

Evidence-Based Psychotherapies for Children and Adolescents

Edited by

ALAN E. KAZDIN
JOHN R. WEISZ



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Multisystemic Treatment of Serious Clinical Problems

SCOTT W. HENGGELER AND TERRY LEE

OVERVIEW

Clinical Problem and Population Addressed

Multisystemic therapy (MST) is an intensive family- and community-based treatment for adolescent youth who engage in severe willful misconduct that places them at risk for out-of-home placement and their families. "Willful misconduct" is a term with broad meaning, and in a corresponding fashion, MST has been applied to a wide range of youth presenting serious clinical problems including chronic and violent juvenile offenders, substance-abusing juvenile offenders, adolescent sexual offenders, youth in psychiatric crisis (i.e., homicidal, suicidal, and psychotic), and maltreating families. Such youth present significant personal and societal (e.g., crime victimization) costs, and due to their high rates of expensive out-of-home placements, they consume a grossly disproportionate share of the nation's mental health treatment resources. Across these clinical populations, the overarching goals of MST programs are to decrease rates of antisocial behavior, improve functioning (e.g., family relations and school performance), and reduce use of out-of-home placements (e.g., incarceration and residential treatment).

Theoretical Framework

With roots in social ecological (Bronfenbrenner, 1979) and family systems (Haley, 1976; Minuchin, 1974) theories, MST views youths as embedded within multiple interconnected systems, including the nuclear family, extended family, neighborhood, school, peer culture, and community. The juvenile justice, child welfare, and mental health systems may also be involved. In assessing the major determinants of identified problems, the clinician considers the reciprocal and bidirectional nature of the influences between a youth and his or her family and social network as well as the indirect effects of more distal influences (e.g., parental workplace). For a treatment to be effective, the risk factors

cians provide intensive services with a commitment to overcome barriers to service access. Thus, MST clinicians have a relatively low caseload to facilitate the implementation of quality multifaceted interventions and to meet with family members and multiple agency representatives at consumer-friendly times and in consumer-friendly settings. To contain costs and for reasons of clinical efficiency, the average duration of treatment is about 3 to 5 months.

Rigorous Quality Assurance System

Rigorous quality assurance is required to promote the level of treatment fidelity needed to achieve desired clinical outcomes. Hence, intensive quality assurance protocols are built into all MST programs, which differentiates MST from most mental health practices. MST therapist education starts with a 5-day overview of the MST treatment model. Therapists participate in weekly group supervision with their on-site MST-trained supervisor, and weekly consultation is provided with an off-site expert MST consultant. Quarterly on-site consultant booster training is provided to address targeted training needs of the entire MST team. In addition, caregiver ratings of therapist adherence to MST principles are monitored monthly through an Internet-based system. Together, these quality assurance components aim to enhance clinical outcomes through promoting treatment fidelity. Empirical validation of several key aspects of the MST quality assurance system is described in more detail subsequently.

CHARACTERISTICS OF THE TREATMENT PROGRAM

Treatment Principles

The complexity of willful misconduct and related problems requires considerable flexibility in the design and delivery of interventions. As such, MST is operationalized through adherence to nine core treatment principles that guide treatment planning (see Table 17.1) and implementation.

Treatment Format

MST works with youth, family members, and all pertinent systems in which the youth is involved including peers, school, extended family, family supports, the neighborhood, community groups, and other involved agencies such as child welfare or juvenile justice. In the early phase of treatment, specific measurable overarching goals and functionally meaningful outcomes are set in collaboration with the family and, as appropriate, other stakeholders. MST overarching goals are broken down into measurable weekly goals. Any person or agency that may influence attainment of these goals is engaged by the therapist and caregiver with specific interventions designed to encourage actions that will facilitate goal achievement.

Strong engagement with the family is essential for successful outcomes, and the MST treatment model incorporates strategies to encourage cooperative partnering. Families are treated with respect and are assumed to be doing the best they can. Other youth-associated systems are also viewed as vital partners in the treatment process. The MST team focuses on system strengths (Principle 2) and is responsive to families' needs. Barriers to engagement are continuously evaluated and addressed (Principles 1 and 8).

across these systems must be identified and addressed. Hence, the "ecological validity" of assessing and treating youth in the natural environment is emphasized under the assumption that favorable outcomes are more likely to be generalized and sustained when skills are practiced and learned where the youth and family actually live.

Conceptual Assumptions

Several assumptions are critical to the design and implementation of MST interventions.

Multidetermined Nature of Serious Clinical Problems

As suggested from the social ecological theoretical model and supported by decades of correlational and longitudinal research in the area of youth antisocial behavior, such behavior is multidetermined from the reciprocal interplay of individual, family, peer, school, and community factors. As such, MST interventions assess and address these potential risk factors in a comprehensive, yet individualized, fashion.

Caregivers Are Key to Long-Term Outcomes

The caregiver is viewed as the key to long-term positive outcomes for the youth. Ideally the caregiver is a parent, but another adult (e.g., grandparent, aunt, uncle, or sibling) with an enduring emotional tie to the youth can serve in this role. Often, other caring adults from the youth's ecology are also identified to provide social support as well (Werner & Smith, 2001). Professional supports are introduced only after exhausting resources in the family's natural ecology. Paid professionals may genuinely care but invariably leave the youth's life for reasons such as professional advancement or termination of treatment. Thus, by focusing clinical attention on developing the caregiver's ability to parent effectively and strengthening the family's indigenous support system, treatment gains are more likely to be maintained.

Integration of Evidence-Based Practices

MST incorporates empirically based treatments insofar as they exist. Thus, MST programs include cognitive-behavioral approaches, the behavior therapies, behavioral parent training, pragmatic family therapies, and certain pharmacological interventions that have a reasonable evidence base (U.S. Department of Health and Human Services [DHHS], 1999). As suggested by other assumptions noted in this section, however, these treatments are delivered in a considerably different context than usual. For example, consistent with the view that the caregiver is key to long-term outcomes, a MST cognitive-behavioral intervention would ideally be delivered by the caregiver under the consultation of the therapist. Similarly, as noted next, the therapist would also be accountable for removing barriers to service access.

Intensive Services That Overcome Barriers to Service Access

In light of the serious clinical problems presented by youth and their families in MST programs (i.e., referral criteria include high risk of out-of-home placement) and the high dropout rates of such youth and families in traditional mental health programs, clini-

TABLE 17.1. MST Treatment Principles

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1. *Finding the fit*: The primary purpose of assessment is to understand the "fit" between identified problems and their broader systemic context and how identified problems "make sense" in the context of the youth's social ecology.
 2. *Positive and strength focused*: Therapeutic contacts emphasize the positive and use systemic strengths as levers for positive change. Focusing on family strengths has numerous advantages, such as decreasing negative affect, building feelings of hope, identifying protective factors, decreasing frustration by emphasizing problem solving, and enhancing caregivers' confidence.
 3. *Increasing responsibility*: Interventions are designed to promote responsible behavior and decrease irresponsible behavior among family members. The emphasis on enhancing responsible behavior is contrasted with the usual pathology focus of mental health providers and kindles hope for change.
 4. *Present focused, action oriented and well defined*: Interventions are present focused and action oriented, targeting specific and well-defined problems. Such interventions enable treatment participants to track the progress of treatment and provide clear criteria to measure success. Family members are expected to work actively toward goals by focusing on present-oriented solutions (vs. gaining insight from or focusing on the past). Clear goals also delineate criteria for treatment termination.
 5. *Targeting sequences*: Interventions target sequences of behavior within and between multiple systems that maintain the identified problems. Treatment is aimed at changing family interactions in ways that promote responsible behavior and broaden family links with indigenous prosocial support systems.
 6. *Developmentally appropriate*: Interventions are developmentally appropriate and fit the developmental needs of the youth. A developmental emphasis stresses building youth competencies in peer relations and acquiring academic and vocational skills that will promote a successful transition to adulthood.
 7. *Continuous effort*: Interventions are designed to require daily or weekly effort by family members, presenting youth and family frequent opportunities to demonstrate their commitment. Advantages of intensive and multifaceted efforts to change include more rapid problem resolution, earlier identification of treatment nonadherence, continuous evaluation of outcomes, more frequent corrective interventions, more opportunities for family members to experience success, and family empowerment as members orchestrate their own changes.
 8. *Evaluation and accountability*: Intervention effectiveness is evaluated continuously from multiple perspectives, with MST team members assuming accountability for overcoming barriers to successful outcomes. MST does not label families as resistant, not ready for change, or unmotivated. This approach avoids blaming the family and places the responsibility for positive treatment outcomes on the MST team.
 9. *Generalization*: Interventions are designed to promote treatment generalization and long-term maintenance of therapeutic change by empowering caregivers to address family members' needs across multiple systemic contexts. The caregiver is viewed as the key to long-term success. Family members make most of the changes, with MST therapists acting as consultants, advisers, and advocates.
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Model of Service Delivery

MST is provided via a home-based model of service delivery, and the use of such a model has been crucial to the high engagement and low dropout rates obtained in recent outcome studies (e.g., Henggeler, Pickrel, Brondino, & Crouch, 1996). While the particular treatment used in home-based programs can vary, critical service delivery characteristics are shared (Nelson & Landsman, 1992) and include the following:

1. *Low caseloads* to allow intensive services: A MST team consists of three to five full-time therapists, a halftime supervisor per team, and appropriate organizational support. Each therapist works with four to five families at a time. The therapist is the team's main point of contact for the youth, family, and all involved agencies and systems.
2. *Delivery of services in community settings* (e.g., home, school, and neighborhood center) to overcome barriers to service access, facilitate family engagement in the clinical process, and provide more valid assessment and outcome data.
3. *Time-limited duration of treatment* (3–5 months) to promote efficiency, self-sufficiency, and cost-effectiveness.
4. *24-hour/day and 7-day/week availability of therapists* to provide services when needed and to respond to crises. MST is proactive, and plans are developed to prevent or mitigate crises. Crisis response can be taxing, but most families are appreciative, and a supportive response can enhance engagement. Moreover, the capacity to respond to crises is critical to achieving a primary goal of MST programs—preventing out-of-home placements.

Skills and Achievements Emphasized in Treatment

Interventions are designed to be consistent with the nine core principles of MST, to be empirically based whenever possible, and to emphasize behavior change in the youth's natural environment that empowers caregivers and youth. A more extensive description of the range of problems addressed and clinical procedures used in MST can be found in the MST treatment manual (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998).

Family Interventions

Engagement and assessment usually begin with meeting the family and youth to explain MST philosophies and principles. In the MST model, the therapist is more closely aligned with the caregivers, relative to the youth. Allying and engaging with caregivers is a critical component of the initial phase of treatment. Youth are also involved in the intake process, but as might be expected, some are reluctant to engage in a process that usually aims to place them under increased parental control. Each household member's perspective of the presenting problem and goals for treatment is solicited. A genogram is created, and information is obtained about the family, other people living in the home, extended family members, family supports, and the quality of important relationships. Each system is assessed for strengths and weaknesses, and values of the family are incorporated into the treatment plan with measurable goals. Guided by information obtained from the initial family meeting and other referring agencies, the MST therapist meets with individuals representing the interests of other organizations to gain their perspectives. Based on these initial data, hypotheses are generated concerning the factors that might facilitate goal achievement, serve as barriers to progress, and maintain negative behaviors. Hypotheses are testable, and hypothesis testing establishes the basis for interventions.

The MST therapist and treatment team must be well informed about research pertaining to family patterns and effective interventions relevant to youth antisocial behavior and other clinical problems. Family risk factors for antisocial behavior, for example, include low caregiver monitoring, low warmth, ineffective discipline, high conflict, caregiver psychopathology, and family criminal behavior, whereas protective factors include

secure attachment to caregivers, supportive family environment, and marital harmony. Thus, the therapist must be capable of assessing the affective bond between caregiver and youth, parental control strategies on a permissive to restrictive continuum, and instrumental aspects of parenting such as structure and consistency. These family processes are assessed with direct questioning, observation, and response to homework assignments. Subsequent interventions aim to optimize strengths that already exist and develop competencies in critical areas that are lacking.

The MST therapist chooses specific parenting interventions with the assistance of the MST supervisor and expert consultant. The assessment of the fit of the particular problem to be addressed and the process of the implementation is pivotal to the selection. In a supportive and nonblaming manner, MST therapists praise positive aspects of parenting (Principle 2), while diplomatically identifying current parenting practices that might be changed for the benefit of all. For example, in a situation in which increased disciplinary structure is needed, interventions would likely occur in three stages. First, the caregivers learn to develop clearly defined rules for observable youth behavior. Second, the caregivers establish rewards and consequences that are closely, consistently, and naturally connected to youth behavior. Third, caregivers learn to monitor their child's compliance with the rules, including when the youth is not directly observable by the caregiver. In so doing, guidelines specified by Munger (1993, 1998) are often followed. Rules are developed to clearly delineate desired and undesired behaviors and are related to the goals of treatment. Expected behaviors are clearly defined and specified so others involved with the youth can determine whether the behavior has occurred. The rules should be posted in a public place and reinforced 100% of the time, in an emotionally neutral manner. Praise should accompany the dispensation of rewards. When two caregivers are involved, rules should be mutually agreed upon and enforced by both caregivers. Consequences need to be meaningful and appropriate to the specific youth. That is, rewards need to be items or activities that the particular youth is motivated to earn, while negative consequences should be disliked. Basic privileges, such as food, clothing, shelter, and love, are to be provided unconditionally and are not withheld or varied in their availability to the youth. Activities that promote prosocial development (e.g., sports teams) are considered growth activities and typically should not be withheld. Because of changes in the system or understanding of the fit, components of the behavior plan, such as the target behaviors, rewards, and consequences need to be continuously assessed and modified when appropriate.

Importantly, frequent barriers to the success of these family interventions pertain to caregiver difficulties, such as substance abuse or untreated mental illness. In such cases, the therapist's primary task is to remove these barriers to caregiver effectiveness by treating them directly. For example, a substance-abusing parent might be treated with a variation of the community reinforcement approach (Budney & Higgins, 1998), which has a strong empirical base in the area of adult substance abuse. Similarly, when caregiver effectiveness is compromised due to high levels of stress, the therapist works closely with the caregiver to identify sources of stress that might be modified and to develop strategies for such change. For example, a single working parent might have significant daily demands from employment responsibilities, caring for younger children, and providing support for an elderly relative. This parent might not have the time and energy needed to provide the high level of monitoring and supervision a problem adolescent often requires. Hence, the therapist would collaborate with the parent in developing and implementing strategies to achieve the desired goals (e.g., engaging the adolescent in structured after school activities and enlisting other supports to help with the elderly relative).

When barriers to effectiveness are removed, the caregiver is then in a position to function as the key change agent.

Peer Interventions

Peer relations affect youth functioning in many ways. Socialization with antisocial or substance-using peers is associated with these respective behaviors, while involvement with prosocial peers is a protective factor. Assessment of peer relations involves interviewing caregivers, school personnel, siblings, and the youth. The MST therapist attends to the number and quality of the peer relations, reputations of peers, social and academic functioning of peers, homogeneity versus heterogeneity of peer group, monitoring of peers by their respective caregivers, and the caregivers' familiarity with youths' peers and their parents.

Limited or poor social skills will contribute to rejection and isolation from peers. The MST therapist should assess the caregiver's social skills and address any caregiver factors that may be contributing to youth socialization difficulties. Some awkwardness may be due to a basic lack of skills or cognitive distortions. Depending on the problem, youth may respond to direct instruction, coaching techniques, and role playing as described by Forman (1993), for example, and the MST therapist will help the caregiver to assist the youth as indicated.

Conversely, youth who are actively rejected are at risk for externalizing behaviors. Peer groups can directly contribute to the youth's disruptive behavior by diverting the youth from more socially acceptable activities, endorsing antisocial behavior as the group norm, providing access to drugs, and encouraging resistance to caregiver monitoring. If the youth is socializing with negative peers, the MST therapist will help the caregiver to have calm discussions about potential negative consequences and avoid criticizing the peers valued by the youth. Interventions to back up these conversations may include systemic monitoring of the youth, caregiver and supportive adults searching places where the deviant peer group tends to socialize if the youth is unaccounted for, asking law enforcement to assist with checking and monitoring, and disallowing telephone contact with antisocial peers. Thus, a relatively stringent plan is put into place to provide significant sanctions for continuing association with problem peers. Concomitantly, MST therapists support caregivers to encourage and reinforce youth contact with prosocial peers and participation in socially accepted and monitored activities. Critical to the success of these interventions is the proactive development of plans to ensure implementation of positive and negative consequences contingent upon the youth's peer interactions. Such plans often include the therapist and several adults in the family's social network.

School Interventions

School is critical for both academic and social development. Risk factors for disruptive behavior in school include limited intellectual functioning, low achievement, learning disabilities, chaotic family functioning, negative family-school linkage, low commitment to education, and chaotic school environment. Protective factors include high intellectual functioning, commitment to schooling, and good caregiver-school communication. During all school interventions, MST therapists must respect the school's policies and procedures.

A frequent goal of treatment is to develop a collaborative relationship between the

youth's caregivers and school personnel, in a context that has typically grown conflictual. The therapist supports the caregiver in interacting with the school but becomes directly involved if necessary. For instance, when there is a family-school conflict impasse, the MST therapist might intervene in a diplomatic manner, emphasizing the best interests of the youth. The MST therapist performs a careful assessment of the nature of the conflict and understands the views of all involved parties to help establish trust with both the family and the school. Unseen efforts of the school can be conveyed to the caregivers, and vice versa, while some misperceptions can be gently challenged. Common ground is highlighted, with a goal of setting up collaborative interactions between the school and caregivers. Ideally, these collaborations emphasize positive constructive changes that can help the youth and avoid revisiting prior decisions that cannot be changed or assigning blame for any real or perceived negative events. Importantly, arrangements are often made in which the parent is responsible for implementing contingencies at home based on youth behavior in school.

Individually Oriented Interventions

Whether for youth or caregivers, MST individually oriented interventions always occur in the context of a larger systemic treatment plan. Individually oriented interventions can be categorized as those addressing continued problematic behaviors after the implementation of systemic interventions, continued problematic behaviors that occur in the face of psychiatric disorders that are being optimally treated from medication and systemic perspectives, sequelae of victimization that relate to the presenting problems, and situations in which extensive efforts to engage caregivers in changing their behavior are unsuccessful and the youth will continue to live in the home.

Cognitive-behavioral therapy (CBT) is an individual treatment approach that is frequently used in MST individual interventions. Considering the range of all individual treatments provided to youth, the empirical support for CBT for anxiety, depression, and externalizing conditions is relatively strong (Weisz & Jensen, 1999). CBT is consistent with MST in that it is present focused and action oriented (Principle 4), individualized to the developmental level of the youth (Principle 6), evaluated from multiple perspectives (Principle 8), and provides a skill that is potentially generalizable (Principle 9). Briefly, CBT involves first evaluating the youth's cognitions in areas related to the identified problem. This may include examining the youth's planning in achieving an objective, attributions regarding the motivation of others, social problem solving, perspective taking, or assessment of consequences of actions. The relationships between these cognitions and the youth's feelings and behaviors are also evaluated. Cognitive deficiencies and distortions are assessed as they apply to the presenting problem. Cognitive deficiencies are addressed with the acquisition of additional skills. When cognitive distortions are identified, they are tested; underlying maladaptive assumptions are delineated, and the validity of the maladaptive assumptions is tested. More adaptive cognitions and behaviors are then learned. Fortunately, several excellent resources for CBT interventions for various conditions are available (e.g., Forman, 1993; Kendall et al., 1992), and MST therapists are referred to and supervised in the implementation of these works as appropriate.

Psychiatric Interventions

MST therapists must be familiar with and able to recognize youth and adult conditions that may respond to psychiatric medication. For example, attention-deficit/hyperactivity

disorder (ADHD) is often comorbid with disruptive behaviors, and the prognosis of comorbid ADHD and conduct disorder is associated with a more negative outcomes than conduct disorder or ADHD alone. Stimulant medications are well studied, and positive effects have been demonstrated for on-task behavior and various externalizing behaviors, while side effects are also well characterized and generally manageable.

If the MST treatment team feels that symptoms consistent with ADHD are interfering with goal achievement, a stimulant trial may be indicated. If the family is reluctant to follow through on the referral, their feelings should be respected while determining the fit and appropriate interventions. MST teams should seek child and adolescent psychiatrists who are systems oriented and well versed in empirically based treatments. The MST therapist can promote a positive working relationship by supporting youth and family follow-through with appointments and medication compliance while helping empower youth and caregivers to actively and assertively collaborate with the psychiatrist. After establishing a diagnosis of ADHD, a double-blind placebo trial may address some family concerns regarding efficacy and short-term side effects. Research suggests that for optimal pharmacological treatment of ADHD, ongoing medication management is needed (Vitiello et al., 2001).

Interventions for Increasing Family Social Supports

A major goal of MST is to develop and maintain social supports for the youth and family in order to promote sustainability of treatment gains. Youth disruptive behavior is associated with increased need for family supports and resources, yet many of the families referred to MST have few resources. Low socioeconomic status, social disorganization, and lack of supportive structures in and of themselves are risk factors for disruptive behavior (Loeber & Farrington, 1998). Conversely, resources can help families manage the challenges of raising children as well as mitigate the negative effects of many hardships (Wolkow & Ferguson, 2001).

Assessment of family social supports occurs during the assessment of other youth-involved systems. Social supports can be characterized by type of support—instrumental, emotional, appraisal, and informational (Unger & Wandersman, 1985)—and also on a continuum ranging from informal, proximal relationships, to more distal, professional, and formal systems. The preference is to develop more proximal informal supports, as these are likely to be more responsive, accessible, and maintained over time. To maintain long-term informal social supports, families that receive support must reciprocate. For example, a neighbor might be enlisted to help monitor the after-school time of a problem adolescent with working parents; in return, the adolescent might cut the neighbor's lawn each week. Even with strong indigenous support, however, family needs can sometimes overwhelm the informal support system, necessitating the use of more formal supports. Hence, the MST treatment team should have a good understanding of the available formal supports in the community and the inner workings of each agency.

Treatment Termination

The average duration of MST treatment is 3 to 5 months. MST typically ends in one of two ways. Either the goals are met, by mutual agreement of the therapist, family, and, as appropriate, stakeholders; or the goals are unmet, but it is felt that treatment has reached a point of diminishing returns for time invested. It is important for the MST team to rec-

ognize situations in which progress is not being made, despite varied attempts to address barriers to effective change. In such cases, the decision to terminate MST services will contribute to the cost-effectiveness of MST and provide the family an opportunity to try another type of treatment that might be helpful.

Approximately two-thirds of MST cases in community settings end with successful achievement of the goals specified by the family and influential stakeholders. The latter stage of MST is spent preparing the youth, family, and stakeholders for the withdrawal of MST services, and termination is openly discussed. Caregiver competence is highlighted, and mechanisms for maintaining progress are identified. If there is a need for further services, appropriate referrals are made. However, it should not be assumed that families need ongoing services.

Quality Assurance System

In light of the importance of treatment fidelity to MST outcomes (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler, Pickrel, & Borduin, 1999; Huey, Henggeler, Brondino, & Pickrel, 2000; Schoenwald, Henggeler, Brondino, & Rowland, 2000), considerable attention has been devoted to the development of quality assurance mechanisms aimed at enhancing treatment fidelity (Henggeler & Schoenwald, 1999).

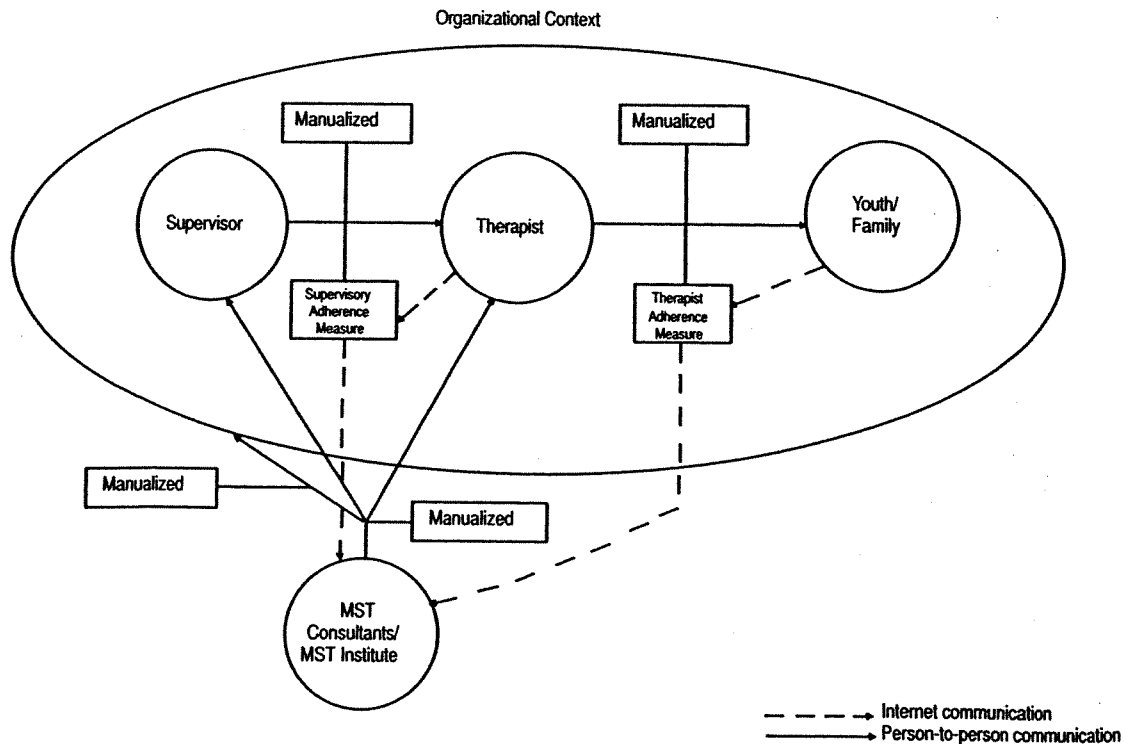


FIGURE 17.1. MST Continuous Quality Assurance System. From Henggeler, Schoenwald, Rowland, and Cunningham (2002). Copyright 2002 by The Guilford Press. Reprinted by permission.

Figure 17.1 provides a representation of the MST quality assurance system. As described extensively in by Henggeler, Schoenwald, Rowland, and Cunningham (2002), the therapist's interactions with the family are viewed as primary because of their critical role in achieving outcomes. Several structures and processes are used to support therapist adherence to MST when interacting with families. These processes include manualization of key components of the MST program, training of clinical and supervisory staff, ongoing feedback to the therapist from the supervisor and MST expert consultant, objective feedback from caregivers on a standardized adherence questionnaire, and organizational consultation. By providing multiple layers of clinical and programmatic support and ongoing feedback from several sources, the system aims to optimize favorable clinical outcomes through therapist support and adherence.

Manualization of Program Components

All components of the quality assurance system are manualized. The treatment manuals for antisocial behavior (Henggeler et al., 1998) and serious emotional disturbance (Henggeler, Schoenwald, Rowland, & Cunningham, 2002) are available from the publisher, The Guilford Press. The other manuals are available only to MST sites. Sites are licensed through MST Services, Inc. (www.mstservices.com), which has the exclusive license for the transport of MST technology and intellectual property through the Medical University of South Carolina.

Treatment (Henggeler et al., 1998): specifying MST clinical protocols based on the nine core treatment principles.

Supervision (Henggeler & Schoenwald, 1998): specifying the structure and processes of the weekly onsite supervisory sessions and ongoing development of therapist competencies.

Expert consultation (Schoenwald, 1998): specifying the role of the MST consultant in helping teams achieve youth outcomes and in building the competencies of team therapists and supervisors.

Organizational support (Strother, Swenson, & Schoenwald, 1998): addressing administrative issues in developing and sustaining a MST program.

Training

Training in MST, which is provided to MST sites by MST Services, Inc., is ongoing and consists of several components.

Site assessment: The development of a new MST program is a process that requires significant community collaboration and often takes up to 12 months to complete.

Initial orientation: A 5-day training aimed at orienting clinical staff to program philosophy and intervention methods is provided prior to startup.

Expert consultation: Weekly telephone clinical consultations aimed at promoting treatment fidelity and youth outcomes and building team competencies are ongoing.

Quarterly booster training: Quarterly boosters are provided by expert consultants to address challenging clinical (e.g., caregiver cocaine abuse) or system (e.g., low referral rate) problems that are impeding the success of the program.

Outcome Monitoring Components

As discussed subsequently, considerable research efforts are underway to develop and validate a MST quality improvement system. Components that are currently validated include the following:

Therapist Adherence Measure (TAM; Henggeler & Borduin, 1992): This 26-item measure uses caregiver reports to track therapist adherence to MST treatment principles.

Supervisory Adherence Measure (SAM; Schoenwald, Henggeler, & Edwards, 1998): Based on therapist reports, this 43-item measure assesses supervisor adherence to the MST supervisory protocol (Henggeler & Schoenwald, 1998).

Youth Outcome Measure: A brief measure of ongoing youth outcomes is in development.

RESEARCH EMPHASES: OUTCOMES, QUALITY ASSURANCE, AND CURRENT TRIALS

Outcomes and findings from published clinical trials, findings from research on the components of the quality assurance system, and emerging research areas are described.

Evidence for the Effects of Treatment

Federal entities such as the Surgeon General (U.S. Department of Health and Human Services, 1999; U.S. Public Health Service, 2001), National Institute on Drug Abuse (1999), Center for Substance Abuse Prevention (2000), and leading reviewers (e.g., Burns, Hoagwood, & Mrazek, 1999; Elliott, 1998; Farrington & Welsh, 1999; Kazdin & Weisz, 1998; Stanton & Shadish, 1997) have identified MST as demonstrating considerable promise in the treatment of youth criminal behavior, substance abuse, and emotional disturbance. These conclusions are based on the findings from eight published outcome studies (seven randomized, one quasi-experimental) with youth presenting serious clinical problems and their families. As presented in Table 17.2, these studies included approximately 800 families, and, as discussed subsequently, approximately 4,000 additional families will have participated in MST research by 2004.

The following summary of juvenile justice, substance abuse, and mental health outcomes is based on the three randomized trials with chronic and violent juvenile offenders (Borduin et al., 1995; Henggeler et al., 1997; Henggeler, Melton, & Smith, 1992), one with substance-abusing juvenile offenders (Henggeler, Pickrel, & Brondino, 1999), one with youth presenting psychiatric crises (i.e., suicidal, homicidal, or psychotic) (Henggeler, Rowland, et al., 1999), one with maltreating families (Brunk, Henggeler, & Whelan, 1987), one with juvenile sexual offenders (Borduin, Henggeler, Blaske, & Stein, 1990), and one with inner-city delinquents (Henggeler et al., 1986). These projects were conducted in Memphis, several sites in South Carolina, and Columbia, Missouri.

Juvenile Justice Outcomes

Three randomized trials of MST with violent and chronic juvenile offenders were conducted in the 1990s. In the Simpsonville, South Carolina, Project, Henggeler et al. (1992) studied 84 juvenile offenders who were at imminent risk for out-of-home placement because of serious criminal activity. Youth and their families were randomly assigned to receive either MST or the usual services provided by the Department of Juvenile Justice

TABLE 17.2. Published MST Outcome Studies

Study	Population	Comparison	Follow-up	MST outcomes
Henggeler et al. (1986) <i>n</i> = 57 ^a	Delinquents	Diversion services	None	Improved family relations; decreased behavior problems; decreased association with deviant peers
Brunk, Henggeler, & Whelan (1987) <i>n</i> = 33	Maltreating families	Behavioral parent training	None	Improved parent-child interactions
Borduin, Henggeler, Blaske, & Stein (1990) <i>n</i> = 16	Adolescent sexual offenders	Individual counseling	3 years	Reduced sexual offending; reduced other criminal offending
Henggeler et al. (1991) ^b	Serious juvenile offenders	Individual counseling Usual community Services	3 years	Reduced alcohol and marijuana use; decreased drug-related arrests
Henggeler, Melton, & Smith (1992) <i>n</i> = 84	Violent and chronic juvenile offenders	Usual community services—high rates of incarceration	59 weeks	Improved family relations; improved peer relations; decreased recidivism (43%); decreased out-of-home placement (64%)
Henggeler et al. (1993)	Same sample		2.4 years	Decreased recidivism (doubled survival rate)
Borduin et al. (1995) <i>n</i> = 176	Violent and chronic juvenile offenders	Individual counseling	4 years (10-year outcomes forthcoming)	Improved family relations; decreased psychiatric symptomatology; decreased recidivism (69%)
Henggeler, et al. (1997) <i>n</i> = 155	Violent and chronic juvenile offenders	Juvenile probation services—high rates of incarceration	1.7 years	Decreased psychiatric symptomatology; decreased days in out-of-home placement (50%); decreased recidivism (26%, nonsignificant); treatment adherence linked with long-term outcomes
Henggeler, Rowland, et al. (1999) <i>n</i> = 116 (final sample = 156)	Youths presenting psychiatric emergencies	Psychiatric hospitalization	None (2-year outcomes forthcoming)	Decreased externalizing problems (CBCL); improved family relations; increased school attendance; higher consumer satisfaction
Schoenwald et al. (2000)	Same sample			75% reduction in days hospitalized; 50% reduction in days in other out-of-home placements

(continues)

TABLE 17.2 (Continued)

Study	Population	Comparison	Follow-up	MST outcomes
Henggeler, Pickrel, & Brondino (1999) <i>n</i> = 118	Substance-abusing and dependent delinquents	Usual community services	1 year	Decreased drug use at posttreatment; decreased days in out-of-home placement (50%); decreased recidivism (26%, nonsignificant); treatment adherence linked with decreased drug use
Schoenwald et. al. (1996)	Same sample		1 year	Incremental cost of MST nearly offset by between-groups differences in out-of-home placement
Brown et al. (1999)	Same sample		6 months	Increased attendance in regular school settings
Henggeler et al. (2002)	Same sample		4 years	Decreased violent crime; increased marijuana abstinence

Note. From Henggeler, Schoenwald, Rowland, and Cunningham (2002). Copyright 2002 by The Guilford Press. Reprinted by permission.

^aQuasi-experimental design (groups matched on demographic characteristics); all other studies are randomized.
^bBased on participants in Henggeler et al. (1992) and Borduin et al. (1995).

(DJJ). At posttreatment, youth who participated in MST reported less criminal activity than their counterparts in the usual services group, and at a 59-week follow-up, MST had reduced rearrests by 43%. In addition, usual-services youth had an average of almost three times more weeks incarcerated (average = 16.2 weeks) than MST youth (average = 5.8 weeks). Moreover, treatment gains were maintained at long-term follow-up (Henggeler, Melton, Smith, Schoenwald, & Hanley, 1993). At 2.4 years post-referral, twice as many MST youth had not been rearrested (39%) as usual-services youth (20%).

In the Columbia, Missouri, Project (Borduin et al., 1995), participants were 200 chronic juvenile offenders and their families who were referred by the local DJJ. Families were randomly assigned to receive either MST or individual therapy (IT). Four-year follow-up arrest data showed that youth who received MST were arrested less often and for less serious crimes than counterparts who received IT. Moreover, while youth who completed a full course of MST had the lowest rearrest rate (22.1%), those who received MST but prematurely dropped out of treatment had better rates of rearrest (46.6%) than IT completers (71.4%), IT dropouts (71.4%) or treatment refusers (87.5%).

In the Multisite South Carolina Study, Henggeler et al. (1997) examined the role of treatment fidelity in the successful dissemination of MST. In contrast with previous clinical trials in which the developers of MST provided ongoing clinical supervision and consultation (i.e., quality assurance was high), MST experts were not significantly involved in treatment implementation and quality assurance was low. Participants were 155 chronic or violent juvenile offenders who were at risk of out-of-home placement because of serious criminal involvement and their families. Youth and their families were randomly assigned to receive MST or the usual services offered by DJJ. Not surprisingly,

MST treatment effect sizes were smaller than in previous studies that had greater quality assurance. Over a 1.7-year follow-up, MST reduced rearrests by 25%, which was lower than the 43% and 70% reductions in rearrest in the previous MST studies with serious juvenile offenders. Days incarcerated, however, were reduced by 47%. Importantly, high therapist adherence to the MST treatment protocols, as assessed by caregiver reports on the TAM, predicted fewer rearrests and incarcerations. Thus, the modest treatment effects for rearrest in this study might be attributed to considerable variance in therapists' adherence to MST principles.

In summary, across the three trials with violent and chronic juvenile offenders, MST produced 25% to 70% decreases in long-term rates of rearrest, and 47% to 64% decreases in long-term rates of days in out-of-home placements. These outcomes have resulted in considerable cost savings. The Washington State Institute on Public Policy (Aos, Phipps, Barnoski, & Lieb, 1999) concluded that MST produced more than \$60,000 per youth in savings in placement, criminal justice, and crime victim costs.

Substance Use Outcomes

Two trials have demonstrated short-term reductions in adolescent substance use (Henggeler et al., 1992; Henggeler, Pickrel, & Brondino, 1999); Borduin et al. (1995) have demonstrated long-term reductions in substance-related arrests; and Henggeler, Clingempeel, Brondino, and Pickrel (2002) have demonstrated treatment effects on rates of marijuana abstinence in a 4-year follow-up. In addition, MST has made an important contribution to the substance abuse literature regarding family engagement and retention in treatment. In a study with diagnosed substance-abusing or dependent juvenile offenders (Henggeler et al., 1999), fully 100% (58 of 58) of families in the MST condition were retained in treatment for at least 2 months and 98% were retained until treatment termination at approximately 4 months postreferral. Moreover, Schoenwald, Ward, Henggeler, Pickrel, and Patel (1996) showed that the incremental costs of MST in this trial were nearly offset by the savings incurred as a result of reductions in days of out-of-home placement during the year.

Mental Health Outcomes

MST has demonstrated favorable decreases in psychiatric symptoms in three studies with juvenile offenders (Borduin et al., 1995; Henggeler et al., 1997; Henggeler et al., 1986). A recent study, however, examined the clinical effectiveness of MST with an extremely challenging mental health population—youth in psychiatric crisis approved for emergency hospitalization (Henggeler, Rowland, et al., 1999). Here, MST was more effective than hospitalization at decreasing externalizing symptoms and as effective at decreasing internalizing symptoms. With regard to out-of-home placements, over the first 4 months postreferral, MST produced a 72% reduction in days hospitalized and a 49% reduction in other out-of-home placements (Schoenwald, Ward, Henggeler, & Rowland, 2000).

Mediating and Moderating Variables

MST treatment theory posits that improved caregiver and family functioning are key factors in achieving desired short- and long-term outcomes. This assumption was directly tested and supported by Huey et al. (2000), who showed that improved family functioning predicted decreased association with deviant peers, which, in turn, predicted de-

creased adolescent antisocial behavior. Indirect support for this treatment theory is provided in the multiple MST studies demonstrating improved family functioning, two recent studies demonstrating increased attendance in regular school classrooms (Brown, Henggeler, Schoenwald, Brondino, & Pickrel, 1999; Henggeler, Rowland et al., 1999), and a recent study showing significantly higher levels of consumer satisfaction for caregivers and youth in the MST condition (Henggeler, Rowland, et al., 1999).

Regarding moderating variables, with few exceptions, favorable MST outcomes have not been moderated by case seriousness or demographic (e.g., race, social class, and gender) characteristics. Hence, outcomes have not varied as a function of such variables. This general absence of moderating influences most likely reflects the intended individualization of MST services to the particular needs, circumstances, and contexts of the youth and families.

Testing the MST Quality Assurance System

One of the long-term goals of this system is to develop strategies that enable continuous tracking of therapist adherence and youth outcomes. Such a system, however, requires the demonstration of empirical linkages between key components of quality assurance. This section describes the empirical status of the linkages shown in Figure 17.1.

Four published studies have demonstrated significant associations between therapist fidelity and youth outcomes. Analyses of data collected in two randomized trials showed that caregiver reports of high adherence on the aforementioned TAM during treatment were associated with low rates of rearrest and incarceration of chronic juvenile offenders at a 1.7-year follow-up (Henggeler et al., 1997) and with decreased criminal activity and out-of-home placement in substance-abusing juvenile offenders approximately 12 months postreferral (Henggeler, Pickrel, & Brondino, 1999). Using data from these two randomized trials, findings from Huey et al. (2000) and Schoenwald et al. (2000) supported the view that therapist adherence to MST principles influences those processes (e.g., family relations and association with deviant peers) that sustain adolescent antisocial behavior.

In addition, A recent nine-site study has demonstrated significant associations between therapist reports of supervisor adherence to the MST supervisory protocol and caregiver reports of therapist adherence to MST treatment principles. (Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002). Hence, as assumed in the quality assurance model, supervisor behavior predicts therapist behavior.

Although, two of the key associations in the MST quality assurance system (i.e., the therapist-family linkage and the supervisor-therapist linkage) have been supported empirically, the influence of other aspects of the system remains to be determined. A 41-site study is currently under way that will provide important data regarding the remaining linkages. This study (Schoenwald, PI) is examining the relationship of therapist adherence to child outcomes in 41 community-based MST programs as well as the impact of therapist, supervisory, organizational, and interagency factors on therapist fidelity to MST. Data regarding consultation provided to these programs is being collected, such that potential links between consultation, supervision, and therapist adherence can be examined for the first time.

Ongoing Research

Investigators in numerous states and several countries are conducting studies that will expand the MST knowledge base in several important directions.

Multisite Effectiveness Trials

As Weisz (2000) has emphasized, the distinctions between efficacy and effectiveness research are considerable—demonstrating efficacy is quite a different thing than the effective implementation of an evidence-based practice in real-world settings. Multisite effectiveness studies are being conducted with juvenile offenders in Canada (Alan W. Leshied, PI), Norway (Terje Ogden, PI), Washington state (Robert Barnoski, PI), and New York (Reese Satin, PI). Findings from these studies will provide important information regarding the transport of MST to real world settings.

Adaptations to New Populations and Replications

Several randomized trials are examining the effectiveness of MST adaptations with populations that have not been the traditional focus of the model. Deborah Ellis and her colleagues (Detroit) are adapting MST to treat children and adolescents with insulin-dependent diabetes mellitus who are under poor metabolic control. Charles Borduin (Columbia, Missouri) has recently completed a replication of MST with juvenile sexual offenders. Bahr Weiss, Tom Catron, and Vicki Harris (Nashville) are conducting a randomized trial of MST with middle school and high school students enrolled in classrooms designed for students with serious behavior problems. In addition, faculty at the Family Services Research Center in Charleston, South Carolina, are directing several randomized trials to extend the model, including a study integrating MST into juvenile drug court for treating substance-abusing juvenile offenders (Henggeler, PI), a randomized trial of MST with physically abused youth and their families (Cindy Swenson, PI), and a trial in Philadelphia evaluating the clinical and cost-effectiveness of an MST-based continuum of care as an alternative to out-of-state residential placement (Sonja Schoenwald, PI).

DIRECTIONS FOR FUTURE RESEARCH

Although MST is relatively well validated in the treatment of serious criminal behavior in adolescents, such validation represents a necessary but far from sufficient step in improving the nation's health. Currently, licensed MST programs are operating in 30 states and several countries. In the United States, these programs serve approximately 1% of juvenile offenders at imminent risk of incarceration. In light of the fact that MST is probably the most widely disseminated evidence-based treatment for juvenile offenders in the United States, the vast majority of such youth are not receiving services that have a reasonable probability of improving outcomes. Numerous challenges and research opportunities are posed by these circumstances, and they can be subsumed in one question: "At the levels of consumers, practitioners, agency administrators, policy makers, and funders, what are the barriers to the adoption, implementation, and sustainability of evidence-based practices and what are effective strategies for overcoming these barriers?" This question is consistent with emphases of the Surgeon General's Action Agenda for Children's Mental Health (U.S. Public Health Service, 2000) and reflects a major thrust of several state and National Institutes of Health initiatives.

MST is less well validated in the treatment of several other serious clinical problems, including serious emotional disturbance, child maltreatment, and substance abuse. As indicated previously, several randomized trials are currently in progress addressing these clinical populations. If favorable outcomes are achieved, population specific adaptations

of the model might be ready for dissemination (currently, MST has been transported solely for youth presenting serious antisocial behavior and their families). For example, MST for youth with serious emotional disturbance has required adaptation to provide considerably more psychiatric support and increased clinical resources (and cost) than standard MST programs. Similarly, the integration of another evidence-based treatment (i.e., contingency management) with MST in the treatment of adolescent substance abuse seems to be improving substance-related outcomes. These adaptations require specification and integration into all components of the MST quality assurance protocols before transport to field settings can be attempted.

Interestingly, another line of research is examining the potential application of MST for medically related problems. The work of Ellis, Naar-King, Frey, Greger, and Arfken, noted previously, best exemplifies this work. This research group is funded by the National Institute on Diabetes and Kidney Disease to conduct a randomized trial on an adaptation of MST to treat children and adolescents with insulin-dependent diabetes mellitus. Funding was based, in part, on favorable pilot data. Similarly, a proposal is in preparation to adapt the model for youth at high risk of transplant rejection due to low medication compliance. Such work is made possible because MST is not a "treatment" per se. It is a set of strategies aimed at using existing knowledge bases as the foundation for critical analysis of specific costly behavioral problems, within the context of organizational commitments to accountability, service access, and consumer empowerment.

A final area of research is more traditional in focus: aiming to identify the mechanisms of change in MST services. This work is best exemplified by Stan Huey's (Huey et al., 2000) study of the mediators of MST outcomes. Similar analyses are planned for current MST trials and additional studies are being planned to examine associations between in session behavior, based on audiorecordings, and client outcomes. Hence, MST research is ranging from the micro (e.g., therapist-family interaction during sessions) to the macro (e.g., Schoenwald study examining the effects of funding structures on MST programs).

SUMMARY AND CONCLUSIONS

MST is a family-based treatment for youth presenting serious clinical problems, including criminal behavior and violence, substance abuse, and serious emotional disturbance. The evidence base for MST, especially in treating serious antisocial behavior in adolescents, is relatively strong, with several published randomized trials with violent and chronic juvenile offenders showing reductions in recidivism and out-of-home placement. On the strength of this record, MST programs focusing on adolescent antisocial behavior have been adopted by provider organizations in 30 states and 7 nations. Indeed, multisite research is currently examining the capacity of MST programs in community-based settings to achieve outcomes comparable to those attained in clinical trials, and several large multisite effectiveness trials are under way as well. In addition, the fundamental MST model is being adapted to treat other challenging clinical problems that present significant costs to the juvenile justice, mental health, social welfare, and health care service systems. These adaptations are being examined within the context of randomized trials with maltreating families, youth presenting serious emotional disturbance, adolescents with serious medical problems, and substance-abusing youths. If these projects are successful and replicated, plans will be developed to transport such MST adaptations to the field.

Importantly, the success of MST has been based largely on research literatures developed across several disciplines during the past 20–30 years. For example, decades of correlational and longitudinal research have delineated key risk factors in the development and maintenance of antisocial behavior in adolescents. MST interventions focus on these risk factors. Similarly, a cadre of outstanding efficacy researchers have developed and validated models of intervention for particular well-defined clinical problems. MST intervention protocols make extensive use of this evidence base. On the other hand, the MST model has gone against the traditions of much of the mental health treatment community by, for example, emphasizing the importance of provider accountability for outcomes and quality assurance systems to facilitate program fidelity, viewing caregivers as the key to long-term outcomes, and making programmatic commitments to overcome barriers to service access. Nevertheless, careful review of major federal reports (e.g., Surgeon General's reports on mental health and youth violence) and the conclusions of leading theorists and researchers, such as the editors of this volume, suggest that such programmatic emphases represent a direction in which the field is heading.

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