Effects of Multisystemic Therapy® are inconsistent within and across studies

Twenty-three randomised controlled trials provide evidence of effects of Multisystemic Therapy® (MST) compared with treatment as usual or other treatments for youth with social, emotional, and behavioural problems. The quality of this evidence is uneven. It shows that effects of MST vary across studies, settings, outcomes, and endpoints.

What is this review about?
Multisystemic Therapy® (MST) is an intensive, home-based intervention for families of youth with social, emotional and behavioural problems. MST therapists engage family members in identifying and changing individual, family, and environmental factors thought to contribute to problem behaviour. Intervention may include efforts to improve communication, parenting skills, peer relations, school performance and social networks. MST is widely considered to be a well-established, evidence-based programme.

We synthesise data from all eligible trials to test the claim that MST is effective across clinical problems and populations.

What studies are included?
Included studies examine outcomes of MST for juvenile offenders, sex offenders, offenders with substance abuse problems, youth with conduct or behaviour problems, those with serious mental health problems, autism spectrum disorder, and cases of child maltreatment.

This review summarises findings from 23 randomised controlled trials of the effects of MST. These trials were conducted in the USA, the UK, Canada, The Netherlands, Norway and Sweden.

Most trials compare MST to treatment as usual (TAU). In the USA, TAU consists of relatively little contact and few services for youth and families, compared with more robust public health and social services available to youth in other high-income countries. One US study provided ‘enhanced TAU’ to families in the control group, and two US studies compared MST to individual therapy for youth.

What are the main findings of this review?
Available evidence shows that MST reduces rates of out-of-home placement and arrest or conviction.

Although most MST trials produce a mixture of positive, negative, and null findings, many reports focus selectively on positive, statistically significant results instead of all results.
in the USA, but not in other countries. Moderate to low quality evidence shows that MST has positive effects on self-reported delinquency and parent and family functioning, but we find no evidence of overall impacts on youth symptoms, substance abuse, peer relations, or school outcomes. Prediction intervals indicate that future studies are likely to find positive or negative effects of MST on all outcomes.

What is the quality of the evidence?
The quality of evidence for MST is mixed. There is only one prospectively-registered trial with complete reporting on all planned outcomes and endpoints. Nineteen trials (83%) had missing data on subgroups, outcomes, or endpoints.

We identified high risks of bias due to: inadequate randomisation procedures, lack of comparability between groups at baseline; systematic omission of cases; attrition; confounding factors, such as between-group differences in race, gender, and attention; selective reporting of outcomes; and conflicts of interest.

Most MST trials (96%) have high risks of bias on at least one indicator. GRADE ratings of the quality of evidence for seven primary outcomes are low to moderate, with high quality evidence on out-of-home placements from non-US studies. US studies led by MST developers have higher risks of bias, and US control groups receive fewer services and have worse outcomes (more out-of-home placements and arrests) than those in independent trials conducted in other high-income countries. Although these moderators are confounded, the US/non-US contrast appears to be more closely related to variations in effects across studies than investigator independence or risks of bias.

What are the implications for research and policy?
Our results stand in stark contrast to many previous reports and reviews on MST. Although most MST trials produce a mixture of positive, negative, and null findings, many reports focus selectively on positive, statistically significant results instead of all results. Careful appraisal of study methods and risks of bias is lacking in many published reports and reviews. Some investigators and many reviewers fail to consider alternative plausible explanations for results that appear to favour MST (e.g., lack of comparability of groups at baseline; differential attrition; confounding influences of race, gender, and additional attention paid to MST cases; and selective reporting of results).