

Wraparound fidelity in systems of care and association with outcomes

Results of the National Wraparound Comparison Study

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Previous research on service factors predicting child and family outcomes

- ◆ Significant but weak association between generic measures of service quality and outcomes
 - Therapeutic alliance, Parent involvement, Child and adolescent satisfaction (Noser & Bickman, 2000)
 - Adherence to national standards for treatment foster care (Farmer et al., 2003)
- ◆ Greater evidence for association between fidelity to specific treatment models and outcome
 - MST (Henggeler et al., 1997)
 - School-based prevention programs (Greenberg et al., 2001)
 - ACT (McHugo et al., 1999)

Previous research on service factors predicting child and family outcomes

- ◆ Previous research has found associations between adherence to wraparound principles and child and family outcomes
 - Associations for individual families within one system of care (Bruns et al., 2005; Hagen et al., 2002)
 - Families served by wrap facilitators showing greater adherence found to have better outcomes on
 - » Child functioning, Child behavior, School outcomes, Family resources
- ◆ Other studies found no relationship (e.g., Ogles et al., 2006)
 - However, variation in fidelity found to be limited (.96; sd = .04)

A theory of change for wraparound: Overview

Ten principles of the wraparound process

A high-fidelity wraparound process

that is “true” to the values and the practice model and characterized by:

- Respect for values, culture, expertise
- Blending perspectives
- Family-driven, youth guided goal structure and decisions
- Opportunities for choice
- Evaluation of strategies
- Recognition/ Celebration of success

Phases and Activities of the Wraparound Process

Short term outcomes:

- Follow-through on team decisions
- Service/support strategies that “fit”
- Service/support strategies based on strengths
- Improved service coordination
- High satisfaction with/ engagement in wraparound
- Experiences of efficacy and success

Intermediate outcomes:

- Services and supports are more effective and “work” better for youth and families

Intermediate outcomes:

- Increased social support and community integration
- Improved coping and problem solving
- Enhanced self-efficacy, empowerment, optimism, self-esteem
- Achievement of team goals

Long term outcomes:

- Stable, home-like placements
- Improved mental health outcomes (youth and caregiver)
- Improved functioning in school/ vocation and community
- Achievement of team mission
- Increased assets
- Improved resilience and quality of life

Wraparound elements (Burns & Goldman, 1999)

- ◆ Parent and Youth Voice and Choice
- ◆ Youth and Family Team
- ◆ Community-based Services and Supports
- ◆ Cultural Competence
- ◆ Individualized Services and Supports
- ◆ Strength-based Services and Supports
- ◆ Natural Supports
- ◆ Continuation of Care
- ◆ Collaboration
- ◆ Flexible Resources and Funding
- ◆ Outcome-based Services and Supports

Need for further research

- ◆ **Several published studies have found associations between wraparound fidelity (or components of studies) and outcomes**
 - However, findings have been mixed in other system-of-care communities
 - No studies have simultaneously employed:
 - » Multiple sites
 - » Large Ns
 - » Full range of validated outcome measures
 - » Measures of services received
 - No studies have assessed site level fidelity and association with outcomes

Wraparound Comparison Study

A component of the National CMHS Evaluation

◆ Research questions:

1. How does the adherence to wraparound elements vary across CMHS-funded sites?
2. How do child and family outcomes vary between CMHS-funded sites with different adherence to wraparound?
3. Across individual families (in all study sites), what is the relationship between Wraparound fidelity, services received, and client outcomes?

Wraparound Comparison Study

◆ Site selection criteria

- Differences in level of wraparound implementation and supports (WFI-Program Administrator form; WFI-PA)
- Similarities with respect to demographics of families served
- Rate of enrollment into national evaluation
- Willingness to participate

◆ Three sites ultimately selected to participate

Wraparound Comparison Study

◆ Measures

- Services received (Multi-Sector Services Checklist)
- Family and youth satisfaction (FSQ, YSQ)
- National evaluation outcome measures
 - » Residential restrictiveness and placement changes
 - » Child functioning (Child and Adolescent Functional Assessment Scale)
 - » Child behavior (Child Behavior Checklist/4-18, Youth Self Report, Behavioral and Emotional Rating Scale)
 - » Family Functioning (Family Assessment Device – General Functioning Scale)
 - » Caregiver Strain Questionnaire
 - » Family Resources (Family Resource Scale)
- Wraparound Fidelity Index 3.0
 - » Caregiver, Facilitator, and Youth forms

Wraparound Fidelity Index, version 3

- **Found to possess good psychometric characteristics**
 - Test-retest reliability
 - Inter-rater agreement
 - Internal consistency
- **Validity has been established through studies showing**
 - Agreement with external experts' assessment
 - Correlation with child and family outcomes
 - Correlation with measures of system support for wraparound
 - Discrimination between Wrap and non-wrap groups
 - Improvements in scores for providers over course of receiving quality improvement activities (e.g., training and coaching)

Data Collection

- ◆ **Study enrollment: January 2004 – October 2005**
- ◆ **WFI Data collection: March 2004 – January 2006**
- ◆ **Outcome measure collected via the national evaluation at baseline, 6-months, and 12-months.**
- ◆ **WFI data collection**
 - Families enrolled in national evaluation during study period recruited by local evaluators to participate in WFI-3 interview and signed consent to contact form.
 - Each family was contacted by a WERT member for the interview six months after entry into services and an attempt was made to contact the family twelve months after entry into services.
 - Caregivers and youths who participated in the WFI received \$20 compensation, youth received \$10.
 - Majority of interviews administered by phone.

Wraparound Fidelity Index 3.0

Respondent Scheme, by element

Element	<u>Number of items</u>		
	Resource Facilitator	Parent	Youth
Parent/Youth Voice and Choice	4	4	4
Youth and Family Team	4	4	4
Community-based Svs/Suppts	4	4	4
Cultural Competence	4	4	4
Individualized Svs/Suppts	4	4	4
Strength-based Svs/Suppts	4	4	4
Natural Supports	4	4	4
Continuation of Care	4	4	4
Collaboration	4	4	
Flexible Resources/Funding	4	4	
Outcome-based Svs/Suppts	4	4	
Total Items	44	44	32
0-2 scale = Element Scores Range	0-8	0-8	0-8

Participants

◆ Baseline

- N = 121 total families from 3 CMHS-funded Systems of Care national evaluation sites in 3 states

◆ Six-Month Follow-up

- N = 93 total families
 - » N=93 Facilitator interviews
 - » N=84 caregiver interviews
 - » N=42 youth interviews

◆ Twelve-Month Follow-up

- N=56 total families
 - » N=25 Facilitator interviews
 - » N=22 caregiver interviews
 - » N=9 youth interviews

Baseline Demographic Information (total N=121)

	Site 1		Site 2		Site 3	
	N=62	51%	N=38	32%	N=21	17%
Mean age*	12.8		11.8		11.8	
Gender*						
Male	45	73%	20	53%	17	81%
Female	17	27%	18	47%	4	19%
Race*						
African American	29	47%	18	47%	2	9%
White	27	43%	19	50%	18	86%
Other or Missing	6	10%	1	3%	1	5%
Hispanic Ethnicity	3	5%	2	5%	3	14%
Custody Status**						
Parental (birth or adoptive)	38	61%	30	79%	21	100%
Other Relative	4	6%	5	13%	0	0%
Ward of the State	17	27%	0	0%	0	0%
Other	3	5%	3	8%	0	0%

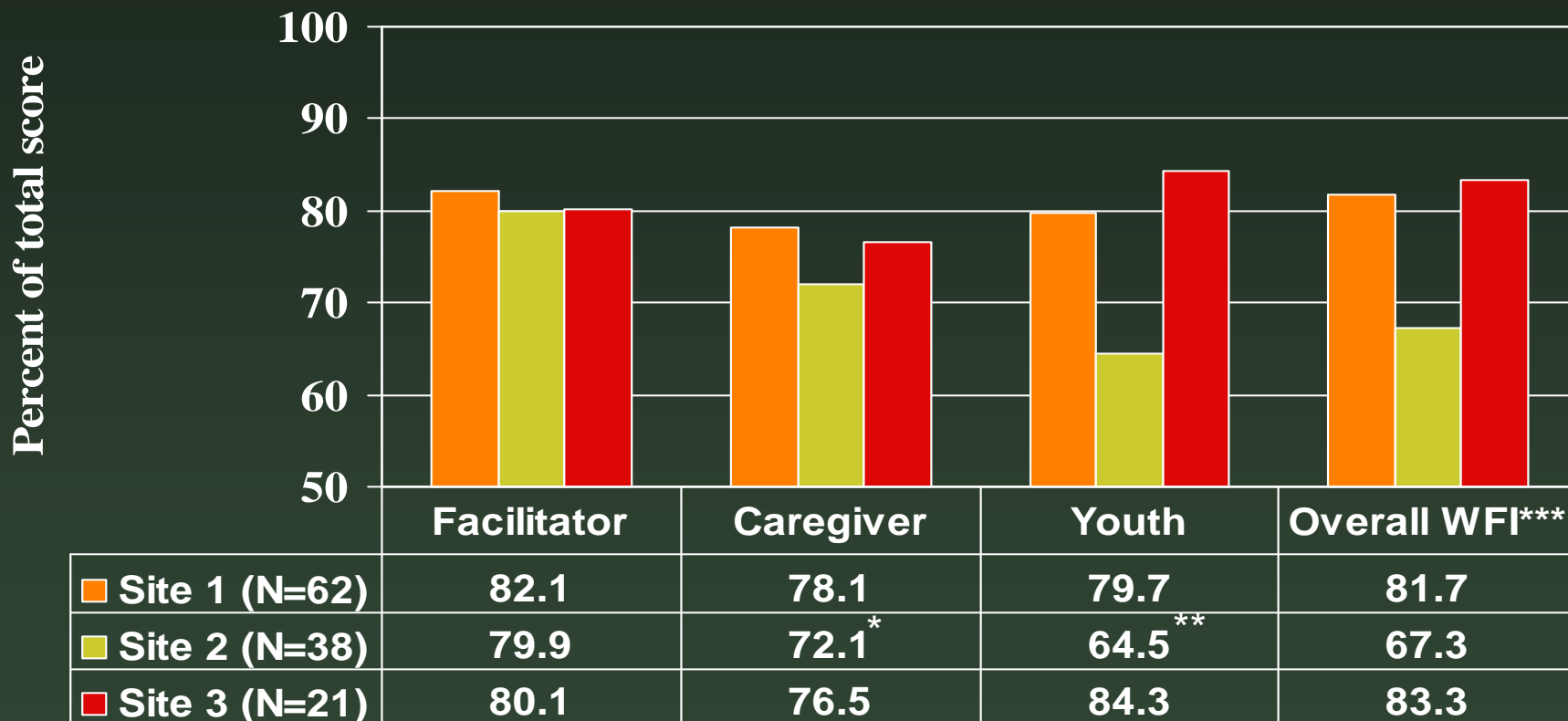
* p < .05, ** p < .01

Results:

Missing data (total N=121)

	Number	Percentage
Baseline		
Any Outcome Measure	25	21%
Six-Month Follow-up		
Any Outcome Measure	47	39%
WFI	8	7%
Twelve-Month Follow-up		
Any Outcome Measure	71	59%
WFI	83	69%

Research question 1: Between-site differences on WFI-3



***Overall WFI score combines all 3 respondents; only calculated for cases with all 3 respondents

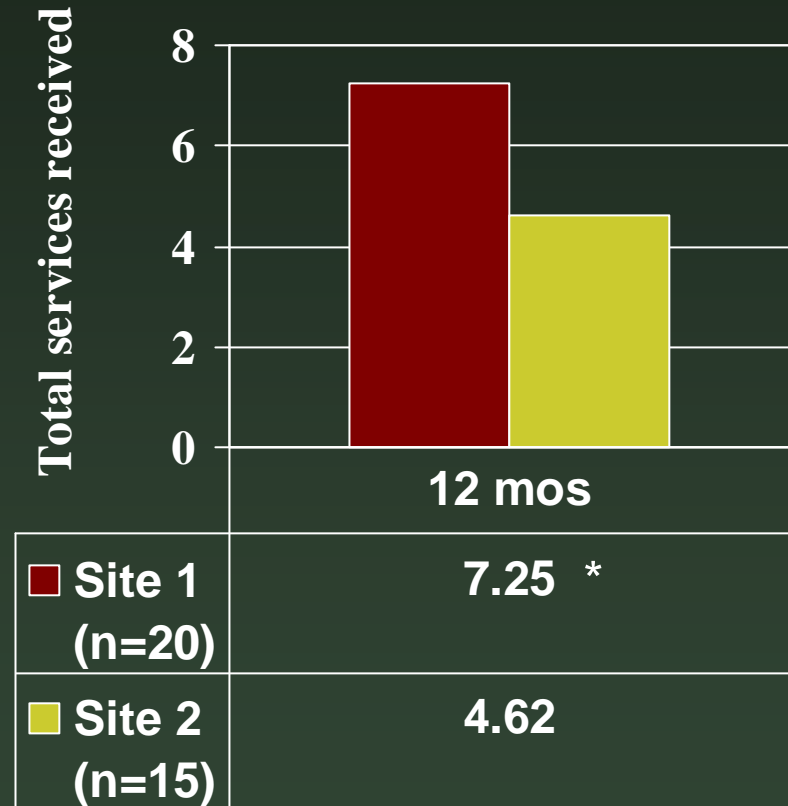
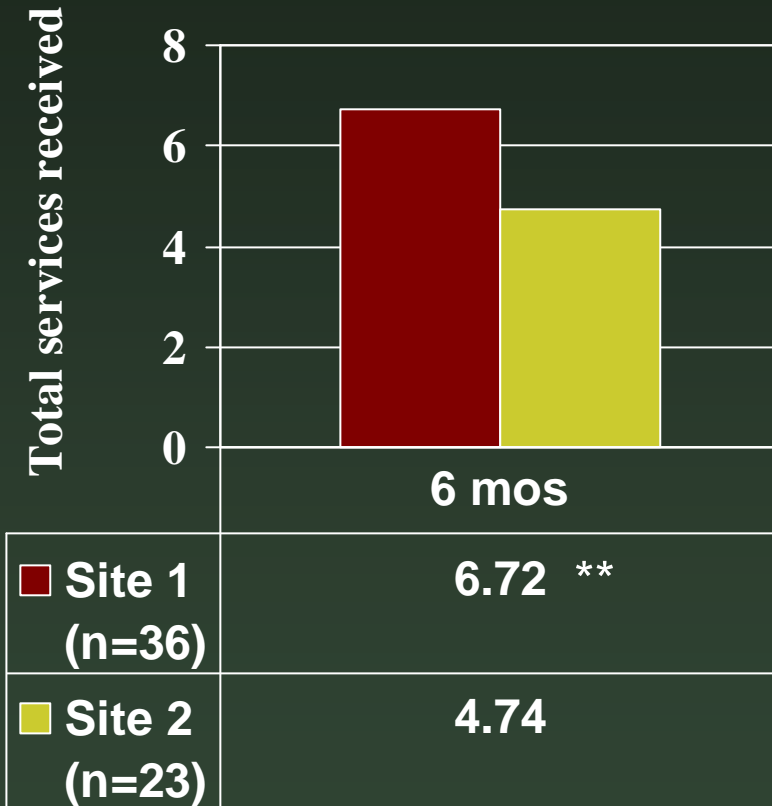
** $p < .01$

* $p < .1$

Decisions on Research questions 2 and 3

- ◆ Research question 2: *How do child and family outcomes vary between CMHS-funded sites with different adherence to wraparound?*
 - Between-site comparisons restricted to Sites 1 and 2 due to Site 3's low Ns and comparable WFI-3 scores to site 1
 - » *Hypothesis: Based on trends in WFI data, Site 1 will demonstrate better outcomes than Site 2*
- ◆ Research question 3: *Across individual families (in all study sites), what is the relationship between Wraparound fidelity, services received, and client outcomes?*
 - Families from all three sites retained in cross-site analysis of association between WFI-3 scores and outcomes
 - First WFI assessment used as fidelity measure

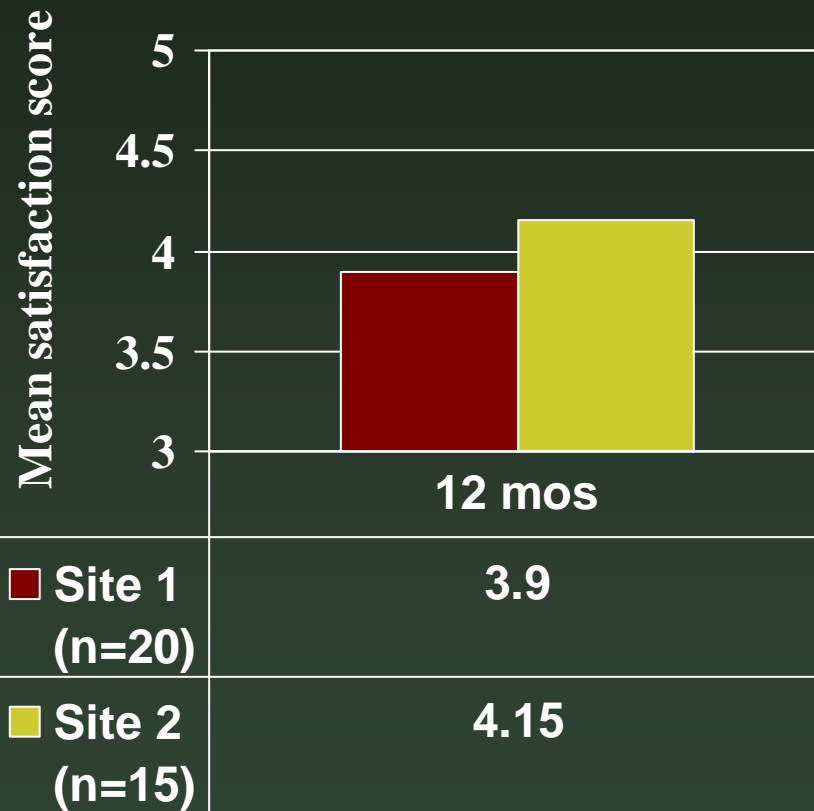
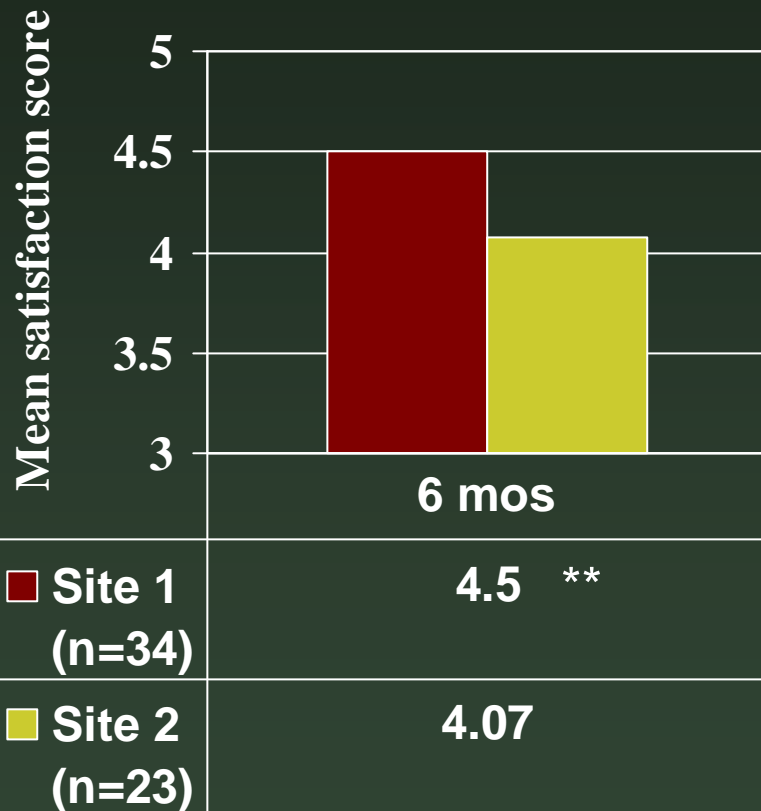
Results: Between site differences on Service use (MSSC total services received)



** $p < .001$

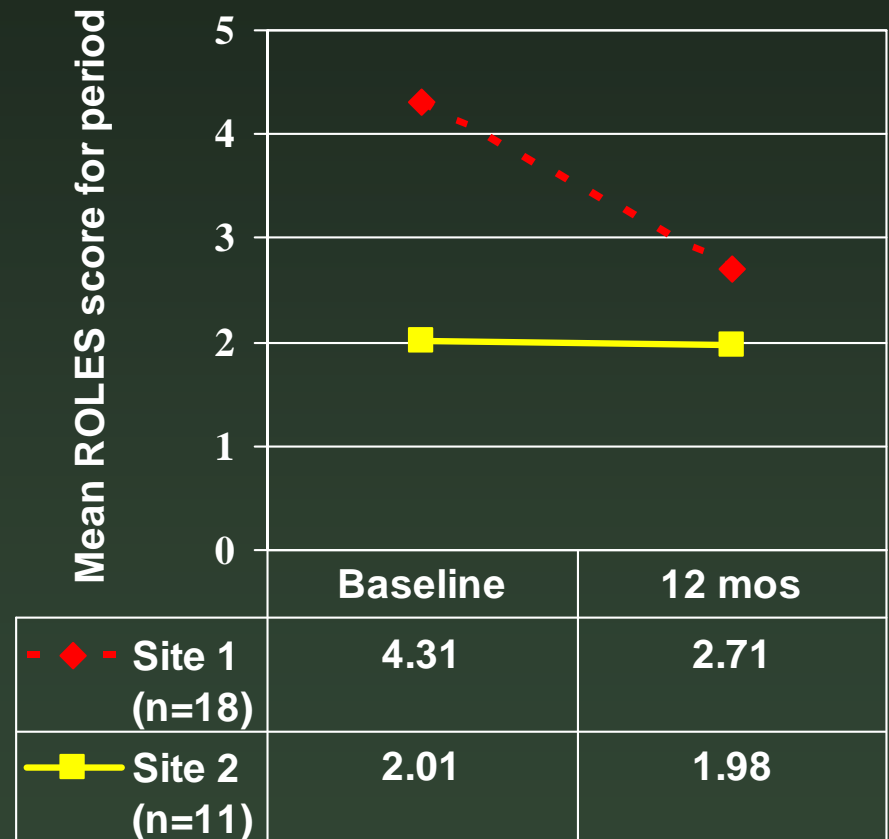
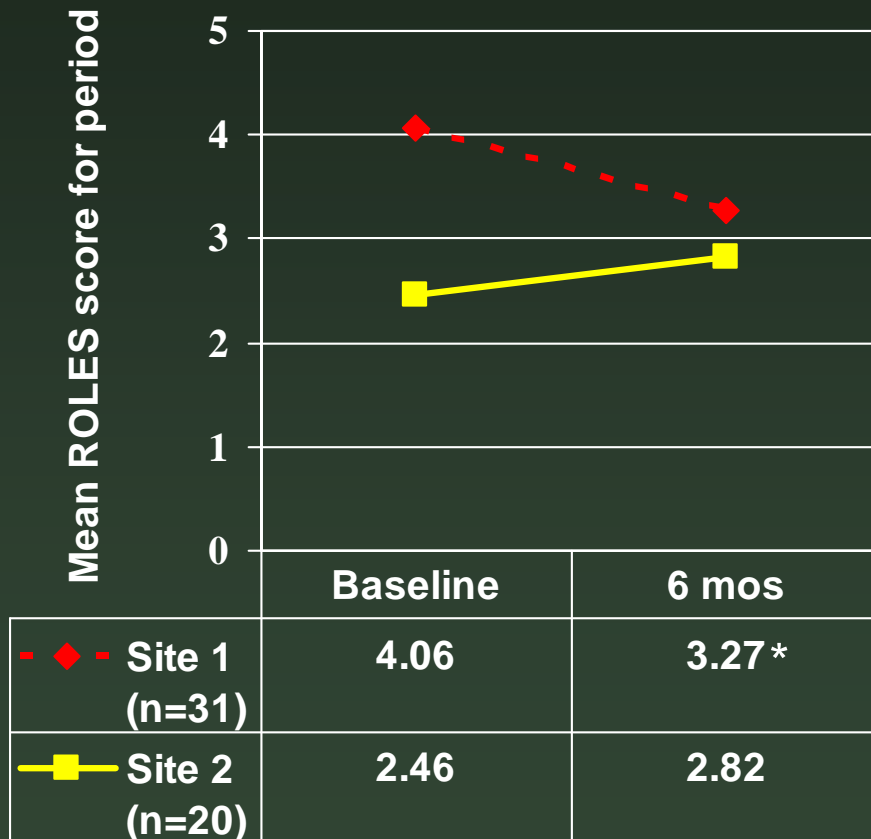
* $p < .05$

Results: Between site differences on Caregiver satisfaction



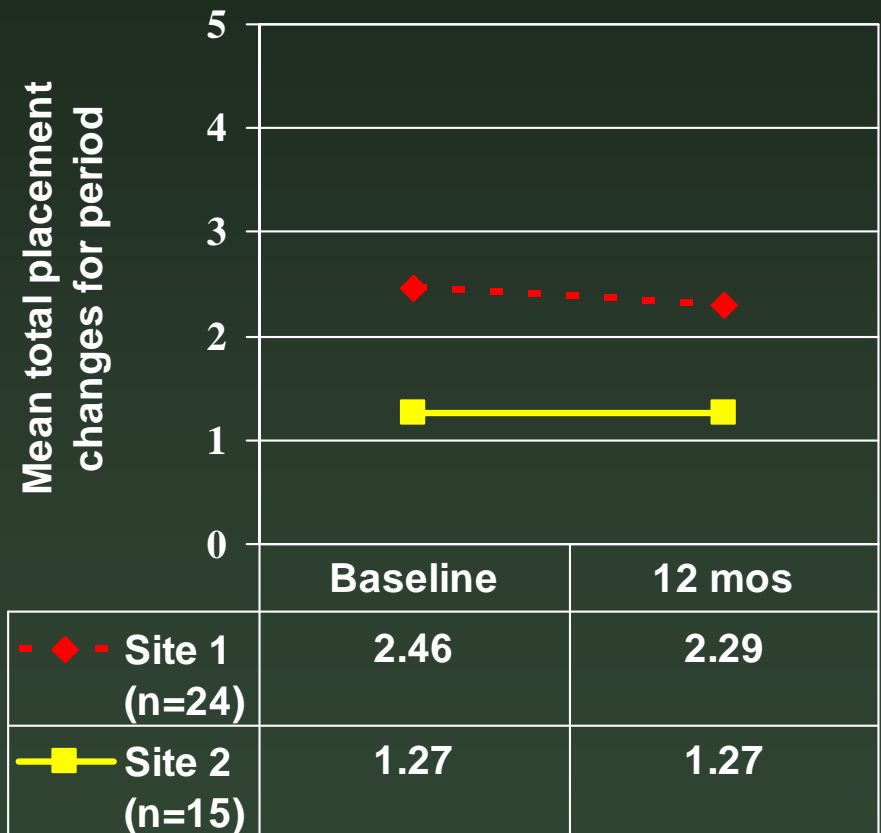
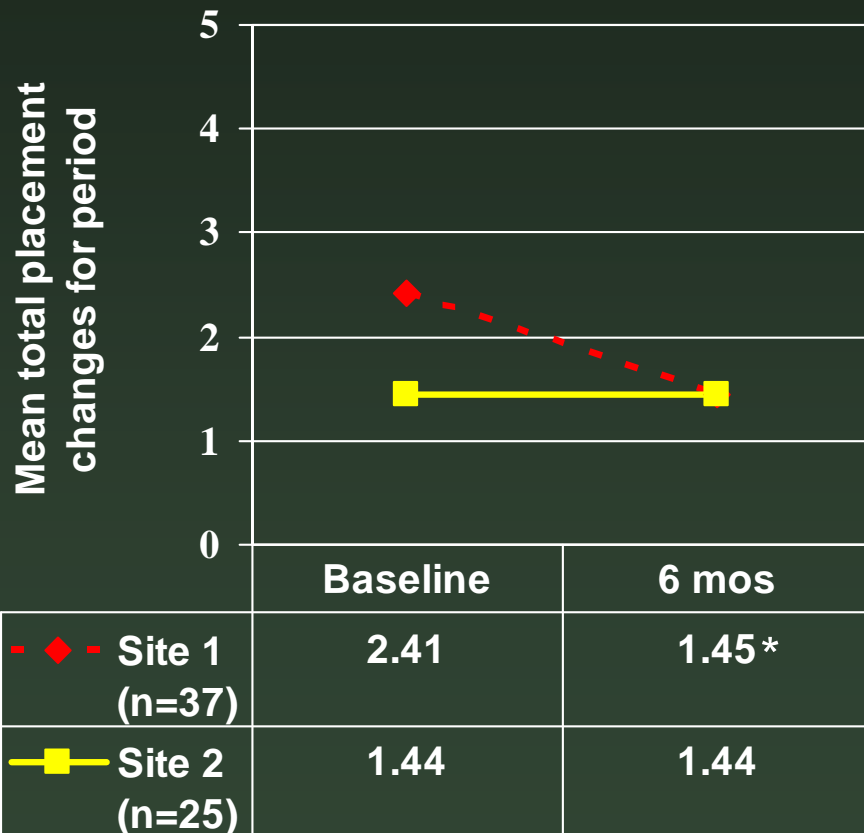
** $p < .01$

Results: Between site differences on Restrictiveness of Living Environment (ROLES)



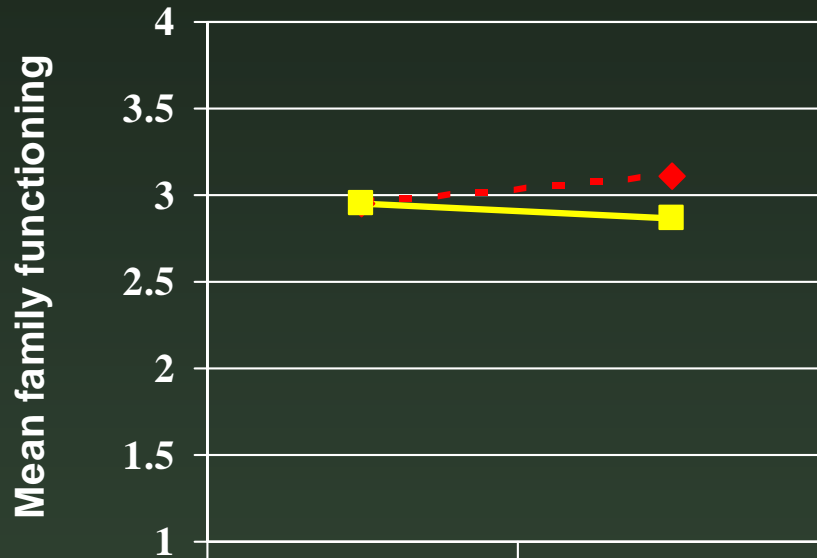
* $p < .05$

Results: Between site differences on Placement changes

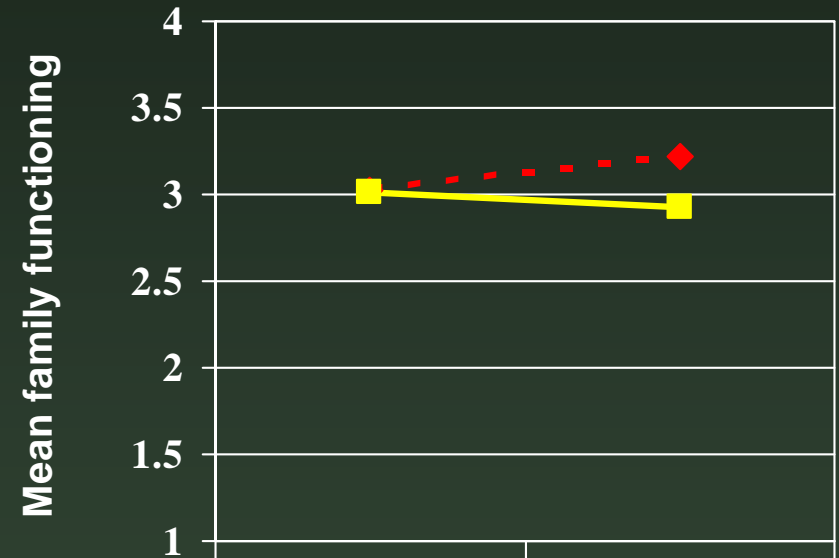


* $p < .05$

Results: Family Assessment Device, general functioning scale



	Baseline	6 mos
- ♦ - Site 1 (n=36)	2.95	3.11 **
- ■ - Site 2 (n=25)	2.95	2.87

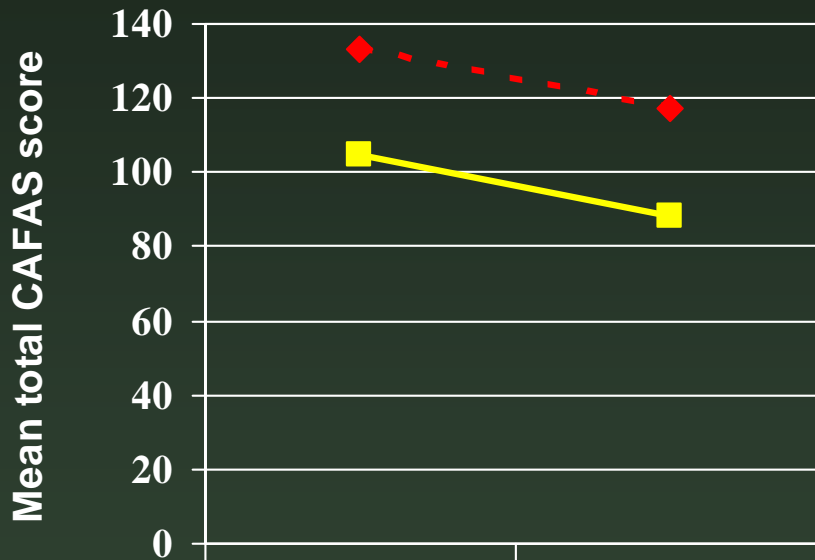


	Baseline	6 mos
- ♦ - Site 1 (n=24)	3.02	3.22 *
- ■ - Site 2 (n=15)	3.01	2.93

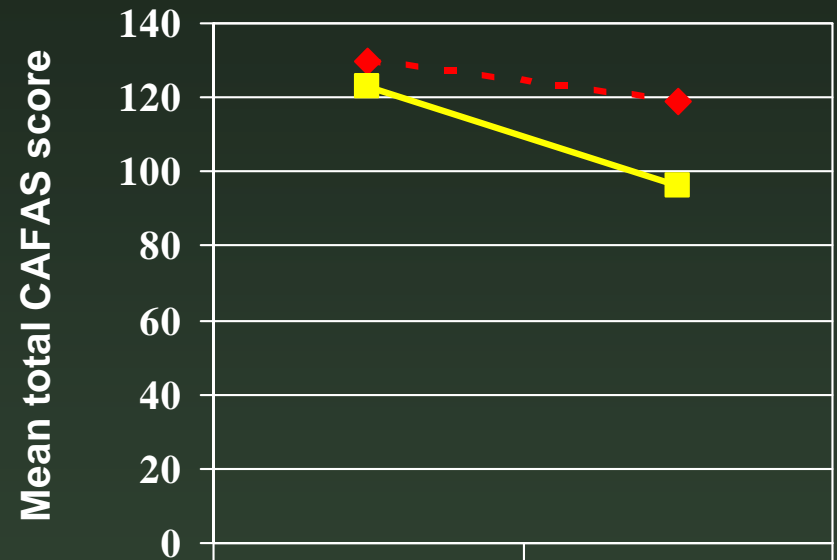
** $p < .05$

* $p < .1$

Results: Between site differences on Child functioning

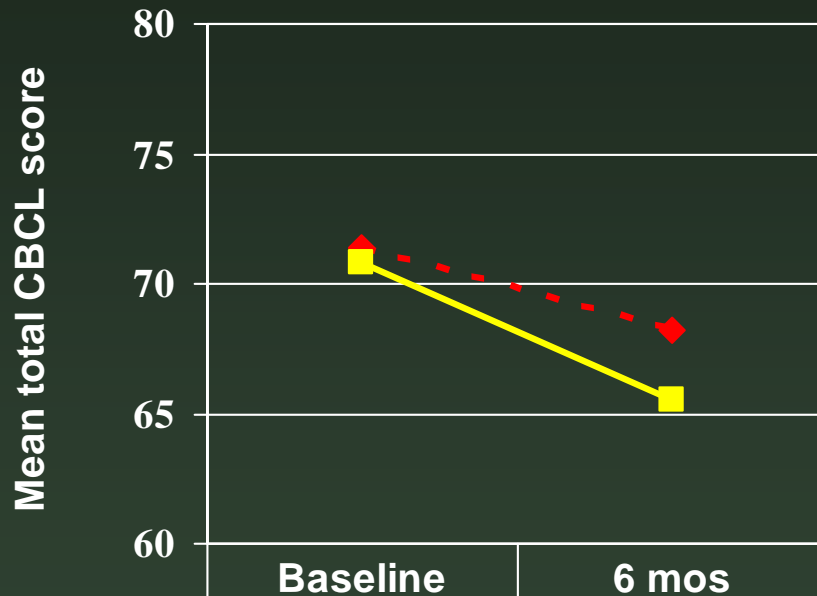


	Baseline	6 mos
- ♦ - Site 1 (n=37)	133	117
- ■ - Site 2 (n=25)	105	88

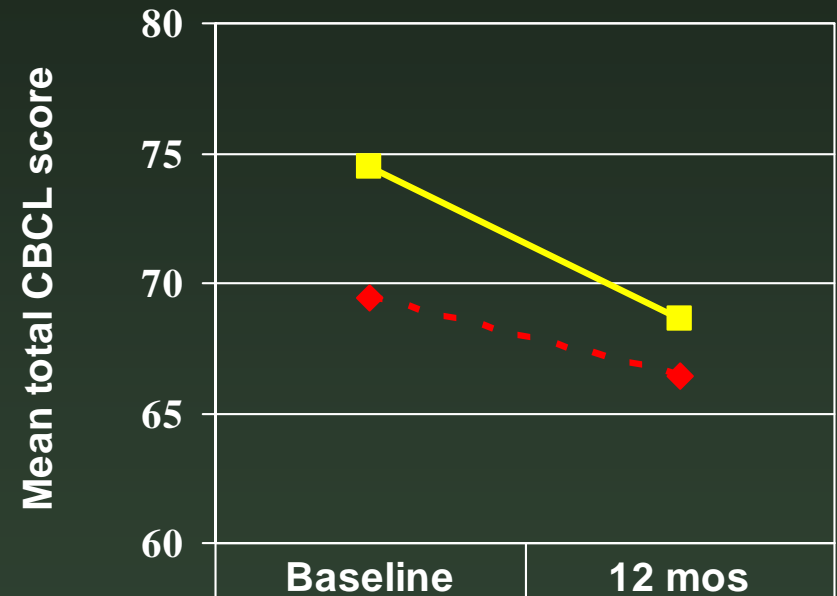


	Baseline	12 mos
- ♦ - Site 1 (n=24)	130	119
- ■ - Site 2 (n=15)	123	96

Results: Between site differences on Child behavior (CBCL/4-18)



- ♦ - Site 1 (n=36)	71.4	68.2
- ■ - Site 2 (n=25)	70.8	65.5



- ♦ - Site 1 (n=24)	69.4	66.4
- ■ - Site 2 (n=15)	74.5	68.6

Summary of between-site differences

◆ Significant differences

- Total services received
- Caregiver satisfaction
- Restrictiveness of living environment
- Placement changes
- Family functioning

◆ All differences in the hypothesized direction

◆ No differences found

- Child functioning
- Child behavior (CBCL or YSR)
- Behavioral strengths
- Caregiver strain
- Family resources
- Youth satisfaction

Results: Association between CG-reported wraparound fidelity and 6-month outcomes

		B	SE	Beta	t	Sig.
After controlling for baseline score	Restrictiveness of Living	-.294	.177	-.196	-1.658*	0.10
	Placement changes	-.005	.071	-.008	-.067	.947
	CAFAS	-0.78	3.32	-0.02	-0.23	0.82
	CBCL	-0.84	0.58	-0.12	-1.46	0.15
	YSR	-1.00	1.12	-0.09	-0.89	0.38
	BERS	1.32	1.05	0.15	1.26	0.21
	Family Functioning	0.05	0.04	0.13	1.24	0.22
	Caregiver Strain	-0.10	0.07	-0.14	-1.48	0.14
	Family Resources	3.27	1.22	0.24	2.68**	0.01
	Outcome variable				<i>r</i>	Sig.
MSSC Total				.08		
Caregiver Satisfaction				.56**	.000	
Youth Satisfaction				.03		

** $p < .01$ * $p < .1$

Summary of other analyses of association between wrap fidelity and outcomes

- ◆ Facilitator WFI scores associated with caregiver satisfaction at 6 months
- ◆ Youth WFI scores associated with youth satisfaction at 6 and 12 months and caregiver satisfaction at 6 months
- ◆ No other significant associations between WFI scores and outcomes in cross-site analyses
- ◆ Several measures showed no relationship with outcome at either wave (6 or 12 mos) for any respondent report
 - CBCL
 - CAFAS
 - BERS
 - Caregiver strain
 - Family functioning

Findings: Fidelity differences between sites

- ◆ No difference in wraparound fidelity according to facilitator report between sites 1 and 2
- ◆ Small (ES = .38) and only marginally significant difference in caregiver-reported fidelity
- ◆ Large (ES = 1.08) and significant difference in youth-reported fidelity
 - However, N of youth surveyed small (Ns = 23, 12)
- ◆ These findings about the greater sensitivity of caregiver and youth reports replicate previous studies

Findings: Outcomes differences between sites

- ◆ Significant between-group differences found for:
 - Total services received
 - Caregiver satisfaction
 - Restrictiveness of living environment
 - Placement changes
 - Family functioning
 - » **All differences in hypothesized direction**
- ◆ No differences found for:
 - Child functioning
 - Child behavior (CBCL or YSR)
 - Behavioral strengths
 - Caregiver strain
 - Family resources
 - Youth satisfaction

Findings: Relationship between fidelity and outcomes

- ◆ Caregiver reported fidelity was found to be related to several 6-month outcomes:
 - Restrictiveness of living ($p < .1$)
 - Family resources
 - Caregiver satisfaction
- ◆ CG-reported fidelity was associated in the hypothesized direction with all 6-months outcomes
- ◆ Overall, however, few significant relationships were found

Limitations

- ◆ Actual differences between sites in fidelity was not large
- ◆ Differences found in between-site outcomes could be related to factors other than differences in wrap fidelity
- ◆ Attrition in outcomes data collection compromises power and leads to difficulties in interpretation in outcomes
- ◆ Current exploratory analytic approach increases family-wise error rate and likelihood of Type I error
- ◆ Limitation to one WFI assessment point may result in imprecise measurement of fidelity
 - Hypothesis of an association between fidelity as assessed at 6 months and outcomes at 12 months may not be realistic
- ◆ Fidelity assessment limited to self-report

Implications

- ◆ WFI-3 interviews may not be very sensitive to between-site differences, especially facilitator interviews
- ◆ Though differences found were small, results suggest sites that adhere more closely to wraparound principles may:
 - Engage families in more services
 - Be more likely to return youth to home-like settings
 - Be better able to keep placement changes to a minimum
 - Achieve greater service satisfaction
 - Possibly help improve family functioning
- ◆ However, as in previous studies, association between quality indicators such as adherence to wraparound principles and more clinical outcomes (e.g., CBCL, CAFAS) found to be inconsistent and weak

Implications

- ◆ Relationship between wraparound fidelity and outcomes at a youth and family level may be less clear than has been found previously
- ◆ Why were such relationships not found in this study?
 - Conforming to the principles of wraparound in coordinating services may not be very important to outcomes
 - Attrition in enrollment in the system of care (and outcomes data collection) may have systematically confounded the relationship
 - Variance in fidelity scores was fairly limited overall, perhaps these particular system of care sites implemented services that are consistently high quality
 - The WFI-3 interviews may not be very sensitive to differences in service processes that are proposed to be relevant to outcomes at an individual family level
 - » Studies that experimentally manipulate staff- or site-level implementation may be better able to determine the impact of wraparound on outcomes

Next steps

◆ Continued data analysis

- Multi-level modeling on study data, including use of imputation for missing data, to reduce family-wise error rate and increase precision

◆ Other steps related to the study findings

- The WFI-3 has been revised to better conform to the specified phases and activities of the wraparound process (see www.rtc.pdx.edu/nwi) and also to increase its variability and sensitivity
- Fidelity measures have been designed and are being pilot tested to augment the use of interviews in assessing adherence to the wraparound model
 - » Team Observation Measure
 - » Document Review Measure

◆ Larger scale, more controlled multi-site studies assessing the relationships between system conditions, wraparound adherence, and outcomes

For more information

◆ Wraparound Evaluation and Research Team (WERT)

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