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Evaluation of Wraparound Services

for Severely Emotionally Disturbed Youths

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Abstract

Objective: Services to children and adolescents with a severe emotional disturbance (SED) have long been inadequate. The wraparound approach has emerged as a promising practice that could address the needs of children with SED and their families through a strength-based, individualized, family-focused team process that emphasizes flexible service planning. This study compares the outcomes of youth receiving the wraparound approach with youth receiving traditional child welfare case management. Method: Child behavior and community integration outcomes were measured at intake and at 6 months in services. Results: Results indicated that youth receiving the wraparound approach showed significant improvement on the Child and Adolescent Functional Assessment Scale (CAFAS) when compared with youth receiving traditional child welfare services. Results also showed that youth receiving traditional child welfare services experienced significantly fewer placements. However, neither group showed significant differences on other clinical or functional outcomes. Discussion: Results are discussed, as well as applications to social work practice, study limitations, and recommendations for additional research on wraparound.



In the United States, one in 10 children and adolescents suffer from mental illness severe enough to result in significant impairment (National Institute of Mental Health, 2001).

Traditional services, including placement in secured, residential treatment settings, have not demonstrated effectiveness in treating these youth. Placing youth in highly restrictive residential and psychiatric hospitals where they are safe is an expedient response, but youth in these settings still run away, are promiscuous, engage in self-destructive behavior, and have access to substances to abuse (Burchard, Burchard, Sewell, & VanDenBerg, 1993). Further, when returned to the community, most therapeutic gains are not maintained. Overall, there is weak evidence for the effectiveness of services delivered in institutional settings (U.S. Department of Health and Human Services, 1999).

In an effort to address these issues, solutions have been sought through the development of "wraparound" or "individualized" services (VanDenBerg, 1993). Wraparound, a philosophy of care, is a planning and decision making process that involves the child and family. This process results in a unique set of community services and natural supports individualized for the child and family to achieve a positive set of outcomes (Burns & Goldman, 1999). Wraparound approaches have been developed that differ widely in their implementation, processes, structures, and underlying theories (Clark & Clarke, 1996). Common in the various approaches is the push for less-restrictive, more-integrated, community-based, and coordinated services.

Wraparound has produced positive outcomes for children and their families experiencing multiple and complex challenges. Evaluation studies on wraparound have used various research



methods ranging from in-depth qualitative interviews to quantitative designs with randomized subject selection and control groups. The strongest evidence for the effectiveness of the wraparound approach has been produced by randomized control studies.

The Fostering Individualized Assistance Program (FIAP) study in Florida examined the wraparound process within the foster care system using a repeated measure between-group design. Clark, Lee, Prange, and McDonald (1996) utilized a controlled study with random assignment of 132 youth to a standard practice group or the FIAP group. The FIAP wraparound approach goals were to stabilize placement in foster care, develop permanency plans, and improve behavioral and emotional adjustment of youth. Interventions by family specialists focused on strengths-based assessment, life domain planning, clinical case management, and individualized supports and services. Youth selected met the inclusion criteria of being in the custody of the state, being 7 to 15 years old, residing in a foster home or emergency shelter, and having a behavioral or emotional disturbance or at risk of such. The results for the FIAP group showed significantly fewer placement changes, more improvement on the Child Behavior Checklist (CBCL; Achenbach, 1991), fewer runaways and fewer days of incarceration than youths receiving standard practice. The FIAP youth also demonstrated a greater likelihood of achieving a permanent placement and significantly better emotional and behavioral adjustment than did the standard practice group in similar settings. Findings gave support to the success of individualized strategies of service delivery for children in foster care with severe emotional and behavioral disturbance.

In New York, Evans, Armstrong, and Kuppinger (1996) compared the efficacy of two programs: Family-Based Treatment (FBT) and Family-Centered Intensive Case Management



(FCICM). Although both programs were developed to meet the needs of children with severe emotional disturbance (SED) and their families, FBT relied upon therapeutic foster families to help transition children home while FCICM provided individualized support and services to families in their homes. FCICM utilized a team approach with a case manager and a parent advocate providing service; the team had access to flexible funding in order to provide individualized services for each family.

Children and families randomly assigned to the FCICM wraparound program showed significantly more improvement in behavior, mood, emotions, and role performance, had briefer and fewer hospital stays, greater improvement in functioning and experienced fewer symptoms than children in FBT. The FCICM children were able to be maintained in their family and community (Evans et al., 1996).

Other studies have shown the effectiveness of wraparound in a variety of setting and programs such as mental health, schools, foster care, and juvenile justice (Bruns, Burchard, & Yoe, 1995; Burchard, et al., 1993; Eber, Osuch, & Redditt, 1996; Eber, Osuch, & Rolf, 1996; Hyde, Burchard, & Woodworth, 1996; Illback, Nelson, & Sanders, 1998; Myaard, 2000; Russell, Rotto, & Matthews, 1999; Yoe, Santarcangelo, Atkins, & Burchard, 1996; Suter, 2007). The two studies presented are examples of a growing body of wraparound research with encouraging results (Clark, et al., 1996; Evans, et al., 1996).

The goal of the present study was to determine if positive outcomes of the wraparound approach found in other studies could be extended to Nevada. Specifically, the study asked if youth receiving wraparound achieve better outcomes than youth receiving traditional child



welfare services as measured by child behavior and community integration indicators. The Nevada Division of Child and Family Services (DCFS) supported the development of a statewide wraparound program. Convergent influences within the state including a system of care grant and a growing recognition of children's unmet mental health needs led to the adoption of the wraparound model. In addition, the wraparound model was becoming increasingly more specified by being 'manualized' with identified phases and steps. Key principles of the wraparound model include engaging with the youth and family; discovering their strengths, culture and needs; child and family team formation, management, and facilitation; and ongoing crisis and safety planning Bruns, Walker, Miles, Osher, Rast, VanDenBerg & National Wraparound Initiative Advisory Group (2004). Coaching and supervision strategies were integrated into the model to enhance fidelity of implementation. Fidelity measures were developed to determine if the model was being implemented as intended. Together, these influences created the opportunity to conduct an expanded evaluation of the effectiveness of wraparound services in Nevada.

Method

Design

This study used a quasi-experimental design with three nonequivalent comparison groups. Youth in two groups received wraparound process intervention: (a) a group in state custody foster care and (b) a group in parental custody. Youth in state custody foster care receiving wraparound were assigned to wraparound facilitators, and youth in parental custody receiving wraparound were served by Children's Clinical Services' resource coordinators. The

third group received traditional foster care case management. Participants were evaluated using standardized clinical and functional measures that measure behavior and community integration. The research compared outcome measures of the two groups receiving wraparound with those of the comparison group receiving traditional child welfare case management. It was hypothesized that the groups receiving wraparound would have better outcomes than the comparison group.

Participants

The 126 participants in this research study were youth diagnosed with a severe emotional disturbance (SED) ages 5 to 18 years. Youth were either in state custody foster care or in parental custody. Children with SED are persons from birth to age 18 who currently or at any time during the past year have had a diagnosable mental, behavioral, or emotional disorder that meets the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR) diagnostic criteria (American Psychiatric Association, 2000). The SED must result in a functional impairment that substantially interferes with or limits the child's role or functioning in family, school, or community activities for 1 year or it is anticipated to impair functioning for 1 year. In addition, a score of 40 or higher on the Child and Adolescent Functional Assessment Scale (CAFAS) (Hodges, 1999) is required to meet SED criteria. Youth were diagnosed and received a SED determination at intake by a DCFS clinical staff member.

Procedures

Programs within the Nevada DCFS served all participants in this study. Parental custody youth and their families are served by Children's Clinical Services, an intensive clinical case management program for children and adolescents. The Wraparound in Nevada for Children and



Their Families Program (WIN) serves youth in state custody foster care. Child welfare foster care serves DCFS custody youth providing traditional case management services.

Youth served by WIN were selected based upon the first 12 youth served by the four wraparound facilitators in the statewide wraparound pilot study. Youth in the parental custody group received wraparound from Children's Clinical Services and were selected based upon either being active in services for at least 6 months or recently having a planned discharge. This criterion assured that youth in the study would have intake and 6-month data available. The traditional child welfare foster care group was selected as a comparison group for the statewide pilot study of wraparound. The northern Nevada region recruited only 6 youth for their comparison group rather than 8, decreasing the total comparison group to 30. The following list shows which program served each treatment group (see Table 1)

INSERT TABLE 1 HERE

Wraparound facilitators and resource coordinators in both wraparound programs have small caseloads of between 10 and 12 youth and are trained in the wraparound process and system of care principles and values. They participate in ongoing supervision of their work with youth and their families. Wraparound coaching and supervision tools define and operationalize the eight steps of the wraparound process (Rast, VanDenBerg & Dalder, 2004). Case managers working in the traditional child welfare services comparison program received no special training or supervision in the wraparound approach.

Measures

Behavior and child integration outcomes measures were used in this study. These



measures included the (a) CBCL (Achenbach, 1991), a standardized measure of problem behaviors and competencies as reported by parents or surrogate caregivers for children ages 4 through 18; (b) CAFAS (Hodges, 1999), an instrument designed to assess degree of impairment in youth with emotional, behavioral, psychiatric, psychological, or substance-use problems ages 6 to 17; (c) Restrictiveness of Living Environment Scale (ROLES) (Hawkins, Almeida, Fabry & Reitz, 1992), a quantitative measure of restrictiveness of a child's living situation across 25 settings; and (d) school and community behavioral indicators e.g. grades, number of days absent from school, number of arrests, etc . Outcome measures were collected on each participant at baseline and at 6 months. Baseline measurements collected at intake included the CBCL, CAFAS, ROLES, and school and community measures. Demographic data were also collected at baseline. The primary caregiver, wraparound facilitator, resource coordinator and program evaluation staff completed the standardized instruments.

Outcome measures of the two groups receiving wraparound were compared with those of the group receiving traditional child welfare services. An analysis of covariance (ANCOVA) test was used to analyze changes on the CAFAS, CBCL, ROLES, and grades. Non-parametric tests were used when the assumptions of more powerful parametric tests could not be met. Thus, the Chi Square Test for Two Independent Samples was used with number of placements, number of arrests, number of reports of abuse or neglect, number of substantiated reports of abuse or neglect, number of days absent from school, and number of disciplinary actions in school. The McNemar Test was used for the dichotomous variables of special education and regular classes.

Results

Forty-eight youth receiving wraparound through the WIN program, 48 youth in the parental custody group receiving wraparound, and 30 youth in traditional child welfare services were evaluated as part of this study.

Youth Characteristics

A summary of youth characteristics is presented in Table 2. Of the 126 youth served, 63% were male and 37% were female. Sixty one percent of the youth were White, 17% were Black or African American, 6.3% were American Indian/Alaskan Native, 2% were Asian, 1% were Native Hawaiian/other Pacific Islander, and 13% were classified as other. Sixteen percent of the youth were of Hispanic origin. Race and ethnicity variables used for the study are those mandated by Federal Regulation 45 CFR 1335 for the Adoption and Foster Care Analysis and Reporting System. The average age of youth served was 12.31 years ($SD = 3.2$), with a range of 5 years to 19 years at intake. Chi-square tests were conducted for the three comparison groups of participants on variables of gender ($\chi^2 (2, N = 126) = 1.61, p = .447$), race ($\chi^2 (10, N = 126) = 16.77, p = .08$), and Hispanic origin ($\chi^2 (2, N = 126) = 4.84, p = .089$). When race was recoded as White or non-White¹ results were also not significant $\chi^2 (2, N = 126) = 1.40, p = .497$. A one-way analysis of variance (ANOVA) revealed no significant differences in the age of participants across the three groups of participants, $F (2, 123) = 1.02, p = .365$.

INSERT TABLE 2 HERE

Outcome Evaluation

Table 3 presents findings for Analysis of Covariance tests conducted on outcome measures with continuous variables. An *alpha level* value of .001 was utilized to compensate for

the number of comparisons being made. The wraparound group demonstrated significantly lower CAFAS scores at posttest, indicating improved functioning and lower level of impairment for youth served by the programs with an average reduction of nearly 33 points, $F(1,112) = 11.21, p = .001$. The standardized mean difference effect size index, d , was $-.50$, a medium effect size (Cohen, 1988).

INSERT TABLE 3 HERE

Chi Square Tests for Two Independent Samples were conducted on pre-test variables to determine if the groups were different at the onset. Results showed that there was no significant difference on any of the pre-test measures. Results of the Chi Square Tests for Two Independent Samples for the wraparound and the traditional child welfare groups are presented in Table 4. All measures of placements, arrests, law enforcement contacts, reports of abuse or neglect, substantiated reports of abuse or neglect, absences from school, and disciplinary actions in school were reported as dichotomous variables. The number of placements was recoded as a dichotomous measure of 1 placement and > 1 placement because all children had at least one placement. The traditional child welfare group experienced significant decreases from intake to 6 months for the number of placements, Pearson $\chi^2(1, N = 113) = 6.1, p = .017$. The phi value was $-.23$, a small effect size. Absences from school were also recoded into a dichotomous variable of 2 or fewer absences and > 2 absences to capture greater than average school absences.

A one-way ANOVA was conducted to assess whether the length of time from custody to intake date was different between the wraparound and traditional services groups. The ANOVA was not significant, $F(1, 53) = 1.86, p = .181$ indicating no significant differences in length of

custody between the two groups at the time of intake. Therefore, the length of time from custody to intake would have no impact on the comparison between the wraparound and the traditional child welfare service groups for the number of reports of abuse or neglect and of substantiated reports of abuse or neglect.

INSERT TABLE 4 HERE

Table 5 compares the intake and 6-month measures for the dichotomous variables of regular classes and special education classes. These findings indicate whether a youth attends a regular mainstream class or is identified while in services as needing special education classes. The results of the McNemar Test indicate that there was no significant movement from regular classes to special education classes for either wraparound ($p = .549$) or traditional child welfare services ($p = .250$). Similarly, there was no significant movement for youth from special education classes to regular classes for either wraparound ($p = .267$) or for traditional child welfare services ($p = .250$).

INSERT TABLE 5 HERE

Discussion and Application to Social Work

This evaluation study was conducted to compare the effectiveness of the wraparound approach and traditional treatment approaches for youth with SED. Youth receiving wraparound made exceptional improvement on the CAFAS indicating decreased level of impairment while enrolled in the program. Wraparound youth also showed greater improvement in functioning as measured by the CAFAS when compared with youth receiving traditional services. Consistently positive CAFAS results suggest that the wraparound approach may contribute to improvement in



youth functioning. Because those rating youth participants were not blind with respect to group assignment, there is a possibility of bias in these findings, and in order to validate this finding future research should consider the use of independent CAFAS raters or raters who are blind to youth assignment.

Youth receiving services through traditional child welfare services experienced fewer placements than youth receiving wraparound services from intake to 6 months, as indicated by the ROLES. One interpretation of this finding is that youth receiving traditional child welfare services are not able to move out of more restrictive living environments, whereas youth in state custody care receiving wraparound experience move to less restrictive placements such as family foster care. Thus, although there are a significantly greater number of placements during receipt of services for youth in state custody receiving wraparound services, there is a trend toward less restrictive environments than placements for youth receiving traditional child welfare services.

As with all quasi-experimental effectiveness studies, there are limitations in the study design which lead to caveats on the conclusions from these findings. First, study participants were not randomly selected, thereby limiting generalization beyond this study. Further, participants were not randomly assigned to groups, presenting limitations for internal validity. However, analyses indicated that the groups were equivalent with respect to gender, ethnicity, race and age, thus lending some confidence to conclusions related to differences between groups. Also, the traditional child welfare services comparison group was smaller than originally intended, leading to a decrease in statistical power. Future evaluations comparing wraparound services to traditional child welfare services should be conducted with larger numbers of participants than in the current study to reduce the possibility of Type II errors.



Measurement artifacts may also threaten internal validity of the study, in that bias may have been inserted by using service providers for data collection. Outcome measures for youth in the wraparound groups were assessed by wraparound facilitators or resource coordinators, while wraparound facilitators collected outcome measures for youth receiving traditional child welfare services in some locations and an independent data collector was used in other locations. It is recommended that future comparisons of wraparound and traditional child welfare groups utilize independent data collectors blind to program assignment to minimize the possibility of bias.

Missing data also limit conclusions from this study. The CBCL, the only clinical measure completed by the caregiver, was frequently missing from the 6-month follow-up although no participants were lost to attrition. The CBCL was often not collected at the 6-month follow-up or was missing from the data collection file. These missing data lead to uncertainty about outcomes and results relating to the CBCL should be viewed with caution.

Strengths of the current study include use of standardized clinical tools or functional outcome measures. The CAFAS and the CBCL are two of the most widely used clinical tools in mental health treatment and research. Functional outcomes such as grades and numbers of arrests are nonreactive ways of measuring behavioral change. Further, data were triangulated in this study by using instruments completed by resource coordinators, wraparound facilitators and parents or parent surrogates and by using information from existing records, such as grades, number and type of placement, number of arrests, and so on. The use of both standardized measures and objective counts of occurrences of certain behaviors add to the measurement validity of the study.



The current study also used a manualized approach to training. The wraparound approach has evolved to the specification of skill sets that can be communicated and applied consistently. Resource coordinators and wraparound facilitators received coaching and supervision to the model, increasing the likelihood that they learned and applied the model as intended. These are necessary conditions for an intervention to have fidelity of implementation (Bruns, Burchard, Suter, & Force, 2005).

It is recommended that additional research comparing wraparound and traditional child welfare or other mental health case management services is necessary to add to social work's knowledge base for working with youth with SED. Future researchers should attempt to utilize more tightly controlled designs, such as randomized control group designs, blind assessment, and larger groups of participants. Further, continued monitoring of clinical results in existing wraparound programs is critical to continuing refinement of the model. Mental health service systems must be able to measure symptom severity, functioning, hopefulness, and therapeutic alliance with repeated measures over time (Bickman, Smith, Lambert, & Andrade, 2003). Finally, fidelity of the implementation of wraparound procedures should be considered in all future studies of wraparound to ensure internal validity. To accomplish this end, ongoing training, coaching, and supervision to the model are essential in order to ensure that wraparound is being implemented in the way it is intended and to maximize outcomes for children and families.

Although not the focus of this study, there is an assumption that the wraparound approach is delivered within a system of care, a comprehensive, collaborative, and coordinated network of mental health and other necessary services organized to meet the multiple and



changing needs of children and adolescents with SED and their families (Stroul & Friedman, 1986). The wraparound approach is the service process at the individual child and family level. A system of care is the organizational philosophy that embraces the same values and philosophies of wraparound at the system level. Whereas the goal for the wraparound approach is to improve outcomes for children and families, it is suggested that the system of care goals, as an organizational change strategy, are to improve the mechanisms of service delivery (Hernandez & Hodges, 2003).

Hernandez and Hodges (2003) argue that systems of care should not be viewed as an intervention that can be measured solely with child- and adolescent-level outcomes. Instead, systems of care should be viewed as a theory of change with system-level measures that can determine how effective the system is working. Examples of system-level outcomes that address organizational change are improved access, cost effectiveness, policy implementation, and organizational relationships. A three-tiered approach is recommended for building on knowledge of systems-related outcomes; knowledge related to child-level interventions; and knowledge related to the relationship between system- and child-level interventions.

Social work has the potential to positively impact the micro-, mezzo-, and macro-levels of a system of care and the wraparound approach. Partnerships between direct practitioners and university-based social workers can encourage more rigorous evaluations of wraparound implementation and the teaching of direct practice skills, including outreach and client engagement skills that reflect wraparound philosophy and values. Social workers in administration and management can facilitate the use of efficacious intervention such as the wraparound approach by encouraging reliance on evidence-informed practice at the micro-level



as well as better communication with mental health and other human service agencies. Within state and county government, social workers can work to design and develop policies and procedures that reflect systems of care and wraparound values and philosophy. Finally, social workers in community leadership roles along with families of youths in need of services can advocate for a collaborative and coordinated service delivery system that utilizes a wraparound approach.



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Table 1

Programs Served by each Treatment Group

Program	Treatment Group
WIN	Wraparound
Children's Clinical Services	Parental custody wraparound
Traditional child welfare	Traditional child welfare services

Table 2
 Summary Characteristics of Youth Served

Variables	Treatment groups			Total
	Wraparound (<i>n</i> = 48)	Parental custody (<i>n</i> = 48)	Traditional Services (<i>n</i> = 30)	
Gender				
Male	27 (56%)	33 (69%)	19 (63%)	79 (63%)
Race				
White	32 (67%)	29 (60%)	16 (53%)	77 (61%)
Black or African American	8 (17%)	6 (13%)	7 (23%)	21 (17%)
American Indian/Alaskan				
Native	1 (2%)	2 (4%)	5 (17%)	8 (6%)
Asian	2 (4%)	0	0	2 (2%)
Native Hawaiian/other				
Pacific Islander	0	1 (2%)	0	1 (1%)
Other	5 (10%)	10 (21%)	2 (7%)	17 (13%)
Hispanic origin				
Yes	5 (10%)	12 (25%)	3 (10%)	20 (16%)
Age				
Mean (<i>SD</i>)	12.4 (3.7)	12.7 (2.3)	11.6 (3.7)	12.3 (3.2)

Table 3

Analysis of Covariance Comparisons of Wraparound and Traditional Child Welfare Services Outcomes

Measures	Wraparound			Traditional			Group Effect				
	N	Pre	Post	N	Pre	Post	F	df	p	Partial Eta Squared	Cohen's <i>d</i> (95% CI)
CAFAS	85	Mean (SD) 108.4 (47.9)	Mean (SD) 75.7 (40.4)	30	Mean (SD) 102.3 (44.7)	Mean (SD) 97.3 (50.1)	11.21	1, 112	.001**	.09	-.50 (-0.92, -0.08)
CBCL Internalizing	63	59.6 (15.4)	59.0 (13.7)	16	60.8 (13.2)	61.5 (10.2)	.38	1, 76	.541	.01	-.19 (-0.74, 0.36)
CBCL Externalizing	63	65.3 (14.8)	62.8 (14.2)	16	64.1 (10.1)	62.8 (10.0)	.03	1, 76	.867	.00	.00 (-0.55, 0.55)
CBCL Total Problem	63	65.9 (14.7)	63.9 (13.9)	16	65.6 (12.6)	63.9 (11.0)	.00	1, 76	.949	.00	.00 (-0.55, 0.55)
ROLES Mean of Placement Levels	82	12.6 (4.8)	11.1 (5.4)	30	15.1 (3.9)	14.9 (5.3)	4.45	1, 109	.037	.04	-.71 (-1.13, -0.27)
Grades	44	2.1 (0.9)	2.3 (0.8)	26	2.3 (0.9)	2.3 (0.7)	.02	1, 67	.886	.00	.00 (-0.48, 0.48)

 ** $p < .01$

Table 4
Chi Square Test for Two Independent Samples Comparisons of Wraparound and Traditional Child Welfare Services Outcomes

Measures	Wraparound <i>n</i> (%)	Traditional <i>n</i> (%)	<i>df</i>	χ^2	<i>p</i>	<i>phi</i>
# of Placements > 1	41 (49.4)	7 (23.3)	1, 112	6.1	.017*	-.23
# Arrested	8 (9.5)	1 (3.3)	1, 113	1.2	.441	-.10
# Law Enforcement Contacts	18 (21.4)	4 (13.3)	1, 113	0.9	.426	-.09
# Reports of Abuse or Neglect	9 (10.7)	4 (13.3)	1, 113	0.2	.741	.04
# Substantiated Reports of Abuse or Neglect	1(1.2)	2 (6.7)	1, 113	2.6	.169	.15
# Absences from School > 2	31 (44.3)	11 (39.3)	1, 97	0.2	.822	-.05
# Disciplinary Actions in School	32 (46.4)	12 (42.9)	1, 96	0.1	.824	-.03

Table 5

McNemar Test Comparisons of Change of Classroom Placement for Children Receiving Wraparound and Traditional Child Welfare Services

Type of Class Placement	Wraparound ($n = 78$)	p	Traditional ($n = 29$)	p
Regular Class	43 (55.1)	.549	18 (62.1)	.250
Special Education Class	35 (44.9)	.267	11 (37.9)	.250