Toward Effective Quality Assurance in Evidence-Based Practice: Links Between Expert Consultation, Therapist Fidelity, and Child Outcomes

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Toward Effective Quality Assurance in Evidence-Based Practice: Links Between Expert Consultation, Therapist Fidelity, and Child Outcomes

Sonja K. Schoenwald, Ashli J. Sheidow, and Elizabeth J. Letourneau

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This study validated a measure of expert clinical consultation and examined the association between consultation, therapist adherence, and youth outcomes in community-based settings. Consultant adherence to the multisystemic therapy (MST) consultation protocol was assessed through therapist reports, and therapist adherence to MST principles was assessed through caregiver reports in 2 samples of families (N1 = 178, N2 = 274) and therapists (N1 = 87, N2 = 162). Caregiver reports of youth behavior and functioning were obtained in the second sample pre- and posttreatment. Random effects regression models demonstrated associations between consultant behavior, therapist adherence, and posttreatment youth behavior problems and functioning. Instrumental aspects of consultation supported therapist adherence and improved youth outcomes; supportive aspects of consultation were negatively associated with adherence and outcomes. These findings suggest the availability to clinicians of expert consultation can impact clinician fidelity to a treatment model and child outcomes.

The implementation of “evidence-based” treatments in child mental health systems is emerging as a national priority (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001). Little is known, however, about the conditions necessary to cultivate the interest and capability of payers, providers, and consumers to implement an evidence-based practice (National Institute of Mental Health, 1999; Rosenheck, 2001; Schoenwald & Hoagwood, 2001). Multilevel strategies to cultivate such capability have been designed by some treatment developers, and evaluation of those strategies is now beginning (e.g., Schoenwald & Henggeler, 2003; Torrey et al., 2001).

The multilevel focus of implementation efforts is consistent with research on the improvement of health care quality, which suggests that change at the level of the individual, group or team, organization, and larger system is necessary to effect an industry-wide change in the quality of care (Ferlie & Shortell, 2001). Among recommended approaches for effecting such change is continuous quality improvement (CQI), described as "a philosophy of continual improvement of the processes associated with providing a good or service that meets or exceeds customer expectations" (Shortell, Bennett, & Byck, 1998, p. 594). These processes involve a variety of individuals within an organization who are trained in basic statistical techniques and tools and are empowered to make decisions based on their analysis of data. CQI differs from traditional quality-assurance methods primarily in its emphasis on understanding and improving the underlying work processes and systems rather than on correction of individuals’ mistakes after the fact. Evidence suggests that CQI applications in the health care sector can improve the quality of care under certain conditions (Blumenthal & Kilo, 1998; Shortell et al., 1998).

The application of CQI approaches to mental health services has not been examined (Bickman, 1999). In the mental health arena, traditional approaches to ensure quality, such as licensure, accreditation, and clinical supervision, prevail without the benefit of evaluation and despite mixed evidence of their impact on clinicians or consumers (Bickman, 1999). These methods of quality assurance map poorly onto the multilevel focus of CQI processes. They also bear little resemblance to the specialized training and support provided to clinicians in treatment efficacy trials (e.g., Weersing & Weisz, 2002; Weisz, Weiss, & Donenberg, 1992). Since 1995, however, efforts have been underway to create for community-based clinicians the conditions that characterized randomized trials of
multisystemic therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998), using a multilevel quality-assurance system, described subsequently. MST is a family- and community-based treatment model designed to address the multiple known determinants of serious antisocial behavior in adolescents (for a review of research on determinants, see Loeber & Farrington, 1998). Within the context of a home-based model of service delivery, MST is provided to families for 3 to 5 months. Each MST therapist carries a caseload of 4 to 6 families and is available 24 hr a day, 7 days a week to respond to crises. Therapists are organized into teams of 3 to 5 individuals and a clinical supervisor.

The effectiveness of MST in treating serious antisocial behavior in adolescents was demonstrated in several randomized trials (for a review, see Halliday-Boykins & Henggeler, 2001). Following the publication of promising long-term outcomes, directors of state and county juvenile justice and mental health agencies contacted the treatment developers in search of a means by which to establish MST programs in their communities. In response to this demand, a comprehensive training and quality-assurance package was developed to assist in the development and implementation of effective MST programs. The first element of that package is a site-assessment process designed to identify and cultivate organizational and community conditions conducive to the establishment of an MST program. Training and consultation components include a 5-day orientation training for therapists and on-site clinical supervisors; quarterly booster sessions tailored to the clinical competencies and needs of each team; on-site, weekly clinical supervision of the MST team provided by a master’s-level individual; and weekly telephone consultation for the team and supervisor by an expert in MST, known as the MST consultant. This training and consultation is supported by manuals for clinicians (Henggeler et al., 1998; Henggeler, Schoenwald, Rowland, & Cunningham, 2002), clinical supervisors (Henggeler & Schoenwald, 1998), and organizations implementing MST (Strother, Swenson, & Schoenwald, 1998), as well as a manual for MST expert consultation (Schoenwald, 1998).

Described in detail elsewhere (Henggeler & Schoenwald, 1999; Henggeler et al., 1998), a graphic depiction of the MST quality-assurance process appears in Figure 1. Feedback about the implementation of each component is both qualitative (i.e., occurs during weekly supervision and weekly consultation) and quantitative. The quantitative feedback regarding therapist and supervisor implementation of MST consists of data from validated measures of clinician adherence to MST (Henggeler & Borduin, 1992) and MST supervisory practices (Schoenwald, Henggeler, & Edwards, 1998). Linkages between caregiver-reported therapist adherence to MST principles and youth outcomes such as arrest, incarceration, and placement have been demonstrated in several clinical trials (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler, Pickrel, & Brondino, 1999; Huey, Henggeler, Brondino, & Pickrel, 2000), and a recent study has documented linkages between therapist reports of supervisor adherence to the MST supervision protocol and caregiver reports of therapist adherence (Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002).

The objectives of this study were to validate a measure of expert clinical consultation and examine the association of consultation practices with both therapist-adherence and client-level outcomes. The MST consultant conducts the initial orientation and quarterly booster training for therapists and supervisors, trains the clinical supervisor in the MST supervisory protocol, and provides weekly clinical consultation to the team. The objectives of weekly consultation are described further in the description of the consultation measure. Whereas on-site clinical supervisors (trained by the consultant) provide immediate oversight, support, and problem-solving help to the MST team, consultants ensure that the assessment, intervention, and problem-solving strategies are developed and executed by the team in a manner consistent with MST principles and processes. MST consultants are full-time doctoral-level individuals employed by a university-affiliated training organization, MST Services, LLC (www.mstservices.com).

Method

Design

The validity and reliability of the MST Consultant Adherence Measure (CAM; Schoenwald, 2001) was assessed using data from two independent samples of therapists. Exploratory factor analyses (EFAs) were conducted, and test–retest and alpha reliability coefficients were computed. A correlational design was used to evaluate for both samples whether consultant behavior, based on therapist ratings on the CAM, was associated with therapist adherence to MST principles, based on MST Therapist Adherence Measure (TAM; Henggeler & Borduin, 1992) ratings from youth’s caregivers. A correlational design was also used to evaluate whether therapist reported CAM ratings were associated with posttreatment child outcomes in the second sample.

Participants

Consultants. Consultants in the first sample (i.e., the pilot sample) were 11 doctoral-level MST consultants employed by MST Services, LLC. The company had provided weekly MST telephone consultation to
the therapists in the pilot sample for at least 1 month prior to and continuously during the 4-week test–retest interval of CAM administration. Fifty-four percent of these consultants were women, and 82% were White non-Hispanic. Consultants in the second sample (i.e., the transportability sample) were 10 doctoral-level MST individuals employed by MST Services, and 9 master’s-level MST individuals trained by MST consultants but employed by a licensed MST provider. Fifty-three percent of these individuals were women and 79% were White non-Hispanic. Consultants had provided weekly consultation to therapists for at least 1 month prior to CAM administration.

Therapists. The pilot sample consisted of 87 therapists in 26 licensed MST programs that were not part of the MST transportability study. Sixty-seven percent of these clinicians were women; 26% had a bachelor’s degree, 69% had a master’s degree, and 5% had a doctoral degree. Therapists had been trained in the MST model and participated in weekly on-site clinical supervision and telephone consultation sessions. Most therapists (74%) had less than 1 year of MST experience when the CAM was administered. The majority of therapists had received consultation from the individual on whom they were reporting for less than 6 months (52%), with 40% receiving consultation from the same individual for 6 months to 1 year. CAM administration was conducted by telephone within the week following the selected consultation session.

The transportability sample consisted of 162 therapists in 35 of the 41 MST programs participating in an ongoing study (Schoenwald, Sheidow, Liao, & Letourneau, in press). Seventy-two percent of these clinicians were women; 43% had a bachelor’s degree, 56% had a master’s degree, and 1% had a doctoral degree. Approximately one half of therapists (53%) had occupied their current position for less than 1 year. The majority


MST = Multisystemic Therapy Services

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of therapists had received consultation from the expert on whom they were reporting for either less than 6 months (44%) or 6 months to 1 year (31%).

Youth and families. Pilot-sample TAM data were collected from 178 caregivers of youth ages 9 to 17 years with antisocial behavior problems referred to a licensed MST program. As part of the standard quality-assurance package for MST programs, families are asked to provide monthly TAM ratings by telephone and are informed that their ratings are anonymous and help inform feedback given to therapists by clinical supervisors and MST consultants. Accordingly, families in the pilot sample completed the TAM via telephone interviews conducted by an employee of the MST program other than the family’s therapist. For families without telephones, supervisors arranged live interviews or to have the caregiver return the TAM by mail. Demographic information about the specific youth and families in the pilot sample is not available because of the anonymous nature of the adherence-reporting system used by MST programs.

TAM, demographic, and outcome data were collected from the 274 families in the transportability sample receiving treatment after the CAM pilot study had been completed. Thus, these 274 families were those receiving treatment during the last quarter of participant enrollment in the transportability study. Participants in the transportability study were youth with antisocial behavior ages 9 to 17 years referred to a licensed MST program and their families who consented to participate (overall consent rate for the study was 81.3%). Pretreatment and posttreatment assessment measures were collected by telephone. For families without telephones, arrangements were made to reach the family at a working telephone number. Caregivers were paid $20 per assessment. In addition, the research assistant telephoned the caregiver every 4 weeks during treatment, caregivers were paid an additional $30 to compensate for the time required to complete the adherence ratings each month during treatment.

The mean age of youth in the transportability sample was 15.76 years (SD = 2.45), and most were male (64%) and White (57%) or African American (19%). Most lived with one (69%) or both (17%) biological parents. Mean caregiver age was 42.6 years (SD = 8.52), and most were female (87%) and White (64%) or African American (19%). Most had completed high school (75%), and one third had completed 1 or more years of college (33%). Half of caregivers (50%) reported earning less than $20,000 per year. The most common referral reasons were serious criminal behavior (31%) and repeated status offenses (55%); youth were referred for treatment by juvenile justice, social services, and mental health authorities.

Consultant and Therapist Protocols and Training

An initial objective of the consultation process is to approximate the expertise of MST treatment developers available to therapists in clinical trials for clinicians and supervisors at the front line of service delivery. These consultants have deep and principled knowledge about MST and skill in its application with the extensive array of situations confronted by client families and MST therapists; they are therefore expected to be efficient and effective in their assessment of problems and construction of solutions (Chi, Glaser, & Farr, 1988). Through the combination of the initial 5-day clinician-orientation training, quarterly booster training, and weekly clinical consultation, consultants are expected to help clinicians develop the knowledge base and skills needed by MST therapists and supervisors. The consultant obtains information about the extent to which such knowledge and skills are used on a case-by-case basis in weekly telephone consultation. Consultants also help therapists and supervisors translate into appropriate clinical strategies the pertinent findings emerging from ongoing trials of MST and related child treatment research.

As described in the consultation manual (Schoenwald, 1998), consultant training is extensive and designed to help consultants develop proficiency in several main components, including (a) expertise in MST, empirically supported treatment modalities, and child treatment and mental health services research; (b) teaching and training through a clinical consultation model; (c) a consultation structure and process designed to make efficient use of clinician and consultant resources (e.g., small-group format; specific preparation by clinicians and consultant before, during, and following consultation); and (d) MST supervisor training and development, which includes helping supervisors to develop the extensive array of competencies required of MST clinicians. The skills, procedures, and strategies executed by consultants within each of these components are specified in the manual.

Therapist training. Clinicians initially received 40 hr of training that provided overviews of the MST treatment model; the conceptual, theoretical, and empirical bases of the approach; and opportunities for practice developing and implementing evidence-based interventions that are consistent with the model. Ongoing treatment integrity was supported by weekly 90-min on-site group supervision meetings with an MST-trained clinical supervisor, weekly 60-min group telephone consultation with an MST expert consultant, and quarterly booster training on special topics (e.g., parental substance abuse) and challenging cases.
Measures

CAM. Consultant adherence to the MST consultation protocol was assessed using therapist reports on the 44-item Likert-format CAM (Schoenwald, 2001). Responses index the frequency with which the consultant engaged in particular behaviors during consultation and range from 1 (never) to 6 (always). The CAM was developed by expert consensus and is based on the rational constructs of consultation described in the MST consultation manual (Schoenwald, 1998). These constructs were derived on the basis of experience providing MST supervision and consultation, reviews of the literature (largely descriptive) of clinical supervision, and research on the nature of expertise (Chi et al., 1988). The originally hypothesized constructs include structure and process, adherence to MST principles and analytic process, engagement–alignment, complementarity with supervision, clinical priorities and objectives, teaching skills, expertise, and overall effectiveness.

TAM. Therapist adherence to the nine principles of MST, and the MST clinical process was assessed using caregiver reports on the 26-item Likert-format MST TAM (Henggeler & Borduin, 1992) originally developed by expert consensus. Caregivers rate the extent to which certain events occurred in treatment sessions using response options ranging from 1 (not at all) to 5 (very much). The TAM was initially validated in a randomized trial of MST with violent and chronic juvenile offenders (Henggeler et al., 1997). That study and a subsequent trial (Henggeler et al., 1999) showed that high therapist fidelity to MST, based on caregiver TAM reports, predicted reduced rates of arrest, incarceration, and out-of-home placements, and between caregiver-reported TAM ratings and short-term instrumental outcomes such as improved family functioning (Huey et al., 2000; Schoenwald, Henggeler, Brondino, & Rowland, 2000).

The six-factor solution generated in the initial TAM validation study (Henggeler et al., 1997) was derived on the basis of sample-specific regression weights, and the sample size was small, with 75 families in the MST condition. A three-factor solution was derived in a larger sample of therapists and families in a recent study of relations between MST supervision and therapist adherence (Henggeler, Schoenwald, Liao, et al., 2002). Psychometric analyses of the TAM involving 1,226 families in the transportability sample yielded a parsimonious, single-factor solution consisting of 15 valid and reliable items (Schoenwald, Sheidow, Letourneau, & Liao, 2003). Details of the reliability, EFAs, and confirmatory factor analyses used to derive this single-factor TAM scale are provided in a technical report available from the authors (Letourneau, Sheidow, & Schoenwald, 2002) and summarized only briefly here. Cronbach’s α for the scale was .90. Unstable items were eliminated on the basis of test–retest reliability. Correlation coefficients between all remaining items were computed. Item pairs that reached .60 or higher were examined for salience to the theoretical construct of interest and statistical properties, and one item from each highly correlated pair was retained.

Therapist adherence appeared to be a stable construct over time within families (i.e., intraclass correlation coefficient for time was .51), but appeared to differ across families treated by a single therapist (intraclass correlation coefficient of .10). Thus, adherence continued to be measured at the family level by combining multiple assessments within a family (i.e., averaging within item across the multiple reports of a caregiver), as occurred in the initial TAM validation study. The item average scores for the 15 items were evaluated in confirmatory factor analyses using LISREL, and fit indexes uniformly indicated a good model fit for a single-factor solution.

For this study, only the TAM ratings obtained from families following the administration of the CAM were used to ensure that only therapist behaviors that could have been influenced by consultation sessions on which therapists reported were represented in the analyses. The mean number of TAM ratings per family used was 2.55 (SD = 1.15).

Child Behavior Checklist (Achenbach, 1991). Child behavior problems were assessed using caregiver reports on the Child Behavior Checklist, a widely used and reliable and valid measure of child behavior problems that has been normed with various age and ethnic groups and shown to discriminate among youth with different types of behavior problems (Drotar, Stein, & Perrin, 1995). The measure describes 113 behavior problem items applicable to children ages 2 to 18 years. Caregivers are asked to rate the extent to which the description is true of their child on a scale that ranges from 0 (not true) to 2 (very often or often true). The Child Behavior Checklist yields T scores for broadband internalizing and externalizing scales. The measure was administered by telephone in this study.

The Vanderbilt Functioning Index (VFI; Bickman, Lambert, Karver, & Andrade, 1998). The VFI is a brief and reliable index that presents low response burden, can be completed by caregivers, and can be administered by telephone was used to assess youth psychosocial functioning. Problems with youth functioning in five areas are represented in 24 items. The areas are antisocial behavior, problems at home, problems at school, problems with peers, and self-harm. Caregivers are asked to respond “yes” or “no” to each of the 24 items. Analyses of the reliability and validity of the VFI indicate adequate internal consistency (Cronbach’s α = .71), concurrent validity (e.g., significant correlation with established measures in the ex-
pected directions), predictive validity (e.g., VFI scores predicted cost of treatment and use of residential care), and incremental validity (e.g., VFI scores accounted for a significant portion of variance of treatment cost and residential care after accounting for the variance accounted for by other measures; Bickman et al., 1998). VFI probability scores were computed by summing raw item scores (0 or 1) and dividing by the number of completed items. Thus, scores ranged from .00 to 1.00.

Results

Characteristics of the CAM

EFAs (maximum likelihood with varimax rotation) were conducted separately for each sample to determine factor structure, with expert consensus and reliability analyses guiding final item selection. (Varimax rotation was selected because, as described in the Measures section, consultation was initially conceptualized as encompassing several distinct and potentially unrelated types of processes and skills.) Based on eigenvalues greater than 1, eight factors were initially identified using pilot study data. However, four of these factors had only two items with factor loadings of at least .4, one of which also loaded more highly on another factor. Thus, a second EFA was conducted specifying four factors. These four factors had eigenvalues greater than 1.6 and together explained 60% of the variance among the items. Three of these factors resembled the originally hypothesized scales of Engagement–Alignment with clinicians, MST Expertise, and Overall Effectiveness. Items from three other hypothesized scales—Structure and Process, Adherence to the MST treatment principles, and Adherence to the MST treatment principles—were removed from the three scales. As seen in Table 1, alpha levels for the final scales ranged from .91 to .94, indicating excellent internal consistency across the pilot and transportability data.

Fewer of the Engagement–Alignment items remained on this combined scale, and those remaining generally indexed consultant supportiveness and alliance between consultant and therapist.

Expert consensus was used to assign items that loaded on different scales across the two samples to a specific factor. The experts (the authors of this article) independently voted on item assignment to a specific scale, and with few exceptions concurred. The exceptions were resolved by consensus, and the more parsimonious three-factor structure that emerged from the transportability sample was retained (see Table 1). Cronbach’s αs on each scale were computed for the pilot and transportability data. Based on poor internal consistency (i.e., low correlation of item to scale or scale alpha would improve with removal of an item), eight items were removed from the three scales. As seen in Table 1, alpha levels for the final scales ranged from .91 to .94, indicating excellent internal consistency across the pilot and transportability data.

The three scales were labeled Perceived Consultant Competence, MST Procedures, and Alliance. Perceived Consultant Competence indexes therapists’ perceptions that the consultant is knowledgeable, skilled in, and able to teach MST. The MST Procedures scale indexes consultant use of MST-specific assessment, intervention, and analytic techniques when helping therapists to solve case-specific problems. The Alliance scale reflects therapists’ perceptions that the consultant was attentive and supportive of them. Remaining analyses utilized these scale scores, with items averaged within each scale.

Association Between Consultation Practices and Therapist Adherence

Hypotheses. Each of the three CAM factors and the TAM factor reflects a construct that is prescribed by the respective consultation and practitioner treatment manuals. Consequently, it was expected that Perceived Consultant Competence, MST Procedures, and Alliance would be positively associated with therapist adherence to the MST treatment principles.

Analyses. To test the association between consultant adherence as reported by therapists to therapist adherence as reported by caregivers, random effects regression analyses were conducted for the pilot and transportability samples using hierarchical linear and nonlinear modeling (Version 5.04; Raudenbush, Bryk, & Congdon, 2001). The use of random regression modeling was necessitated by the nested structure of data in both samples (i.e., youth within therapists in the pilot sample and youth within therapists within organizations in the transportability sample). In random regression models, variables at lower levels can be modeled in terms of covariates at upper levels while
concurrently estimating and adjusting for the degree of intraorganization or intratherapist correlation in the data. These models also allow for varying numbers of participants within levels of analysis.

Adherence was measured at the family level (Level 1), whereas CAM factors (Perceived Consultant Competence, MST Procedures, and Alliance) were measured at the therapist level (Level 2). Thus, the Level 1 model contained only an intercept and error term, whereas the Level 2 model contained the three CAM factors as covariates. For the transportability sample, the Level 3 model accounted for nesting of therapists within organizations. (Given the condition of anonymity that characterized data collection from the pilot sample, it was not possible to link therapists to organizations in that sample; thus nesting of therapists within organization was not modeled.) Due to collinearity among the CAM factors at the therapist level, backward elimination was used to identify final models, with an alpha level greater than .05 established as the criteria for elimination of predictors.

Table 2 summarizes the results of the final random regression analyses for both the pilot and the transportability sample. The table contains regression coefficients (and standard errors) for CAM factors remaining in the final backward elimination regressions, as well as the variance accounted for at the therapist level (i.e., the level at which the CAM factors were entered). Across both samples two CAM factors, Perceived Consultant Competence and Alliance, related consistently to therapist adherence, accounting for 19.3% of therapist level variance in adherence for the pilot sample and 98.7% of therapist level variance in the transportability sample. As expected, the direction of the relation was positive for Consultant Competence. Counter to expectations, however, Alliance was negatively related to therapist adherence after controlling for the effect of Consultant Competence. Thus, consultant behaviors intended to convey support and maintain alliance with the therapist appear to have deleterious effects on therapist adherence. No association was found between MST Procedures and therapist adherence.

The greater proportion of therapist-level variance accounted for by the Competence and Alliance variables in the transportability sample relative to the pilot sample is likely due to the fact that organizational variance was accounted for in the random regression mod-

### Table 1. CAM Items on the Three Final CAM Factors

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pilot α</th>
<th>Transportability α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Consultant Competence</td>
<td>.91</td>
<td>.94</td>
</tr>
<tr>
<td>3. *You could tell the consultant had case-specific ideas about barriers to success and how to overcome them.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. *The consultant helped when the team was “stuck” on some aspect of a case.</td>
<td></td>
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<tr>
<td>9. The consultant was competent at his or her job.</td>
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<tr>
<td>37. How knowledgeable do you think your consultant is in the theory of MST?</td>
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<td></td>
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<tr>
<td>38. How skilled do you think your consultant is in treatment modalities used in MST such as strategic, structural, behavioral, cognitive–behavioral therapies?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. How skilled do you think your consultant is in implementing MST interventions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41. How skilled do you think your consultant is in teaching clinicians to do MST?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alliance</td>
<td>.94</td>
<td>.94</td>
</tr>
<tr>
<td>11. The consultant really listened when clinicians talked.</td>
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<td></td>
</tr>
<tr>
<td>12. The consultant gave positive feedback to clinicians.</td>
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<td></td>
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<tr>
<td>14. The consultant addressed clinician behaviors that present barriers to engagement or treatment progress.</td>
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<tr>
<td>15. You could tell the consultant had the best interests of the client and clinician at heart.</td>
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<tr>
<td>19. The consultant gave supportive feedback to clinicians when needed.</td>
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<td></td>
</tr>
<tr>
<td>MST Procedures</td>
<td>.93</td>
<td>.94</td>
</tr>
<tr>
<td>2. The consultant explained how to implement specific intervention strategies for a case.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. *You could tell the consultant had case-specific ideas about barriers to success and how to overcome them.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. *The consultant helped when the team was “stuck” on some aspect of a case.</td>
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<tr>
<td>6. The consultant described interventions in sufficient detail that clinicians could carry them out.</td>
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<tr>
<td>7. The consultant identified clinician behaviors that facilitate engagement or treatment progress in specific cases.</td>
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<td></td>
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<tr>
<td>20. The consultant referred to specific MST principles when discussing cases.</td>
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<tr>
<td>26. The consultant helped generate a more comprehensive understanding of the “fit” of a problem.</td>
<td></td>
<td></td>
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<tr>
<td>27. The consultant explained what he or she was doing and why.</td>
<td></td>
<td></td>
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<tr>
<td>31. The consultant helped clinicians prioritize problems and intervention targets.</td>
<td></td>
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<tr>
<td>32. The consultant tried to gauge clinician “buy in” to his or her recommendations.</td>
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<tr>
<td>34. Consultation was well structured.</td>
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<tr>
<td>35. The consultant conveyed a “can do” attitude.</td>
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<tr>
<td>36. You could tell the consultant was well prepared.</td>
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</tr>
</tbody>
</table>

Note: CAM = Consultant Adherence Measure; MST = Multisystemic Therapy. *Denotes items on two scales.
els for the transportability but not the pilot sample. (Organizational data were not available for the pilot sample, so the random regressions were two- rather than three-level models for that sample.) Thus, the CAM factors may have accounted for a larger proportion of the smaller amount of therapist variance that was isolated by the three-level nesting in the transportability sample.

**Association Between Consultation Practices and Child Outcomes**

**Hypotheses.** Based on previous findings of positive associations between therapist adherence and child outcomes, and the hypothesis that the CAM factors and the TAM would be positively associated, our initial expectations were that each of the CAM factors would predict improvements in child behavior following treatment (taking pretreatment behavior into account). Specifically, it was anticipated that higher CAM ratings would predict lower externalizing and internalizing scores on the Child Behavior Checklist posttreatment and fewer problems in functioning as reported on the VFI. This initial hypothesis was amended on the basis of the finding of a negative association between Alliance and therapist adherence. The alternative hypothesis was that Alliance would predict increases in child behavior and functioning problems when Consultant Competence was low.

**Analyses.** Random regression models were computed to evaluate the relation of therapist-reported consultant practices to caregiver-reported youth problems posttreatment, controlling for pretreatment levels of youth problems. These analyses were conducted only for the transportability sample; data on child problems were not collected from the pilot sample. Random regression models were estimated using youth outcome variables measured posttreatment at the individual level (Level 1), with baseline measurements entered into the model as a covariate. These data were nested within therapists (Level 2), and therapists were nested within organizations (Level 3). Therapist perceptions of consultant behavior were measured at Level 2. Thus, the Level 1 model contained the covariate of baseline measurement, whereas the Level 2 model contained the three CAM factors as covariates. The Level 3 model accounted for nesting of therapists within organizations. As in the previous analyses, backward elimination was used to handle collinearity.

Previous findings from the transportability study indicate that youth exhibited significantly lower levels of externalizing and internalizing problems following treatment, as well as improved functioning scores at posttreatment (Schoenwald et al., 2003). The results of these analyses indicated that consultant behavior was related to youth outcomes and that one aspect of consultant behavior—Alliance—interacted with initial level of youth symptomatology (see Table 2 for regres-
MST Procedures predicted lower youth externalizing and internalizing problems posttreatment, as expected. Counter to expectations, however, this relation did not hold with respect to child functioning scores. Instead, after controlling for the effects of Perceived Consultant Competence, MST Procedures predicted increases in functioning problems. This finding suggests at least two interpretations. One is that consultants who are less competent in their jobs are less likely to generate case-specific recommendations that improve child functioning. Another possibility is that therapists must perceive consultants to be competent before they make use of consultant recommendations regarding the use of MST procedures in specific cases.

Perceived Consultant Competence predicted decreases in problem functioning (i.e., improved functioning) as expected but was not associated with behavior problem scores posttreatment. Despite the lack of association between Consultant Competence and posttreatment behavior problems, this factor was critical to the relation between Alliance and child problem scores. Consistent with the alternative hypothesis, Alliance was positively associated with externalizing and internalizing problems after controlling for Competence. This finding suggests that, in the absence of consultant competence, the presence of a supportive alliance between consultant and therapist does not bode well for children. In addition, the effect of Alliance on externalizing and internalizing problems varied by initial problem level, with higher initial scores predicting more deleterious effects of Alliance.

Discussion

The objectives of this study were to validate a measure of MST expert consultation and examine the association of such consultation with another component of the MST quality-assurance system—therapist fidelity to the treatment model—and child outcomes in community settings. Our findings suggest that expert consultation provided by an individual who is not a member of the clinical treatment team is characterized by a stable and meaningful factor structure. The results of random effects regression analyses provide preliminary evidence of the predictive validity of expert consultation regarding a well-validated measure of therapist adherence and with posttreatment child outcomes.

Observed associations between the CAM factors and TAM emerged for two of the three CAM factors but were in the expected direction only for one of these: Perceived Consultant Competence. This finding is consistent with previous findings of association between clinical supervisors’ expertise in MST and therapist adherence (Henggeler, Schoenwald, Liao, et al., 2002). Contrary to expectations, however, consultant behavior focused on maintaining a supportive alliance with therapists was negatively associated with therapist adherence after the effects of consultant competence were taken into account. This pair of findings suggests that consultant competence in MST is a putative mechanism to increase therapist fidelity; clinicians can make use of consultant expertise in MST, but not of consultant support, in ways that increase their fidelity to the model. Thus, it may be that the alliance between consultant and clinician contributes to such phenomena as clinician attendance and participation in consultation sessions but not to the acquisition of expertise, skills, or strategies needed to adhere to the treatment model.

Similarly, it appears that consultant competence in MST is required to effectively coach therapists in MST-specific assessment, intervention, and analytic procedures if child functioning is to improve. On the other hand, decreases in internalizing and externalizing problems occurred when consultants focused on MST-specific procedures, irrespective of their level of perceived competence. This finding suggests that greater competence in MST is needed to help therapists influence child functioning relative to symptoms.

This study examines correlates of the implementation and short-term outcomes of a complex and evidence-based treatment in community settings. The findings indicate that the behavior of experts external to a treatment team is associated with therapist adherence and posttreatment youth outcomes. Consultant competence in MST also appears important to therapist adherence and child outcomes because it affects relations between other aspects of consultation, specifically alliance and a focus on MST-specific procedures and therapist adherence, and reductions in child behavior and functioning problems. The consultant’s attention to MST-specific procedures also related to reductions in child problems. The presence of a supportive alliance between consultant and therapist appears to have deleterious effects on therapist adherence when consultant competence is low and on child outcomes when the consultant focuses too little on the use of MST-specific procedures in specific cases. Thus, although future investigations may reveal the importance of alliance in retaining clinician participation in consultation, endorsement of the MST model, or retention in a MST program, our findings suggest alliance does not support therapist adherence or positive child outcomes.

The limitations of this study should be noted. Chief among these is that the constructs were measured from only one perspective (i.e., consultation from therapists’ perspectives, treatment fidelity and child outcomes from caregivers’ perspectives), and a multimethod measurement strategy (e.g., additional respondents, coding tapes of consultation sessions) might have pro-
duced different results. In addition, the data were correlational, thus prohibiting examination of the direction of effects. Therapist reports of consultation predated caregiver reports of therapist adherence and child outcomes, thus reducing the possibility that consultant behavior was influenced by either caregiver reports of adherence or child outcomes. On the other hand, because therapists were already working with the families in each sample at the time the consultation measure was administered, it is possible that their adherence prior to the consultation influenced the behavior of the consultant.

These limitations notwithstanding, this study provides empirical support for another linkage between components in the multilevel quality-assurance system designed to help community-based service providers implement MST with the fidelity required to achieve desired youth outcomes. To wit, linkages between therapist adherence and youth outcomes had been demonstrated in clinical trials and are emerging in the transportability study (Schoenwald et al., 2003). A recent study documented associations between MST supervision and therapist adherence (Henggeler, Schoenwald, Liao, et al., 2002). This study links expert consultation with therapist adherence and youth outcomes. The role of expert interface with individuals adopting innovations has been hypothesized as one of several factors helpful to the adoption process (Brown, 1995; Schoenwald & Henggeler, 2002). And, of course, treatment experts (i.e., developers of a treatment) are intimately involved in randomized trials that test treatment efficacy. This study provides evidence to support the hypothesis that weekly consultation with a treatment expert can support fidelity of implementation among front-line clinicians in community-based sites. The extent to which such expertise is needed to support the implementation of treatment models that are less complex and designed to treat youth with less serious problems is unknown. Similarly, how such expertise can be cultivated, refreshed in accordance with emerging new evidence, and sustained locally, within dissemination sites, is an open question, and one we plan to explore in future studies.

Meanwhile, given the encouraging evidence of the reliability and validity of the CAM, this measure will be added to the other fidelity assessment measures (therapist adherence, supervisor adherence) administered at dissemination sites as part of the MST quality-assurance process. When a sufficiently large sample of therapists and supervisors have completed both the consultant adherence and supervisor adherence measures, it will be possible to examine the relative contributions of consultant adherence and supervisor adherence to therapist adherence. (The small sample of supervisors participating in the pilot and transportability samples used to validate the CAM-prohibited analyses of consultation–supervision linkages.) The results of such analyses will inform future iterations of the quality-assurance process, which, in turn, will be evaluated. In this way, we hope to bring a CQI philosophy to the development, evaluation, and adjustment of the MST quality-assurance process, a process whose aim is to enable front-line staff to implement an evidence-based treatment with the fidelity needed to achieve positive outcomes for youth and their families.

References


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