

# Initial Dissemination and Effectiveness of Multisystemic Treatment in New Zealand: A Benchmarking Study

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## Abstract

Multisystemic Therapy has begun to be disseminated in New Zealand and represent one of the preferred approaches of a recent national interagency plan for severe conduct disorder and antisocial behaviour. Findings from a recent meta-analysis have suggested that dissemination of Multisystemic Therapy may be subject to setting effects (Curtis, Ronan, & Bordin, 2004). This study reflected features previously associated with lower effect sizes. Therefore, one aim of this effectiveness study was to compare findings from the initial dissemination of MST in community mental health settings in New Zealand with findings from US-based randomized controlled trials. Sixty five antisocial youth, along with their families, participated in the study across three different settings. Findings demonstrated significant pre- to post-treatment improvements in most indicators of ultimate (i.e., offending behavior) and instrumental (i.e., youth compliance, family relations) treatment outcomes. Reductions in offending variables continued to improve across follow-up intervals. Further, successful treatment completion rates in this study (98%) were significantly greater compared to the average completion rate found in previous MST studies. Additional benchmarking indicated that effect sizes compared favourably with those seen in previous MST research focused on juvenile offenders. Families generally reported high levels of satisfaction with the program. Most also felt that it met youth and family cultural needs. Issues related to continuing dissemination of MST, including an expanded role for benchmarking, are discussed.

## Introduction

Antisocial behaviour in youth represents a complex and pervasive clinical problem with significant consequences for individuals, peers, families, and communities (e.g., minimal academic participation, increased rates of unemployment, incarceration).

Reviews of empirically supported child and adolescent treatments have identified MST as a treatment program of choice for antisocial behaviour in youth. For example, a recently conducted meta-analysis (see Curtis, Ronan, & Bordin, 2004) found MST to have a very high successful completion rate ( $M = 86\%$ ) and an average between group effect size of .44 for juvenile offenders.

One important finding from the above meta-analysis was that studies classified as "efficacy" had a much higher effect size ( $ES = .81$ ) than those studies classified as "effectiveness" ( $ES = .27$ ). Thus, it is quite possible that efficacy-based RCT successes seen for MST may be different when disseminated in a community context.

### The aims of this research were to:

- Evaluate the effectiveness of MST in assisting families to engage and finish treatment
- Evaluate the effectiveness of MST in terms of ultimate and instrumental outcomes
- Benchmark these findings against RCT findings using a recent benchmarking methodology

## Method

**Participants:** Sixty-five youth and their families who were referred to an MST program. Youth ranged in age from 8.6 to 17.0 years ( $M = 13.83$ ;  $SD = 1.88$ ), and 71% ( $n = 46$ ) were male. The majority ( $n = 45$ ; 69%) of youth lived in the most deprived areas of New Zealand.

### Ultimate Outcomes:

- Frequency and severity of offending behaviour
- Attendance at school/vocational training
- Days in mandated out-of-home placements

### Instrumental Outcomes:

- MST Behavioural Rating Scale
- Parental Supervision Index
- Therapist Adherence Measure – Behaviour Scale

### Analyses:

- Repeated measures ANOVA and Chi Square analyses were conducted to assess pre- to post- and follow-up treatment effects

- Within-group effect sizes for ultimate and instrumental outcomes were calculated in order to conduct Benchmarking Procedure

### Benchmarking (see Hunsley & Lee, 2007):

- Successful Completion Rate – Curtis et al. (2004) was used as a comparison study
- Within-group effects – Bordin et al. (1995) and Henggeler et al. (1992, 1997) were used as comparison studies

## Results

Table 1: Means, Standard Deviations, and F values for Ultimate and Instrumental Outcomes at Pre- and Post Treatment

Outcome Variable	Treatment Period				F <sup>d</sup>
	Pre-treatment		Post-treatment		
	M	SD	M	SD	
<i>Ultimate Outcomes</i>					
Offending					
• Frequency	2.25	3.14	1.52	2.54	3.96*
• Severity	3.27	3.48	2.70	3.45	1.62
OHP's <sup>a</sup> (days)	38.48	54.88	13.50	28.48	16.13***
School Attendance <sup>b,c</sup>	51%	34.29	67%	29.20	14.93***
<i>Instrumental Outcomes</i>					
MST-BRS	5.11	2.13	6.12	2.43	5.34*
PSI	4.74	1.36	6.80	2.69	42.85**
TAM-B	3.48	0.64	3.67	0.62	3.69*

<sup>a</sup>OHP's = Out-of-home Placements, <sup>b</sup>School Attendance reflects percentage of attendances (possible days attended/actual days attended), <sup>c</sup>This was a chi-square analysis, <sup>d</sup>\*  $p < .05$ , \*\*  $p < .01$ , and \*\*\*  $p < .001$ .

Table 2: Benchmarking

	Current Study	Benchmarks					
		Curtis et al., 2004	Bordin et al., 1995	Henggeler et al., 1992	Henggeler et al., 1997		
		MST	IT	MST	US	MST	US
Completion Rate	98%*	76%-100%					
Ultimate Outcome Effect Size:							
• Objective Indicators	$d = .37$						
• Subjective Indicators				$d = .75^b$	$d = .28^b$	$d = .59^b$	$d = .28^b$
Instrumental Outcome Effect Size	$d = .57$	$d = .41$	$d = .15$	$d = .15$	$d = .07$	$d = .04$	$d = -.03$
Overall Effect Size	$d = .47$	$d = .41$	$d = .15$	$d = .45$	$d = .17$	$d = .31$	$d = .12$

\* $p < .05$ , <sup>b</sup>Self-reported and parent-reported ultimate outcome measures (i.e., Self-Report Delinquency Scale, Global Severity Index of the Brief Symptom Inventory Revised Problem Behavior Checklist). Ultimate outcomes similar to those assessed in the current study (e.g., offending frequency and severity) were captured at post-treatment but not at pre-treatment, thus preventing pre-post comparisons and a resultant within-group effect size calculation.

## Key Findings

### Ultimate Outcomes :

- As can be seen in Table 1, the mean number of offences across the sample reduced from 2.25 at pre-treatment, to 1.52 at post-treatment, to 1.22 at 6-month follow-up, to 0.95 at 12-month follow-up. Furthermore the actual proportion of participants who offended decreased from 51% ( $n = 33$ ) at pre-treatment; to 41% ( $n = 26$ ) at post-treatment; to 35% ( $n = 22$ ) at the 6-month follow-up; to 27% ( $n = 17$ ) at 12-month follow-up. Additionally the average severity of offending behaviour reduced across intervals from 3.7 to 2.70 (17%) between pre- and post-treatment, from 2.70 to 2.54 (6%) between post-treatment and 6-month follow-up, and from 2.54 to 1.92 (24%) between 6- and 12-month follow-up.
- School attendance increased over the treatment period, it returned to pre-treatment levels over the follow-up period.
- Out of home placement decreased over the treatment period, and returned to a pre-treatment levels over the follow-up period.

### Instrumental Outcomes:

- Youth demonstrated behavioural improvements across treatment reflecting a trend towards significance (as measured by the TAM-B)
- There was significant improvements in youth and family functioning from pre- to post-treatment (as measured by the MST-BRS). Such improvements were continued throughout the follow-up period.
- Parental monitoring was significantly improved from pre- to post-treatment. These improvements continued to improve across the follow-up period.

### Benchmarking (see Table 2):

- Prior to treatment, the average number of lifetime arrests of the samples ranged from 3.07 ( $SD = 2.07$ ) (Henggeler et al., 1997) to 4.20 ( $SD = 1.40$ ) (Bordin et al., 1995); Henggeler et al. (1992) reported an average of 3.5 arrests ( $SD = 2.80$ ). In comparison, our own study assessed offending in the six months prior to treatment and reported an average of 2.12 ( $SD = 3.12$ ) prior offences.
- Our overall ES was similar to those from other MST conditions and substantially higher than the individual therapy and usual service ES's reported by the comparison studies. While our reported ultimate outcome ES is lower than comparison ES's, it is important to understand that our ultimate outcomes reflect actual documented behaviours, whereas the ultimate outcomes reported by comparison studies were self- or parent-reported.
- Our instrumental ES compares quite favourably with other instrumental ES's. However, given the disparities in measurement methodologies, it is our view that the most accurate comparison ES in two of the three studies is the overall ES (Henggeler et al., 1992, 1997) whereas in the third study, given no pre-post ultimate outcomes, it is the instrumental ES (Bordin et al., 1995).

## Discussion

### Future Directions:

Researchers of MST effectiveness should also broaden their assessment of instrumental outcomes in each of the systems pertinent to the goals of MST. For instance, measures that directly assess involvement with prosocial peers would be informative for future studies. Additionally, broader assessment of other areas that are frequent targets of MST interventions might include measures of performance in school (e.g., grades, achievement levels), and participation in extracurricular activities (e.g., sport teams, church groups, recreation centre activities).

### Conclusions:

Taken together, the findings of this evaluation add to the growing body of evidence that supports MST as an effective treatment for antisocial behaviour in youth. In New Zealand, the results suggest that MST can achieve significant positive outcomes for young people and their families. Accordingly, based on current findings, MST appears to be a valuable addition to existing health, judicial, and social science in New Zealand. As MST is more widely disseminated in New Zealand, significant efforts will be needed to ensure that support for and research on the ongoing dissemination of the treatment model continues, while taking into account the social, cultural, and ethnic factors that are unique to this country.