



Does Multidimensional Treatment Foster Care (MTFC) Reduce Placement Breakdown in Foster Care?¹

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Abstract

This study describes and compares placement breakdown rates between three samples of antisocial youth in a child welfare system: a Swedish and a US MTFC program (Multidimensional Treatment Foster Care), and a Swedish national cohort study focusing on adolescent breakdown in traditional out-of-home care. The Swedish national cohort study had more than a three-fold increase in risk of breakdowns compared to the Swedish MTFC program. Although not all the differences were statistically significant, the trend in the material was clear. Regardless of type of care, gender, and time of breakdown, MTFC youths in Sweden with their combination of high internalizing and externalizing symptoms showed lower breakdown rates compared to the other two studies. The author concludes that multi-contextual treatment programs such as MTFC help youths complete their treatment better than traditional out-of-home care.

Key Words: Breakdown, Antisocial youths, Foster home care, Multidimensional Treatment Foster Care

Introduction

This study focuses on breakdown rates in out-of-home care for adolescents with behaviour problems. We investigated whether a treatment program imported from the USA and implemented in Sweden could replicate the same low breakdown frequencies as in the USA. In addition, we focus on whether this Swedish treatment program is more effective at keeping youth in treatment than traditional foster home care and residential care. When discussing premature disrupted placement in the context of out-of-home care, we use the term breakdown.

In the USA, Treatment Foster Care programs are becoming more common and are considered to be an alternative way of providing treatment for young people with behaviour problems (Reddy & Pfeiffer, 1997; Newton et al., 2000; Andreassen, 2003; Andershed & Andershed, 2005; Gilbertson et al., 2005). In the USA, the Multidimensional Treatment Foster Care (MTFC) program has effectively treated youth with behaviour problems and demonstrated low breakdown rates (Chamberlain, 1990, 1994; Chamberlain et al., 1992; Chamberlain & Mihalic, 1998; Chamberlain & Reid, 1998; Fisher & Chamberlain, 2000). These promising re-

sults may well explain why there are several MTFC trials today in Sweden, the United Kingdom, Ireland and Netherlands (Chamberlain, personal communication, 2007).

Drop-outs or placement breakdown are a well-known phenomenon in treatment research. In areas like psychiatry and psychotherapy, drop-out or premature disruption of treatment has been a recognized problem for many years. In 1978, Fisher found that 50% of the psychotherapy clients never came back after their first meeting (1978). Reviews of psychiatric and therapeutic treatments have found that around 40-60% of children and adolescents drop-out prematurely, a percentage that indicates the obvious challenge of retaining clients in treatment (Garfield, 1994; Kadzin, 2004). Breakdown is also a very common problem within social work. In a review of studies focusing on parents who batter their children, Corchoran (2000) found several studies where 70-80% of the parents never completed their treatment. Swedish treatment programs for drug abusers show drop-out figures of 60-70% (Berglund et al., 1991). Breakdown is a selection process. Those who drop-out of treatment usually have more problems than those who complete their treatment (Kadzin, 1997; Newton et al., 2000). This explains why an evaluation of treatment outcomes could be misleading if the drop-outs are not included in the analysis. British researchers who coined the term "breakdown" were the first in Europe to highlight the importance of placement breakdown within foster care during the 1960s and 1970s (Trasler, 1961; Parker 1966; George, 1970; Napier, 1972). Since then, many studies that focus on both foster care and residential care have been conducted in the UK, the USA, Australia, and Europe (Cautley, 1980; Stone & Stone, 1983; Festinger, 1986; Millham et al., 1986; Berridge & Cleaver, 1987; Cooper et al., 1987; Fenyo et al., 1989; Berry & Barth, 1990; Fratter et al., 1991; Kendrick, 1996; Courtney & Barth, 1996; Newton et al., 2000; Barber & Delfabbro, 2002; Sallnäs et al., 2004; Farmer et al., 2005). A review of international literature of out-of-home care from longitudinal studies showed breakdown rates between 20-40% for children and between 40-50% for adolescents (Egelund, 2006). Sweden has corresponding results for adolescents in out-of-home care (Socialstyrelsen, 1995; Sallnäs et al., 2004). Younger children have generally more varied or lower breakdown rates (Millham et al., 1986; Berridge & Cleaver, 1987; Van der Ploeg, 1993; Minty, 1999; Strijker et al., 2005).

Breakdown is a substantial problem for all involved. What are the consequences when nearly 50% of all placements are disrupted? The placements affected by breakdowns are expensive and increase the financial costs for the child welfare system (Gilbertson & Barber, 2003; Chamberlain et al., 2006). Recruiting and retaining foster parents is an already well-known problem in many countries (Chamberlain et al., 1992; Martin et al., 1992; Sallnäs, 2000). The painful experience of breakdown is an additional motive for a care provider to leave the system (Bebbington & Miles, 1990; Triseloitis et al., 2000; Wilson et al., 2000; Department of Health, 2002). For a child, a disrupted placement could be a traumatic experience that places the child at risk for further unstable placements (Courtney, 1995; Newton et al., 2000; Vinnerljung et al., 2001; Egelund, 2006). It is also well documented that youth who experience an unstable exit from foster care and prematurely move back home are in danger of new acts of parents' rejection (Barth & Berry, 1987; Farmer, 1993; Biehal, 1995). Jonson-Reid and Barth (2003) have found that unstable exits from foster care are associated with delinquency and subsequent probation foster care. Attachment issues are also important correlates of placement disruption (Palmer, 1996; Leather, 2002). In a longitudinal study, Anderson (2005) found support for the theory that relationships formed at a later stage in childhood could have a resilient effect on the child's development. Other negative aspects of breakdown are frequent changes of school with no continuity and lower educational attainment (Berridge & Cleaver, 1987; Biheal, et al., 1995).

Several factors may contribute to breakdown. Many youths placed in out-of-home care have severe and complex behavioural problems (Fanshel & Shinn, 1978; Rushton, 1989; Rutter, 2000; Vinnerljung et al., 2001) and are at risk for the breakdown of placements (Millham et

al., 1986; Berridge & Cleaver, 1987; Fenyo et al., 1989; Berry & Barth, 1990; Fratter et al., 1991; Chamberlain, 1994; Berridge, 1997; Barber & Delfabbro, 2002; Farmer et al., 2005). Farmer (1993) hypothesises that two heterogeneous groups of children – “protected children” and “disaffected children” – enter care. In a longitudinal study of 200 children referred to foster care, Delfabbro et al. (2001) found similar categories. The categories were described as different stages in a foster child’s life. The “protected children” were younger and placed in care because of their parent’s inability to properly care for the child. The “disaffected” children were older and placed in care because they displayed antisocial problems. Among the “disaffected” children, there were those who both exhibited mental health problems and serious conduct disorder. They showed 80% probability of experiencing placement breakdown within the first four months of care due to problem behaviour. Other studies illustrate how conduct disorder and mental health problems and instability in foster home placements relate to one another (Vogel, 1999; Frame & Berrick, 2000; Delfabbro, Barber & Cooper, 2001; Holland & Gorey, 2004). In a previous study of children placed in out-of-home care, we followed a Swedish national cohort of 776 youths for five years. In this study, 57% of the antisocial youth placed in a foster home (non-kinship foster home) prematurely ended their placement (Vinnerljung et al., 2001; Sallnäs et al., 2004). If the youths had a combination of antisocial and mental health problems, the disruption rate was around 80%. Delfabbro et al. (2001) found similar results. In addition, other studies have found that antisocial behaviour and mental health problems correlate (Harrington et al., 2005; Rutter et al., 2006; Vinnerljung & Sallnäs, 2008). In a later study, the Swedish youths in the national cohort study were followed-up to age 25. Youth placed in care for antisocial behaviour had considerably worse long term outcome compared to youth placed in care of other reasons. Breakdown was a robust indicator of negative long-term prognosis independent of other background variables (Vinnerljung & Sallnäs, 2008).

Clearly, antisocial problems and breakdown are strongly linked; however, the direction of the causal effects is rarely discussed. In a landmark study, Newton, Litrownik, and Landverk (2000) found that children entering foster care without exhibiting behavioural problems and exposed to placement breakdowns were at high risk of developing behaviour problems. But some children also developed severe problems due to placement breakdown. The authors concluded that behaviour problems could be both the cause and the consequence of placement breakdown.

Increasing demand for effective treatment programs

Obviously, placing an adolescent with antisocial problems in foster care is risky business. As the main reason for placing adolescent in out-of-home care in Sweden is behaviour problems (Vinnerljung et al., 2001; Sallnäs et al., 2004), there is an increasing demand for effective programs for this target group. Because Sweden lacks evaluations of mainstream out-of-home care, there is a trend towards importing already evaluated treatment programs from abroad (Socialstyrelsen, 2004). Researchers from Sweden and other countries are collaborating to provide better evidence-based treatment programs (Ferrer-Wreder et al., 2004).

Treatment programs focusing on antisocial youth are most successful when they target multiple aspects of risks such as family, peer group, and school. Especially, when they focus on improving parent behaviour and management skills and encourage emotional cohesion (Lipsey, 1995; Farrington, 2003). This was recognized by Chamberlain and her colleagues when they started trials of Multidimensional Treatment Foster Care (MTFC) for delinquent youth in the USA. Initially, they questioned whether it was at all possible to carry through foster home placements with this group without high breakdown rates (Chamberlain & Reid, 1998). Today, MTFC is one of twelve Blueprints Model Programs scientifically validated by the Centre for Study and Prevention of Violence and MTFC is implemented in both Canada and Sweden.

There are newly started MTFC sites in Great Britain and the Netherlands. In 2001 Swedish researcher started to set up the MTFC program in Sweden, in collaboration with the Oregon Social Learning Centre, USA. Presently, the Swedish program is the object of an ongoing evaluation. The youths included in the program represent one of three samples in this study.

The aim of the study

In this study, we compare the breakdown rates and the relative risk of breakdown of adolescents with behaviour problems in three different samples:

1. a MTFC program in Sweden;
2. a Swedish national cohort study of traditional care; and
3. a MTFC program in the USA.

When comparing the breakdown rates, we are also interested in the time of breakdown, gender differences, and the context of the breakdown.

What is MTFC?

Multidimensional Treatment Foster Care treats adolescents who have problems with chronic antisocial behaviour, emotional disturbance, and delinquency. MTFC is a social learning-based treatment program used as an alternative to residential treatment. Several studies show that MTFC reduces the number of placements in residential care, decreases child problem behaviour, reduces the risks of placement disruption, reduces the number of foster parents dropping out, and reduces cost of care (Chamberlain, 1990, 1994; Chamberlain et al., 1992; Chamberlain & Mihalic, 1998; Chamberlain & Reid, 1998; Fisher & Chamberlain 2000; Aos et al., 2004).

MTFC programs, which recruit and train foster parents, have two main goals: to decrease deviant behaviour and to increase pro-social behaviour. The treatment program includes formalized cooperation between a treatment team and the youth's birth parents, school, leisure, and social services. The foster parents provide the youth with a structured and therapeutic living environment and they receive daily supervision and support from a program case manager. A checklist (PDR, Parent Daily Report Checklist) is used daily to measure the youth's behaviour problems. This checklist is completed by the foster parents and communicated in a brief telephone call. The PDR allows the treatment team to follow the youth's behaviour and develop a course of treatment according to that development. The foster parents can only have one foster child placed at a time. The youth's parents are involved in shaping the treatment plan and participate in family therapy. The MTFC prepares the family to reunite when the youth completes treatment (Chamberlain, 1994).

Method

To compare breakdown rates, three samples have been included in this study: a sample of youths participating in a Swedish MTFC program, a sample of children and youths participating in the US MTFC program, and a national cohort sample of youths in out-of-home care in Sweden. (Please see the methodological limitations' section about comparing breakdown rates in different samples.)

Sample 1

This sample represents a part of an ongoing evaluation of the Swedish MTFC site. The inclusion criteria required the youth to display the same prominent behaviour problems common to youths diagnosed with CD (Conduct Disorder) according to the Diagnostic and Statistical Manual of Mental Disorder (DSM-IV-TR). The evaluation included via randomization 37 youths in a MTFC program and 37 youths in “treatment as usual”. The youths (13-17 years old) were all referred by the Child Welfare Department. Because the current study compares youth exposed to MTFC treatment with two other samples, the group of “treatment as usual” was not included in this study. Further inclusion criterion required MTFC treatment for at least one year. Six youths were excluded because they had not been in treatment for a full year. The final sample consisted of 31 youths (17 boys and 14 girls; 13-17 years old) with documented serious behaviour problems (Table 1). The on-going evaluation of MTFC gave us access to pre-treatment data from the Youth Self Report (YSR) and the Child Behaviour Check List (CBCL) (Achenbach & Rescorla 2001). The clinical testing with YSR and CBCL showed that the youths had high ratings on externalizing and internalizing symptoms. The youths’ self-ratings showed about 1.5 to 2 times higher scores compared to normal population peers (Broberg et al., 2001). The mothers’ rating of their children’s behavioural problems showed at least 4 to 6 times higher scores compared to normal population peers (Larsson & Frisk, 1999) (Table 1).

Two other studies have used YSR and CBCL scoring from the present MTFC sample to compare the severity of behaviour problems with youths placed in MST (Multi systemic therapy), FFT (Functional family therapy), psychiatric inpatient units, and secure units (Gustle et al., 2007; Westerstrand & Zetterberg, 2007). The results showed that youths in the Swedish MTFC had similar or slightly more psychiatric symptoms and more externalizing symptoms compared to youths in psychiatric inpatient units and youths being treated in other evidence-based treatment programs. The MTFC group had similar externalizing symptom as youths in secure units (residential care for severely antisocial youth). In addition, the mothers of youth placed in MTFC showed the worst psychiatric health compared to mothers with youths in other treatment programs, measured using the Symptom Checklist 90 (SCL-90) (these results are not presented in this article). This information provides a compelling picture of youth with serious behavioural problems.

Table 1

The pre-treatment scores of Youth Self Report (YSR) and Child Behaviour Check List (CBCL) for the Swedish MTFC sample, N = 31, and normal scores of YSR (Broberg et al., 2001), and CBCL (Larsson & Frisk, 1999).

	MTFC pre-treatment		Normal	
	Score	(sd)	Score	(sd)
YSR (Youth report)				
YSR Internal	13.9	(9.8)	9.5	(7.2)
YSR External	25.7	(9.8)	13.8	(7.9)
YSR Total	59.6	(22.9)	38.4	(20.8)
CBCL (Mother report)				
CBCL Internal	16.4	(8.8)	4.2	(4.6)
CBCL External	32.4	(15.5)	5.5	(5.7)
CBCL Total	67.8	(30.4)	14.1	(13.5)

Sample 2

We also used a sub-sample from a Swedish national cohort study on out-of-home care for adolescents with focus on breakdown, (see Introduction) in this article, called “the Swedish breakdown study” (see Sallnäs et al, 2004 for a detailed description) The national cohort study included all adolescents between the age of 13 and 16, who entered Swedish out-of-home care 1991 (N = 766). Here we have used a sub-sample of 275 teenagers, 99 girls and 176 boys, placed in care due to antisocial behaviour (displaying criminal or violent conduct or alcohol/drug abuse). In this sample, we had no access to clinically scored behaviour problems. Instead, we have identified the youths with criminal or violent conduct and alcohol/drug abuse using municipal case files including police reports. Criminal conduct included a chain of criminal offences documented in police reports. Violent conduct criteria included several violent acts, robbery, and repeated violence in school or at home, documented in police reports. To identify alcohol abuse, several police reports referencing abuse were required. To identify drug abuse, descriptions of the abuse had to be included in the case files. It should be noted that the police reports were all included in the municipal case files. In Sweden, no legal sanction can be imposed for acts committed by youths under fifteen years old. Young persons between 15 and 17 years old cannot be sentenced to prison (except under special circumstances). They are referred to the social welfare authorities (Jansson, 2004). The youth were placed in non-relative foster home, public residential care, and private residential care. Public residential care is run by county or municipal social authorities. Private residential care is primarily small residential care units, run by former foster parents (Vinnerljung et al, 2001). Foster homes were the most common placement for antisocial youth, except for the most delinquent youths placed in secure units (displaying criminality, violence, and drug abuse at the same time) (Vinnerljung et al., 2001). Secure units are not included in the comparisons within the present study. We found no significant differences between the Swedish break down study and the Swedish MTFC study regarding gender, ethnicity, age, and legal ground for placement (voluntary or court order placement) (Not shown in Table).

Sample 3

The US MTFC study included 90 youths (51 boys and 39 girls) referred by the Child Welfare Department between 1994 and 1997 to the Oregon Social Learning Center’s (OSLC) Treatment Foster Care program (Smith et al., 2001). The breakdown figures used in the analysis included both children and youths because we could not separate the data between children and youth (see further discussion in Methodological limitation). At the time of placements, the participants were between 2 and 16 years old and displayed emotional and behavioural disorders. The most common diagnoses were Oppositional Defiant Disorder (ODD), Posttraumatic Stress Disorder (PTSD), and Attention-Deficit/Hyperactivity Disorder (ADHD) as defined by DSM-IV-TR. Placement breakdowns were coded during the first and second six months of treatment (Smith et al., 2001).

Measures

To examine breakdown, we looked at the time of breakdown, breakdown by type of care, and breakdown by gender. In practically all other studies, most breakdowns have occurred at the beginning of the placement (overviews in Vinnerljung et al, 2001; Egelund, 2006). Therefore, we have calculated the breakdown rates for each study at six and 12 months after intake. Since rates tend to differ between different types of care, comparisons were made between both foster and residential care (Vinnerljung et al., 2001; Egelund, 2006). In addition, we checked for differences between boys and girls since previous research is inconclusive regarding the influ-

ence of gender on breakdown (Smith et al., 2001; Egelund, 2006). Finally, interviews were used to describe the actual breakdowns that occurred in the Swedish MTFC study.

Definition of breakdown

In the literature, various definitions of breakdown have been used over time, complicating comparisons between studies (eg. Rowe, 1987; Minty, 1999; review in Vinnerljung et al, 2001). The definition used here is the same as in the Swedish breakdown study (Sallnäs et al., 2004):

1. the agency responsible for placing the adolescents in care ends the placement because the carers provides inferior services; or
2. the carer (foster parents, residential home) ends the placement against the wishes of the placing authority; or
3. the youth runs away, refuses to return, or refuses to continue with placement.

The US MTFC study defines breakdown as a youth being removed from a foster home as a result of at least one of these conditions:

1. foster parents are unable to manage and treat a youth's emotional and/or behavioural difficulties as judged by the program staff;
2. foster parents request that a youth be removed from their home (Smith et al., 2001); and
3. the youth runs away (in personal communication with Dr. Chamberlain, August, 2007).

These two definitions of breakdown can be used in a reasonably comparable way according to our interpretation and after consulting with the principal investigator of the USA study (Dr. Chamberlain). Although the definitions are presented in different ways, the essence of the breakdown is the same.

Analysis

We compared breakdown rates between three studies with bivariate statistical analyses. A two-tailed non-parametric test (Fisher's Exact Test) was used to analyse whether the different breakdown rates were significant, (Lagerberg & Sundelin, 2000). We also estimated relative risks of breakdown (RR; cp. Lipsey, 1998) by comparing breakdown rates. All statistical analyses were performed using SPSS version 15.0.

We described four cases of placement breakdowns in the Swedish MTFC program. The description of the breakdowns provided a close look at the context of the breakdown. The case manager for each placement was interviewed by telephone about his/her experience of the breakdown. The entire interview was transcribed and summarized. The information gathered during the interviews was further condensed into Table 3.

Results

Of the three studies, the Swedish breakdown study is the most diverse regarding the sample size and the data source. The two MTFC studies are similar as the samples include individuals participating in the same kind of treatment program (see Methods). Table 2 presents, the rates and relative risk (RR) of breakdown for each study by category of care and gender for six and twelve months. The significant differences showed in the table are between the Swedish MTFC study and the other two studies. Because missing data made it impossible to separate analyses of breakdowns for girls and boys in the US MTFC study, we only present gender differences between the Swedish MTFC study and the Swedish breakdown study.

Table 2

Breakdown of placements within six and twelve months, comparing data from the MTFC study in Sweden with data from the Swedish breakdown study and the MTFC study in the USA by type of care, gender, and Relative Risk (RR).

Breakdown	MTFC in Sweden N = 31		RR ^a	Residential care (Private & Public) in Sweden N = 200		RR ^a	Foster home care in Sweden N = 75		RR ^a	MTFC in the USA N = 90		RR ^a
	n	%		n	%		n	%		n	%	
6 months												
Total	3	(10)	2.1	37	(17)	1.9	20	(27)*	2.7	16	(18)	1.8
Girls	1	(7)	3.7	14	(21)	2.9	10	(33)†	4.7	No data		
Boys	2	(12)	1.6	23	(18)	1.5	10	(23)	1.9			
12 months												
Total	4	(13)	2.5	58	(29)*	3.4	34	(45)*	3.5	23	(26)	2.0
Girls	1	(7)	5.1	19	(28)	3.8	17	(57)*	8.0	No data		
Boys	3	(18)	1.8	39	(30)	1.7	17	(38)	2.2			

* $p < .05$, † $p < .10$

a RR = Relative Risk

Table 2 shows that breakdowns within six months tend to be lower in the Swedish MTFC program than in traditional care. The only significant difference was between the Swedish MTFC study (10%) and foster home care (27%); in other words, there was a 2.7 times increased risk of breakdown. One-third of the girls in traditional foster home care broke their placement, a 4.7 times higher relative risk compared to the Swedish MTFC program.

At 12 months after admission, the differences in breakdown rates between the Swedish MTFC study (13%) and the Swedish breakdown study (45%) were larger (Table 2). Results showed that there was between 1.7 and eight times increased risk of breakdown for traditional care (RR = 1.7 – 8.0). More than every second girl (57%) in foster home care experienced breakdown within one year. The risk was eight times higher compared to the Swedish MTFC.

When we compare the two MTFC studies, it is essential to recall the high rate of non-adolescents included in the US MTFC study (see Methodological limitations). But the breakdown rates were still twice as high in the US MTFC program compared to the Swedish MTFC program regardless of follow-up time. In the absence of statistical significance due to sample size, the results showed a two-fold risk of breakdown for the USA MTFC. We know from the US MTFC study that younger girls and boys and older boys were significantly less likely to experience disruption than older girls during the first six months of placement (Smith et al., 2001).

Summarizing, there is a clear trend displaying differences in breakdown rates between the two Swedish studies. Within 12 months after admission, the breakdowns within the traditional out-of-home care were three times more frequent than in MTFC. The increased risk of breakdown was eight fold for the girls placed in foster home care. Even the MTFC in USA had higher rates of breakdown compared to the Swedish MTFC.

Description of actual breakdowns in the Swedish MTFC-program

In the following, some information has been changed or left out to maintain the anonymity of the individuals.

Table 3

Summary of the description of the breakdowns.

	The youth's antisocial behaviour	The incident of breakdown	The reason for breakdown	Who initiates breakdown
First case	Drug abuse Violent behaviour	Was taking drugs during treatment.	The social service and the parents didn't accept the treatment plan.	The MTFC case manager
Second case	Drug abuse Violent behaviour Serious crime	Was sent to drug treatment during the program.	Refused to return to the foster parents after drug abuse treatment.	The youth
Third case	Extremely aggressive Running away Suicidal ideation Tormenting animals	After several violent incidents, the foster family couldn't handle the situation.	The foster parents became afraid of the youth's extreme violence behaviour.	The foster parents
Fourth case	Violent behaviour at home	The foster parents grew marijuana together with the youth	The unacceptable lifestyle of the foster parents.	The MTFC case manager and the social service

In the first case, neither the parents nor social services could accept the treatment plan, forcing the case manager to end the placement. In the second case, the youth worked very hard to change his behaviour. After being on leave, the youth felt overwhelming pressure and depression and refused to return to the foster family. The third case was a youth who tormented animals and exhibited extremely violent behaviour and suicidal ideation. Because the foster parents could not handle the situation and were afraid of her, they broke the treatment. The last placement was disrupted because the foster parents exhibited an unacceptable lifestyle (illicit drug abuse). This forced the MTFC team and the social service to disrupt the placement although the treatment continued in a new foster family.

Discussion

Placing and retaining youth with serious behaviour problems are difficult tasks in many countries (Fenyo et al., 1989; Fratter et al., 1991; Berridge, 1997; Vinnerljung et al., 2001; Barber & Delfabbro, 2002; Farmer et al., 2005). In this article, we have re-examined breakdown rates and relative risk of breakdown of youth's placed in MTFC Sweden compared to MTFC in the USA and a Swedish national cohort study (the Swedish breakdown study) that focused on adolescent breakdown. In addition, case managers from the Swedish MTFC sites were interviewed regarding four cases of breakdowns.

There are many large differences between breakdown rates in the two Swedish studies. The Swedish breakdown study showed about twice as many disruptions (21%) within six months after admission as the Swedish MTFC study (10%). The girls placed in foster home care were nearly five times (RR = 4.7) as likely as girls in MTFC to experience breakdown. Twelve

months after admission the trend was even stronger. At about the same level of breakdown rates as most other studies (Egelund, 2006), the Swedish breakdown study had nearly three times more breakdowns (34%) compared to the MTFC study (13%). Even the US MTFC study showed higher rates of breakdown compared to the Swedish MTFC study. The MTFC in Sweden had half as many breakdowns as the US MTFC independent of time. Subsequently, the results show a consistent trend.

Earlier studies illustrate that the MTFC Swedish sample represents a group of youths with high scores for both psychiatric and external symptoms (Table 1) (Gustle et al., 2007; Westerstrand & Zetterberg, 2007). To place an antisocial youth in Swedish traditional out-of-home care is associated with a more than twofold risk for breakdown when compared to the Swedish MTFC (RR = 2.5). In foster home care, the risk was 3.5 times higher. As both the samples consist only of youth exhibiting antisocial behaviour, these differences can hardly be explained by selection factors. These results emphasise how difficult it is to place teenagers with antisocial behaviour problems in any kind of care (Berridge, 1997; Barber & Delfabbro, 2002; Rushton, 2004; Sallnäs, et al., 2004). Table 2 illustrates that the girls in traditional care had eight times increased risk of breakdown compared to the girls in the MTFC study. This highlights the risk of placing a girl with antisocial behaviour problems in traditional foster homes. The MTFC study in the USA found that older girls were more likely to experience disruption than older boys at least during the first six months (Smith et al., 2001). Chamberlain and Reid (1994) examined gender differences within youths participating in the MTFC program and found that girls at the beginning of treatment showed fewer behaviour problems; however, they found that girls became more aggressive over time. The MTFC program includes strategies to track social aggressive behaviour, making it easier for the foster parents to anticipate and understand changes in the child's behaviour. In traditional foster care, foster parents do not have access to such support.

Adolescent girls tend to express their aggressiveness in a more interpersonal context than boys (Moffitt et al., 2001; Chamberlain, 2003). This gender difference is important to emphasize as many prevention programs for delinquent youths are based on research mainly conducted on boys. In a meta-analysis of treatment programs for delinquent youth, Lipsey (1992) found that only 8.2% of the programs were intended for girls. Although the literature seems to be inconsistent, there are indications that older girls tend to be in greater risk of experiencing breakdown compared to boys. (Millham et al., 1986; Rosenthal et al., 1988; Socialstyrelsen, 1995; Smith et al., 2001). The original Swedish breakdown study found an increased risk of breakdown for girls between 13 and 16 years old who were placed in foster home care compared to boys (Sallnäs et al., 2004).

In all three studies, more than the majority of the breakdowns happened during the first six months. Obviously, the beginning of the placement seems to be a vulnerable time that requires support for both the youth and the care provider (Appathurai, et al., 1986; Bebbington & Miles, 1990; Wählander, 1990; Chamberlain et al., 1992; Martin et al., 1992; Triseloitis et al., 2000; Department of Health, 2002; Egelund & Hestbaek, 2003; Osterman et al., 2007). Supporting the foster parents is one of the core components in MTFC. In an earlier Swedish study, MTFC foster parents stated that receiving daily support and feedback from the treatment team was an important reason for them to remain in the program (Kyhle Westermark et al., 2007).

The Swedish MTFC trial was constantly monitored during implementation by the MTFC developer in the USA; and the program was eventually certified. This certification can be counted as a strong indication of high program fidelity. There was a double risk of breakdown for the MTFC program in the USA compared to the Swedish MTFC, although the US program included many pre-adolescent children. But if we had been able to compare breakdown rates between the teenagers in the US study and the Swedish MTFC-program, the results would most

likely have showed even greater differences (Millham et al., 1986; Berridge & Cleaver, 1987; Van der Ploeg, 1993; Minty, 1999; Strijker et al., 2005). Studies of the treatment effects of the Swedish MTFC trial have not yet been published. However, our results suggest that the Swedish program is more successful than traditional out-of-home care in retaining the youth in treatment. Regarding the better retention rates for the Swedish MTFC-program compared to similar programs in the USA, contextual factors may be important.

The risk of dropping out of treatment does not depend on just the youth's character. The troubled youth usually come from socioeconomic disadvantaged families (Loeber, et al. 1998; Patterson et al., 1998; Chamberlain, 2003). For the families taking part in the MTFC program, this participation could in itself increase the stress. Costs for babysitting, transportation, and taking time from their job are financial burdens. The program has to take this in consideration to secure participation during the entire treatment. For example, a MTFC program prioritises providing assistance with babysitting and family visits to facilitate the parents' participation. This could have contributed to the lower breakdown rates for the MTFC program compared to the Swedish breakdown study. The use of a PDR list could be another reason. It enables the treatment team to follow the youth's behaviour development and provides the treatment team a possible way to predict placement disruption. Other studies have used the PDR list in the same way but with the purpose of identifying reliable predictors of placement breakdowns (Chamberlain et al., 2006).

The summary of the four breakdown cases illustrated that all four youths were aggressive, a component in their problematic behaviour that placed them at risk for breakdown (Palmer, 1996; Kazdin, 1997). The first case the treatment team had to disrupt the treatment because both parents and social services did not follow the stipulated rules. The situation points at the importance of ensuring that the social service accepts the rules before treatment begins. If they do not back up the treatment team, it is impossible to carry through the program. The next youth had behavioural problems combined with depression. He refused to return to the foster family after being on leave. Placing an older adolescent with antisocial problems and depression in a foster family is difficult and risky. The combination of antisocial and psychological problems increases the risk of breakdown (Vinnerljung et al., 2001; Rutter et al., 2006). Other studies have identified an 80% probability of breakdown for this combination of problems; another reason why placing these youth is so complicated (Delfabbro et al., 2001). In the third case, a young girl was so aggressive that the foster parents felt forced to end the placement. Violent behaviour increases the risk of breakdown (Farmer et al., 2005). In a study of foster carers, safety was noted as a crucial factor in unsustainable placements. Threats to family safety (eg. the carers' own children) tended strongly to result in placement breakdowns (Gilbertson & Barber, 2003). In the last case, the placement was disrupted due to unacceptable lifestyle of the foster parents. This raises a question whether this unacceptable situation would have been discovered in a case of a traditional foster placement. The MTFC team separately meets with biological parents, the youth, and the foster parents every week, a strategy that gives them a better chance to discover this kind of situation. Except for the third case of breakdown, it might have been possible to avoid the other breakdowns with improved and explicit communication between the treatment team, foster parents, biological parents, and the social service (Fisher et al., 2000; Gilbertson & Barber, 2003).

The youths in the Swedish MTFC study were evidently afflicted with serious antisocial problems. Many of them had psychiatric symptoms and high externalizing symptoms (Gustle et al., 2007; Westerstrand & Zetterberg, 2007). This combination of symptoms illustrates the seriousness of these youths' problems (Harrington et al., 2005; Rutter et al., 2006; Vinnerljung & Sallnäs, 2008) and means there is little chance of keeping the youths in traditional out-of-home care (Delfabbro et al., 2001; Strijker et al., 2005). Why then were there so few breakdowns in the MTFC programs? The foster parents are intensely backed up by a treatment team and sup-

ported by strategies that enable them to predict a youth's breakdown (Chamberlain, 2003). Daily support and feedback are crucial for the foster parents to remain in the program (Kyhle Westermark et al., 2007). It implies that the method itself could explain how the MTFC program manages to lower the breakdown rate.

Methodological limitations

The small sample from the Swedish MTFC-program, used in comparisons with other studies, presents obvious problems with statistical power. But treatment research commonly uses small samples in pilot studies. Using small samples at the beginning of introducing a new treatment program is justified for both economical and ethical reasons, but may result in insufficient statistical power. In our study, we used both significant statistical differences in breakdown rates and calculated relative risk (RR). RR is one of the most common effect measures when clinical trials use dichotomous data (Shadish et al., 2002; Higgins & Green, 2006). It provides a supplementary approach to reliance only on significant differences, and can reduce the risk of statistical conclusion errors (Type II errors; Lipsey, 1998). A focus only on significant results in our study would have given very confined data. Instead, we have considered the results as a totality, by examining consistent trends in the analysis (Achen, 1986; Foldspang et al., 1986).

The different ways of obtaining data on placement breakdowns could also implicate a methodological weakness. Both MTFC studies breakdowns were documented during treatment by MTFC-workers, while the Swedish breakdown study used municipal case files to identify placement disruptions. Probably, case files are a less reliable data source. However, the consequence is that rates of placement breakdowns are underestimated in the Swedish national cohort study (Vinnerljung et al, 2001; Sallnäs et al, 2004). Henceforth, the differences between the two Swedish samples are probably greater in reality than in our analysis.

Another limitation is that we had data on antisocial behaviour from the youths themselves and their parents only in the Swedish MTFC study. In the Swedish breakdown study we had to rely on case files.

Finally, the USA sample also included pre-adolescent children making it impossible to compare breakdown rates for adolescents between the Swedish and the US MTFC program. In the US MTFC study, adolescents had significantly higher breakdown rates than younger children (Smith et al, 2001). Henceforth, the comparable breakdown rates in the USA sample (with two third of the population under 13 years old) are underestimated compared to the Swedish samples.

Conclusion

The overall results suggest that the Swedish MTFC program has good potential to retain antisocial youths in treatment, compared to traditional out-of-home care. This seems to be especially valid for antisocial adolescent girls.

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