attaining treatment goals was more than 3 times greater for youth who possessed a high degree of collateral support than for those who had few or no natural support assets ( $OR = 3.492$ ). Youth who received wraparound services that scored high in the promotion of community involvement were 4 times more likely to attain treatment goals ( $OR = 4.04$ ) and almost 3 times more likely to discharge to a home setting ( $OR = 2.873$ ) than were youth who received services that adhered poorly to this element of practice (see Table 3).

### Discussion

The study sheds light on key variables that are tied to the effectiveness of the wraparound process when the ultimate aim of services is to hasten the transition of youth from residential care to a home living situation and/or assist in the maintenance of a home placement.

**Table 3**  
**Logistic Regression Analysis of Outcomes by Impairment at Entry,**  
**Collateral Support, and Community Involvement**

Variable	Goal Attainment		Home at Discharge	
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
High <i>Child and Adolescent Functional Assessment Scale</i> score	0.68	0.34–1.35	0.38**	0.19–0.77
High no. collaterals	3.49**	1.36–8.99	1.73	0.14–0.90
High community involvement	4.04**	1.41–11.62	2.87*	0.99–8.30

\* $p \leq .05$ . \*\* $p \leq .01$

Logistic modeling revealed that success in attaining this outcome was predicted by youth displaying lower levels of functional impairment at service entry. This result is consistent with data from a large system-of-care initiative, showing that successful program completion by children was predicted by fewer behavioral symptoms at enrollment (Wright, Russell, Anderson, Kooreman, & Wright, 2006). Moreover, of the previous investigations cited above, the most favorable outcomes were obtained in those that involved children with only moderate impairments in mental health functioning. Taken together, these findings underscore the challenge in attaining positive outcomes with highly impaired youth, even when mental health service providers use a process intended for clients with the most complex needs. These results also raise the question of whether the services provided in this and other wrap-around studies were of adequate intensity and/or fidelity to meet the needs of the youth with higher levels of functional impairment. Some light is shed on this question through the use of a system of benchmarks offered by the developer of the WFI for discriminating between higher and lower fidelity programs (Bruns, Suter, & Leverentz-Brady, 2008). According to this system, the overall adherence obtained at the current study site fell into the “above average” range. Had services scored in the “high fidelity” range, youth with higher levels of impairment may have been more successful in attaining goals and transitioning to a home setting.

Findings in this study also highlight the importance of collateral or natural support persons in contributing to positive outcomes. The inclusion of such informal helpers (e.g., relatives, friends, neighbors, associates from church or other faith communities) in the wrap-around team process of service planning and delivery has long been considered a mainstay of this and other community-based approaches to serving youth with

emotional or behavioral disorders (Cox, 2005). For instance, VanDenBerg and Grealish (1996) asserted that the wraparound team’s membership should be “at least one-half non-professionals who have access to informal resources and supports which the professionals may not be familiar with” (p. 13). Bruns et al. (2004) stressed that team members should include individuals who are committed to the success and well-being of the family. These authors also emphasize that the wraparound team should “actively seek out and encourage the full participation of team members drawn from family members’ networks of interpersonal and community relationships” and facilitate a plan that “reflects activities and interventions that draw on sources of natural support” (p. 7).

Results from the current study do not, however, confirm that the presence of collateral support is essential in ensuring successful transition to or preservation of a home placement. Nor do they support the view that the inclusion of collateral or natural helpers in the wrap-around child and family team process is a necessary and critical component of successful service delivery. In fact, as seen in Table 2, the WFI-3 domain that evaluates adherence to the element of Natural Supports was not found to be significantly associated with any of the outcomes included in this study. This element assesses the extent to which the team does the following: helps the caregiver receive support from natural helpers, assists the youth in developing friendships with youth who will have a good influence on behavior, relies mostly on professional or nonprofessional services, and includes non-professional members in team meetings. The lack of relationship between adherence to this practice principle and study outcomes appears to be incongruent with the finding that the number of collateral supports available was significantly higher for youth who met treatment goals. One explanation for this apparent inconsistency is that the presence of natural supporters may be helpful to

the youth and family regardless of the extent to which they interface with or are engaged by the wraparound team. Another lies in low degree of fidelity to the element of Natural Supports found in this data set overall. Had adherence to this principle reached a moderate or high level, it is possible that tests of association would have detected a significant relationship between a process that was inclusive of natural supports and the dependent variables under study.

Another finding of this research is that an emphasis on linking youth and families with community activities and resources was intricately associated with goal attainment and transition to or preservation of a home living situation. This supports a central tenet of the wraparound theory of change asserting that the integration of children and families into home and community life results in an increased capacity for coping, self-efficacy, and empowerment, along with program-specific outcomes (Walker, 2008). It also reinforces the notion that the creation of an “enabling niche” (i.e., a habitat for youth that builds on their assets and capabilities) is key to the promotion of educational and treatment goal attainment (Cox, 2008, p. 20). Adherence to this strength-based orientation to mental health practice may be of particular importance when wraparound is provided to children and adolescents in group homes or residential treatment centers. Many of such youth are encouraged to engage in on-site extracurricular activities with fellow residents. Far fewer are afforded opportunities to participate in jobs, vocational programs, or recreational activities that are compatible with their unique skills or interests and located in the neighborhood or community to which they will return or transition. A shift toward increased community integration for youth in residential care is likely to enhance their motivation to address emotional or behavioral difficulties and foster their connection to peers and adults in their receiving neighborhoods.

## Limitations

Caution must be exercised, however, in interpreting the results of this study because of several limitations therein. First, data pertaining to the number of collateral supports available to study participants was gathered at discharge only. Without comparable numbers collected at intake, it is impossible to discern whether the informal supports identified at service closure were present throughout the treatment episode or increased in quantity during the course of service delivery. Thus, it is unclear whether the wraparound process can be “credited” with the relatively high number of support persons available

to youth who met treatment goals. Second, just as low fidelity to the WFI-3 element of Natural Supports may have negated its potential relationship to study outcomes, a ceiling effect may have come into play for other adherence domains. Low variability of item scores for the third version of this instrument has, in fact, prompted the development of the WFI-4 (Bruns & Sather, 2008).

The authors recommend that future research pertaining to the implementation of the wraparound process use this newer version of the WFI. It is possible that the use of this revised adherence tool will reveal stronger associations between fidelity to wraparound principles and outcomes than those identified in this study. An additional limitation concerns the data collection procedures used in the current investigation. It should be noted that they did not make clear the temporal relationship between the administration of the WFI and the youth’s actual movement to a home living situation. For some participants, the transition home occurred well in advance of discharge from the wraparound program and, thus, may have preceded the most recent attempt at assessing fidelity to the process. Here, high adherence to the element of Community Involvement could have been the result of, rather than the impetus for, the youth’s transition home. Nevertheless, community integration may have served well the preservation of these placements in the homes of foster, adopted, or biological caregivers. Further study is needed to clarify the impact of community involvement both prior to and following the transition of youth to a home living situation. Finally, enthusiasm for the implications of results concerning the impact of the wraparound process on child outcomes is tempered by the fact that fidelity assessment was limited to facilitator report. Moreover, it should be recognized that the perceptions of these service providers regarding the quality of the wraparound process may have influenced their scoring of some, if not all, of the outcome measures used. This limitation can be circumvented in future research through the use of multiple methods and/or informants for measuring model adherence.

In conclusion, the presence of several collateral helpers within the youth and/or family’s social network appears to further treatment goal attainment attributable to the wraparound process. Such informal service providers should be considered as potential sources of support even if they are not present for or involved in wraparound team meetings. In addition, an emphasis on successfully linking youth and families with community resources is likely to pay big dividends by furthering goal achievement and the preservation of home placement.

However, these outcomes may be more elusive for youth exhibiting the highest levels of functional impairment. To establish the effectiveness of the wraparound process with highly impaired youth, outcome studies are needed at sites demonstrating high fidelity to the principles and practices of the model. The authors recommend that continued implementation research be conducted in order to further clarify for whom and under what conditions the wraparound process is successful.

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