



School enrolment following multisystemic treatment: A register-based examination among youth with severe behavioural problems



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ABSTRACT

This article addresses the ongoing debate about the effectiveness of multisystemic treatment (MST) by examining school enrolment at age 18 among youths who have received MST. The analyses are restricted to youths who engage in antisocial behaviour and/or substance abuse. We used propensity score matching to compare school enrolment between youths who had received MST and a control group who had not received MST. The analyses of population data showed a somewhat lower school enrolment in the MST group compared with youths receiving treatment as usual.

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1. Introduction

Severe behavioural problems among youth are a matter of deep concern and are considered to be a major social welfare challenge (Olsson, 2010). In addition to the high rate of delinquency and substance abuse among these youth, research over several decades from several countries has shown high rates of school drop-out, unemployment, and adult criminal behaviour among delinquent and drug-abusing youth (see e.g. Marti, Stice, & Springer, 2010; Mensch & Kandel, 1988; Patterson, DeBaryshe, & Ramsey, 1989). In the 1970s, to reduce juvenile criminal activity and other types of disruptive behaviour, Scott Henggeler and colleagues at the Medical University of South Carolina introduced multisystemic treatment (MST).

MST is a short-term, family- and community-based therapeutic approach for families of youth aged 12–17 years with serious antisocial behaviour. Therapists are available 24 h a day, 7 days a week, and the treatment programme focuses explicitly on the family–school linkage (Brown, Henggeler, Schoenwald, Brondino, & Pickrel, 1999). MST is time-limited, with the average treatment period being three to 5 months (MST Services Inc., 2015). Initially, MST targeted youth with severe behavioural problems, such as delinquency, substance abuse and severe school problems. Currently, the target population has been expanded to other vulnerable youth, including abused and neglected youth, sex offenders and obese youth (for a review see van der Stouwe, Asscher, Stams, Dekovic, & van der Laan, 2014).

MST tries to achieve long-term results by keeping youth in their homes, in school, and out of trouble. In general, a key predictor of favourable long-term outcomes is education (De Ridder et al., 2012;

Hammarström & Janlert, 2002; Rumberger & Lamb, 2003). In addition, reengagement in education has been found to help youth who received MST by giving them hope for the future and motivation to change their current behaviour (Tighe, Pistrang, Casdagli, Baruch, & Butler, 2012). Thus, in this article we focus on school enrolment following MST. We ask whether youth who have been involved with child welfare services because of severe behavioural problems are still in school at the age of 18 because they have had MST.

This question has been answered affirmatively in the literature. Brown et al. (1999) showed that juvenile offenders who received MST improved their school enrolment compared with peers who received the usual services. Improved functioning for the MST group of juvenile offenders at school is also found in (Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006). Furthermore, Henggeler et al. (1999) showed that youth with psychiatric crises who received MST instead of hospitalization were absent from school fewer days than those who were hospitalized. Moreover, Weiss et al. (2013) found a positive effect of MST on number of days present in school among adolescents with serious conduct problems. On the other hand, Barth et al. (2007) found that demographic background characteristics were more important in explaining educational progress than was MST. However, the Barth et al. (2007) study is based on a small sample and the authors urged caution in interpreting their results. Consequently, we do not know if MST increases school enrolment or if this positive relationship is because of a selection of the most resourceful youth into MST. Because there are only a few studies with somewhat ambiguous results, we need research on educational outcomes after MST.

In this article, we restricted our analyses to youth who previously received MST because of antisocial behaviour and/or substance abuse. The data for this study were drawn from Norwegian population data on child welfare clients. We examined school enrolment at the age of 18

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among youth who engaged in antisocial behaviour and/or substance abuse and received MST, and compared them with similar youth who received treatment as usual (TAU). We used propensity score matching (PSM) to select youth sharing important background characteristics with the MST group for the comparison group (TAU). We conducted analyses exploring MST and school enrolment on 7480 adolescents (MST = 1086, TAU = 6394).

The remainder of the article is organized as follows: we present an overview of the child welfare population and child welfare services in Norway; next we briefly review previous research on MST, followed by the methods and results of the current study; and finally, the article ends with a discussion of the empirical findings.

1.1. Child welfare clients and services in Norway

In Norway, almost 4% of children younger than 18 years in a given year receive welfare benefits. The Norwegian child welfare system has a strong focus on assistance at home and family support; more than 80% of all the children involved with child welfare services receive voluntary assistance in the home (Backe-Hansen, Madsen, Kristofersen, & Hvinden, 2014). There are more than 20 categories of in-home services, and the most frequent in-home intervention is advice and counselling. About one-third of child welfare clients receive advice and counselling (Christiansen, 2015). Manual-based parenting programmes that target conduct problems (e.g., MST and Parent Management-Oregon (PMTO)) were first introduced in the late 1990s, and since then they have been implemented nationwide. Today, MST teams are available in all of Norway's 19 counties, though they are not available in some sparsely populated areas. The Norwegian Centre for Child Behavioural Development trains the 21 MST teams in Norway.

1.2. Past evidence of the effects of MST

Outcomes other than educational attainment following MST have been widely evaluated and several studies have shown that MST is effective in reducing delinquency and/or improving individual and family functioning (for an overview see *MST Services Inc., 2015*). Positive outcomes following MST were also found in the only randomized controlled trials (RCT) conducted in Norway (Ogden & Hagen, 2006; Ogden, Hagen, & Andersen, 2007), which were based on a follow-up study to (Ogden & Halliday-Boykins, 2004). These studies compared the treatment group receiving MST with a comparison group receiving TAU.

However, the conclusion that MST leads to positive outcomes has been compromised by methodological difficulties, as Littell, Campbell, Green, and Toews (2005); Littell (2006), and Littell (2008) have argued. Littell and colleagues argue that MST offers no substantial benefits compared with the usual services and that the positive evaluations of MST are a result of methodological shortcomings and errors of interpretation in previous reviews. However, Henggeler, Schoenwald, Swenson, and Borduin (2006) have argued that Littell's analyses misinterpret and misrepresent MST research studies. The arguments that Littell makes on the one hand, and those that Henggeler and colleagues make on the other hand cover several areas, but one main dispute concerns methodological issues. Mainly, Littell argues that results from previous trials may be affected by unknown selection biases associated with drop-out and different levels of participation in MST. Henggeler and others do, however, disagree with this claim. Our aim in this article is not to address this disagreement. Then again, the potential of bias due to attrition is minimal in registry data since we are able to identify the youths' educational attainment at the age of 18 independently of him/her taken part in the study. Individuals who died have been excluded from the analysis. In addition, any problems with selection are reduced by controlling for individual, parental, and geographical characteristics. However, it seems necessary to emphasise that the outcome measure following MST in the present article is limited to one single item – i.e. being in school or

not at the age of 18 –, which is a more restricted measurement than previous studies. Consequently, the present study does not examine any effect of MST on unemployment, criminal behaviour, or other severe problems. In addition, any long-term effects on educational attainment is not examined.

1.3. Identifying selection and attrition biases

Most of the research on MST has been conducted as relative small, controlled trials using a so-called yoked design, which randomly assigns participants to receive either MST or the usual services (TAU) (e.g. Henggeler et al., 1999). Randomized control trials are often considered the gold standard for measuring the causal effect of an intervention. However, random allocation in trials is complex because allocation to the treatment group and the non-treatment group may differ not only with respect to treatment or not, but also with respect to other conditions that may have an impact on the effects of the intervention. For instance, MST is restricted to parents who are sufficiently involved with their children and motivated to start MST. Thus, it seems reasonable to assume that youth from the most disadvantaged families are excluded from MST, as Barth and colleagues have argued (Barth et al., 2007). Social stratification research has established that educational attainment is related to family resources, such as the parents' education, employment, income and/or immigrant background (see e.g. Blossfeld, Blossfeld, & Blossfeld, 2015; Jonsson & Rudolphi, 2011). As far as we know, previous studies have not adjusted for any impact of background characteristics on the effects of MST. In the present study, we include several background characteristics about the youths and their families, such as parental education, family income, the youth's gender and immigrant background.

In addition, whether or not someone is offered MST may differ by the characteristics of the community in which the youth/family live. Because MST is offered round-the-clock, it demands a relatively high number of skilled therapists, and some areas may not have enough trained MST therapists. This is particularly true in areas that are sparsely populated, as in many parts of Norway. With about five million inhabitants in an area somewhat larger than Germany, which has about 80 million inhabitants, the population density in some parts of Norway is very low. Thus, MST is not offered in all parts of the country. Consequently, selection into MST and TAU may differ by characteristics of the youth, family and/or location. To address these issues, we included several indicators in our analyses to control for selection biases associated with the availability of MST.

In addition, in previous research on MST, many participants are lost to follow-up, although not in a pairwise fashion. Typically, the remaining participant of the MST/TAU pair is retained in the analysis when this happens. According to Littell (2006), this method poses a threat to the internal validity of such research. With regard to school enrolment following MST, it could introduce an invidious bias if MST youths with low school motivation are more likely to drop out of the trial. In this study, we have considered this by using information from public administrative registries, which resolves much of the problems of attrition (we do not need the consent of the youth, parents, or teachers to obtain such information).

Moreover, to the best of our knowledge, previous MST studies have been based on information collected from people involved in MST programmes (e.g., parents, teachers, and social workers). Consequently, evidence of positive outcomes for MST may have been artificially produced by collecting information from individuals with subjective perceptions of the MST programme (e.g. positive satisfaction bias, see Gail & Benichou, 2000). The present study utilizes longitudinal register-based information. Consequently, this approach removes any biases in using self-reported measures. However, it should be noted that previous RCT-studies include information from several informants (youth, parent, teacher etc.), which reduces any problems with subjective perceptions. In the present study, the utilization of administrative

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