

Title: **Service Process as a Determinant of Treatment Effect – the Importance of Fidelity**

Jim Rast, Ph.D.
CEO, Vroon VanDenBerg
98 Inverness Dr. E., Suite 310
Englewood, CO 80138
303/790-4099, ext. 103 Fax: 303/790-1926
Email: jim@vroonvdb.com

Leanne Earnest, Ph.D.
Neighborhood Care Centers
Las Vegas, Nevada 89102

Christa Peterson, Ph.D.
Department of Child and Family Services
6171 West Charleston Blvd.
Las Vegas, Nevada 89146
702-486-6120
702-486-7742 (fax)
CRPETERS@dcs.state.nv.us

Susan Mears, MSW
Neighborhood Care Centers
Las Vegas, Nevada 89102

Acknowledgements: This research was partially funded through a Title IV-E research and training funding. The evaluation for the children and youth in the Las Vegas sites was partially funded through a grant from SAMHSA for Building Systems of Care through Neighborhood Care Centers.

Introduction

During the past fifteen years the use of “wraparound” as a process has exploded with an increase from less than 10,000 to over 400,000 children and their families receiving something called wraparound. At the same time there has been an increased focus on using “evidence-based” practices. Some studies have suggested that coordinated systems of care do not produce better outcomes than usual care (Bickman, Summerfelt, & Noser, 1997). From these and other studies the authors have often contended that in addition wraparound does not result in improved functioning for children and youth compared to usual mental health services. Unfortunately in the rush to produce evaluations of large scale system of care implementation and studies to build the “evidence-based” literature insufficient attention has been placed on the process for wraparound or system of care structure and function for Systems of Care. In some cases the process is not defined, in others it is defined but not with the specificity that guides implementation or replication, and even when this is done studies and evaluation have overlooked the importance of assessing whether the process has been implemented as intended.

Wraparound as a process for delivering services was first used to describe the service process of the Kaleidoscope Program in Chicago in 1975. It has been defined as a family-centered, team based process that focuses on the strengths, needs and culture of the child and family to develop an individualized plan. Although several articles and monographs have described the process and some general principles (Burchard, Burchard, Sewell, and VanDenBerg, 1993; VanDenBerg and Grealish, 1999; and Burns and Goldman, 1999), only recently have the practice principles and elements been defined and most of the “wraparound” that is ongoing does not meet the criteria of these practice principles and elements. In some communities and states,

“wraparound” are any services purchased with non-categorical dollars. In others it is any form of team process for developing plans. In others it is a professional system that uses a continuum of care to assign children to levels. Thus research on wraparound can only be completed and replicated when the process is clearly defined through practice principles and elements and these “standards” are measured to ensure the research meets fidelity standards.

The first efforts to define fidelity of the wraparound process were done through quality improvement processes (Rast, 1999, Bruns, 1999). Several tools have been developed to measure the fidelity of the wraparound process to the intended practice principles but the one that has been used most widely and looks at all eleven of the practice principles is the Wraparound Fidelity Index (WFI) (Bruns, Ermold, and Burchard, 2001). This paper reports the use of the WFI to assess the quality and fidelity of the wraparound process provided in the Nevada research project described in the previous paper¹.

Method

This study was one of a three part study to examine the impact of the wraparound process on children and youth within the child welfare system in Nevada. Sixty five children participated in the study. 33 children were assigned to the experimental groups and received the wraparound process. 32 children were assigned as controls and received usual child welfare and mental health services². The 33 children assigned to the wraparound process were from four geographical regions of the state (Carson City, Reno, North Las Vegas, and South Las Vegas). Each of these four groups had an assigned wraparound facilitator who was responsible for implementing the process and a community team responsible for the System of Care support for wraparound. The facilitators received four days of basic training in the wraparound process and an additional 8 to 40 hours of hands-on coaching in the process.

Approximately five months after children began the wraparound process (or at the same time for the controls) telephone interviewers began contacting the primary caregivers, resource coordinators, and youth if they were 11 years of age or older. Three interviewers completed a total of 149 interviews across the two groups. All of the possible interviews were completed for the children in wraparound and all but caregiver interviews for 4 of the 32 children in the control groups were completed. The WFI questions are scored on a three point Likert Scale (Not Met, Sometimes Met and Met). Each of the eleven practice principles has four questions. This means that the possible score on each principle is 8. The scores were converted to a one hundred point scale for ease of review by staff and supervisors.

The scores for the four wraparound facilitators were calculated independently and it was determined that three of the four facilitators had scored at low fidelity levels on at least four of the principles. The fourth facilitator had scored at high levels on ten of the eleven principles. For this reason the outcome measures were resorted by high and low fidelity wraparound and presented in this paper in that format.

¹ Peterson, Rast, Gruner, Abi-Karan, and Earnest (2003). Comparing Functional Outcomes of Wraparound and Traditional Mental Health and Child Welfare Services.

² Part three of the study looks at the services and costs and reports on the types and amounts of services and supports received by each group. Information on this part of the study can be obtained from the authors.

Results

Overall there was a significant difference between the wraparound fidelity scores for the 33 children in the experimental group and the 32 children in the control group. Figure One shows these results. The black columns show the average scores across the four facilitators for all of the interviews. The experimental group averaged 75.6% fidelity to the practice principles while the control group averaged 59.6%. The first three sets of columns show the ratings by resource coordinators (case workers and wraparound facilitators), primary caregivers and youth. Although there is some variation in the ratings of the three groups the overall difference between the two groups remains relatively constant across the groups.

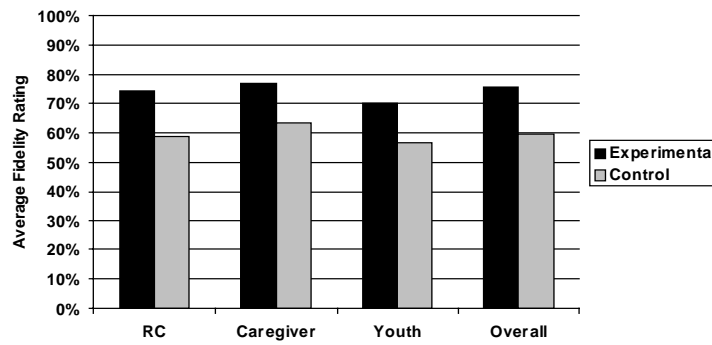


Figure One shows the average rating for the service process as scored on the **Wraparound Fidelity Index (WFI)**. The black columns are the ratings from the three different sources for children in the experimental group and the gray columns are the average ratings for children in the control group. from the interviews with the wraparound facilitators or case managers responsible for the plan. The first set of columns are the average rating by the case manager/wraparound facilitators, the second set of columns are for the ratings by parents and caregivers, and the third set of columns are the ratings by youth 11 years old or older who are receiving services. The final set of columns are the overall ratings.

The data for each of the four facilitators was calculated separately. This data showed that three of the facilitators had scores that ranged from 63.5 to 78.0% and each had 4 to 6 practice principle areas that had scores below 70%. The fourth facilitator had an overall average of 86.9% and no practice principle areas below 70%. Table One shows the average ratings for the three facilitators with the lower averages (LF Wraparound) and the facilitator with the higher scores (HF Wraparound). The three shaded areas show the three practice principles (youth and family team, natural supports, and flexible funding and resources) for the LF Wraparound that were scored at less than 70%. In addition, the HF Wraparound scored at least 15% higher in community-based supports, individualized services, and collaboration.

	LF Wraparound	HF Wraparound
Voice and Choice	76%	87%*
Youth and Family Team	61%	91%
Community Based Services and Supports	73%	90%*
Cultural Competence	74%	89%
Individualized Services	74%	96%*
Strengths Based Services	72%	86%
Natural Supports	52%	84%
Continuation of Care	84%	90%
Collaboration	71%	95%
Flexible Funding and Resources	47%	71%
Outcome Based Services	77%	74%
Overall	72%	87%

Table One shows the average ratings on the **Wraparound Fidelity Index (WFI)** for facilitators who have been classified as providing LF (low fidelity) and HF (high fidelity) wraparound. The first eleven rows show the average ratings across parent/caregivers, youth, and resource coordinator interviews. The final row shows the overall ratings for the two groups. The shaded areas highlight the areas of greatest difference in meeting the fidelity standards of wraparound as defined in the WFI and are significant at the .01 level. The items marked with * are significant at .05.

Figure Two shows the GPA outcome data from the previous study resorted by HF and LF wraparound. In the comparisons on the left the experimental group has had more students improve their grades but also had had more students have lowered grades. The resorted data on the right shows that three times as many children in HF Wraparound had improved outcomes compared to the controls and fewer children whose GPAs decreased. On the other hand the children with LF Wraparound had more than twice the percent of children with an increase in GPA and twice the increase in children with decreasing GPA. The confounding finding of the increasing percentage of children in wraparound with decreasing school performance was all contained in the LF Wraparound group.

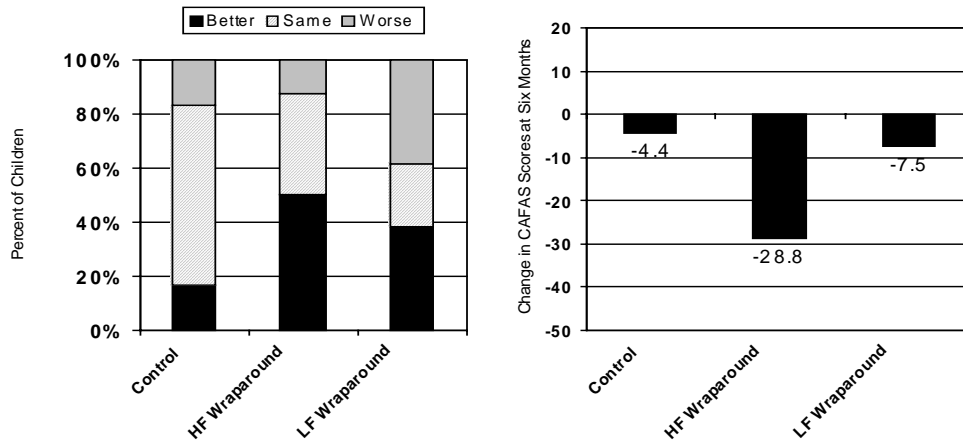


Figure Two shows the impact on GPA (grade point average) and changes in CAFAS scores when sorted by the fidelity of wraparound. The columns on the left show the difference between all of the children in the control group and the results sorted by high and low fidelity wraparound. The black section of the column shows the percentage of students who had improved GPAs in the six months following study initiation, the gray striped bars show students whose GPAs remained within 0.1 on a 4-point scale and the gray sections of the columns show the percentage of students whose grades deteriorated. The differences between the control and HF wraparound is significant at the .01 level and between the HF and LF wraparound at the .05 level. The right chart shows a comparison of the CAFAS scores of the three groups (high fidelity wraparound, low fidelity wraparound, and controls). The CAFAS scores use the eight item scoring system. The data compares the change in scores from the time of intake (which assessed the score based on the six months prior to the study) and after six months in the study. The differences between the HF wraparound and both the LF and control group is significant at the .01 level on the CAFAS scores.

The experimental group had an average decrease in CAFAS scores of 12.8 points over the first six months in the study. The control group had an average decrease of 4.4. points. When the two wraparound groups are compared, however, the LF Wraparound group had an average decrease of 7.5 points compared to an average decrease of the HF Wraparound group of 28.8 points. Table Two shows the comparison of six of the other primary outcome measures for the HF and LF Wraparound groups. The LF group showed improvements in only 3 of the 6 areas and actually worsened in two of the areas. On the other hand the HF group showed significant improvements in each of the six measures and more improvement than the LF group in all measures.

Measure	High Fidelity	Wrap Around	Low Fidelity	Wrap Around
	Baseline	6 Months	Baseline	6 Months
Residential Level	2.9	1.1**	2.9	2.6
Abuse Reports	.5	0*	.3	.1
Law Enforcement Contacts	.8	0**	.3	1
GPA	2.5	2.9*	2.4	2.3
Absences	2.8	1.8*	3.8	2.7
Disciplinary Actions	0.8	0.5*	1.3	1.3

Table Two shows the summary results of some of the primary outcome measures for the study. Residential level is measured from the six levels of the ROLES adapted for Nevada. Level 1 is the level for living with family or independent living and Level 6 is psychiatric hospitalization. Abuse reports refers to the average number of abuse reports filed in the six months prior to study initiation and the number filed in the first six months of the study. The law enforcement contacts refers to the average number of contacts in the same time periods. GPA refers to the average grade point average for children in the six months prior to study initiation and the first six months after initiation. Absences is the average number of school absences and disciplinary actions is the average number of school disciplinary for these time periods. ** indicates the differences between the two groups is significant at the .01 level and * is significant at the .05 level.

Discussion

Although this data only represents the initial six months of pilot work and the number of children in HF wraparound was small (8 children), the results suggest a strong link between the fidelity of the wraparound process and the eventual impact of the process. In addition, the areas in which the LF Wraparound group were consistently lower on the fidelity scores (youth and family team, engaging natural supports, individualization, collaboration, and flexible funds) may begin to show what about the process is important to produce good outcomes. The study is expanding and the process to ensure high fidelity wraparound is being strengthened, but the results show a clear relation between the quality and fidelity of wraparound and outcomes for children and families.

References

- Bickman, L., Summerfelt, W.T., & Noser, K. (1997). Comparative outcomes of emotionally disturbed children and adolescents in a system of services and usual care. Psychiatric Services, 48, 1543-1548.
- Bruns, E.J. (1999). National approaches to measuring and monitoring treatment fidelity. Paper presented at the 12th Annual Research Conference: A System of Care for Children's Mental Health, Clearwater Beach, Florida.
- Bruns, E.J., Ermold, J., & Burchard, J.D. (2001). The Wraparound Fidelity Index: Results from an Initial Pilot Test. In Newman, C., Liberton, C., Kutash, K., & Friedman, R. (Eds.) A System of Care for Children's Mental Health: Expanding the Research Base. Proceedings of the Thirteenth Annual Conference. Tampa: Florida Mental Health Institute Research & Training Center for Children's Mental Health.
- Burchard, J.D., Burchard, S.N., Sewell, R., & VanDenBerg, J. (1993). One kid at a time: evaluative case studies and description of the Alaska Youth Initiative Demonstration Project. Washington DC: Georgetown University Child Development Center, CASSP Technical Assistance Center.
- Burns, B.K. (2002). Reasons for hope for children and families: A perspective and overview. In Burns, B. and Hoagwood, K. (Eds.), Community Treatment for Youth: Evidence-Based Treatment for Severe Emotional and Behavioral Disorders. Oxford: Oxford University Press.
- Burns, B.J., & Goldman, S.K. (1999). Promising practices in wraparound for children with serious emotional disturbance and their families. Systems of care: Promising Practices in Children's Mental Health, 1998 series, Vol. IV. Washington D.C.: Center for Effective Collaboration and Practice, American Institutes for Research.
- Rast, J. (1999) Promising Practices in Children's Mental Health, Systems of Care 1999 Series, Volume VII. NRN (Eds.) in Integrated Evaluation and the Development of Systems of Care. Washington, D.C.: Center for Effective Collaboration and Practice, American Institutes for Research.
- VanDenBerg, J. & Grealish, E.M. (1996). Individualized Services and Supports through the Wraparound Process: Philosophy and Procedures. Journal of Child and Family Studies, 5, 1, 7-21.