

Top Tier Evidence Initiative:

Evidence Summary for Multidimensional Treatment Foster Care (MTFC)

HIGHLIGHTS:

- **Intervention:** A foster care program for severely delinquent youth.
- **Evaluation Methods:** Two well-conducted randomized controlled trials, and a third trial with some limitations.
- **Key Findings:** For girls, more than 50% reduction in criminal referrals and days in locked settings, and roughly 40% reduction in pregnancy rates, two years after random assignment. For boys, evidence of reductions in criminal activity is promising but not yet Top Tier due to study limitations.
- **Other:** Strong evidence of effectiveness applies to settings where the alternative treatment is community-based residential group care. Program cost is lower than group care. Longer-term study follow-up would be desirable to see if effects continue beyond two years.

I. Finding of the Top Tier Evidence Initiative's Expert Advisory Panel:

The Multidimensional Treatment Foster Care (MTFC) program meets the Top Tier Evidence Standard for its effect on girls, but not yet for boys. The Standard is defined, per recent Congressional legislation, to include: *Interventions shown in well-designed and implemented randomized controlled trials, preferably conducted in typical community settings, to produce sizeable, sustained benefits to participants and/or society.*

II. Description of the Intervention:

MTFC provides severely delinquent youths with foster care in community families trained in behavior management, and emphasizes preventing contact with delinquent peers. Typical community treatment for such youth, by contrast, often involves placement in a group residential care facility with other troubled youth.

As an example of the program's behavior management techniques, foster parents track and regulate the youths' behaviors using a point system, with youths receiving points for positive behaviors and losing points for negative behaviors. As youths accumulate points, they are afforded more freedom from adult supervision.

The program also provides the youths and their families with individual and family therapy, and program case managers closely supervise and support the youths and their foster families through daily phone calls and weekly foster parent group meetings. Biological (or adoptive) families to whom the youth is returning after the MTFC placement receive family therapy and support. The average length of stay in the program is 6-7 months. The average cost is about \$3,600 per month (2009 dollars), which is 30 to 50 percent lower than the cost of treatment in a group residential care facility in Oregon (where the studies of the program were conducted).

[Click here to go to the program's web site.](#)

III. Evidence of Effectiveness

This summary of the evidence is based on a systematic search of the literature, and correspondence with leading researchers, to identify all well-conducted randomized controlled trials of MTFC in the treatment of juvenile offenders. Our search identified three such studies, summarized below. Importantly, these trials evaluated MTFC in settings where the alternative treatment was community-based group care in a residential facility. Thus their findings apply only to the program as implemented in such settings. In addition, all three studies took place in Oregon, suggesting the value of future replication in other states.

The specific effects that were replicated in at least two trials – and thus are most likely to be reproducible in a program replication – are reductions in criminal activity and teen pregnancy. For reasons discussed below, we have stronger confidence that MTFC reduces criminal activity for females than males, and believe the effect on males requires corroboration in additional studies to constitute strong evidence.

The following summarizes the program's effects on the main outcomes measured in each study, including any such outcomes for which no or adverse effects were found. All effects shown are statistically significant at the 0.05 level unless stated otherwise.

Study 1 – Delinquent Girls

This was a randomized controlled trial of 81 chronic female juvenile offenders in Oregon who had been mandated by juvenile courts to receive out-of-home care due to chronic delinquency, and who had consented to study participation. The girls were randomly assigned to MTFC or to a control group that received community-based residential group care (the typical treatment for such youth in Oregon).

The girls averaged 15.2 years of age, and 12.0 lifetime criminal referrals. 28% had a prior pregnancy. 74% were Caucasian, 68% were from single-parent families, 32% were from families with an annual income of less than \$10,000.

The MTFC group received MTFC with a few adaptations for female offenders, such as additional instruction on how to avoid aggression in social relationships (e.g., by talking to friends about distressing situations) and how to regulate their emotions (e.g., with coping and problem-solving strategies).

Effects on the MTFC group over the 2-year period following random assignment (versus the control group):

- 69% fewer days spent in locked settings – e.g., jail, correctional facilities (47 days on average for the MTFC group vs. 149 days for the control group);
- 55% fewer official criminal referrals per youth (1.38 referrals vs. 3.04 referrals);
- 38% lower pregnancy rate (32.4% of MTFC girls became pregnant vs. 52.4% of control girls);¹

¹ To assess the statistical significance of this effect, the researchers pooled the sample from this study with that from study 2 (summarized below), to form a combined sample of 166 girls. The effect for the combined sample was statistically significant ($p < .01$).

The effect sizes for these outcomes were similar in years 1 and 2 of the follow-up, indicating that MTFC's effects persisted after the girls completed program participation.

The study found no significant effect on youths' *self-reported* delinquent behavior, raising a cautionary element in a pattern of mostly positive effects.

Discussion of study quality:

- The study had low to modest attrition: At the two-year follow-up, data on criminal referrals, delinquency, and days in locked settings were obtained for 75-80% of the sample, and data on pregnancy outcomes were obtained for 94% of the sample. The follow-up rates were similar for the MTFC group and the control group.
- At the start of the study, the MTFC group and control group were highly similar in their observable characteristics (e.g., demographics, past delinquent behavior, pregnancy history).
- The study measured outcomes for all youths assigned to the MTFC group, regardless of whether or how long they actually participated in the program (i.e., the study used an "intention-to-treat" analysis).
- The study evaluated MTFC as it is typically implemented in community settings (e.g., without direct researcher involvement in program delivery), thus providing evidence that the program is effective under real-world conditions.
- The study used multiple measures to assess outcomes, including both official police/court records and self-reports for crime and delinquency outcomes, and self-reports and caregiver reports for pregnancy outcomes.
- Research staff gathering outcome data were blind as to which girls were in the MTFC group versus the control group.
- A limitation of this study is that its follow-up period was only two years. Longer-term follow-up is needed to determine if the sizable effects at two years persist.

Study 2 – Delinquent Girls

This was a second randomized controlled trial of chronic female juvenile offenders in Oregon who had been mandated by juvenile courts to receive out-of-home care due to chronic delinquency, and who had consented to study participation. The study randomly assigned a sample of 85 girls to MTFC or to a control group that received community-based residential group care (the typical treatment for such youth in Oregon).

The girls averaged 15.3 years of age, and 11.8 lifetime criminal referrals. 22% had a prior pregnancy. 74% were Caucasian, 54% were from single-parent families, and 32% were from families with an annual income of less than \$10,000.

The MTFC group received MTFC with a few adaptations for female offenders (the same as in study 1), plus a component that targeted HIV-risk behaviors – including information on dating, sex, and high-risk behaviors, and strategies for being sexually responsible (e.g., refusal skills).²

Effects on the MTFC group over the 2-year period following random assignment (versus the control group):

- 41% lower pregnancy rate (22.7% of MTFC girls became pregnant vs. 38.5% of control girls);³

The study is expected to report crime/delinquency outcomes in the near future, and we will update this summary to incorporate the findings.

Discussion of study quality:

- The study had low attrition: At the two-year follow-up, pregnancy data were obtained for 98% of the original sample.
- At the start of the study, the MTFC group and control group were highly similar in their observable characteristics (e.g., demographics, past delinquent behavior, pregnancy history).
- The study measured outcomes for all youths assigned to the MTFC group, regardless of whether or how long they actually participated in the program (i.e., the study used an “intention-to-treat” analysis).
- The study evaluated MTFC as it is typically implemented in community settings (e.g., without direct researcher involvement in program delivery), thus providing evidence that the program is effective under real-world conditions.
- The study used both self-reports and caregiver reports (i.e., multiple sources) to measure pregnancy outcomes.
- Research staff gathering outcome data were blind as to which girls were in the MTFC group versus the control group.
- A limitation of this study is that its follow-up period was only two years. Longer-term follow-up is needed to determine if the sizable effects at two years persist.

² The fact that MTFC’s effects on pregnancy were similar in study 1 (without the HIV component) and study 2 (with the HIV component) suggests that this added component was not a key factor in the program’s effectiveness. But this conclusion can only be considered tentative because the girls were not randomly assigned between the two alternative versions of MTFC.

³ To assess the statistical significance of this effect, the researchers pooled the sample from this study with that from study 1 (summarized above), to form a combined sample of 166 girls. The effect for the combined sample was statistically significant ($p < .01$).

Study 3 – Delinquent Boys

This was a randomized controlled trial of 85 serious juvenile male offenders in Oregon who had been mandated by juvenile courts to receive out-of-home care due to chronic delinquency, and who had consented to study participation. The boys were randomly assigned to MTFC or a control group that received community-based residential group care (the typical treatment for such youth in Oregon).

The boys averaged 15 years of age, and had an average of 14 lifetime criminal referrals and more than four felony referrals. 85% were Caucasian, and 57% were from single-parent families.

Effects on the MTFC group over the 2-year period following random assignment:

Compared to the control group, boys in the MTFC group –

- Were 45% less likely to receive an official criminal referral for a violent offense (21% of the MTFC group received such a referral vs. 38% of the control group); and
- Had a 68% lower rate of self-reported violent incidents per youth (10.5 incidents for the MTFC group versus 32.6 incidents for control group).

Importantly, we believe these effects may be valid, but need confirmation in additional studies to constitute strong evidence of an effect on boys. This is because of a limitation in the study – namely, a sizeable pre-program difference in self-reported delinquency between the MTFC group and the control group (see “Discussion of Study Quality,” below).

Discussion of study quality:

- The study had low to modest attrition: At the two-year follow-up, data on official criminal referrals were obtained for 93 percent of the sample, and data on self-reported violence were obtained for 79 percent of the sample. The follow-up rates were similar for the MTFC group and the control group.
- The study measured outcomes for all youths assigned to the MTFC group, regardless of whether or how long they actually participated in the program (i.e., the study used an “intention-to-treat” analysis).
- The study used both official court records and self-reports (i.e., multiples sources) to measure crime/delinquency outcomes.
- An important study limitation is that there was a sizeable difference between the MTFC group and control group in their self-reported violent incidents in the six months prior to the study (namely, 28 such incidents per youth in the MTFC group vs. 45 in the control group). Although the two groups were highly similar in other characteristics (e.g., official criminal referrals and demographics), and although the study used regression adjustment to try to control for the pre-program difference in self-reported violence, the existence of this observable difference raises the possibility that there were other, unobserved differences between the two groups that could account for the MTFC group’s superior outcomes. For this reason, we believe the study’s results – although helping to substantiate MTFC’s effect in reducing criminal activity – constitute highly promising rather than strong evidence of effectiveness for boys. Confirmation in additional studies is needed.

- Other study limitations include:
 - The researchers who interviewed the boys to measure self-reported delinquency were not blind as to which boys were in the MTFC versus control group. Blinding would have been desirable to rule out the possibility that researcher bias (e.g., as proponents of MTFC) could have consciously or unconsciously influenced their measurement of these self-reports.
 - The researchers were closely involved in program delivery (e.g., in supervising parent and therapist training). This may limit the extent to which the study's findings generalize to delivery settings without such involvement (although the results of studies 1 and 2, above, show effectiveness for girls in such settings).
 - The study's follow-up period was only two years. Longer-term follow-up is needed to determine if the sizable effects at two years persist.

IV. References:

Study 1 – Delinquent girls

- Kerr, David C. R., Leslie D. Leve, and Patricia Chamberlain. "Pregnancy Rates Among Juvenile Justice Girls in Two Randomized Controlled Trials of Multidimensional Treatment Foster Care." *Journal of Consulting and Clinical Psychology*, June 2009, vol. 77, no.3, pp. 588-593.
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- Clarifying correspondence with Patricia Chamberlain (July 2008)

Study 2 – Delinquent girls

- Kerr, David C. R., Leslie D. Leve, and Patricia Chamberlain. "Pregnancy Rates Among Juvenile Justice Girls in Two Randomized Controlled Trials of Multidimensional Treatment Foster Care." *Journal of Consulting and Clinical Psychology*, June 2009, vol. 77, no.3, pp. 588-593.

Study 3 – Delinquent boys

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- Randomized Clinical Trial.” *Journal of Emotional and Behavioral Disorders*, vol. 12, no. 1, spring 2004, pp. 2-8.
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