Mechanisms of Change in Multisystemic Therapy with Delinquent Youth

Introduction

Therapist and contextual mechanisms through which Multisystemic Therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998) achieves reductions in delinquent behavior were examined. Using multiple informants and partial least squares estimation procedures, the causal links between MST adherence and functional outcomes in delinquent youth receiving treatment were evaluated.

Method

Procedures and Participants

Participants were 57 violent and chronic juvenile offenders who had participated in a randomized trial of MST (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997), and represented a subsample of those assigned to the MST condition. The youth were predominantly male (83%), with an average age of 14.6 years. Seventy-seven percent were African American and 23% Caucasian.

Measures

Assessment was completed at pre- and post-treatment. Adherence to MST was assessed via caretaker, youth, and therapist ratings on the 26-item MST Adherence Measure (Henggeler & Borduin, 1992). Quality of family functioning was evaluated using parent and adolescent reports on the Family Assessment Measure (FAM-III; Skinner, Steinhauer, & Santa-Barbara, 1983). Parent monitoring behavior was assessed using parent and youth reports on the Monitoring Index (Brown, Dishion, & Kavanagh, 1991). Affiliation with delinquent peers was assessed using three peer-relevant items (alpha = .70) from caregiver ratings on the Revised Behavior Problem Checklist (RBPC; Quay & Peterson, 1987). Finally, the frequency and severity of delinquent behavior was derived from adolescent self-report on the General Delinquency subscale of the Self-Report Delinquency Scale (SRD; Elliott, Ageton, Huizinga, Knowles, & Canter, 1983; Elliott & Huizinga, 1983), and selected items from caretaker report on the RBPC (alpha = .82).

Data Analytic Strategy

Latent Variable Path Analysis with Partial Least Squares estimation procedures (LVPLS; Falk & Miller, 1991; Lohmoeller & Wold, 1984; Wold, 1975) was used to analyze the model. The root mean square covariance (RMS COV) was used as an overall index of model fit (Falk & Miller, 1992). An RMS COV coefficient above .20 represents a model with inadequate fit, whereas a coefficient of zero represents a perfect fit.

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Because LVPLS makes no assumptions about the distributional characteristics of the variables or sample size, evaluation of paths using traditional tests of significance is considered inappropriate. Thus, paths are deemed "substantial" when the predictor variable contributes at least 1.5 percent of the variance of a predicted variable, according to Falk and Miller (1992).

Results

Caregiver Ratings of Adherence

Figures 1 and 2 present the model outcomes for caregiver ratings of therapist adherence. Paths from adherence to each of the post-treatment constructs represent the effects of therapist adherence on changes in the outcome variables. Similarly, the paths among post-treatment outcome variables reflect how changes in one outcome variable are associated with changes in another. Figure 1 indicates that, in addition to its direct effect, adherence contributed indirectly to reductions in delinquent behavior through its direct effect on family functioning and indirect effect on peer affiliation. This model yielded an RMS COV value of .05, indicating an adequate fit between the model and the data. Figure 2 indicates that MST adherence was directly associated with improvement in parent monitoring and reductions in delinquent behavior over time. In addition, adherence had an indirect effect on delinquent behavior through its direct effect on parent monitoring and indirect effect on peer affiliation. The RMS COV value of .07 suggested an adequate fit to the data.

Youth and Therapist Ratings of Adherence

Table 1 shows the structural coefficients of the paths of theoretical importance for models utilizing youth and therapist ratings of adherence. These models reveal that three of the four paths from adherence to the family/parenting domains were substantial and in the expected direction[1]. In addition, for each of the models, adherence appeared to contribute indirectly to reductions in delinquent behavior through its effects on family/

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[1] Evaluation of the single indicator for the therapist-rated adherence latent variable in the Monitoring Model suggests that this construct appears to represent a *failure to adhere* to MST. Thus, the negative path from adherence to parent monitoring is consistent with our hypothesis.

parent functioning and peer affiliation. The model fit was adequate for each model.

Thus, when youth and therapist reports of adherence were examined in conjunction with caregiver ratings, general support was found for the role of adherence in improving family, peer, and youth functioning — directly and indirectly.

Discussion

Our data supports the assertion that when family relations (i.e., quality of family functioning and parent monitoring) and quality of peer affiliation improve, delinquent behavior decreases. The data provides significant evidence for a core assumption among family systems theorists and researchers: that improvement in the parental subsystem contributes to reductions in problem behavior among disturbed youth (Henggeler & Borduin, 1990; Mann, Borduin, Henggeler, & Blaske, 1990; Miller & Prinz, 1990). However, our study is fairly unique in that it incorporated another important mediating domain not typically addressed in individual- or family-based treatment models; i.e., peer relations. Finally, our results indicated that adherence to MST was pivotal in achieving these outcomes. This study should be considered an initial step towards the goal of discerning the complex mechanisms through which MST contributes to behavior change.

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Figure 1
Impact of MST adherence (caretaker report) on delinquent behavior: Direct and indirect effects through family functioning and delinquent peer affiliation
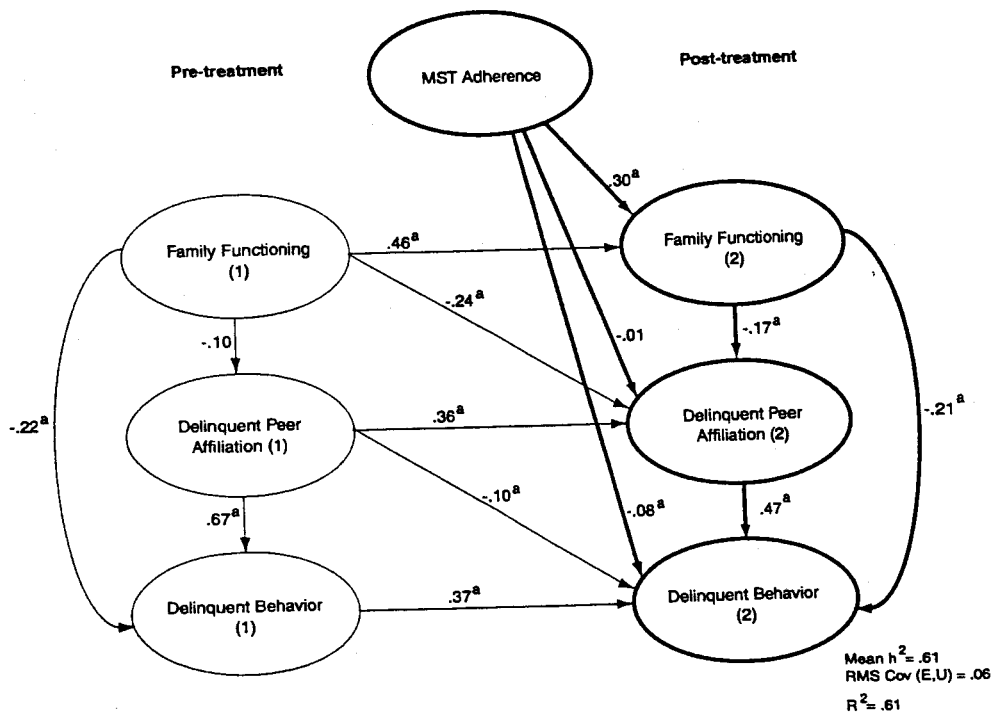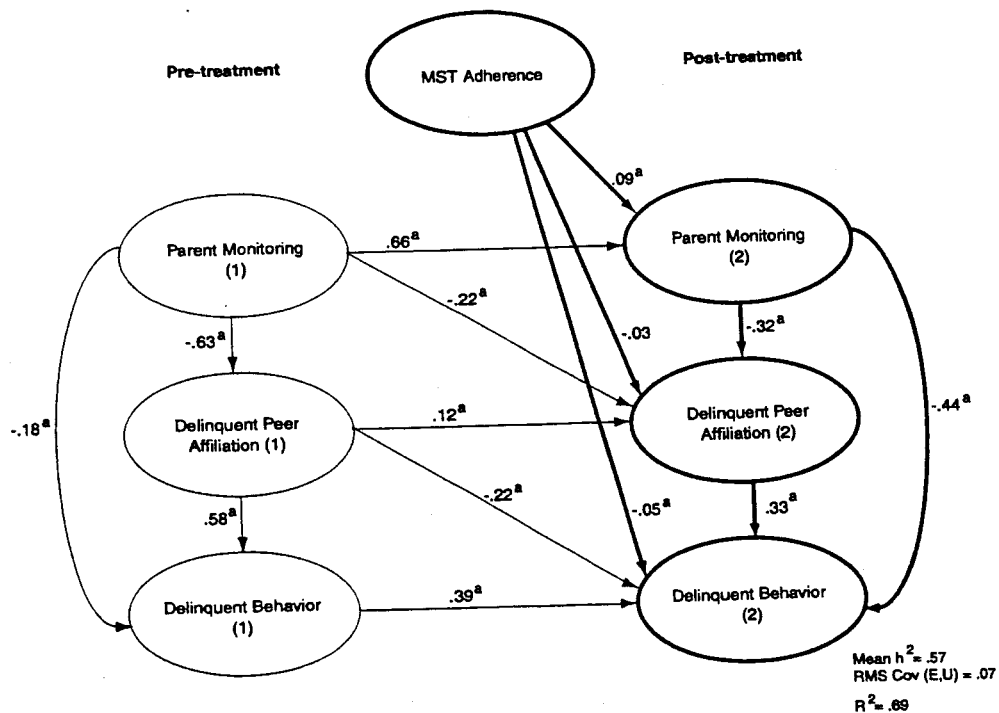

Figure 2
Impact of MST adherence (caretaker report) on delinquent behavior: Direct and indirect effects through parent monitoring and delinquent peer affiliation

Thick lines represent paths of central importance in the model—direct and indirect effects of MST process on delinquent behavior.
"a" indicates a predicted path that accounted for substantial variance (1.5%) based on Falk & Miller's (1992) recommendations.

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Table 1
Structural Coefficients and Summary Indices for Models Utilizing Youth and Therapist Reports of MST Adherence

Paths	Family Functioning		Monitoring	
	Youth (n = 48)	Therapist (n = 57)	Youth (n = 48)	Therapist (n = 57)
Structural Coefficients				
Adherence to Family/Monitoring	-.06	.27[a]	.14[a]	-.27[ab]
Adherence to Peers	-.29[a]	-.07	-.28[a]	.11
Adherence to Delinquency	.08	.00	.11[ac]	-.14
Family/Monitoring to Peers	-.18[a]	-.15[a]	-.22[a]	-.26[a]
Family/Monitoring to Delinquency	-.21[a]	-.25[a]	-.42[a]	-.51[a]
Peers to Delinquency	.46[a]	.46[a]	.34[a]	.35[a]
Summary Indices				
RMS COV (E, U)	.05	.06	.06	.06
Mean h²	.66	.63	.67	.60
R²	.65	.61	.72	.70

[a] indicates a predicted path that accounted for substantial variance (1.5%), based on Falk & Millers (1992) recommendations.
[b] indicates that the Adherence construct in this model was represented by a single, negative indicator — nonproductive sessions.
[c] indicates the relationship was in a direction counter to prediction.