



Top Tier Evidence Initiative:

Evidence Summary for Parent Management Training – the Oregon Model (PMTO)

HIGHLIGHTS:

- **Intervention:** A parent training program for recently-separated, single mothers with sons aged 6-10.
- **Evaluation Methods:** A well-conducted randomized controlled trial.
- **Key Findings:** Sons of women in the program group had substantially fewer arrests over nine years (an average of 0.76 arrests per boy in the PMTO group versus 1.34 per boy in the control group).
- **Other:**
 - (i) These findings apply to the version of PMTO for separated, single mothers with young boys, as opposed to other versions of PMTO.²
 - (ii) A study limitation is that its sample was geographically concentrated in one mid-sized Oregon city. Replication of these findings in a second trial, in another setting, would be desirable to confirm the initial results and establish that they generalize to other settings where the intervention might be implemented.

I. The Top Tier initiative’s Expert Panel has identified this intervention as **Near Top Tier**.

The Panel finds that this intervention meets the “Near Top Tier” evidence standard, defined as:

Interventions shown to meet almost all elements of the Top Tier standard (i.e., well-conducted randomized controlled trials... showing sizable, sustained effects), and which only need one additional step to qualify. This category includes, for example, interventions that meet all elements of the standard in a single site, and just need a replication trial to confirm the initial findings and establish that they generalize to other sites.

II. Description of the Intervention:

Parent Management Training – the Oregon Model (PMTO) is a manualized¹ parent training program for recently-separated single mothers with sons aged 6-10.² The program consists of 14 weekly meetings with groups of approximately ten mothers, each led by a pair of trained female staff whose degree levels range from high school diploma to Ph.D. Children do not attend the meetings, and the program does not directly intervene with them.

The meetings teach five core parenting practices: appropriate, noncoercive discipline (e.g., setting limits, following through, reinforcing prosocial behavior); skill encouragement (e.g., breaking tasks such as homework into achievable steps); monitoring; problem solving; and positive involvement. They also teach skills tailored to divorcing women, including (i) emotional regulation (e.g., recognizing negative emotions, and practicing techniques to help regulate them); (ii) managing interparental conflict (e.g., through problem solving and negotiation); and (iii) addressing children’s divorce-related concerns (e.g., through active listening, problem solving, and recognizing and managing emotions).

¹ Forgatch, Marion. *Parenting Through Change: A Training Manual.* Oregon Social Learning Center, 1994.

² Other versions of PMTO serve families – including two-parent families – with children of either gender exhibiting conduct problems (e.g., aggression, delinquency, and substance use).

In addition, the program includes a 30-minute videotape, showing families using effective parenting practices to help their children adjust to the divorce. Between meetings, content is reinforced through home practice assignments and mid-week phone calls providing homework support.

The program's cost is \$1,000-\$1,500 per family, in 2012 dollars. (This does not include of training and certifying the staff who lead the group meetings.³) [Click here to go to the program's website.](#)

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 PMTO for separated or divorced mothers. Our search identified one such trial. What follows is a summary of the study design and the program's effects on the main outcomes measured nine years after random assignment, including any such outcomes for which no or adverse effects were found.⁴ All effects shown are statistically significant at the 0.05 level unless stated otherwise.

Overview of the Study Design: Randomized controlled trial of PMTO with a sample of 238 recently-separated, single mothers and their sons aged 6-10, conducted in Oregon 1992-2005.

The study recruited 238 mothers living in or near Eugene, Oregon, who (i) had been separated from their partner within the past 3 to 24 months; (ii) lived with a biological son in grades 1 through 3; and (iii) did not cohabit with a new partner. These mothers were randomly assigned to either a group that received PMTO, or a control group that received usual community services.

The mothers averaged 35 years of age, and the boys averaged 7.8 years. 86% of the boys were white. The families' average annual income was \$24,000 (in 2012 dollars), and 76% were receiving public assistance. 96% of mothers had completed high school and 76% had some academic or vocational training beyond high school. 49% of the mothers were clinically depressed.

Effects of PMTO nine years after random assignment:

Compared to the control group, boys in the PMTO group (i.e., the sons of PMTO-group mothers) –

- Had substantially fewer arrests over the nine years (an average of 0.76 arrests per boy in the PMTO group versus 1.34 per boy in the control group); and
- Were 60% less likely to have been arrested by age 14 (the arrest rates for the PMTO versus control group boys were not reported). This effect was statistically significant at the 0.10 level but not the 0.05 level.⁵

³ The cost of training and certifying staff is about \$17,600 per staff person, plus an annual cost of about \$3,400 per staff person for ongoing coaching and recertification to maintain faithful program implementation. These costs of training staff would presumably be spread over the many program participants they work with.

⁴ In addition to the effects summarized in this write-up, the study found a pattern of positive effects 30 months after random assignment on outcomes such as boys' behavior, mothers' depression, and mothers' annual income. We do not summarize these findings because – in addition to being shorter term – the statistical significance of the effects was sometimes not reported, and most of these outcomes were measured with indices that do not allow one to readily interpret the size of the effects.

⁵ The study also found that boys in the PMTO group had lower levels of teacher-rated delinquency, attention deficit problems, and internalizing behavior (e.g., depression, anxiety) over the nine years, compared to boys in the control

The study appears to have found no significant effect on the boys' substance use, although the effect on this outcome was not clearly reported.

Compared to the control group, mothers in the PMTO group –

- Had substantially fewer arrests over the nine years (approximately 0.7 arrests per mother in the PMTO group versus 1.0 per mother in the control group). This effect was statistically significant at the 0.10 level, but possibly not the 0.05 level.⁶
- Reported a higher average standard of living across the nine years, compared to the control group (the effect size is unclear, because the study measured standard of living with an index that does not lend itself to ready interpretation).

The study found suggestive evidence of a decrease in mothers' likelihood of arrest during the nine years (as distinguished from number of arrests), but this effect did not reach statistical significance and therefore could be due to chance.⁷

Importantly, PMTO's effect on mothers' arrests may well be valid, but because it reached statistical significance in only one of two measures (i.e., number versus likelihood of arrest) – and possibly not at the 0.05 level – we believe it needs confirmation in additional studies to rule out the possibility that it is a chance finding.

The study appears to have found no significant effects on maternal depression or substance use over the full nine years, although effects on these outcomes were not clearly reported.

Discussion of study quality:

- The study had a long-term follow-up, with low sample attrition, for its main outcome measures: Arrest records at the nine-year follow-up were obtained for 95% of the boys and 100% of the mothers in the sample. Data on mothers' standard of living at the nine-year follow-up were obtained for approximately 80% of the sample, and follow-up rates were similar for the PMTO versus control group mothers.
- At the start of the study, the PMTO and control groups were highly similar in pre-program characteristics, such as child behavior, maternal depression, family income, and maternal arrests.

group. These effects often reached or approached statistical significance. However, we believe these findings are only suggestive because of a limitation in the study's measurement of these outcomes (namely, teacher ratings were obtained for only about half of the boys during the last three years of the follow-up period, when most of these effects were found).

⁶ The study reports that this effect was statistically significant at the 0.05 level in a one-tailed test, which means it is significant at least at the 0.10 level in a two-tailed test (the test we report in all Top Tier evidence summaries). The study does not provide sufficient information to determine if the effect is also significant at the 0.05 level in a two-tailed test.

⁷ Specifically, 22% of PMTO mothers were arrested during the nine years, versus 29% of control group mothers.

- The study appropriately sought outcome data for all families assigned to the PMTO group, regardless of whether or how long they actually participated in the program (i.e., the study used an “intention-to-treat” analysis).
- Criminal arrest outcomes were measured with official court records, accessed through a search of court and police databases in Oregon and, where applicable, other states. Mothers’ standard of living was measured through self-reports, obtained by interviewers who were unaware (“blind”) as to which mothers were in the PMTO versus control group.
- A study limitation is that the sample was geographically concentrated in one mid-sized Oregon city (Eugene). The Top Tier initiative’s Expert Panel believes that replication of the above findings in a second trial, conducted in another setting, would be desirable to confirm the initial findings and establish that they generalize to other settings where the intervention might normally be implemented.
- A second study limitation is that the program’s weekly group meetings were held at the Oregon Social Learning Center (OSLC), where PMTO was developed, and program delivery by OSLC staff was closely supervised by PMTO’s lead developer and researcher (Marion Forgatch). This may limit the extent to which the study’s findings generalize to delivery systems without such close developer involvement.

Other studies:

Other versions of PMTO have been evaluated in randomized controlled trials, but these versions were substantively different than the model described above because they were designed to serve different populations – e.g., two-parent families or stepfamilies of children exhibiting conduct problems (in contrast to the above study’s focus on separated, single mothers of boys who did not necessarily have conduct problems). Thus, program content in these other versions was not specifically focused on the challenges facing recently-separated single-parent families, and/or was delivered to families individually (rather than through group meetings). Because of these programmatic differences, these studies are not summarized here. In addition, the Top Tier initiative’s review of these other versions found the evidence to be suggestive, but not yet strong enough to qualify for Top Tier or Near Top Tier (e.g., due to only short-term follow-up).

IV. Summary of the Intervention's Benefits and Costs:

If taxpayers fund implementation, what benefits to society can they expect to result, and what would be their net cost? The following table provides a summary. This is intended to be a general overview of social benefits in relation to taxpayer cost, rather than a comprehensive benefit-cost analysis. It assigns monetary value to particular benefits and costs only when doing so requires minimal assumptions.

<u>Benefits To Society</u>
<ul style="list-style-type: none">▪ For <u>sons</u> of the women in the PMTO group: substantially fewer arrests over nine years (0.76 arrests per boy in the PMTO group versus 1.34 per boy in the control group).▪ For the <u>mothers</u> in the PMTO group: suggestive evidence of fewer arrests over nine years (0.7 arrests per PMTO group mother versus 1.0 per control group mother).
<u>Net Cost To Taxpayers</u>
<ul style="list-style-type: none">▪ Approximately \$1,000-\$1,500 per family, in 2012 dollars.*

*This does not include the cost of training and certifying the staff who lead the group meetings, estimated at about \$17,600 per staff person, plus an annual cost of about \$3,400 per staff person for ongoing coaching and recertification. These costs of training staff would presumably be spread over the many program participants they work with.

V. References:

Main study – recently-separated, single mothers

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