Effectiveness of MST with Juvenile Sex Offenders: 1-year Outcomes

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Study Stakeholders
This NIMH-funded randomized clinical trial represented a collaboration between the investigators and
• Cook County State’s Attorney’s Office
• Circuit Court of Cook County
• Juvenile Probation
• Kids Hope United

Study Design
The principal aim of this study was to examine treatment effectiveness of MST compared to
treatment as usual for juvenile sex offenders (TAU-JSO).
Youth were randomized to MST (n = 67) or TAU-JSO (n = 60).

Eligibility Criteria
• Youth adjudicated or diverted for serious sexual offense between January 2004 – June 2006
• Youth ordered to community-based sex offender-specific treatment
• Age 11 to 17 years
• Caregiver resided in the county
• Youth and caregivers speak English or Spanish
• Limited exclusion criteria (severe MR, psychosis)

Recruitment and Retention
• 194 youth were referred by the State’s Attorney
• 178 youth were eligible (92% eligibility rate)
• 131 youth and families recruited (74% recruitment rate): 2 provided no data, 2 removed due to
degenerative brain disorder
• 127 participants retained for intent-to-treat analyses
  • 67 (53%) MST
  • 60 (47%) TAU-JSO
### Methodology
Research assessments were conducted at baseline and 6, 12, 18, and 24-months post-baseline.
Current analyses are based on data from baseline through 12-months post-baseline.

### Interventions: MST
MST is a caregiver-focused, home-based intervention originally designed to target deep-end juvenile delinquents. Therapists use well-validated treatment strategies derived from pragmatic family therapies, behavioral parent training, and cognitive-behavioral therapy to address interpersonal, familial, and extrafamilial factors associated with youth antisocial behavior.

Interventions: MST
MST for juvenile sex offenders maintained this individualized focus on risk factors associated with juvenile offending but enhanced standard MST by addressing:
- Safety planning (to reduce access to victims)
- Youth and caregiver denial of sexual offense
- Age-appropriate social experiences with peers

Intervention: MST
- MST was provided by 1 doctoral and 4 master’s level clinicians under the supervision of a doctoral level clinician and in consultation with Drs. Borduin and Letourneau
- Therapist fidelity scores fell below mean scores from of a 45-site MST transportability study and above mean scores from clinicians not providing MST
- The treatment completion rate was 91%, with an average duration of 7 months

Interventions: TAU-JSO
TAU-JSO was a youth-focused, group-based intervention that addressed deviant sexual arousal, victim empathy, cognitive distortions, relapse prevention, and family counseling.
Key treatment objectives included youth acceptance of responsibility, breaking the cycle of offending by increasing awareness of triggers, identification and exercise of internal and external behavioral controls, and development of a relapse-prevention plan.

Interventions: TAU-JSO
- TAU-JSO was provided by 7 specially trained probation officers (4 bachelor’s level, 3 master’s level) under the supervision of a master’s level probation officer.
- Treatment fidelity was not formally monitored but caregiver satisfaction ratings indicated high satisfaction with services.
- The average duration of treatment was 11 months for youth on probation and 8 months for diverted youth.
- 27% of youth remained in treatment at 12 months post-baseline.
Youth Demographics

Mean Age at Baseline 15 years (SD = 1.7)
Gender 124 boys; 3 girls
Race
• Black 54%
• White 44%
• Other 2%
Hispanic Ethnicity 31%

Index Sexual Offenses

Three-quarters of index charges were felony sexual offenses
44 (35%) participants had prior non-sexual charges

Outcome Measures

Problem Sexual Behavior
• Adolescent Sexual Behavior Inventory (ASBI) Risk/Misuse and Deviant Sexual Interests scales (youth and caregiver reports)
Antisocial Behavior
• Self Report of Delinquency (SRD) General Delinquency Scale (youth report)
• Personal Experiences Inventory (PEI) Marijuana and Alcohol Scale (youth report)

Outcome Measures

Mental Health Symptoms
• CBCL Externalizing & Internalizing T-scores (youth and caregiver reports)
Out-of-home placements
• Monthly caregiver report of youth placement in detention (detained, jailed, incarcerated), residential treatment (short- or long-term mental health, substance use, or sex offender treatment settings), or formal foster care settings

Analytic Strategy

Two-level (time nested within youth) Mixed-Effects Regression Models (MRM) were used to test study hypotheses

Results: Problem Sexual Behaviors

MRMs revealed significant negative linear effects on all four ASBI scales (ps < .001), indicating scores for youth in the MST condition decreased from baseline to 12 months post-baseline
The condition × linear effects were positive and significant for all scales (ps < .05), indicating that MST youth evidenced significantly greater reductions in problem sexual behaviors over time, relative to TAU-JSO counterparts
Results: Antisocial Behavior
MRMs revealed significant negative linear effects on the SRD ($p < .001$) and PEI ($p < .01$), indicating reduced delinquent behavior and substance use over time for youth in the MST condition.
The condition $\times$ linear effects were positive and significant in both models ($ps < .05$). In contrast to TAU-JSO youth, MST youth reported significantly greater reductions in delinquent behavior and substance use from baseline to 12-months post-baseline. TAU-JSO youth reported a significant increase in substance use over time.

Results: Mental Health Symptoms
MRMs yielded a significant negative linear effect ($p < .01$) and a significant positive condition $\times$ linear effect ($p < .05$) on the youth-reported Externalizing scale. This indicates that the MST youth reported a significantly greater reduction in externalizing symptoms over time compared to their TAU-JSO counterparts.
MST and TAU-JSO groups evidenced similar (and significant) reductions on the remaining three CBCL outcomes.

Results: Out-of-Home Placements
MRM indicated a significant condition $\times$ linear effect ($p < .001$) for the percentages of youth in out-of-home placements throughout the monthly assessments.
The probability that an MST youth was in an out-of-home placement during the past 30 days remained approximately 7% through 12-months post-baseline.
The probability that a TAU-JSO youth was in an out-of-home placement during the past 30 days increased from 8% to 17% during the course of follow-up.
Discussion

MST was more effective than TAU-JSO in decreasing deviant sexual interest/risk behaviors, delinquent behaviors and substance use, externalizing symptoms, and costly out-of-home placements.

Mechanisms of Change

The MST theory of change posits that adolescent antisocial behavior is driven by the interplay of risk factors associated with the multiple systems in which youth are embedded. In particular, MST focuses on empowering caregivers to gain the resources and skills needed to more effectively parent their children. As caregiver effectiveness increases, therapists guide caregiver efforts to, for example, disengage their children from deviant peers and enhance academic performance.

Analytic Strategy

Tests of mediation were conducted for two types of outcomes:

- Sexual Deviance and Risk Taking
  - ASBI Composite scales (youth and caregiver reports)
- Antisocial Behavior
  - SRD General Delinquency scale (youth report)
  - PEI substance use (youth report)
  - Externalizing T-score (youth report)

Results: Does treatment affect the mediator process (A Path)?

A series of analyses was conducted to evaluate the treatment effect on the putative mediator variables. Results from these models revealed significant treatment effects for two of the mediator variables:

- bad friends scale (combines youth & cg report)
- lax discipline scale (youth report)

Hypothesized Mediators

Putative mediators included scales assessing parenting practices & delinquent peer association:

- Parenting
  - Pittsburgh Youth Study (PYS) questionnaire scales assessing
    • Lax Discipline (youth and caregiver reports)
    • Supervision (youth and caregiver reports)
    • Communication (youth and caregiver reports)
- Peer Relations
  - PYS scales assessing
    • Bad Friends (combines youth and caregiver reported items)
    • Peer Delinquency (youth report)
    • Peer Conventional Activities (youth report)
Results: Does treatment affect the mediator process (A Path)?

Significant treatment effects were not detected on the other putative mediators ($p > .05$); thus, they were eliminated from consideration as potential mediators.

Results: Does the mediator process affect the outcome process (B Path)?

Next, analyses explored the effect of the bad friends mediator slope on the outcome slopes. Results revealed significant mediator slope effects of bad friends on the SRD, PEI, and ASBI composite (youth report) scales. These models indicated that the rate of change on the bad friends scale was significantly associated with improvement on these three outcome scales from baseline to 12 months post-baseline.

Results: Does the mediator process affect the outcome process (B Path)?

Next, analyses explored the effect of the lax discipline mediator slope on the outcome slopes. Results showed significant mediator slope effects on the Externalizing, SRD, and ASBI composite (youth and caregiver report) scales. These models indicated that the rate of change on the lax discipline scale was significantly associated with improvement on these outcome scales from baseline to 12 months post-baseline.

Results: Testing Bad Friends and Lax Discipline as Mediators of MST Effects on Outcomes

Mediation is implied when there is a significant treatment effect on the mediator process (A Path) combined with a significant effect of the mediator process on the outcome process (B Path). Results from products of coefficients tests indicated that the bad friends and lax discipline scales significantly mediated the MST outcomes for the SRD, PEI, and ASBI composite scales.

Discussion

Bad friends mediated MST effects on offender delinquency, substance use, and youth-reported problem sexual behaviors.

Lax discipline mediated MST effects on delinquency and both youth and caregiver-report problem sexual behaviors.

Discussion

Together, these findings suggest that MST empowered caregivers to

- Better identify friends that were having a negative influence on their adolescents;
- Advise them to stop associating with such friends;
- Follow through on planned discipline.

These behaviors, in turn, led to decreased antisocial behavior and problem sexual behaviors on the part of the adolescent sexual offenders.
Discussion

Assuming that this conceptualization of the mediational processes is at least partially correct, these findings support a central emphasis of MST – the empowerment of caregivers to provide more consistent discipline to their delinquent youth and to attempt to extract these youth from their deviant peers.

Conclusions

This study presents the first randomized effectiveness trial with juvenile sex offenders and results have important clinical implications. Consistent with previous MST efficacy research, results support the capacity of MST to achieve favorable outcomes pertaining to problem sexual behavior and antisocial behavior.

Conclusions

Furthermore, the findings suggest that group-based interventions that increase youth association with deviant peers while ignoring caregiver discipline strategies are not likely to be effective.

Conclusions

The findings that lax discipline and bad friends mediated problem sexual and antisocial behavior outcomes supports the contention that the determinants of general antisocial behavior have much in common with the determinants of sexual offending behaviors. Thus, treatments that are effective for delinquency also hold promise in treating adolescent sexual offending.

Future Directions

Results through 2 years post-baseline will be examined. Cost analyses are underway. We hope to extend follow-up to permit examination of treatment effects on sexual and general recidivism rates.

Sexual recidivism was not examined due to low short-term recidivism rates, yet, these favorable 1-year findings for MST are consistent with long-term reductions in recidivism observed in two prior MST efficacy studies with juvenile sex offenders.

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