

The Effectiveness of a Community-Based Intensive Intervention for Young People  
with Complex Psychological and Forensic Needs

by

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## **ABSTRACT**

This thesis examined the effectiveness of an intensive, community-based intervention for youth presenting with complex psychological needs, and their families, and discussed the need to understand and address the multiple risk and protective factors across several systems associated with aggressive, violent, antisocial and offending behaviour in young people, in order to intervene effectively. The intervention is based on the principles of Multi-Systemic Therapy (MST), a renowned intensive, community-based intervention for aggressive, violent and antisocial young people, which is explored in the literature review (Chapter 1). The available evidence-base on MST demonstrates that the behaviour of young people considered at significant risk to themselves and/or others can be managed safely within the community, while engaging their caregivers and wider ecology to effect positive changes that are sustainable. The research study (Chapter 2) reports on a modest sample of 17 young people and 12 caregivers who completed research measures prior to and following the receipt of the intensive intervention based on MST principles aimed at improving youth and family functioning. Positive changes in both individual functioning and family environment observed were found to be consistent with the existing evidence-base regarding the effectiveness of community based interventions. This provides support for moving away from traditional office-based approaches to engaging these clients in order to prevent further deterioration in behaviour and subsequent placement of the young person away from his/her family and community. A discussion surrounding the use of psychometric measures provides insight into the role of the family environment in assessing and intervening with this client group in Chapter 3. Finally, the importance of recognising families as the key to a successful system of care is further explored in the

case study in Chapter 4. Overall, this thesis provides support for the abandonment of a simplistic superficial understanding of social, emotional, and behavioural difficulties in young people to a more ecological, dynamic approach, which has implications for prevention of the detrimental and long lasting costs of youth social, emotional and behavioural difficulties.

*For Mum and Dad*

*I love you and owe everything to you*

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## **INTRODUCTION**

This thesis forms part of the criteria for the qualification of Foren. Psy. D. Its overall aim was to examine the effectiveness of an intensive community-based intervention, based broadly on the principles of Multi-Systemic Therapy, for young people with social, emotional and behavioural needs at risk of care or custody and their families, and discuss the requirement for a more ecological and comprehensive conceptualisation and treatment of these young people.

Adolescence is well known as a period of storm and stress. During this very short space of time, young people would have reached physical and sexual maturity, be close to developing their own identity, have a more concrete concept of who they are and how they would like to be, have a clearer idea of what life goals they would like to achieve, and have a clearer concept of what social, familial and cultural rules and values they are prepared to choose to adhere to. While many adolescents make the transition without serious difficulties (Haiman, Lambert, & Rodriques, 2005) research suggests that around one in ten young people experience mental health problems severe enough to require professional help, and that rates of mental health problems among children increase as they reach adolescence (Meltzer et al., 2000).

The field of emotional and behavioural difficulties in children and young people has been well researched over the last 40 years, which has allowed for the development of descriptive characteristics, building of theoretical explanations, development of assessment tools, as well as interventions for these young people. Recently, the

approaches for understanding, assessing and intervening with emotional and behavioural problems in young persons have moved from viewing different theoretical slants in isolation from one another, to a more integrated view that considers the interrelationships between the many factors that are associated with child developmental outcomes (Carr, 2006).

Because the symptoms of social, emotional and behavioural difficulties tend to increase in intensity over time (Forness, Kavale, & Lopez, 1993), if left to progress without appropriate treatment these young people are likely to lead frustrating lives with significant difficulties across several domains. From an economic perspective the consequences of these difficulties are significant. Children with antisocial behaviour disorders are at risk for the following poor outcomes: increased rates of violent offences, depressed or anxious mood, self-harm, alcohol and substance abuse, early school leaving, homelessness, and difficulties in interpersonal relations (Farrington, 1991; Greene et al., 2002; Scott et al., 2001). Further, the effects of ongoing patterns of emotional and behavioural disorders and the resulting antisocial behaviours are likely to continue for generations (Greenberg, Domitrovich, & Bumbarger, 2001). This raises serious concerns about the need for prevention and treatment, and raises questions about the implications of the failure to prevent emotional and behavioural disorders and the costs of such failure.

In the past, intensive services for children and adolescents with severe emotional and behaviour disorders were almost exclusively located in the office of a mental health professional or in an out-of-home placement (Knorth et al., 2008). However, as



research has evolved, the potential for young people and families to receive evidence-based care in their own communities now exists (Burns & Hoagwood, 2002). This thesis is in parallel with a number of new areas of research into young people with complex needs. Much research on this population of young people has been conducted in highly restricted settings (e.g., Kolko, Loar, & Sturnick, 1990; Leichtman et al., 2001; Moody, 1997; Rohde et al., 2004); however, this work explores the effectiveness of a community- and home-based intervention for young people who are considered candidates for removal from their natural ecologies. It also examines the heterogeneity of these young people and thus the necessity for an individual needs-based, ecological, dynamic and intensive approach to treatment. It is hoped that the findings demonstrated in this thesis will contribute to the available and emerging evidence which supports the view that out-of-home placements should be used as a last resort as opposed to a choice of intervention (Ogden & Halliday-Boykins, 2004). While working to preserve a family unit may not be a feasible or safe option in some instances, community-based treatments with some high-risk youth can be effective in preventing further deterioration to themselves, their families and the wider society, while managing them safely in their own community (Henggeler et al., 2009).

### **Thesis structure**

The thesis is structured as follows:

Chapter 1 comprises a literature review following a narrative approach examining the efficacy of Multi-Systemic Therapy (MST), an intensive, ecological, community-

based intervention for juvenile violent, substance-abusing and sexual offenders who are at risk of care or custody, in reducing recidivism and improving individual, familial and peer functioning. This chapter further explores the strengths, and weaknesses, of the evidence-base that the MST treatment model has built up over the past 20 years.

Chapter 2 examines the effectiveness of an intensive intervention, based broadly on the principles of Multi-Systemic Therapy, in a sample of 17 young persons referred to the service due to their significant and chronic behavioural difficulties who were at risk of placement out-of-borough, and 12 caregivers involved in the intervention. Changes in individual, and family-functioning, were elicited following the receipt of the intensive intervention by the young people and their caregivers. The modest sample size is a limitation, however, this research adds to the literature that highlights the fundamental need for an integrative and ecological approach that brings services into the homes and communities of these clients. It supports a move away from understanding these young people with complex needs from a narrow, single-component perspective, where treatment approaches are targeted at an individual level.

Chapter 3 critically evaluates the Family Environment Scale (FES; Moos & Moos, 1994), a frequently used measure which provides a snapshot of family functioning, identifying areas of strength and need. The psychometric properties and normative data of the FES are explored. This chapter highlights that for a truly global, ecological

perspective to be achieved in assessing family functioning, consideration must always be given to the assessment methods and tools utilised within the field.

Chapter 4 comprises of a single case study with a young person presenting with significant emotional and behavioural needs, as well as a conviction for a sex offence. The study assesses the efficacy of the intensive intervention, with the aim of reducing recidivism, improving individual and family functioning, and facilitating educational success. The design, implementation and evaluation of the intervention are discussed in relation to the available evidence-base on the similarities and differences between young people who present with sexually abusive behaviours and juvenile non-sexual delinquents. This chapter suggests that a dynamic, intensive and family-based approach to treatment can produce effective results, with young people with complex needs.

The thesis concludes in Chapter 5 with a discussion of the general findings in relation to the aims of the thesis. The implications and limitations of findings are considered in terms of research and clinical practice.

### **Ethical Considerations**

This study was reviewed by the Oxleas NHS Foundation Trust Ethics Research Committee and was also approved by the School of Psychology, University of Birmingham. Individuals whose information formed the database used in Chapter 2 signed consent forms (see Appendix 1) for the private practice to use their information anonymously for the purpose of research and development. Confidentiality was

ensured by anonymity. Participants were not required to provide additional information to that discussed within the context of completing the intervention-specific measures. The database was stored on a password-protected computer in a locked room at the services office. No psychological or physical harm was anticipated to participants as a consequence of completing this project. The case study in Chapter 4 is based on a true account of the assessment and intervention of a 14-year old male who was referred to the Youth in Need Team, part of the Greenwich Child and Adolescent Forensic Mental Health Service in South East London. The client will be referred to as S to maintain client confidentiality and the identity of all the other individuals involved has been concealed. The intervention has been directed partly by the client's professional network and partly by discussions with the client therefore the approach taken has been collaborative and multi-disciplinary. The client provided verbal consent, and due to his age, his parents signed a consent form for the information to be translated in this way for the purpose of this thesis. All details within this thesis are true to the knowledge of the author and are based on forensic assessment and clinical judgement. The completion of this thesis has fully conformed to the ethical guidelines as outlined by the British Psychological Society.

## **CHAPTER 1**

**A Literature Review: What is the effectiveness of the Multi-Systemic Therapy programme for violent, substance-misusing, and sexual offenders in reducing recidivism and improving individual, family, and peer functioning?**

## ABSTRACT

*Aims:* To review the evidence-base for Multi-Systemic Therapy, a community-based intensive intervention for young people with complex psychological needs who are risk of care or custody.

*Design:* Literature review following a narrative approach which describes a brief overview of the model followed by exploration of MST outcome from 1980 to date which have included randomised controlled trials, quasi-experimental and cohort studies. Three databases and one gateway were searched and hand searching of reference lists was completed.

*Participants:* Young people aged between 10 and 17 years presenting with aggressive, violent, anti-social, offending, substance-misusing, and/or sexualised behaviour.

*Results:* Results from twelve randomised control trials and one quasi-experimental study completed by the programme developers with these sub-populations of young people have demonstrated support for MST over treatment-as-usual. Examples of these outcomes in individual studies include reduced short- and long-term rates of recidivism, reduced rates of out-of-home placements, decreased substance use, decreased behaviour and mental health difficulties, and improved family functioning. However, when the studies are combined, it is difficult to draw firm conclusions from meta-analytic reviews as to the effectiveness of MST as contradicting results have been reported.

*Conclusions:* MST is a cost-effective model that offers a pragmatic treatment based on an ecological conceptualisation of youth anti-social behaviour and a refreshing approach in working with these hard-to-reach young people and their families; however, more independent research is required in order to classify MST as a well-established treatment for these young people as most studies highlighting outcomes in favour of MST have been completed under close supervision of programme developers.

*Keywords:* multi-systemic, multiple systems, social ecological, family-based, home-based, community, intensive, adolescents, youth, young people, emotional and behavioural problems, externalising problems, aggressive, violent, delinquent, anti-social behaviours, treatment, intervention.

## INTRODUCTION

There has been an ongoing debate over the years about the circumstances under which a young person should be placed in an out-of-home setting, and whether this placement is positive or negative for the young person and their family in the long-term. For instance, some have held a strong view that such placements should be used only as a last resort (e.g., Anglin & Knorth, 2004), and that they produce less than ideal long-term results (e.g., Curry, 1991). Others have argued that these placements can offer a meaningful and effective intervention for young people with the most complex needs (e.g., Whittaker & Maluccio, 2002), and they are able to demonstrate positive effects in relation to internalising and externalising behaviour difficulties (e.g., Axford et al., 2005).

Of course, much depends on the type of out-of-home placement and interventions offered. Incarceration or institutionalisation of the young person has demonstrated negative outcomes as well as fiscal and personal expense (e.g., Gatti, Tremblay, & Vitaro, 2009). However, there is evidence that therapeutic residential placements, which are structured and use family-based and holistic approaches and interventions, are effective in enhancing the psychosocial, emotional, and behavioural functioning of the young person (Axford et al., 2005).

In recent years there has been a major shift in service delivery culture (Burns & Hoagwood, 2002). First, there has been a change in location of intensive treatment from the office and institution to home and community settings, although this is still very little as a whole. Second, there has been a shift in attitude toward the families,



from that of a dysfunctional cause of the child's psychopathology, to an effective partner with professionals. Third, there has been a re-conceptualisation of services in terms of support for the families and the child in a culturally and ethically relevant manner (Duchnowski, Kutash, & Friedman, 2002).

Although research on effective treatment for young people with mental health difficulties has increased in the past several years, the vast amount of research has not been conducted with multi-problem youth and families. One model, Multi-Systemic Therapy (MST; Henggeler et al., 1998), born in the United States over 30 years ago, has been broadcast as a validated and effective treatment approach for young people with severe and complex psychological needs and their families. MST has been implemented in several sites in the United States and Canada, and has been transported to other countries around the world. Today, in excess of 400 MST programmes are operating in more than 30 states and 10 nations, serving approximately 17,500 young people and their families annually (Henggeler et al., 2009). This review will provide a brief overview of the model before exploring its relevant evidence available for youth with complex psychological and forensic needs who are at risk of out-of-home placements.

### **Overview of the model**

Multisystemic Therapy (MST) is a multi-faceted, short-term, home- and community-based intervention for families of youth with severe psychosocial and behavioural problems. MST was first introduced in the early 1980's as a 'family-ecological systems approach' (Henggeler, 1982) and developed as a means to provide

scientifically validated, cost-effective, community-based treatment as a viable alternative to expensive, ineffective treatments that have traditionally been provided to young people with serious behaviour disorders. Integrating social ecological and family systems theories with research on the causes and correlates of serious antisocial behaviour in youth, MST is designed to address complex psychosocial problems.

The conceptual framework for MST is derived from reviews of research on juvenile delinquency and other psychosocial problems in childhood and adolescence that point to the influences of a variety of individual, family, school, peer, neighbourhood, and community characteristics (Fraser 1997; Henggeler et al., 1998). Henggeler et al. argue that, if these problems are multi-determined, it follows that effective interventions should be relatively complex, considering adolescent characteristics as well as aspects of the key systems in which adolescents are embedded. This is parallel to social ecological theories of human development (e.g., Bronfenbrenner, 1979), in which behaviour is viewed as a product of reciprocal interactions between individuals and their social environments, and with family systems theories, in which children's behaviours are thought to reflect more complex family interactions (Minuchin, 1974).

As described by its developers (Henggeler et al., 1998), MST uses a family preservation service delivery model that provides time-limited (three to five months), but intensive (from two to daily contacts per week, almost always in the family's home) services to the entire family. Treatment teams consist of MST therapists (typically mental health professionals with masters or doctoral degrees), and MST

supervisors (typically Clinical/Forensic Psychologists or Psychiatrists). Therapists carry small caseloads (four to six cases per therapist) and are available to clients twenty four hours a day, seven days a week. Treatment is individualised to address specific needs of youth and families, and includes work with other social systems including schools and peer groups (hence, the name multi-systemic).

Treatment may focus on cognitive and/or behavioural change, communication skills, parenting skills, family relations, peer relations, school performance, and/or social networks. Clinical features of MST include a comprehensive assessment of child development, family interactions, and family members' interactions in other social systems. In consultation with family members, the therapist identifies a well-defined set of treatment goals and tasks required to accomplish these goals are identified, assigned to family members, and monitored in regular family sessions in the family's home. MST does not have a unique set of intervention techniques; instead, intervention strategies are integrated from other pragmatic, problem-focused treatment models, including strategic family therapy, structural family therapy, and cognitive behaviour therapy (Henggeler et al., 1998). According to its developers, MST is distinguished from other intervention approaches by its comprehensive conceptualisation of clinical problems and the multi-faceted nature of its interventions.

MST interventions are based on nine core principles, which are also used to assess treatment fidelity (Potter & Mulkern, 2004). The primary purpose of assessment is to understand the fit between the identified problems and their broader systemic context

(Principle 1). Therapeutic contacts should emphasise the positive and should use systemic strengths as levers for change (Principle 2). Interventions should be designed to promote responsible behaviour and decrease irresponsible behaviour among family members (Principle 3). Interventions should be present-focused and action-oriented, targeting specific and well-defined problems (Principle 4). Interventions should target sequences of behaviour within or between multiple systems that maintain identified problems (Principle 5). Interventions should be developmentally appropriate and fit the developmental needs of the youth (Principle 6). Interventions should be designed to require daily or weekly effort by family members (Principle 7). Intervention effectiveness is evaluated continuously from multiple perspectives, with providers assuming accountability for overcoming barriers to successful outcomes (Principle 8). Finally, Principle 9 emphasises that interventions should be designed to promote treatment generalisation and long-term maintenance of therapeutic change by empowering caregivers to address family members' needs across multiple systemic contexts (Henggeler et al., 1998).

MST therapists receive intense clinical supervision and participate in weekly consultation with MST Services, Inc. Adherence to MST treatment fidelity is determined by measuring therapist and supervisor adherence to the principles of MST. The former is measured by the Therapist Adherence Measure, TAM, a 26-item Likert-type scale developed through expert consensus and validated in two MST trials (Henggeler et al., 1997, & Henggeler, Pickrel, & Brondino, 1999). Fifteen of the twenty six TAM items load on a single factor known as therapist adherence, which are reportedly linked to the nine principles of MST described above (Schoenwald et al.,

2003). This factor purportedly indexes the mutual engagement of the family and therapist in key treatment aspects (e.g., goal setting, assessment, and intervention activities), and includes items such as ‘the sessions were lively and energetic’; ‘my family and the therapist worked together effectively’; ‘the therapist recommended that family members do specific things to solve our problems’. The TAM is administered by someone other than the therapist to the primary caregiver each month they are receiving treatment. The TAM scores are aggregated for each therapist to guide clinical supervision and consultation (Henggeler et al., 2009).

Furthermore, to ensure supervisors provide clinical supervision according to the MST principles, MST therapists complete a Supervisor Adherence Measure (SAM; Henggeler & Borduin, 1992), every month on their supervisor. The SAM is a 43-item Likert-scale measure completed by the therapist online on a monthly basis. It requires the therapist to consider all of the supervision sessions that have occurred in the prior month when responding to the questions, which are designed to measure four key areas related to supervision: structure and process, adherence to principles, analytical process, and clinician development (Henggeler & Borduin). Sample items include: ‘when the supervisor recommended changes in my course of action, the rationale for the recommendation was described in terms of one or more of the MST principles’; ‘interventions that were discussed targeted sequences of interactions between family members’; ‘in the past two months, the supervisor and I have set goals for development of my specific competencies in MST’; ‘the supervisor had difficulty managing team discussion’. The scores from the SAMs are aggregated for use by the consultant and programme administrator in supervision with the MST supervisor

(Henggeler et al., 2009). This quality assurance system is a very important part of the treatment model as research findings have demonstrated that adherence to the MST protocol by the therapist, supervisor and consultant affects youth behavioural and criminal outcomes of MST in community settings (Cunningham et al., 2006; Henggeler & Schoenwald, 1999; Huey et al., 2000; Schoenwald, Brown, & Henggeler, 2000; Schoenwald, Sheidow, & Chapman, 2009; Schoenwald, Sheidow, & Letourneau, 2004).

### **MST Outcomes**

The MST programme developers argue that the model has been identified as demonstrating considerable promise in the treatment of significant youth criminal behaviour and substance misuse (Henggeler et al., 2009). These conclusions are based on findings from 13 published outcome studies (12 randomised, 1 quasi-experimental) with youths presenting with serious clinical problems and their families. Findings from these studies are summarised next (Table 1), according to the defining characteristics of the study sample and the types of outcomes targeted. Key studies from each sub-population of young offenders are then explored in more detail in the sections that follow.

Table 1

*Published MST Outcome Studies for Juvenile Violent, Sexual, and Substance Misusing Offenders*

STUDY	POPULATION	COMPARISON (TREATMENT AS USUAL; TAU)	FOLLOW- UP	MST OUTCOMES
Henggeler, Rodick, Borduin, Hanson, Watson, & Urey (1986) N=57 <sup>a</sup>	Delinquents	Diversion services, which included individual and group counselling.	Post treatment	<ul style="list-style-type: none"> <li>• Improved family relations (based on observational measures)</li> <li>• Decreased behaviour problems</li> <li>• Decreased association with deviant peers</li> </ul>
Borduin, Henggeler,	Adolescent sexual offenders	Individual counselling	3 years	<ul style="list-style-type: none"> <li>• Reduced sexual offending (recidivism rates: 12.5% MST vs. 75% TAU)</li> </ul>

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Blaske & Stein (1990) N=16					<ul style="list-style-type: none"> <li>• Reduced other criminal offending (recidivism rates: 25% MST vs. 50% TAU)</li> </ul>
Henggler, Borduin, Melton, Mann, Smith, Hall, Cone, & Fucci. (1991) <sup>b</sup>	Serious juvenile offenders	Individual counselling	3 years		<ul style="list-style-type: none"> <li>• Reduced alcohol and marijuana use</li> <li>• Decreased drug-related arrests (4% of MST group arrested vs. 16% of TAU group)</li> </ul>
Henggeler, Melton, & Smith (1992) N=84	Violent and chronic juvenile offenders	Usual community Services, which included: - Court Orders with conditions attached	59 weeks		<ul style="list-style-type: none"> <li>• Improved family relations (cohesion)</li> <li>• Decreased aggression</li> <li>• Decreased self-reported offending</li> </ul>

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		<ul style="list-style-type: none"> <li>- meetings with Probation Officers</li> <li>- placement of young person in instances of continued non-compliance with Court Order</li> </ul>		<ul style="list-style-type: none"> <li>• Fewer re-arrests (recidivism rates: 42% MST vs. 62% TAU) and time incarcerated (days incarcerated: 20% MST vs. 68% TAU).</li> <li>• Improved peer relations</li> <li>• MST decreased use of out-of-home placements by 64%</li> </ul>
Henggeler, Melton, Smith, Schoenwald, & Hanley (1993).	Same sample		2.4 years	<ul style="list-style-type: none"> <li>• Decreased recidivism (doubled survival rate, i.e., percentage of youth <u>not</u> arrested at 120 weeks = 39% MST vs. 20% TAU )</li> </ul>
Borduin, Mann, Cone,	Violent and chronic	Individual counselling that focused on personal, familial, and academic	4 years	<ul style="list-style-type: none"> <li>• Improved family relations</li> </ul>

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Henggeler, Fucci, Blaske, & Williams (1995) N=176	juvenile offenders	issues. Included an eclectic blend of psychodynamic, client-centred, and behavioural approaches.		<ul style="list-style-type: none"> <li>• Decreased psychiatric symptomatology (not significant)</li> <li>• No significant peer relations effect</li> <li>• Decreased short-term recidivism (4-week recidivism rate: 26% MST vs. 71% TAU)</li> <li>• Decreased long-term recidivism (4-year recidivism rate: 22% MST completers vs. 71% TAU completers)</li> </ul>
Schaeffer & Borduin (2005)	Same sample		13.7 years	<ul style="list-style-type: none"> <li>• Decreased rearrests (recidivism rates: 50% MST vs. 81% TAU)</li> <li>• Decreased days incarcerated (MST participants sentenced to 57% fewer days</li> </ul>

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				of incarceration as adults)
Sawyer & Borduin (2008)	Same sample		21.9 years	<ul style="list-style-type: none"> <li>• Decreased rearrests (recidivism rate: 63% MST vs. 76% TAU)</li> <li>• Decreased days incarcerated</li> <li>• Decreased civil suits reflecting family instability</li> </ul>
Henggeler, Melton, Brondino, Scherer, & Hanley (1997) N=155	Violent and chronic juvenile offenders	Juvenile probation services—high rates of incarceration. Probation monitored school attendance. Based on needs of youth, referrals were made to social services, substance misuse groups, vocational programmes, and counselling services. Out-of-home	1.7 years	<ul style="list-style-type: none"> <li>• Decreased psychiatric symptomatology</li> <li>• Decreased days in out-of-home placement (days per year per young person: 33.2 MST vs. 70.4 TAU)</li> <li>• Decreased self-reported offending (nonsignificant)</li> </ul>

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		placements used if necessary.		<ul style="list-style-type: none"> <li>• No treatment effects with family and peer relations</li> <li>• Treatment adherence linked with long-term outcomes</li> </ul>
Henggeler, Pickrel, & Brondino (1999) N=118	Substance abusing and dependent delinquents	Usual community Services, which included outpatient substance abuse treatment, residential placement, inpatient substance abuse programmes, and mental health services. *78% of this group reportedly did not receive any treatment	1 year	<ul style="list-style-type: none"> <li>• Decreased drug use at post-treatment (but not maintained at 6-month follow-up)</li> <li>• Significantly fewer days spent in out-of-home placement by MST group</li> <li>• Non-significant decrease in recidivism</li> <li>• Treatment adherence linked with decreased drug use</li> </ul>

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Henggeler, Pickrel, Brondino, & Crouch (1996)	Same sample	1 year	• 98% rate of treatment completion
Schoenwald, Ward, Henggeler, Pickrel, & Patel (1996)	Same sample	6 months	• Incremental cost of MST nearly offset by between-groups differences in out-of-home placement
Brown, Henggeler, Schoenwald, Brondino, & Pickrel (1999)	Same sample	4 years	• Increased attendance in regular school settings

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Henggeler, Clingempeel, Brondino, & Pickrel (2002)	Same sample			<ul style="list-style-type: none"> <li>• Decreased violent crime</li> <li>• Increased marijuana abstinence (rate of abstinence: 55% MST vs. 28% TAU)</li> </ul>
Borduin & Schaeffer (2001) – preliminary report N=48	Juvenile sexual offenders	Usual community services which included supervision by probation workers and completion of sex offender treatment groups.	Post-treatment	<ul style="list-style-type: none"> <li>• Decreased behaviour problems and symptoms</li> <li>• Improved family relations, peer relations, and academic performance</li> </ul>
Borduin, Schaeffer, & Heiblum (2009)	Same sample		8.9 years	<ul style="list-style-type: none"> <li>• Decreased recidivism for sexual crimes (recidivism rate: 8.3% MST vs. 45.8% TAU)</li> <li>• Decreased recidivism for other crimes</li> </ul>

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				(recidivism rate: 29.2% MST vs. 58.3% TAU)
				• Decreased days incarcerated (number of days incarcerated: 393.42 MST vs. 1942.50 TAU)
Ogden & Halliday-Boykins (2004) N=100	Norwegian youths with serious anti-social behaviour	Usual child welfare Services described as home-based treatment or social work, including child counselling, parent training, and promoting involvement in pro-social activities. Institutional placements used in some cases.	6 months post recruitment	<ul style="list-style-type: none"> <li>• Decreased externalizing and internalizing symptoms</li> <li>• Decreased out-of-home placements</li> <li>• Increased social competence</li> <li>• Increased consumer</li> </ul>

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				satisfaction
Ogden & Hagen (2006a)	Same sample		24 months post- recruitment	<ul style="list-style-type: none"> <li>• Decreased externalizing and internalizing symptoms</li> <li>• Decreased out-of-home placements</li> </ul>
Timmons-Mitchell, Kishna, Bender, & Mitchell (2006)	Juvenile offenders (felons) at imminent risk of placement	Usual community Services – this is loosely described as supervision by probation officers.	18-month follow-up	<ul style="list-style-type: none"> <li>• Improved youth functioning</li> <li>• Decreased re-arrests (recidivism rate: 67% MST vs. 87% TAU)</li> </ul>
N=93				
Henggeler,	Juvenile	Four treatment conditions, including	12-month	<ul style="list-style-type: none"> <li>• MST enhanced substance use outcomes</li> </ul>

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Halliday- Boykins, Cunningham, Randall, Shapiro, & Chapman (2006). N=161	offenders with substance abuse and substance dependence in juvenile drug court	- - - -	family court and treatment as usual drug court and treatment as usual drug court and MST drug court and MST with contingency management	post- recruitment	• Drug court was more effective than family court at decreasing self-reported substance use and criminal activity (42% of youth demonstrated positive marijuana urine drug screens in the drug court condition vs. 12% of youth in the drug court + MST/CRA condition)
Rowland, Chapman, & Henggeler (2008) N=70	Nearest-age siblings			18-months post- recruitment	• Evidence-based treatment decreased sibling substance use
Sundell, Hansson,	Youth met diagnostic criteria	Usual child welfare services in Sweden described as home-based		7 months post-	• No outcomes favouring either treatment condition – i.e., a general decrease in

Lofholm, Olsson, Gustle, & Kadesjo (2008)	for Conduct Disorder	treatment or social work, including child counselling, parent training, and promoting involvement in pro-social activities. Institutional placements used in some cases.	recruitment	psychiatric problems and antisocial behaviour among participants across treatments observed.
N=156				• Low treatment fidelity reported.
Letourneau, Henggeler, Borduin, Schewe, McCart, Chapman, & Saldana. (2009)	Juvenile sexual offenders	Usual sex-offender specific treatment – i.e., supervision by probation officers and engagement in sex offender treatment groups. Referrals to other services, e.g., substance misuse counselling, were also made if necessary	12 months post-recruitment	• Decreased sexual behaviour problems • Decreased delinquency (rate: 60% MST vs. 18% TAU), substance use (50% reduction in MST group but almost doubled in TAU condition), and externalising symptoms • Reduced out-of-home placements (rate: 7% MST vs. 17% TAU)
N=127				

<sup>a</sup> Quasi-experimental design (groups matched on demographic characteristics); all other studies are randomised

<sup>b</sup> Based on participants in Henggeler et al. (1992) and Borduin et al. (1995)

### *Violent and chronic juvenile offenders*

In total, nine randomised trials and one quasi-experimental trial with serious juvenile offenders have been published. The first clinical (efficacy) trial was conducted in a university research setting (Henggeler et al., 1986) which did not involve random assignment. Following demonstration of the short-term efficacy of MST in treating delinquent inner-city adolescents, it was diffused to community mental health settings. The first randomised clinical (effectiveness) trial with this population of delinquents, known as the Simonsville study, was conducted by Henngeler, Melton, and Smith (1992, 1993). In addition to the positive behavioural outcomes, this study highlighted that the relative effectiveness of MST was not moderated by demographic characteristics (i.e., race, age, social class, gender, and arrest and incarceration history) and pre-existing needs in family relations, peer relations, social competence, behaviour problems, or parental symptomatology were not differentially predictive of outcomes. Thus, MST was equally effective with young people and their families of divergent backgrounds and with varying strengths and weaknesses. This study demonstrated that not only was MST successful in the community, and when delivered in a university-based setting, but also such an intensive home- and family-based model could reduce the criminal activity of violent/chronic young offenders while maintaining them in the community.

As highlighted in Table 1, clinically, outcomes have been consistently in favour of MST compared to control groups (e.g., outpatient individual and family therapy, parent training, group substance abuse meetings, out-of-home placements, supervision by probation workers). Across studies, examples of positive outcomes include

decreased recidivism (from 25% to 70% reduction rate), decreased self-reported criminal offending, decreased days in out-of-home placement (from 47% to 64% reduction rate), decreased behaviour problems, improved family relations, peer relations, and school attendance, and decreased symptomatology in youths and parents. These notable outcomes translate to considerable cost savings, which are outlined below.

In the most comprehensive and extensive completed evaluation of MST to date (known as the Columbia, Missouri project), Borduin et al. (1995) examined the effectiveness of MST compared with individual therapy in a sample of 200 juvenile offenders who were involved in extensive criminal activity as evidenced by their average of 4.2 (SD=1.3) previous arrests. At post-treatment, the initial study's instrumental outcomes indicated that MST was significantly more effective than individual therapy at increasing family supportiveness, increasing family cohesion and adaptability, decreasing family hostility, decreasing parental, youth, and sibling symptoms and decreasing behaviour problems in youth. At four-year follow-up, recidivism data highlighted that youths who received MST were significantly less likely to be rearrested than youths who received individual therapy. Specifically, MST completers (N=77) had lower recidivism rates (22.1%) than MST dropouts (46.6%; N=15), individual therapy completers (71.4%; N=63), and individual therapy drop outs (71.4%; N=21). Moreover, MST dropouts were at lower risk of re-arrest than individual therapy completers, individual therapy dropouts, and refusers, suggesting a dose effect, that is, a small dose of MST was more effective than individual therapy, while a complete course of MST was the most effective option.

In a 14-year follow-up (Schaeffer & Borduin, 2005), where the sample averaged an age of 28.8 years, the study explored criminal recidivism and days incarcerated in adulthood. Results indicated that MST participants were at a significantly lower risk of re-arrest during the follow-up period than IT participants. In fact, youth in the IT group were 4.25 times more likely than youths in the MST condition to be re-arrested during the follow-up period. The effect sizes for survival functions observed for MST participants ranged from medium for overall re-arrest (0.58) and non-violent offences (0.57) to large for violent (0.844) and drug-related offences (0.864). Furthermore, as adults, the MST group spent fewer average days confined (582.25) compared to the control group (1356.53). Translated into cost-effectiveness, the estimated benefit-to-cost ratio for MST was demonstrated to range from \$6.25 (tax payer benefits only) to \$27.14 (taxpayer and crime victim benefits). That is, \$1 spent on MST today can be expected to return \$6.25 to \$27.14 to taxpayers and crime victims in the years ahead (Klietz, Borduin, & Schaeffer, 2009).

The most recent (and longest) follow-up outcome study from this original Borduin et al. (1995) sample is a 21-year follow-up period (Sawyer & Borduin, 2008) (average age of the sample = 37.3 years  $SD = 1.8$ ) and demonstrates the remarkable maintenance of the gains achieved from the 14-year follow-up study. In all outcomes explored, MST was favoured compared to the control (individual therapy) group, showing a superior survival probability, fewer violent (.45 vs. 1.04) and non-violent (2.48 vs. 3.52) arrests, lower odds of re-arrest, fewer adult days confined (1915 vs. 2875) and fewer civil suits (e.g. divorce, child support, paternity) which the authors propose reflect family instability (.57 vs. .93). However, it could be argued that civil

suits solely do not provide an accurate measure of family stability. Stronger support for this conclusion could come from more specific constructs that relate to family instability, for example, levels of cohesion, expressiveness, and conflict, as well as consistency of family activities and routines within the home (e.g., Moos & Moos, 2002).

The first multi-site randomised trial (Henggeler et al., 1997) evaluated the role of treatment fidelity in the successful dissemination of MST with violent and chronic juvenile offenders at imminent risk of incarceration and their families who were randomly assigned to MST or usual Department of Juvenile Justice services. The control group is loosely described as supervision by Probation services with weekly or monthly contact with the youth through which school attendance is monitored. It is also indicated that social service involvement (alcohol and drug abuse programming, vocational counselling or training, referral to Department of Mental Health) was pursued if deemed necessary and the initiation of an out-of-home placement was considered if there was no progress during the probation period. In this study, therapists and their supervisors were not provided with weekly consultation from an MST expert. While findings highlighted reductions in re-arrests (by 26%) and days incarcerated (by 47%) at a 1.7 year follow-up, these outcomes were only half as strong as those observed in previous MST findings. Hierarchical multiple regression analyses were used to investigate the possibility that outcomes in the MST condition were associated with treatment adherence. The authors found that high adolescent reports of index offences, high rates of re-arrest, and subsequent incarceration of youths were significantly associated with low therapist adherence to MST principles.

At the 1.7 year follow-up, the authors noted that high adherence to MST predicted favourable outcomes; thus highlighting the importance of maintaining treatment fidelity when disseminating complex family-based services to community settings. Subsequently, future research highlighted the importance of supervisor and consultant adherence to the model in producing positive instrumental outcomes (Schoenwald, Brown, & Henggeler, 2000).

### *Juvenile sexual offenders*

Three randomised control trials have been completed with this population of young offenders. In the first controlled study of adolescent sexual offenders to appear in the literature (and the second randomised study completed in MST), Borduin et al. (1990) showed that MST reduced three-year recidivism for both sexual offences and criminal offences with 16 juvenile sex offenders when compared with outpatient individual counselling (i.e., an eclectic blend of psychodynamic, humanistic and behavioural approaches). Significantly fewer MST participants had been re-arrested at a three-year follow up for sexual crimes and other criminal offences at follow-up. The frequency of sexual re-arrests was significantly lower in the MST condition (average = .12) than in the individual counselling condition (average = 1.62). Moreover, the re-arrest frequency for non-sexual crimes was lower for young people who received MST than for those who received individual counselling (.62 vs. 2.25). MST also significantly impacted on number of days spent incarcerated compared to the control group. However, the authors note that the findings from this study should be considered tentative because the sample size was very small, thus it is likely that the outcome data was skewed by a few serious cases.

In a second study (Borduin & Schaeffer, 2001), 48 male adolescents with a mean age of 14 years were randomised to MST or usual services (consisting of Cognitive and Behavioural individual and group therapy). Instrumental outcomes at post-treatment highlighted that MST improved youth, family, peer, and school adjustment as evidenced by decreased behaviour problems in youth, decreased self-reported youth criminal offending, decreased parent and youth symptoms, increased family cohesion and adaptability, decreased youth association with negative peers, increased emotional bonding and social maturity in relations with positive peers, decreased youth aggression in relations with peers, and improved youth school performance. At nine year follow-up (Borduin, Shaeffer & Heiblum, 2009), gains in recidivism were maintained with results highlighting that MST effectively reduced sexual re-offending by 80%, other criminal offending by 50%, and days incarcerated by 80%. The benefit-to-cost ratio for MST for these gains was estimated to range from \$12.40 (taxpayer benefits only) to \$38.52 (taxpayer and crime victim benefits).

The most recent study (recruitment ended in autumn 2006), and including the largest sample size (n=127) with this population of young offenders, was based in Chicago and funded by the National Institute of Mental Health in which participants were randomly assigned to receive MST or usual services (sex-offender specific outpatient group treatment provided by the Department of Probation). One-year post-recruitment outcomes have recently been assessed (Letourneau et al., in press) suggesting that relative to usual services participants, MST participants evidenced reductions in delinquency, sexually inappropriate behaviour, deviant sexual interests, alcohol and substance use, psychiatric symptoms, and out-of-home placements. Furthermore, the



mechanisms by which these gains were achieved have been explored and it is suggested that MST effects on youth antisocial behaviour and deviant sexual interests/risk behaviours were mediated by increased caregiver follow-through on discipline practices as well as decreased caregiver disapproval of and concern about the youth's deviant peers, as measured by youth and caregiver reports of parenting and peer relations constructs on scales from the Pittsburgh Youth Study (Henggeler, et al., in press).

The MST programme developers have spent 2004 to 2008 in laying the groundwork for transporting MST adaptations for juvenile sex offenders to community-based providers. In that period, they have piloted fifteen teams in eight states in the United States under close oversight by the adaptation developer. These teams have been reportedly successful, and the next step in the path to dissemination involves moving toward an even broader dissemination of MST for this clinical population in existing and new sites in the U.S. and other countries (e.g., the UK and EU) (Henggeler et al., 2009).

#### *Substance misusing offenders*

In an examination of the outcomes for the chronic juvenile offenders in the Simpsonville, South Carolina, and Columbia, Missouri studies described above, research found that MST had led to significant decreases in both drug-related arrests and self-reported drug use after treatment (Henggeler et al., 1991). These studies demonstrated that MST effect sizes were among the highest of those reviewed in a meta-analysis of family-based treatments of drug abuse (Stanton & Shadish, 1997).

As a result, the first randomised control trial of MST with delinquents with substance abuse and dependence was undertaken in Charleston, South Carolina and funded by the National Institute on Drug Abuse (NIDA), running between 1992 and 1997 (outlined in Table 1). One hundred and eighteen juvenile offenders who met the DSM-III-R (1987) criteria for substance abuse or dependence and their families were randomly assigned to receive either MST or service provided by the Department of Juvenile Justice (DJJ). Interestingly, 98% of the families assigned to the MST condition completed a full course of treatment, whereas only 22% of families assigned to DJJ services received any substance abuse or mental health services during their first five months in the programme. The results highlighted that while MST reduced self-reported alcohol and marijuana use at post-treatment (Henggeler, Pickrel, & Brondino, 1999), urine screen results did not confirm these self-reports, and results of substance use were not maintained at six-months post-treatment follow-up.

However, gains favouring MST compared to DJJ services at six-month post-treatment follow-up were demonstrated in decreased incarceration, decreased total days in out-of-home placements (Schoenwald et al., 1996), and increased youth attendance in regular school settings (Brown et al., 1999). Cost-benefit analyses showed that the costs of MST were nearly offset by savings incurred as a result of reductions in days of out-of-home placements during the 12 months following the referral (Schoenwald et al.). Moreover, at four-year post-treatment, MST participants (now young adults) demonstrated significant reductions in aggressive criminal behaviour and had fewer

positive tests for drug use (confirmed by urine screens) than participants in the usual services condition (Henggeler et al., 2002).

Because the study by Henggeler, et al. (1999) failed to garner outcomes typical of MST studies, several enhancements (based on the empirically supported “Community Reinforcement Approach” {CRA; Budney & Higgins, 1998) model for treatment of adult cocaine abuse} were made to the MST treatment protocol to more effectively address adolescent substance abuse. This approach, while theoretically compatible with MST, focuses very specifically on substance use as opposed to a primary focus of MST on broader environmental risk and protective factors. Pilot testing of this integrated model was conducted in a randomised trial with a different population (youth presenting psychiatric emergencies) as well as in a quasi-experimental neighbourhood-level intervention project.

The second clinical trial with this population (highlighted in Table 1; Henggeler et al., 2006) included four treatment conditions one of which was Drug court and MST/CRA. Drug court for substance abusing offenders was held on weekly basis (compared to family court which was held biannually), thus included a high level of monitoring of the young person’s behaviour by the court through urine screen analyses and weekly reports from caregivers and substance misuse counsellors. Based on these reports, a drug court judge imposed sanctions for negative behaviour/positive urine tests, while positive behaviour and negative urine tests were rewarded. With both drug and family courts, the young person was referred to community mental health services to address their needs (Henggeler et al.). Overall, while drug court was

more effective than family court at decreasing self-reports of substance use and criminal offending, the drug court + MST/CRA condition produced the most favourable objective substance use outcomes. However, it could be argued that this adapted model cannot be classed as ‘pure’ MST in practice.

### *Other populations*

The success of the aforementioned randomised trials of MST, especially the Simpsonville and Missouri Projects, led to several studies being conducted that attempted to adapt and extend the MST approach to other populations. MST outcomes in these adapted models have been explored with child maltreatment (caregivers referred for child abuse and neglect; Brunk, Henggeler, & Whelan, 1987), and mental health (youth presenting with serious clinical problems and psychiatric emergencies including suicidal behaviour; Henggeler et al., 1999), and even with chronic health care problems (inner-city adolescents with poorly controlled type 1 diabetes; Ellis et al., 2005a, 2005b). The effectiveness of MST in these populations is not the focus of this literature review and the reader is referred to the studies highlighted for a more extensive review of the outcomes achieved.

### **Strengths of the evidence-base on MST**

MST was studied with randomised experiments at an early phase in its development, which represents a significant step forward in using randomised control trials to test and improve interventions. The model appears to have a strong track record based on the rigorous evaluation that has been a hallmark of its development and dissemination. This is its strength as historically, the early success of innovative treatment models

has rarely been replicated in dissemination efforts (Potter & Mulkern, 2004). In addition, the evidence-base is relatively robust and demonstrates a high degree of validity given that much of the evaluation research has included populations of actual clinical cases, a range of study outcomes, multi-agent and validated multi-method battery assessments evaluating functioning and psychiatric symptoms, and long-term outcomes past the termination of treatment.

Furthermore, MST has received empirical support from multiple studies conducted in 'real world' settings that have maintained few exclusion criteria, strengthening support for treatment effectiveness. The proponents of MST argue that as an evidence-based practice, MST meets the following minimal criteria: at least two control group studies have been conducted, at least two investigators have conducted research on the intervention, a treatment manual exists so that others can replicate the treatment methods, there are standards for training therapists, and fidelity measures exist for implementing the intervention (Potter & Mulkern, 2004).

In relation to outcomes, MST has obtained positive outcomes compared to services as usual in randomised controlled trials, supporting its usefulness for treating severe problems in young people (Kazdin & Weisz, 1998). As explored in the previous section, the success of MST is defined in terms of reduced recidivism rates among participating youths, improved family and peer relations, decreased behaviour problems, and decreased rates of out-of-home placements. Furthermore, MST has demonstrated that such outcomes are cost-effective. In fact, in a study conducted by the Washington State Institute on Public Policy, MST was identified as the most cost-

effective intervention for juvenile offenders among 16 programmes evaluated (Washington State Institute on Public Policy, 1998). Furthermore, over the years MST has received significant support from leading reviewers (e.g., Stanton & Shadish, 1997; Kazdin & Weisz, 1998; Farrington & Welsh, 1999; and more recently, Waldron & Turner, 2008; Hoge, Guerra, & Boxer, 2008) as well as entities {e.g. Blueprints for violence prevention (Elliott, 1998); Office of Justice Programs (2005); National Institute on Drug Abuse (1999); National Mental Health Association (2004)} charged with evaluating research.

There has also been support for MST from outcomes achieved by independent investigators who have conducted RCTs (Timmons-Mitchell et al., 2006; Ogden & Halliday-Boykins, 2004; see Table 1), quasi-experimental (Stambaugh et al., 2007; see Table 1) and benchmarking studies (e.g., Odgen, Hagen, & Anderson, 2007; Curtis et al., in press; Tolman et al., 2008). Benchmarking studies require that the strength of treatment effects in a community-based implementation of an evidence-based treatment be compared with the strength of the effects achieved in previous clinical trials of that treatment (Tolman et al.). Overall, these results have reported favourable outcomes. For instance, although Tolman et al. report lower mean pre-post effect sizes (Effect Size,  $ES = 0.29$  and  $0.33$ ) on outcomes measures produced in their study than those derived from RCTs published by the developers ( $ES = 0.46$ ), they are nevertheless within the 95% confidence interval around the mean of those reported in the RCTs (95%  $CI = 0.27$  to  $0.64$ ). Tolman et al. suggest that this is due to the study's methodological limitations, which include a lack of comparison groups and several differences in programme operations (e.g., compared to the original MST model,

accepting younger clients, assigning a larger number of treatment goals, and providing booster sessions to youth who had already received MST). This finding is largely consistent with evaluations of MST programs implemented without expert consultation from MST Services, Inc (Henggeler et al., 1997).

It is noteworthy that while the MST developers report that the effect sizes derived from the RCTs are 'large', these would be classed in the small ( $ES = 0.2$ ) to medium ( $0.5$ ) range by Cohen (1988). In the most recent benchmarking study conducted in New Zealand, Curtis et al. (2009) reported overall treatment effect sizes consistent with those achieved across previous studies, and MST was superior to the comparison condition benchmarks, suggesting that reasonable effect sizes can be achieved without close expert supervision. However, it is important to note that there are some significant problems in how the control group is evaluated in this study. Furthermore, while benchmarking studies are cost-effective in communities with public funding, they cannot overcome various threats to internal validity produced by a single group design such as history, maturation, testing, instrumentation, statistical regression, experimental mortality, ambiguity about the direction of causal influences, and diffusion or imitation of treatment (Cook & Campbell, 1979).

A meta-analysis, of seven MST RCTs in the United States, conducted by Curtis, Ronan, and Borduin (2004) was in favour of MST. An overall, medium treatment effect size of  $0.55$  was obtained and gains made by MST-treated youth included a decrease in the frequency and severity of arrests, symptomatology, deviant peer relations, and substance use. Furthermore, improved family relations, supportive peer

relations, school attendance, and parental monitoring were also experienced by MST youth and MST demonstrated an average treatment completion rate of 86% (with a range of 76-100% across seven studies). These appear to be remarkable findings as positive outcomes are difficult to achieve in community settings, where client populations may be less motivated, heterogeneous, more severely disordered, and more economically disadvantaged, compared to clients included in efficacy, university-based studies (Henggeler, Schoenwald, & Pickrel, 1995). MSTs positive outcomes are hypothesised to be linked to the model's ability to focus intensely on particular problems within a broad-based clinical paradigm and use interventions that are consistent with those (i.e. behavioural, cognitive-behavioural, pragmatic, family systems) evidencing the largest effect sizes in the meta-analytic literature (Lipsey, 1992; Weisz & Weiss, 1993). These interventions are implemented within a social-ecological theoretical framework (Bronfenbrenner, 1979), yet are highly individualised and based on strengths and weaknesses of the presenting child, family, and extrafamilial ecology (Henggeler & Borduin, 1990). Furthermore, clearly operationalised goals are used whereby a rigorous quality assurance system is in place aimed at optimising youth outcomes.

That research has indicated that few client factors have been found to moderate MST outcomes is also a significant strength as it suggests that the extent to which positive outcomes are achieved in MST does not depend on gender, age or type of population studied (e.g. violent or criminal juvenile offenders, substance-abusing young people, adolescent sexual offenders) (Curtis et al., 2004; Henggeler et al., 1998; Tolman et al., 2008). Furthermore, in on-going dissemination of the treatment model, MST has been



transported across community agencies (mental health, juvenile justice, children's welfare) and geographical locations (from state-wide in the United States to Europe & U.K.) with considerably less direct oversight from expert supervisors than has occurred in efficacy studies. Rigorous randomised control trials are in place to continue to investigate the effectiveness of MST in real world clinical settings, with populations varying in social, cultural, and ethnic factors that are unique to a particular country or context.

### **Weaknesses of the evidence-base on MST**

A significant criticism cited across the literature on the effectiveness of MST is that most studies have been conducted by MST programme developers, and this personal and financial interest in the program might create a conflict of interest. All of the randomised and follow-up studies published to date, with the exception of two (Ogden & Halliday-Boykins in Norway, 2004; Timmons-Mitchell et al., 2006 in the United States), have been conducted by one of the founders of MST. While both sets of studies have reportedly replicated favourable outcomes of MST achieved in previous research, more independent research would allow for rigorous support of the model's effectiveness.

The most controversy with regards to the effectiveness of MST has been generated by the Ontario study (Leschied & Cunningham, 2002), which remains unpublished. This was the first large-scale replication of MST outside the United States and also the first randomised study conducted within the Canadian youth justice system. The study was multi-site, to monitor the implementation and effectiveness of MST in areas that

varied in terms of size, urbanism, and resource base. Of interest was also whether the independent evaluation in this study would produce the same results and whether the American results would generalise to Canada. The results are not consistent with previous MST research, and in its interim report researchers found no statistically significant differences in outcome measures between MST and usual services and very low reductions in rates of convictions compared to previous research.

In three years, 79% of youth had at least one conviction (Leschied & Cunningham, 2002). MST programme developers attribute these non-significant findings to site-level differences in treatment fidelity as well as methodological flaws. Examples of the latter include low sample size (n=409), poorly specified randomisation procedures, post-intervention assessments not blinded and therefore potentially biased, some outcome data being collected by MST therapists, and other outcomes potentially biased by decision-makers' knowledge of participants' involvement in MST or usual services (Henggeler et al., 2006).

However, there is concern (Littell, 2006) that these inferences have been made in the absence of hard data on adherence and other data have been selectively reported thus misrepresented. For instance, Henggeler and colleagues reported that the MST programmes averaged a 10% reduction in convictions, based on interim 6-month follow-up data, but failed to highlight that MST was associated with increases in the proportion of youth convicted of any offence at the one-year, two-year, and three-year follow-ups (Henggeler et al., 2006). Littell further argues that some data have been misinterpreted, for example, Henggeler and colleagues have interpreted within-group

changes over time – i.e., maturation – as evidence of intervention effects. Similarly, a more recent multi-site study conducted in Sweden (Sundell et al., 2008) failed to find outcomes favouring the MST condition. The MST developers attributed this to treatment fidelity being poor across sites, and concluded that there was some, but not entirely consistent, indication that therapist adherence was linked to more favourable youth outcomes.

The positive findings from the meta-analysis of MST conducted by Curtis et al. (2004) outlined in the preceding section may have been affected by estimation errors and bias because of the fact that the researchers were programme developers of MST. Furthermore, some of the studies included in this review were more characteristic of efficacy research while others were more characteristic of effectiveness research. Efficacy trials tend to be carried out under ideal conditions, for example, where clients and therapists are highly selected, and programme developers supervise the research. They are frequently criticised as having limited generalisability to real-world issues (Clarke, 1995). On the other hand, effectiveness trials place a high premium on ecological validity and clinical utility of the treatment, maintaining few exclusionary criteria in recruiting clients, and being independent of programme developers (Clarke).

It was indicated that treatment effect sizes differed in studies of efficacy (large  $ES = .81$ ) than in studies of effectiveness (small  $ES = .27$ ), pointing to the need for continued transportability research (Littell, 2006). It is important to note that this

review did not include the outcomes from the multi-site Ontario study that demonstrated non-significant results.

A further meta-analysis of MST studies conducted by Littell, Popa and Forsythe (2005) in their paper for the Cochrane Library (which included the Ontario study) found no significant differences between MST and usual services and concluded that it is not clear whether MST has clinically significant advantages over other services. However, there also exists controversy as to whether, by including the Ontario study, this meta-analysis dishonoured the conditions discussed by Nugent (2006) in order for a meta-analysis to be valid. The Ontario study is reported to have had the most complete intent-to-treat analysis of any study included in the meta-analytic review by Littell and her colleagues – and it found no significant differences between MST and usual juvenile justice services in outcomes in four sites. Littell (2006) claims this study is unpublished because of its null findings (i.e., publication bias), not its methods. The authors of the systematic review do not claim to draw conclusions about the efficacy of MST but suggest that further research by independent investigators is needed before it is accepted as an effective intervention. Unsurprisingly, Henggeler and colleagues robustly reject these concerns (Henggeler et al., 2006) but the debate about the scientific basis of the evidence and the relationship of this to commercial development of a treatment programme looks set to continue.

Broader critiques of the evidence-base of MST come from Littell and her colleagues (Littell et al., 2005; Littell, 2006) who seriously question the integrity of the MST trials. For example, they draw attention to inconsistent reporting on the number of

cases in MST trials (the Missouri and Simpsonville projects) in different MST papers (Borduin et al., 1995; Borduin & Henggeler, 1990; Henggeler et al., 1991; Henggeler et al., 1992; Henggeler et al., 1996). Littell argues that failure to mention the reason for exclusion of certain cases can lead to ‘post hoc refinement’ (Gorman, 2005). Furthermore, retention of ‘unyoked’ cases (i.e., where one case in a randomised pair was lost during the study, its mate was retained in the analysis in the Henggeler et al., 1992 study) is highlighted by Littell as a problem as it is thought to undermine the original randomised design and could make studies vulnerable to the ‘invidious bias’ that drop-outs may produce. Other methodological critiques include use of unclear randomisation procedures, variable follow-up periods, and subjective definition of treatment completion. Overall, Littell comments that flaws in methodology that the MST developers have attributed to non-significant findings in the Ontario study are characteristic of virtually all the clinical trials in the analysis conducted by Littell et al.

It is known that the type of control group may contribute to between-group results. Inspection of the control groups across the trials seem to suggest that MST studies have typically compared MST to treatments with limited empirical support (e.g., individual counselling) or in most cases involve MST (a specific intervention modality) compared to ‘usual services’, which could consist of a broad range of interventions, which are sometimes unknown (i.e., the independent study by Timmons-Mitchell et al., 2006). In one early study, which was the second randomised trial in MST, (124 victims of child abuse and neglect; Brunk et al., 1987) no significant differences between the MST group and the control group were found,

with both groups displaying improvements across all outcomes measured, except for one (observational measures of parent-child interactions which supported MST). The treatment received by the comparison group in this study was parent behaviour training, which has demonstrated its effectiveness (Woolfenden, Williams & Peat, 2001). Similarly, a more recent study by Painter (2009) where MST was compared to family skills training combined with case management in community, showed that both groups demonstrated improvement in youth functioning. Thus, more research comparing MST to well-validated treatment models (such as Family Functioning Therapy and Multidimensional Treatment Foster Care) is warranted, as there is evidence of equal effectiveness of these treatments in improving family and youth functioning and behaviour (MacDonald & Turner, 2008; Sexton & Alexander, 1999).

Finally, research is required to understand the conditions that best support the effective implementation of MST in community settings. To date, the importance of adherence to the principles and analytical process of MST has been consistently linked with behavioural and clinical outcomes (Henggeler et al., 1997). However, concerns have been expressed (Littell, 2006) that the measure that is used to assess treatment fidelity (Therapist Adherence Measure, TAM) is flawed as it is not specific to MST but taps constructs that are considered essential to any therapeutic intervention, such as client engagement, therapeutic alliance, and client satisfaction. Furthermore, the ability of the TAM to discriminate between MST and other approaches has not been assessed.

## **Conclusions**

MST represents a movement away from traditional intervention methods for young people with severe social, emotional, and behavioural needs, which have typically included either under-intervention due to the failure of office-based approaches to engage the client and his/her ecology, or over-intervention (expensive out-of-home placements) due to significant escalation of risk and/or need (French, 2009). Using a home-based model to overcome barriers to engagement with families, MST aims to address all the complex problems within a youth's ecological system that contribute to the youth's problems. It is not a one-size-fits-all treatment model, yet it possesses a definite structure, where treatment goals are matched to the needs and strengths of the youth and family. The strong emphasis on measuring fidelity at all levels further adds to its credibility in the literature and practice.

Taken together, the findings from the research discussed in the above sections suggest that MST is a valuable intervention for young people with antisocial behaviour. While the evidence base for MST is characterised by considerable controlled research and its effectiveness has been demonstrated through the transfer of MST to other clinical populations, multiple organisational settings, and countries, a key drawback remains that there exists little diversity among investigators. It is typical in treatment development research for early clinical trials to be conducted in ways that maximise the chances that the treatment will show positive effects, if, indeed, it is an effective treatment; however, as MST is more widely disseminated, research must focus on evaluations of the effectiveness conducted by investigators who do not have an

allegiance to the programme model so that future independent reviews can confirm its classification as a well-established treatment.

Kazdin (2006) suggests other questions about MST that remain to be answered, for instance, is the intensity of effort required for all cases? Can components of treatment or an abbreviated regimen work? Answers to these questions would of course make MST more accessible to clinical service settings. This was the starting point for developing an intensive community intervention model in Greenwich, based on what might be achievable to sustain within local National Health Service and Local Authority resources.



## **CHAPTER 2**

**The Effectiveness of an intensive intervention on young people with  
complex needs: An Empirical Study.**

## **ABSTRACT**

The efficacy of an intensive community-based intervention, based broadly on the principles of Multisystemic Therapy, for young people with chronic aggressive, violent, antisocial and/or sexualised behaviours, at risk of care or custody, and their families, was explored in a sample of 17 young people and 12 caregivers. Pre-treatment and post-treatment assessment batteries evaluating family functioning, emotional loneliness, locus of control, interpersonal functioning, and resiliency were completed by the youth and caregivers. At the end of the six to nine intervention, the assessments highlighted that youth and their caregivers self-reported (statistically significant) reductions in family conflict and (close to significance) increments in family cohesion. Near significant improvements were also observed in the level of engagement in recreational activities as a family unit (Active Recreational Orientation) and the emphasis on vocational activities (Achievement-Oriented). Furthermore, post-treatment, young person measures demonstrated self-reports of enhanced interpersonal functioning as evidenced by statistically significant reductions in three domains of the interpersonal functioning measure: 'Vindictive/Self-Centred', 'Cold/Distant' and 'Intrusive/Needy', as well as statistically significant increments in the Sense of Mastery and Sense of Relatedness domains of the Resiliency Scales. The clinical significance and implications of the observed changes are discussed in the context of research which supports multidimensional causal models of maladaptive behaviour in adolescents. The need for interventions to be intensive, overcome barriers to engagement and retention in treatment, and work at multiple levels in order to target the risk factors in these young people who are typically a very hard-to-reach subset of this population are also addressed.

## INTRODUCTION

Children and adolescents with severe emotional and behavioural difficulties are a treatment priority not only because the outcomes for these youngsters are very poor across multiple domains of functioning in life, but also because in the long-term the cost to society for unsuccessfully treated psychological problems is enormous (e.g., Greenberg et al., 2001). This chapter focuses mainly on young people with conduct difficulties as a significant proportion of youth presenting with symptoms associated with Conduct Disorder (e.g., aggression towards others, property destruction, theft or deceitfulness, and serious rule violation, Herbert, 1987; Kazdin, 2002; Loeber et al., 1998), were referred to the intensive intervention which is evaluated currently. The current terms and concepts used in various fields to describe youth with behaviour difficulties ('delinquency', 'antisocial behaviour', 'aggression', 'Conduct Disorder', 'conduct problems', and 'externalising behaviour disorders') are not identical and are partially separable, but they also overlap and correlate with one another. These young people, with an externalising syndrome, representing undercontrolled behaviour including impulsive, hyperactive, aggressive, violent and delinquent behaviours, form the majority of referrals to Child and Adolescent Mental Health Services and represent the most difficult-to-treat segment of this population (Farrington, 1995; Kazdin, 1995). Thus, the identification, assessment, containment, and treatment of maladaptive aggression and associated disruptive behaviours are important tasks facing mental health clinicians in both ambulatory and institutional treatment settings.

## **A General Discussion of Risk and Protective Factors**

The field is rapidly departing from single-variable, main-effects perspectives and toward viewpoints that attempt to integrate developmental, psychobiological, individual, familial, community, cultural and socioeconomic factors in more ecologically valid models.

A broad list of identified risk and protective factors related to general child psychopathology is outlined in Figure 1 below. It is important to note that the vast majority of risk factors are non-specific and exert their influence on maladaptive outcomes in indirect ways. Furthermore, risk factors rarely exist in isolation from one another; instead, they usually interact in complicated ways over the course of the individual's development. Consequently, research is beginning to explore multiple-risk-factor models, with a focus on interactions among risk factors in attempting to understand the development of maladaptive behaviour.

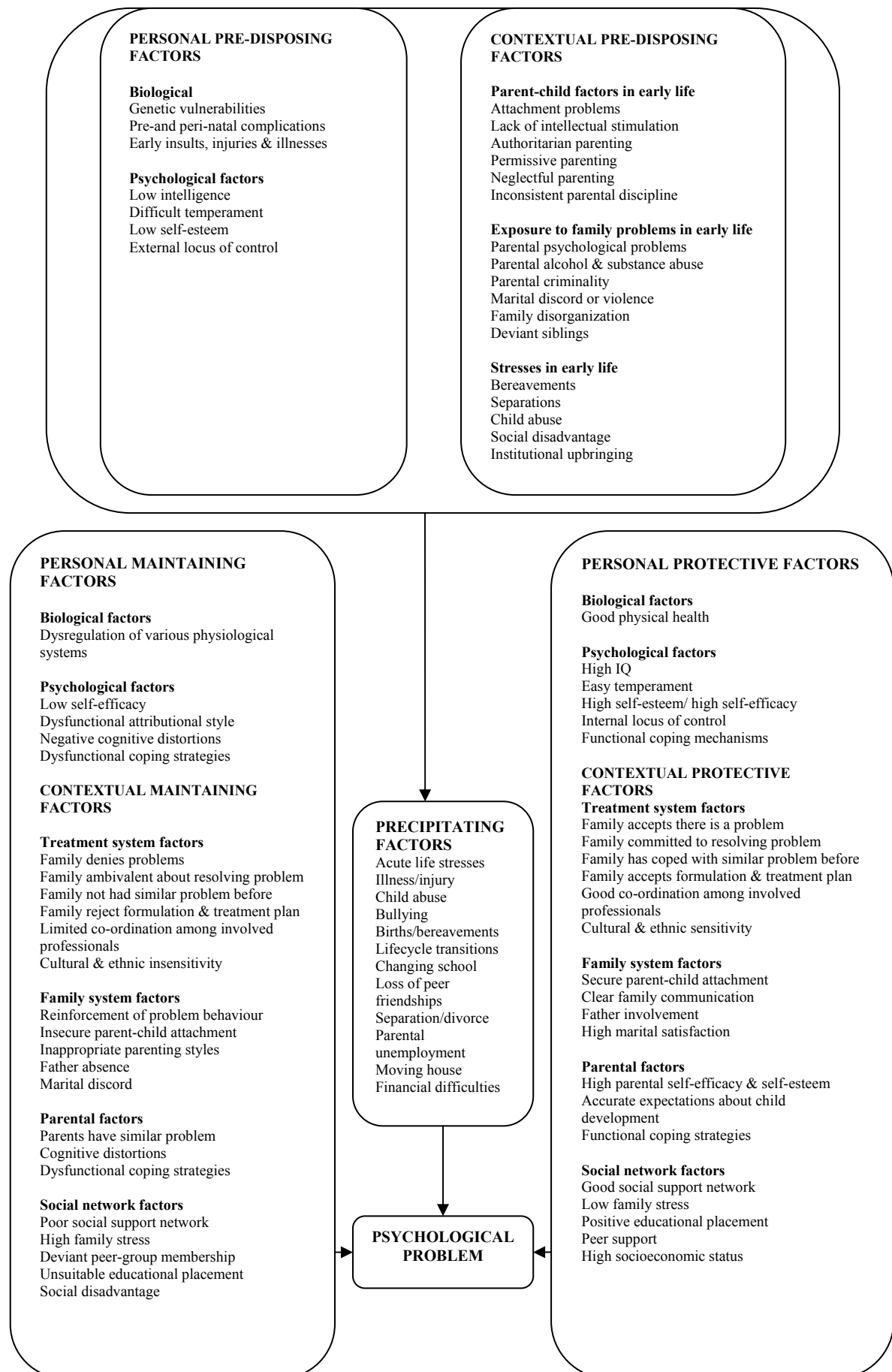


Figure 1. Factors contributing to the development of psychological difficulties in children and adolescents (adapted from Carr, 2006).

For instance, a significantly heightened risk for adult criminality has been found when both environmental and heritable risk factors for antisocial behaviour are present in an individual's life, as compared to either type of risk factor operating independently (Bohman, 1996). An example of this is the impact of maladaptive parenting styles on the development of youth conduct problems. Poor parenting practices have been found to be a risk factor for childhood antisocial behaviour only in those children without callous-unemotional personalities (possibly determined by genetic influences). In children with these traits, risk for conduct problems occurs independently of either effective or ineffective parenting practices (Wootton, Frick, Shelton, & Silverthorn, 1997).

A further example of the interaction between genetic and environmental factors is research which highlights that a 'difficult temperament', characterised by qualities of overactivity, undercontrol, high intensity of responses, inattention, predominantly negative mood, and low adaptability to new situations, by itself is a weak predictor of the development of conduct problems. Thomas and Chess (1977), who first categorised child temperament as difficult, slow-to-warm-up, and easy, argued that a difficult temperament may contribute to negative social interactions that undermine healthy psychosocial adjustment. Much patience and flexibility is required of the parents of such a child (Chess & Thomas, 1995), therefore, it is unfortunate that a difficult child temperament can evoke exactly the types of negative parenting behaviours that transform temperament into antisocial behaviour. When a difficult temperament in the child is combined with family dysfunction, marital conflict, low socioeconomic status, upbringing in a high-crime neighbourhood, and/or parental

psychopathology, prediction for aggression and conduct disorder is stronger (Tschann et al., 1996).

It is important to note that psychosocial variables are not independent of genetic influences on the development of aggression. Genetic factors have been identified as influencing individual differences in psychosocial risk exposure. Thus, psychosocial factors influencing the development of maladaptive behaviours in children and adolescents may be partially genetically mediated (e.g., Rutter, 1999) – this relation appears to be bidirectional. An individual's genetic factors may lead to increased exposure to environmental risk factors. For instance, a young person with Attention Deficit Hyperactivity Disorder (ADHD) with the attendant risk for impulsivity (which may be genetically determined) may be predisposed to engage in risk-taking behaviour, and generally will struggle to think through the consequences of their actions. This consequently may provide a greater likelihood of exposure to psychosocial risk factors known to be associated with the development of maladaptive aggression, such as association with an anti-social peer group. Genetic factors may also increase an individual's vulnerability to environmental risks. For example, low verbal intelligence (a genetically mediated effect) in young people tends to be stronger risk factor in the development of aggression and antisocial behaviours in high-risk, as opposed to low-risk, environments characterised by much psychosocial adversity (Tiet et al., 1998).

As aforementioned, risk factors do not occur in isolation from one another and are frequently multiple and chronic in a child's life. Since most psychosocial risk factors

are non-specific and exert their effects on risk for maladaptive behaviours indirectly, the specific type of risk factor appears less significant for the development of such behaviours than the total number of risk factors present. Cumulative effects of multiple risks (i.e., parental psychopathology, low socioeconomic status, adverse life events, poor parenting practices, genetic risk factors for psychiatric disorders or psychopathy) have been demonstrated to have far more of a serious impact on developmental outcomes in youth than any specific type of risk factor (Fergusson & Lynskey, 1996; Herrenkohl et al., 2000; Rutter, 1979). In the etiology of aggressive and antisocial behaviours in youth, therefore, the total number of risk factors appears more important than specific types of risk factor.

Like risk factors, protective factors, exist in three different domains: child, family and extrafamilial factors, depicted in Figure 1. These factors can exert a buffering effect on high-risk youth. They can modify, ameliorate, or alter an individual's response to some environmental hazard that predisposes him or her to a maladaptive outcome (Rutter, 1985). They appear to interact with risk factors to partially buffer youth to maladaptive outcomes, especially in high-risk environments. Their presence has been found to characterise children and adolescents who show resilience in the face of stress, and good outcomes despite high-risk status (Carr, 2000a; Carr, 2000b).

### **Integrated models of aggression and related behaviours**

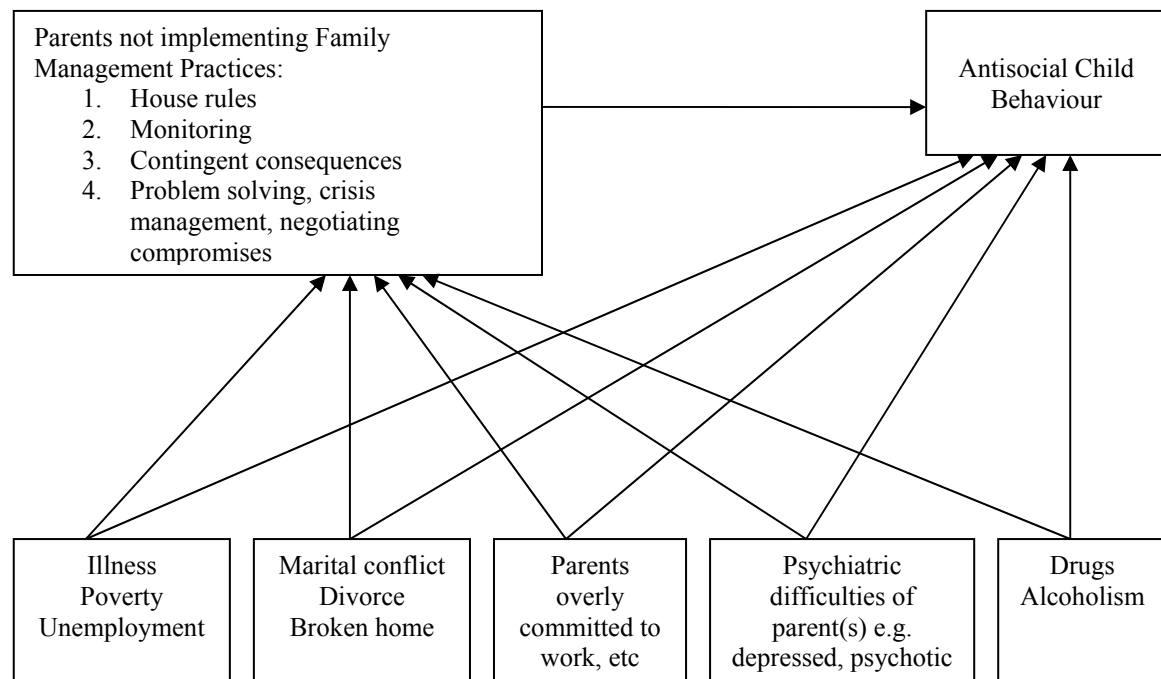
It has become increasingly clear that aggression and antisocial behaviour cannot be attributed to a single unitary cause. Negative behaviours are likely to result from multiple, frequently co-occurring, reciprocal, and interacting risk factors, causal



events and processes, all of which may differ depending on a child's gender and developmental age (Mash & Dozois, 1996). To this extent, a developmental psychopathology approach to such problems in young people allows for consideration of a broad range of interacting individual, child, parental, familial, and environmental variables, including biological as well as psychological processes, in the development, maintenance and/or desistance of maladaptive aggression across development. Three models from this perspective are discussed below.

Patterson's 'coercive family process' theory (see Figure 2 below), highlights the importance of negative reinforcement, and the abandonment of positive parenting practices in families with aggressive/anti-social children, where family/contextual variables also play a role in diminishing positive parenting practices. This model depicts a breakdown in positive parenting practices at the core of coercive family process theory and postulates that harsh and inconsistent conflictual interchanges between parents and a child over disciplinary issues in the family eventually train the child in aggression and antisocial behaviours through negative reinforcement of the child's behaviour. The child therefore learns that aggressive behaviours are a winning social strategy in the home and over time the coercive cycle escalates and these behaviours then generalise to the environments outside home (school and community), where arguing, bullying, non-compliance, and fighting may occur. The child's aggression is especially strongly reinforced when stressed or frustrated parents follow a pattern of ineffective discipline with episodic, explosive, and harsh behaviours directed toward the child (Capaldi & Patterson, 1994). Parent-child interactions marked by this parental inconsistency (laxness, then harshness), as well as

by high conflict and intense negative affect, are particularly likely to train the child in the use of aggression as a social strategy for negotiating interpersonal relationships. Harsh and inconsistent discipline practices have been shown to account for 30% to 52% of the variance in the development of antisocial behaviour (Capaldi & Patterson, 1994; Patterson, Reid, & Dishion, 1992). Furthermore, poor supervision (Wasserman et al., 1996), and low levels of positive involvement with offspring (Rothbaum & Weisz, 1994) are ineffective parenting practices that have been implicated in the onset and maintenance of negative behaviour in young people. Examples of low parental involvement include parental nonacceptance, intrusive, controlling, or rejecting attitudes toward a child. However, as noted above, it is important to bear in mind bidirectional influences on family socialisation related to child aggressive behaviour. Characteristics of the child, such as temperament, impulsive responding, attention span, and oppositionality, can strongly influence parenting behaviour (e.g., Chess & Thomas, 1995); thus, it may be that negative parenting practices are largely a reaction to the difficult, oppositional, and aggressive behaviours displayed by the child with developing Conduct Disorder (Hinshaw & Anderson, 1996).



*Figure 2.* The relationship among family management practices, contextual variables, and antisocial child behaviour (from Patterson, 1982).

A second model highlights the developmental progression from early oppositional behaviour to later Conduct Disorder (Figure 3). This model describes that depending on the influence of various interacting individual, parental and peer factors, normative infant and early childhood oppositional behaviours may follow one of two developmental pathways (Loeber et al., 1993).

In the normative pathway, an infant displaying oppositional behaviour will undergo a slow process of progressive socialisation under the influence of normative and appropriate parenting and school pressures. This tends to result in a general reduction of oppositional defiant behaviours. During adolescence and under the influence of teenage peer influences, the young person may display premature experimentation with adult activities such as drinking, smoking, staying out late at night, and transient

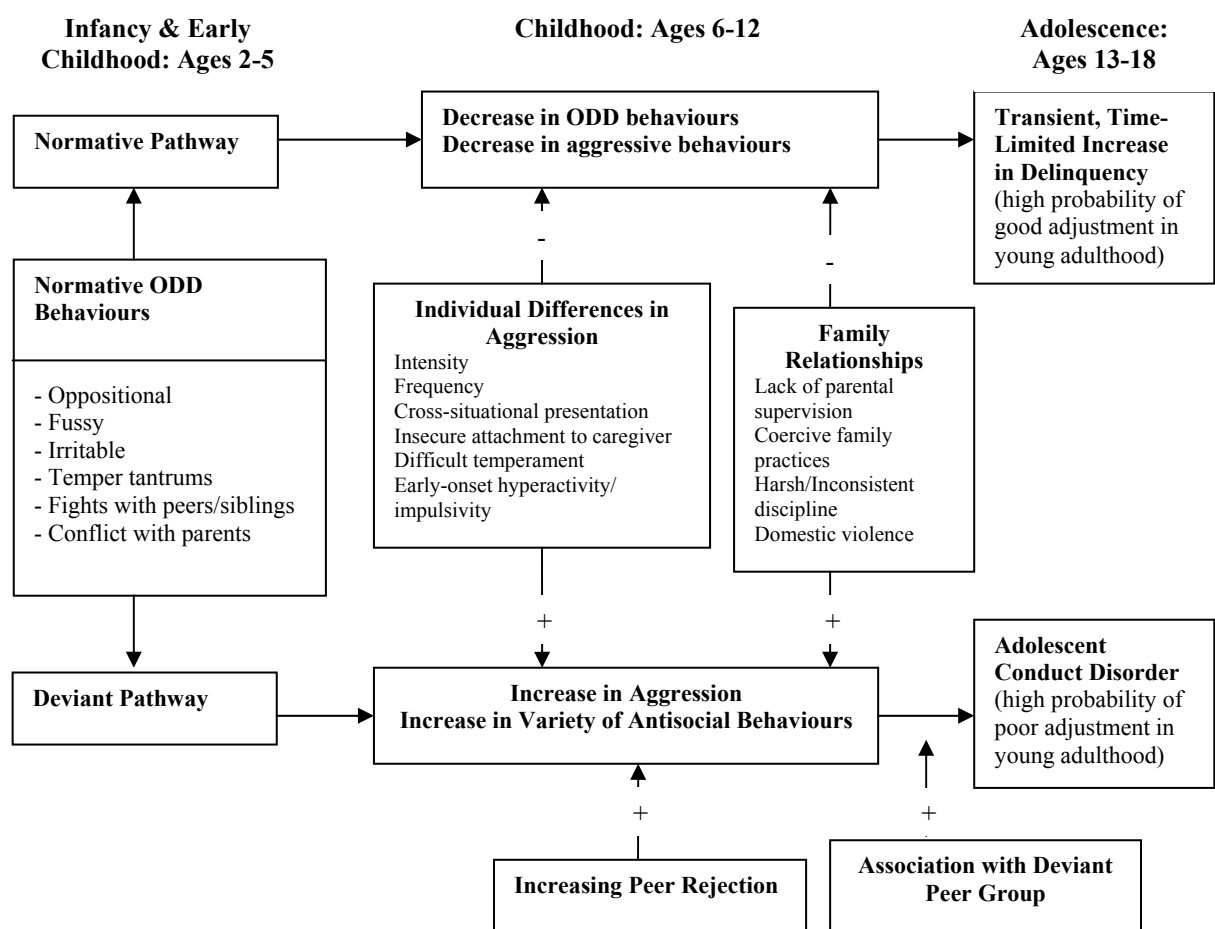
and time-limited delinquency. However, in this pathway, the prognosis for eventual positive adjustment in the early adult years is high, perhaps due to the influence of protective individual, familial, and/or environmental factors.

On the contrary, a second, more deviant pathway is highlighted whereby normative early childhood oppositional behaviours become influenced by a number of individual, parenting, family, and peer factors to result in serious aggressive/antisocial behaviour and the development of Conduct Disorder (CD) by primary school age or adolescence. This orderly emergence of CD behaviours from early Oppositional Defiant Disorder (ODD) symptoms is supported by the Pittsburgh study (Loeber et al., 1998) whereby there was evidence that in boys, stubborn behaviours tended to emerge first, followed by defiant behaviours including disobedience. Minor covertly aggressive acts, such as lying and shoplifting, occurred next. Mild aggression such as bullying was followed by acts of property damage, including vandalism and fire-setting. In early adolescent years, more serious maladaptive behaviours emerged, which included physical fighting and violence, as well as avoidance of authority. Given what is known about the stability of antisocial behaviours and CD with increasing age, and that treatments for CD are less effective than treatments for ODD (Loeber, Lahey, & Thomas, 1991), it is important to identify young boys who are at increased risk for developing more serious antisocial behaviour in later childhood to allow for an early intervention, where symptoms may prove to be more amenable to change.

This model is similar to the ‘multiple-pathways’ (Loeber & Hay, 1994) model, which suggests that less serious forms of aggression generally pave the way for more serious forms; however, while many young people engage in the milder forms of these behaviours, many fewer youth progress over time to the more serious forms. Eventual antisocial outcome may be best understood by differences in three developmental pathways, including: (1) an authority conflict pathway, which is the earliest to emerge and begins in childhood. The outcomes for boys in this pathway have been found to be relatively benign, with some antisocial behaviours exhibited at outcome, but generally low rates of delinquency and low rates of meeting the criteria for later CD (Loeber et al., 1993); (2) a covert pathway, which involves escalation in covert problem behaviours, defined as hidden, furtive acts that generally do not involve direct physical confrontation with other individuals. Prognosis in this pathway is less benign: at outcome, slightly more youth in the covert pathway met the criteria for CD and self-reported more delinquency than boys in the authority-conflict pathway (Loeber, Wung, et al., 1993); (3) an overt pathway, which consists of acceleration in overtly aggressive behaviours, defined as direct physical confrontation with other individuals, escalating to physical fighting, and then serious violence (e.g., attacking others and forcing sexual activity onto others).

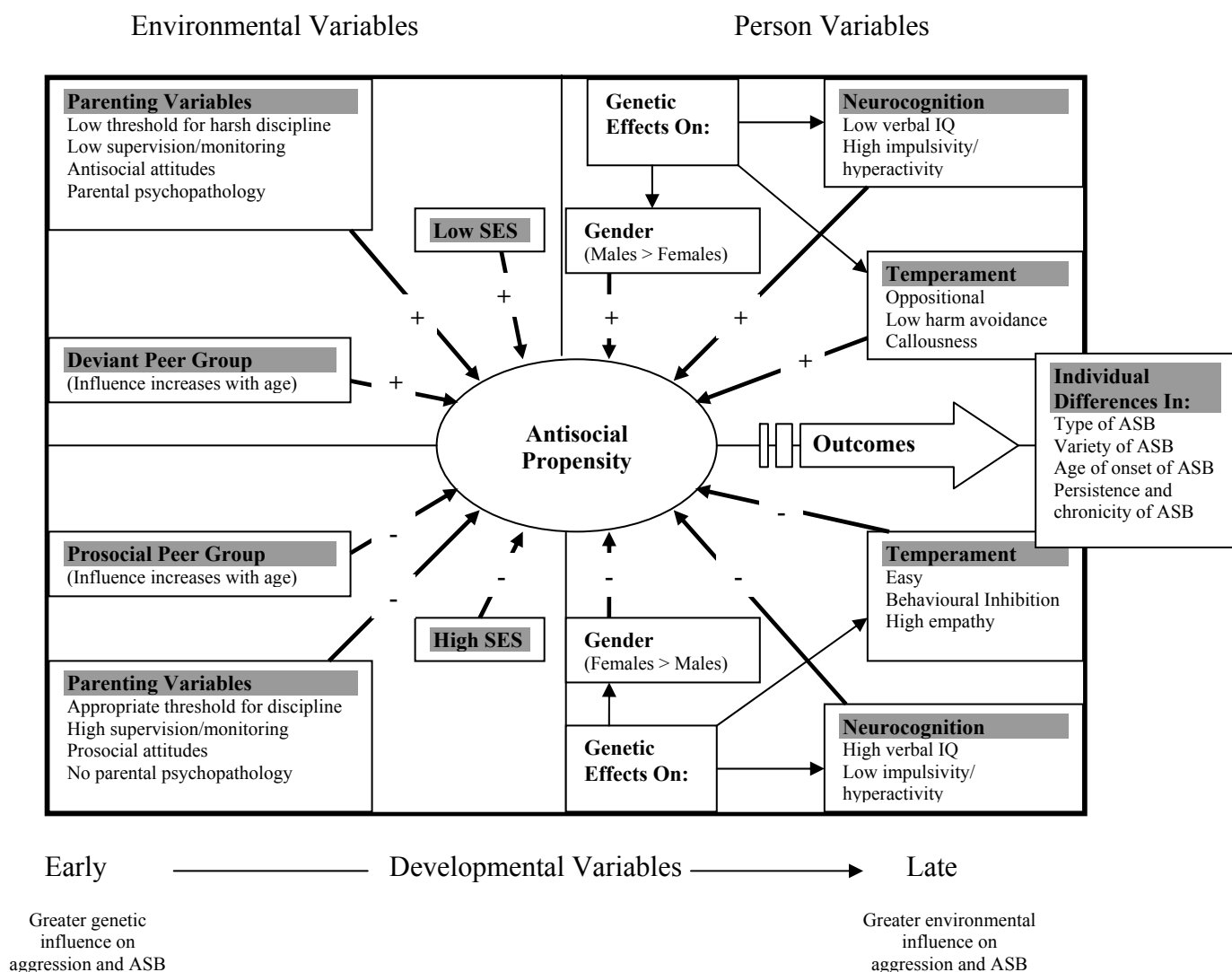
The data suggests that prognosis for youth entering this pathway varied inversely with age: boys with early-onset overt aggression appeared to have a worse prognosis than boys with overt aggression first displayed later in childhood. At outcome, youth in the overt pathway were slightly more court-involved than those involved with the other pathways (Loeber, Wung, et al., 1993). However, most boys advanced on more than

one pathway simultaneously over the course of development. Certain combinations of pathways (e.g., covert-overt) were found to be more powerful indicators of serious negative outcome than other pathways (e.g., covert-authority conflict). Furthermore, boys on all three pathways showed the highest rates offending behaviour at outcome (Loeber et al.).



*Figure 3.* The developmental pathway leading to CD in later childhood and adolescence, beginning with difficult temperament and early ODD-like behaviour. Data from Loeber et al. (1993).

A fourth model introduces the concept of ‘antisocial propensity’ as a key construct to explain individual differences in the risk for and type of antisocial behaviours at outcome (Lahey, Waldman, & McBurnett, 1999; see Figure 4 below). The model depicted in Figure 4 describes an integrative causal approach to the development of antisocial behaviours in youth. It combines the influences of individual and environmental variables, and risk, and protective factors, to help explain differences in individual susceptibility to the manifestation of antisocial behaviour over the course of an individual’s development. Stable individual differences in antisocial propensity suggest variations in several temperamental and neurocognitive abilities, each with their own genetic and environmental influences. Individual antisocial propensity in turn interacts with a number of social factors over the course of development, the cumulative result being an individual’s risk for the expression of antisocial behaviour.



*Figure 4.* Antisocial propensity, developmental trends, and individual differences in antisocial behaviour outcomes. Data from Lahey, Waldman and McBurnett (1999).

## Interventions

The treatment literature underlines the extraordinarily poor outcome for cases of Conduct Disorder. Traditional approaches have focused on treatment of existing problems (reactive) and rehabilitation of the offending youth (Winett, 1998). The results of these approaches which include the use of aversive sanctions (corporal punishment, suspension, expulsion and incarceration) have not been positive, and



based on recidivism rates, incarceration appears to be relatively ineffective and may actually lead to an increase in offending behaviour (Gatti et al., 2009; Lipsey, 1995). As research highlights that youth antisocial behaviour is multi-determined from factors across the youth's social network, treatment must have the capacity to address a broad range of problems. This has allowed the development and evaluation of multimodal, multi-component, interventions to address the multiple individual and social systems affecting youngsters with such behaviours. Significant advances have been made in this field through research which has evaluated interventions with the most difficult-to-treat subtypes of youth with conduct problems: chronically delinquent adolescents (Borduin, 1999). Treatment gains made have been found to be limited and remain modest, their effects are on the order of a 12% to a 25 % reduction in onset or in existing symptoms; however, even these small amounts may translate into significant societal savings.

Of all treatment modalities for conduct problems in youth, psychosocial treatments have been the most well researched (e.g., Herbert, 1978, 1987; Rutter, Giller, & Hagell, 1998; Weisz & Kazdin, 2010). Although there is some evidence base for the implementation of adolescent-focused skills-building group and individual interventions such as anger control training for aggressive youths (Lochman et al., 2010), these single-component programs are not the focus of this section. Recent research (e.g., Kazdin, 2002; Scott, 2008) supports the effectiveness of family-oriented interventions along a continuum of care, which extends from behavioural parent training through family therapy and multi-systemic therapy to treatment foster care. This section will specifically, but only very briefly, explore effective

community-based and multimodal treatment for adolescents with such difficulties. Multi-Systemic Therapy, one family-based intervention is explored and evaluated in more detail in the literature review in Chapter 1.

*Parent training interventions* for use in families of adolescents with conduct problems emphasise specific changes in parenting practices, including a strong emphasis on parental monitoring and supervision of the adolescent as well as expanding the list of targeted behaviours for parental monitoring and tracking, using more age appropriate forms of punishment, and promoting greater involvement of the adolescent in treatment (McMahon & Wells, 1998). One such model, the Oregon Social Learning Centre (OSLC) programme, has demonstrated efficacy in comparison to trials with a treatment-as-usual condition, with adolescents in the OSLC parent training condition spending less time incarcerated compared to those in the comparison group (Forgatch & Patterson, 1989). There is evidence of treatment gain generalisation to other settings as well as over a significant period of time (one to three years) (Barlow & Stewart-Brown, 2000; Behan & Carr, 2000; Brestan & Eyberg, 1998). However, limitations exist in the demands such a programme places on parents who may have their own significant difficulties and needs, for instance, low intelligence, serious forms of psychopathology, as well as contextual difficulties such as marital conflict and low socioeconomic status (Kazdin, 1997).

*Brief Strategic Family Therapy (BSFT)* is a short-term, problem-focused intervention that aims to improve conduct, delinquency, and other behaviour-related problems in children and adolescents by attempting to change family interactions and

cultural/contextual factors that influence the youth behaviour problems (Szapocznik et al., 1989). As family relations are believed to play a pivotal role in the evolution of behaviour problems, they are the primary target for intervention. The goal of BSFT is to improve youth behaviour by improving family relationships that are presumed to be directly related to youth behaviour problems and improving relationships between the family and other important systems that influence the youth (e.g., school, peers). Interventions consist of individual therapy, parent training, skill development and/or improving parent-child interactions, depending on what have been identified as key factors linked to the youth negative behaviour (Robbins & Szapocznik, 2000; Szapocznik et al.). Outcome studies (e.g., Coatsworth et al., 2001; Santisteban et al., 2003; Szapocznik et al.) have demonstrated that BSFT decreases substance use, reduces negative attitudes and behaviours (while increasing positive attitudes and behaviours) in youth as well as increasing parental involvement, effective parenting, and parental management of youth behaviour. Furthermore, improvements in the family environment, such as increased cohesiveness, communication, and collaboration have been demonstrated (e.g., Santisteban et al.).

*Functional Family Therapy (FFT)* is a family intervention for adolescents with antisocial behaviours that reflects an integrative approach to treatment, and relies on systems, behavioural, and cognitive views of dysfunction (Sexton & Alexander, 1999). Clinical problems are conceptualised from the standpoint of the functions they serve for the family as a system, as well as for the individual family members. The underlying rationale is that an adolescent's problem behaviour is the only way some interpersonal function, such as intimacy, support, or distance can be met among

family members. Maladaptive interactions within the family are thought to preclude more direct means of fulfilling these interpersonal functions. The goal of FFT is to alter interaction and communication patterns in such a way as to foster more adaptive functioning (Sexton & Alexander). Both efficacy and effectiveness research (e.g., Friedman, 1989; Gordon, Graves, & Arbuthnot, 1995; Waldron et al., 2001) has demonstrated that FFT is effective with chronic offending and previously incarcerated delinquents. In addition to improved family communication, adolescents receiving FFT have been found to show lower recidivism rates and sibling generalisation compared to treatment-as-usual, with temporal generalisation demonstrated up to over two years post-treatment (Waldron & Turner, 2008).

*Multisystemic therapy (MST)* is an intensive family and community-based treatment that addresses the multiple determinants of serious antisocial, aggressive and violent behaviour in juvenile offenders (Henggeler et al, 1998; 2009). It emphasises both the interactional nature of adolescent psychopathology and the role of multiple systems in which an adolescent is embedded, including family, school, peer group, and community (Henggeler & Borduin, 1990). Like FFT, MST maintains the view that clinical problems of the adolescent emerge within the context of the family. However, unlike other family approaches, MST considers the family as just one (albeit a very important one) of a number of systems that affect the adolescent, which include peer, school and community (Henggeler et al.). Because multiple influences are targeted by the focus of MST, the programme developers highlight that many different treatment techniques are used; thus, MST is a package of interventions that are flexibly deployed with adolescents, their families, and the wider ecology. MST has been

described as being evaluated with the most difficult-to-treat population of young people with conduct problems (Henggeler et al.). Several outcome studies have shown that MST, compared to treatment-as-usual, is superior in reducing adolescent problem behaviours, arrest rates, incarceration rates, and peer aggression as well as improved family relations and family functioning (e.g., Borduin et al., 1990; 1995; Henggeler et al., 1986) with some treatment gains maintained at follow-up periods of up to 14 (Schaeffer & Borduin, 2005) and 21 years (Sawyer & Borduin, 2008).

*Treatment Foster Care* is reserved for cases where removal from the home has already been deemed necessary, and is considered to be the least restrictive form of residential care (Stroul, 1989). Most TFC programmes share similar features: foster parents are carefully selected, trained, and closely supervised; one child/adolescent is placed in each home; a support system is created for the TFC parents; and family therapy for the biological or adoptive parents. The treatment plan usually includes (a) family therapy; (b) TFC family support, training and supervision; (c) individual therapy; (d) coordination with the multi-agency network; and (e) school monitoring and interventions (Chamberlain, 2003). In general studies of the TFC model tended to evaluate discharge data (i.e. placement of the child in a less restrictive setting at discharge), which range from a low success rate of 62% to a high of 89% (Stroul). However, over the last two decades, RCTs measuring a wide range of outcomes have been implemented (e.g., Chamberlain, Leve, & DeGarmo, 2007; Leve & Chamberlain, 2007). These studies have reported favourable outcomes (e.g., reduced delinquency, increased school attendance, and increased caregiver attachment) for

young people that would otherwise be treated in more restrictive settings (Leve, Fisher, & Chamberlain, 2009).

Scott (2008) highlights that a common theme underlying interventions that work is that they modify the environment around the young person, and he cites interventions that target parenting styles as the most effective. Overall, a multi-systemic intervention programme targeting specific problem-maintaining processes or potential problem-resolving processes within the child, the family and the school appears to be the most effective approach to treatment of children and adolescents who present with pervasive conduct problems. Even though family interventions for conduct problems in adolescents have demonstrated encouraging results, it is important to bear in mind that as the severity, frequency, and intensity of psychopathology deepen in the adolescent and family system, response rates diminish, and dropout rates from treatment increase (Kazdin, 1997).

### **The Current Research Project**

As mentioned previously, youth with severe psychological and behavioural problems and those presenting with forensic needs are in frequent contact with the youth justice system and mental health services. These young people are often at risk of care or custody, both at a significant cost to the Local Authority and Government. The extent of the cost was investigated in an Audit Report (Youth in Need, Oxleas NHS Trust, French, 2004) which highlighted that 75 young people who had been referred to out-of-borough placements before January 1, 2003 had a total weekly cost to the London Borough of Greenwich of just under £135,000.

A key finding from the Audit Report was that young people with a high level of need were being placed out-of-borough due to the absence of alternative interventions within their immediate communities. Furthermore, it emerged (from the Audit Report and wider literature) that while short-term improvements in individual functioning were observed, these positive changes were not sustained in many cases (e.g., Grietens, 2002; Scherrer, 1994). Thus, the audit recommended that the provision of specialist community options in the youths' natural ecology should be considered. In March 2005 a grant was obtained from the Department of Health to pilot an intensive community intervention based on the principles of MST. The project drew from the emerging literature regarding multisystemic treatment approaches.

This pilot was reported to the Department of Health (DoH Report; French, 2007). It highlighted that the intensive intervention was successful as evidenced by most goals being fully or partially met, young people re-engaged with education and remained with their families or in a foster care family unit at the end of the intervention. Furthermore, qualitative results from telephone interviews at three-month and six-month follow up provided valuable insight into the service users' and multi-agency professionals' positive regard of the intervention and suggested that positive changes had been sustained. However, a need was identified to explore the specific changes in emotional and psychological health that were being facilitated as a result of the intervention.

## **AIMS AND OBJECTIVES**

The main aim of this study was to investigate the effectiveness of the intensive intervention provided by the Youth in Need Service by using reliable and validated psychometric measures at a pre- and post- intervention level on a cohort of referrals to the service. The study sought to provide objective assessments of changes that were:

- (a) Areas of individual and family functioning that are known risk and protective factors in the development and maintenance of youth social, emotional, and behavioural difficulties, that is, factors that have been identified in the literature. For instance, levels of warmth, ineffective discipline, and conflict within the family (e.g., coercive family process theory; Capaldi & Patterson, 1994), as well as the young person's sense of attachment to significant others, social isolation, and social and problem solving skills (e.g., Carr, 2006).
- (b) Areas of individual and family functioning that were typically targeted by the intervention, e.g., improving relationships between family members, enhancing parenting strategies, and improving social and problem solving skills in young people in order to reduce or prevent escalation of negative behaviours in the long-term.

## **Hypotheses**

1. There will be a significant difference in family functioning in both caregivers and young persons following the intervention
2. There will be a significant difference in young person locus of control following the intervention
3. There will be a significant difference in young person emotional loneliness following the intervention



4. There will be a significant difference in young person interpersonal functioning following the intervention
5. There will be a significant difference in young person resiliency following the intervention
6. There will be a significant differential gain in family functioning, between caregivers and young persons, following the intervention.

## **METHOD**

### **Participants**

Participants were young people who presented with aggressive, violent and/or sexualised behaviour and who were at risk of custody or care, and their parent(s) or carer(s). There were 21 new referrals (young people) during the period of the research. Referrals came from the various agencies within the London Borough of Greenwich – Children's Services (57%), the Youth Offending Team (11%), Education services (21%) and other teams within the borough's Child and Adolescent Mental Health Service (11%). All new referrals to the Youth in Need Service between the period of September 2007 and May 2008 were eligible for the study. However, a clinical decision was made not to include one referral as this young person was clinically not indicated to reasonably comprehend and complete the measures due to his age. Therefore, 20 referrals were recruited into the study.

### **Participant demographics**

Of the entire research inclusive sample, 16 were young males, while 4 were young females. The age range of the young people was 11 – 16 (Mean = 14.1, SD = 1.39). The number of parents/carers initially approached was 14. Of this total, 12 were mothers while 2 were fathers. There were two cases whereby the young person was in foster care therefore the carers were also approached regarding the research measures. The age range of the parents/carers was 36 – 52 (Mean = 44.6, SD = 4.59).

Further participant data is presented in Tables 1 and 2 below.

Table 1

*Participant Ethnicity Data*

Ethnicity	Young person		Caregiver	
	n	%	n	%
White British	9	45%	8	56%
Black African	5	25%	3	21%
Black Carribean	-	-	1	7%
Mixed White British/ Black African	1	5%	-	-
Mixed White British/ Black Carribean	3	15%	1	7%
Other	2	10%	1	7%

Table 2

*Additional Participant Data*

<b>Needs</b>	<b>n</b>	<b>Percentage %</b>
<i>Primary presenting problem</i>		
Violence/aggression	10	50%
Sexualised behaviour	1	5%
Challenging behaviour	5	25%
Multiple complex behaviours	2	10%
Other	1	5%
<i>Psychiatric diagnosis*</i>		
ADHD	4	20%
CD	3	15%
<i>Additional presenting problems</i>		
Aggression	13	65%
Friendship difficulties	11	55%
Physical violence	9	45%
Poor school attendance	8	40%
Frequent low mood	6	30%
Bullied	6	30%
Being a bully	7	35%
Substance misuse	5	25%
Stealing	6	30%
Running away	9	45%
Deliberate self-harm	2	10%

Previous convictions or police cautions	10	50%
<i>Living situation</i>		
Parents separated or divorced	20	100%
Looked after by Local Authority	5	25%
<i>Previous history**</i>		
Emotionally neglected	9	45%
Physically neglected	5	25%
Physically abused	5	25%
Witnessed violence in the family	7	35%
Sexually abused	3	15%
Perpetrator of sexual abuse	4	20%

\*These figures only include cases where a psychiatric diagnosis was clearly identified either in the referral documents/reports, or where a formal diagnosis was made by the psychiatrist available to the team during the course of the intervention. It is likely that this is an under-representation of the actual incidences of ADHD and CD.

\*\*These figures only include cases where abuse was known to have occurred, so the actual numbers may be higher.

## Procedure

After the initial referral and discussion with the team's clinical lead and lead therapist on the case, clients were approached by the researcher to explain the rationale for the research as well as to obtain consent. If the young person was under the age of 16 years, the parent/carer was asked to provide consent. As per NHS research ethics, families were typically provided with an information sheet (see Appendix 2) on the

study and given approximately one week to decide whether or not to participate in the study. None of the clients approached declined to be included in the study.

Following this, clients attended an appointment prior to the start of the intervention during which time they completed the pre-intervention research measures. These appointments were held primarily at the YIN site, but some at the clients' home, school or other location (e.g. Youth Offending Service) in order to reduce barriers to meeting. In some instances where the young person was unable to concentrate long enough for completion of all pre-intervention measures in one session, a second appointment for this was set-up in the following week.

Research specific measures were chosen following careful consideration of: (a) the family and individual aspects of functioning that the intervention aimed to address, consistent with the empirical causes and correlates, and systemic conceptualisations of youth negative behaviour (e.g., Bronfenbrenner, 1979) (as described above, p.74), (b) measures that the participants would adequately manage to complete, and (c) measures with good reliability and validity. These included:

1. Family Environment Scale (FES; Moos & Moos, 2002)
2. Nowicki-Strickland Locus of Control Scale (Nowicki & Strickland, 1973)
3. Inventory of Interpersonal Problems (IIP-32; Barkham, Hardy & Startup, 1996).
4. UCLA Loneliness Scale – Version 3 (Russell, 1996)
5. Resiliency Scales for Children and Adolescents (RSCA; Price-Embury, 2007).

As a measure of family functioning, it was decided at the start of the study that the Family Environment Scale would be completed by the young persons and caregivers, while the remaining four measures would be completed by the young persons only.

The intervention was delivered by the YIN team consisting of a consultant clinical psychologist, senior forensic psychologist, senior family therapist and forensic psychologist-in-training. The team's assistant clinical psychologist was responsible for completion of clinical screening measures. Like MST, the intervention used an assertive and flexible approach to address both individual (e.g., cognitive) and systemic (e.g., family, school, peer) influences on youth negative behaviour (Henggeler et al., 1998). The interventions were designed to be individualised to account for the specific constellation of influences identified in each case. This meant that clinicians were guided by information obtained from the initial family meetings and other referring agencies and organisations considered key participants in the young person's life (e.g., school personnel, Youth Offending Service officers). Each system around a young person was assessed for strengths and weaknesses, and values of the ecology were incorporated into the treatment plan. Based on these initial data, hypotheses were generated concerning the factors that might facilitate goal achievement, serve as barriers to progress, and maintain negative behaviours. In line with MST, hypotheses were testable, and hypothesis testing established the basis for interventions (Henggeler et al.).

Also similar to MST, treatment was generally present-focused and action-oriented with well-defined goals (Principle 4; Henggeler et al., 1998). The clinicians and

families worked towards goals that had been set by the family at the start of the intervention over a six to nine month period. Examples of these goals included: improving family relationships; reducing young person's aggression/violent/anti-social behaviour; increasing young person's self-esteem; social skills training; re-engagement with education; improving peer relationships/sibling relationships; parental skills training; balancing parents'/child's needs; assertiveness training; and improving communication patterns. Reviews with the family and multi-agency network were held every six to eight weeks to monitor progress towards these goals.

In line with the emphasis on carrying out therapeutic work in the client's natural ecology (Henggeler et al., 1998), sessions were typically held at the family's home, or another appropriate community site. However, office-based sessions were also held in cases whereby it was deemed necessary to meet with a caregiver or young person away from the home environment. Like MST, which does not emphasise unique therapeutic techniques, an integrative and comprehensive approach was used to conceptualise the problem behaviour (Henggeler et al.). Thus, treatments using behavioural, cognitive, cognitive-behavioural, and/or structural/systemic family therapy modalities were implemented based on the formulation of the young person's needs.

A key difference between MST and the intensive intervention included the individual who was primarily engaged in treatment. In MST, the caregiver is the main focus of engagement from the start, whereas in the intensive intervention, there was a stronger focus on engaging both the young person and caregiver. This is dissimilar to an MST



way of working, whereby individual work with the young person is only considered following assertive and exhaustive attempts to engage the caregiver (Henggeler et al., 1998). The rationale for adopting this approach is explored in more detail in the final part of the thesis (Chapter 5, p.208).

A further difference between MST and the intensive intervention was the intensity of the face-face contacts with the family. Whereas MST aims for three to daily face-face contacts per week, the intensive intervention averaged biweekly contacts. This may have been due to the stark difference in intensity between MST and traditional outpatient child mental health services within the borough, with clients perhaps feeling that more than two contacts with the service per week were intrusive or exhaustive. Thirdly, unlike MST whereby there is a stringent emphasis on therapist, supervisor, and consultant fidelity to the treatment model (Henggeler et al., 1998), there was no scope within the intensive intervention to implement a formal adherence measure, or to receive external consultation, to ensure treatment was delivered as intended. Instead, weekly group and individual supervision with the team lead were mechanisms by which treatment integrity was monitored. Finally, whereas MST is a time-limited model (maximum treatment length is five months; Henggeler et al., 2009), the intensive intervention adopted a more flexible length of intervention based on progress in each case; therefore, in some instances, treatment was extended to as long as nine months.

Following the intervention, either prior to or after the final review meeting with the client, referring agency and all relevant agencies, the researcher met with the client,

and/or parent to complete the same set of measures. For parents who were unable to meet face-face to complete the FES, a telephone interview was set up at a time convenient for them. In a few instances, the FES questionnaire was posted to them with a self-addressed and stamped envelope included. A maximum time frame of six weeks from the final session was deemed appropriate for collection of this post-intervention data. At the end of the intervention, the participants' lead therapists were asked to complete a research schedule (see Appendix 3) based on the information received from participants' referrers and that obtained over the course of the intervention. This was adapted from a research schedule for the adolescent sex-offender treatment group, designed jointly by the YIN team lead and a clinical psychologist in charge of evaluating the effectiveness of the group.

Of the total initial sample, one young person was not recruited into the study due to reasons for referral (consultation for risk assessment only therefore he would not be undergoing the intensive intervention). The post-intervention measures for two young people and their respective parent/carer were unobtainable as:

- In one case there was total disengagement from the family following the start of intervention due to complex parental mental health difficulties;
- In the second case, a few months into the intervention, the young person's behaviour escalated within a very short time frame leading to the need for him to be removed from his foster placement as a matter of urgency.

The final sample therefore consisted of 17 young people who completed all 5 measures pre- and post- intervention, and 12 parents/carers who completed the family

functioning (FES) measure pre- and post- intervention. This was in line with the researcher's target sample size. Due to the intensive nature of the intervention, this sample size is representative of the number of young people the service works with in this time frame.

## **Measures**

Examples of all measures are available in Appendices 4 – 8.

### *1. Family Environment Scale*

A 90-item self report measure, the FES is a Social Climate Scale consisting of 10 subscales that measure the actual (The Real Form, 'R'), preferred (The Ideal Form, 'I') and expected (The Expectations Form, 'E') social environment of families. These 10 FES subscales assess 3 underlying sets of dimensions: relationship dimensions, personal growth (or goal orientation) dimensions, and system maintenance dimensions. The subscales are further defined in Table 3. The relationship and system maintenance dimensions primarily reflect internal family functioning, whereas the personal growth dimensions primarily reflect the linkages between the family and the larger social context. The form R was used in the present study, both pre- and post-intervention as this form aims to help people to describe their current family as they perceive it. The FES has reasonable psychometric properties as demonstrated in Table 3, and validity evidence is provided in the manual through summaries or references to approximately 150 additional research studies.

Table 3

*FES Scale and Subscale Descriptions and Properties (from Moos & Moos, 2002)*

<b>Subscale</b>	<b>No. of items</b>	<b>internal consistency (Alpha)</b>	<b>Description</b>
<b>Relationship Dimensions</b>			
Cohesion	9	.78	The degree of commitment, help, & support family members provide for one another.
Expressiveness	9	.69	The extent to which family members are encouraged to express their feelings directly
Conflict	9	.75	The amount of openly expressed anger & conflict among family members
<b>Personal Growth Dimensions</b>			
Independence	9	.61	The extent to which family members are assertive, self-sufficient, & make their own decisions
Achievement Orientation	9	.64	How much activities (school & work) are cast into an achievement-

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			oriented or competitive framework
Intellectual-Cultural Orientation	9	.78	The level of interest in political, intellectual, & cultural activities
Active-Recreational Orientation	9	.67	The amount of participation in social & recreational activities
Moral-Religious Emphasis	9	.78	The emphasis on ethical and religious issues & values
<b>System Maintenance Dimensions</b>			
Organisation	9	.76	The degree of importance on organization & structure in planning family activities & responsibilities
Control	9	.67	How much set rules & procedures are used to run family life

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*2. The Inventory of Interpersonal Problems – 32 (IIP – 32) (Barkham, Hardy & Startup, 1996)*

The Inventory of Interpersonal problems (IIP-32) is a self-report instrument that identifies the difficulties people have in their interpersonal relationships (Barkham, Hardy & Startup, 1996). A high score ( $T > 70$ ) on this may indicate the existence of interpersonal problems, reflective of poor understanding of the progression of feelings in relationships. Thirty-two items constituting the short form of the Inventory of Interpersonal Problems (IIP-32) (Barkham, Hardy & Startup, 1996) was employed. Responses for each of the items are made on a five-point scale ranging from 0 ('not at

all') to 4 ('extremely'). Standard T scores are provided for evaluating the person's overall interpersonal difficulty; scores on each of the eight scales indicate the person's level of difficulty in eight domains of interpersonal functioning. Individual-based T scores may be calculated and then compared to the person's difficulty in each domain relative to the person's overall level of interpersonal difficulty, which allows for identification of the domains that the individual experiences as particularly problematic, regardless of the person's overall reported level of difficulty.

The overall internal consistency of the inventory is high (.86) (Barkham et al., 1996). Items in the inventory load on eight areas of difficulty in which individuals experience difficulty in interpersonal relationships. These areas and their respective alpha coefficients are highlighted in Table 4 below. The overall retest correlation (with a time lag of two months) for the IIP-32 is .70, and for each of the eight areas of difficulty re-test correlations range from .56 to .81.

Table 4

*IIP-32 Scale and Subscale Descriptions and Properties (from Barkham, Hardy, & Startup, 1996)*

Scale	No. of items	Alpha Coeff.	Scale Description
Domineering/ Controlling	4	.73	Difficulty in relaxing control; controlling, manipulative
Vindictive/ Self- Centred	4	.83	Describes problems of hostile dominance, reflects distrust of and suspiciousness toward other people
Cold/Distant	4	.87	Indicates minimal feelings of affection for and little connection with other people, difficulty in making and maintaining long-term commitments to others, lacking in sympathy, nurturance, generosity, forgiveness and warmth.
Socially Inhibited	4	.82	Difficulty initiating social interactions, expressing feelings to others, joining groups or socialising; feelings of anxiety, embarrassment or timidity in the presence of others
Nonassertive	4	.83	Severe lack of self-confidence and self-esteem; difficulty taking the initiative or being the centre of attention; avoidance of

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			situations involving social challenge or requiring the exercise of power or influence over other people
Overly Accommodating	4	.70	Excess of friendly submissiveness; reluctance to say 'no', allow selves to be easily persuaded ; obliging, accommodating, deferential and gentle; avoid being argumentative, egotistical or devious; are too exploitable, too easily taken advantage of by others
Self-Sacrificing	4	.78	Excessively affiliative, warm, nurturant and generous; easily connect with others emotionally and readily provide help and care to others in need; difficulty in setting limits on other people; difficult to maintain boundaries; put others' needs before their own.
Intrusive/ Needy	4	.68	Problems with friendly dominance; powerful need to feel engaged with others and impose their presence on to the attention of others; difficult to spend time alone; may disclose things inappropriately; involve him/herself in others' business in a way that others find offensive.

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### *3. Nowicki-Strickland Locus of Control Scale (Nowicki & Strickland, 1973)*

To assess locus of control orientation of the participants, the Nowicki–Strickland Internal–External Control Scale for Children (Nowicki & Strickland, 1973) was administered. This research instrument, which was normed on 1,107 students in grades 3 through 9, is based on the adult locus of control scale created by Rotter (1966), and includes 40 self-report statements to which the participants answer ‘yes’ or ‘no’. The items in the Nowicki-Strickland scale ‘describe reinforcement situations across interpersonal and motivational areas such as affiliation, achievement and dependency’ (Nowicki & Strickland, p. 149). Statements are worded so that responses indicating an external orientation to locus of control receive a score of ‘1’ and items indicating an internal orientation receive a score of ‘0’. Thus, higher scores are indicative of external locus of control. An example of an external item (scored as a ‘1’ if answered ‘yes’) is: ‘Do you believe that most problems will solve themselves if you just don’t fool with them?’ An example of an internal item (scored as a ‘0’ if answered ‘yes’) is ‘Do you believe that if somebody studies hard enough he or she can pass any subject?’

Psychometric properties of the Nowicki–Strickland scale have been reported in several sources (e.g., Nowicki & Duke, 1974a, 1974b; Nowicki & Roundtree, 1971; Nowicki & Strickland, 1973) and are adequate to good. Estimates of internal consistency range from the lower .60 level to the upper .80 level. Test–retest reliability coefficients have been found to range from .76 at a five-week interval to .63 at nine-month interval. Criterion-related validity and convergent and discriminant construct validity have been established through various means, including

correlational studies measuring the association of the Nowicki–Strickland scale with achievement test scores, grade point averages, and group-administered intellectual ability screens.

#### *4. The UCLA Loneliness Scale – Version 3 (Russell, 1996)*

The UCLA Loneliness Scale was developed to assess subjective feelings of loneliness or social isolation. Items for the original version of the scale were based on statements used by lonely individuals to describe feelings of loneliness (Russell, Peplau, & Ferguson, 1978). The questions were all worded in a negative or ‘lonely’ direction, with individuals indicating how often they felt the way described on a four-point scale that ranged from ‘never’ to ‘often’. Due to concerns about how the negative wording of the items may have affected scores (i.e., response sets), a revised version of the scale was developed and published in 1980 that included ten items worded in a negative or lonely direction and ten items worded in a positive or non-lonely direction (Russell, Peplau, & Cutrona, 1980). Recently, Version 3 of the UCLA Loneliness Scale has been published (Russell, 1996). In this most recent version of the scale, the wording of the items and the response format has been simplified to facilitate administration of the measure to less educated populations, such as the elderly.

Research has indicated that the measure is highly reliable, both in terms of internal consistency (coefficient alpha ranging from .89 to .94) and test-retest reliability over a one-year period ( $r = .73$ ). Convergent validity for the scale has been indicated by significant correlations with other measures of loneliness. Construct validity has been

supported by significant relations with measures of the adequacy of the individual's interpersonal relationships, and by correlations between loneliness and measures of health and well-being.

*5. Resiliency Scales for Children and Adolescents – A Profile of Personal Strengths (Price-Embury, 2007)*

This scale measures the personal attributes of children and adolescents that are critical to psychological resiliency. The measures address why some children and adolescents adjust to or recover from adversity and why others do not. Three stand-alone global scales make up the measure along with ten subscales, and each scale has its own form. These three scales (i.e., forms) can be used in combination or separately:

- Sense of Mastery Scale: Optimism, Self-Efficacy, and Adaptability increase the likelihood that youth will be able to cope with adverse circumstances;
- Sense of Relatedness Scale: Trust, Support Comfort, and Tolerance serve as a buffer against stress;
- Emotional Reactivity Scale: Sensitivity, Recovery, and Impairment evaluate vulnerability to stress or the impact of adversity on the youth as related to the youth's pre-existing level of emotional reactivity.

Item responses are in Likert-type format. Response options are frequency based, and are ordered on a 5-point Likert-type scale: 0 ('never'), 1 ('rarely'), 2 ('sometimes'), 3 ('often'), and 4 ('almost always'). Items are written at an eight-nine years of age reading level and were written to be gender neutral.

Evidence for the scales' internal consistency has been shown to be good to excellent for all three global scales across three age bands for females and males. Alpha coefficients are generally adequate to good at the subscale level with the exception of the Adaptability subscale, which consists of only three items. Coefficients were comparable across gender with a few exceptions. Table 5 displays alpha coefficients for RSCA scales and subscales by gender within three age bands.

Table 5

*RSCA Subscale Alpha Coefficients (from Price-Embury, 2007)*

<b>Resiliency</b>	<b>Ages 9 – 11</b>		<b>Ages 12 – 14</b>		<b>Ages 15 – 18</b>	
<b>Subscales</b>						
	<b>Female</b>	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>	<b>Male</b>
	<b>(n=113)</b>	<b>(n=113)</b>	<b>(n=112)</b>	<b>(n=112)</b>	<b>(n=100)</b>	<b>(n=100)</b>
Optimism	.64	.73	.78	.77	.90	.88
Self-Efficacy	.76	.77	.84	.82	.91	.91
Adaptability	.59	.52	.64	.58	.79	.84
Trust	.79	.77	.84	.81	.90	.89
Access to Support	.74	.68	.71	.74	.83	.86
Social Comfort	.75	.76	.82	.80	.86	.89
Tolerance	.70	.66	.77	.73	.86	.87
Sensitivity	.74	.76	.78	.81	.85	.86
Recovery	.83	.82	.74	.86	.86	.88
Impairment	.89	.87	.89	.87	.90	.94
Sense of Mastery	.83	.86	.89	.89	.95	.94
Sense of Relatedness	.89	.89	.91	.90	.95	.95
Emotional Reactivity	.90	.90	.91	.91	.93	.95

## **Treatment of Data**

Paired-samples t-tests were used to assess the impact of the intervention on each of the measured variables (family functioning, interpersonal problems, locus of control, emotional loneliness, and resiliency). This was done separately for young persons and caregivers for the family functioning variable.

As the Family Environment Scale (FES) was completed by both young people and caregivers, a Multivariate analysis of variance (MANOVA) was used to assess if there was a significant difference in the effect of the intervention between young persons and caregivers across the ten subscales of the FES, by taking the difference in measured scores (post intervention – pre intervention). Bar charts were used to have a visual comparison of the impact of the intervention on each of the measured variables.

Prior to conducting statistical analyses, preliminary assumption testing (e.g., correlation analyses, use of scatterplots) was conducted to ensure that the data conformed to the assumptions required to proceed with the analyses. Assumptions of normality were most likely to be violated due to the modest sample size (less than 20 in each cell; Pallant, 2007). However, this was overcome by using the Pillai's trace test statistic, which is reportedly more robust than the commonly used Wilks' Lambda, in the MANOVA output data (Pallant). Other assumptions regarding independence of observations, measurement of dependent variable (on an interval scale), univariate and multivariate outliers, linearity, multicollinearity, and homogeneity of variance-covariance matrices were not seriously violated.

As the sample number was modest, where a reasonable effect size was observed and a value that was close to significance, *post-hoc* power analysis was used to determine the level of power in the study. *Post-hoc* power analysis is generally conducted after a study has been completed, and uses the obtained sample size and effect size to determine what the power was in the study, assuming the effect size in the sample is equal to the effect size in the population. The General Linear Model procedure of the SPSS was used to estimate the post-hoc power and the G\*Power Software provided estimations of adequate sample size that would have increased statistical power where a statistically significant result was not indicated (See Appendix 13). In practice, it is better to conduct a Power Analysis prior to the study. As such, it can be used to determine an appropriate sample size to achieve adequate power before conducting the study (Thomas, 1997).

## RESULTS

### Instrumental Outcomes

#### *1. Post- intervention Family Environment Scale scores*

A statistically significant decrease was observed between the pre- (M= 61.89, SD=15.41) and post- intervention scores (M=51.18, SD= 13.80) in the Conflict subscale in the young person group,  $t(16) = 3.57, p < .01$  (two-tailed). The mean decrease in Conflict scores was 10.71 with a 95% confidence interval ranging from 4.23 to 16.60. A medium effect size (.71) was indicated.

Significant changes were not observed on any of the other nine subscales in the young person group (Figure 5), or amongst the caregiver group (Figure 6). The mean scores (and standard deviation) on all sub-scales of the Family Environment Scale before and after the intervention among the young people and their caregivers can be found in Appendices 9 and 10 respectively (for which data was available for both pre- and post-intervention) however Figures 5 and 6 below highlight the shifts in these subscales (taking all available data).



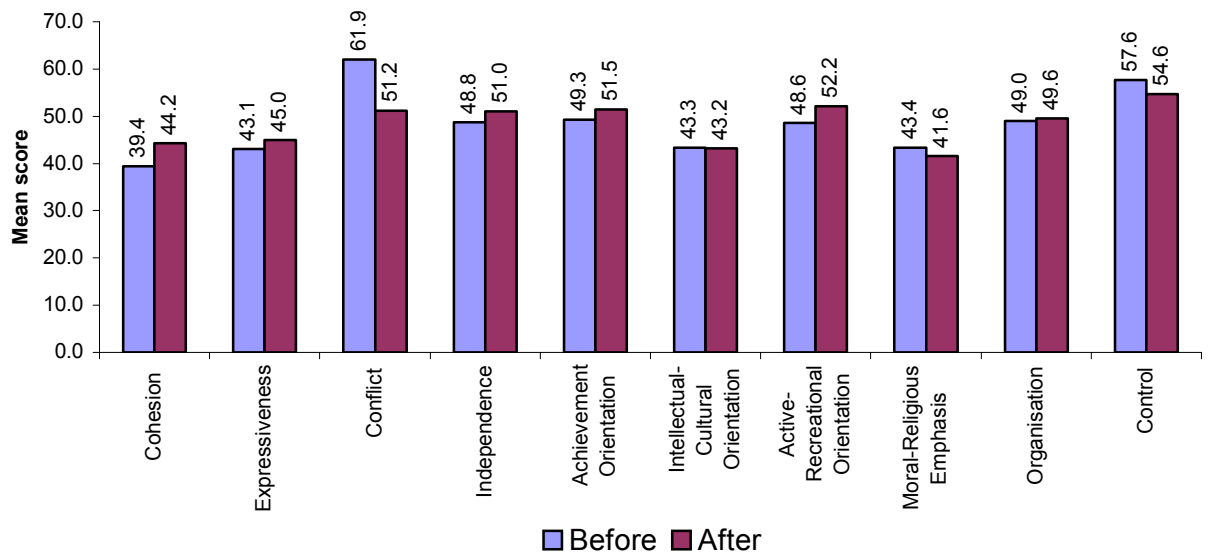


Figure 5. Young person pre- and post-intervention scores of FES subscales.

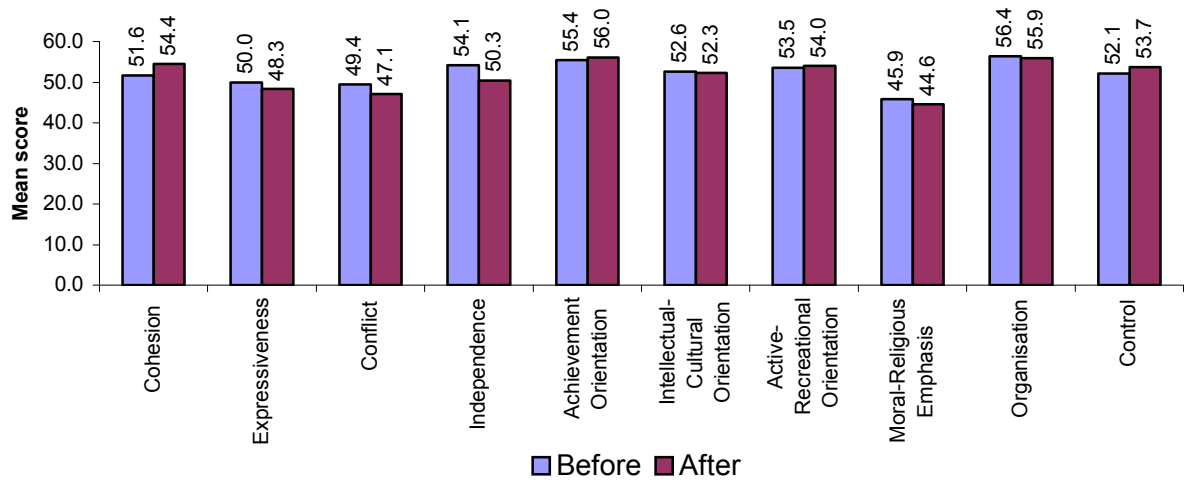


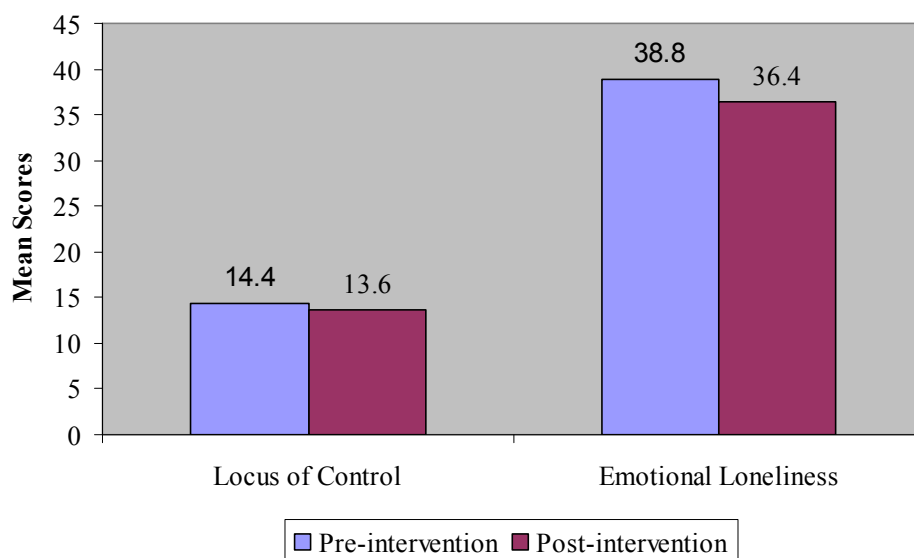
Figure 6. Caregiver pre- and post-intervention scores of FES subscales.

### *2. Impact of the intervention on the young person Locus of Control scores.*

The locus of control mean scores (depicted in Figure 7) among the young people before and after the intervention were 14.35 (SD 4.95) and 13.59 (SD 2.48) respectively. The paired t-test suggested that the difference is not statistically significant and hence the intervention was not effective at all on the locus of control score.

### *3. Impact of the intervention on the young person Emotional Loneliness scores*

The Emotional Loneliness mean scores among the young people before and after the intervention were 38.76 (SD = 6.01) and 36.35 (SD = 6.04) (see Figure 7). Although a slight decrease in loneliness after the intervention was observed, this difference was not statistically different.



*Figure 7.* Young person pre- and post-intervention scores of Locus of Control and Emotional Loneliness measures.

#### *4. Impact of the intervention on the young person interpersonal problem scores*

Statistically significant differences were found in three (Vindictive/Self-Centred, Cold/Distant and Intrusive/Needy) of the eight domains of the Inventory of Interpersonal Problems (IIP-32). The effect sizes observed for changes in these domains fell within the small range for Vindictive/Self-Centred (.42) and Cold/Distant (.27), and in the medium range for the Intrusive/Needy domain (.67). Table 6 provides mean scores before and after the intervention, while changes in all domains are visually depicted in Figure 8. Pre-post intervention mean scores for all eight domains are located in Appendix 11.

Table 6

*Young Person Pre- and Post- Intervention Mean Scores and Standard Deviations of IIP-32 Domains Showing Statistical Significance*

Sub-scale	Young person (n = 17)		Paired t-test	
	Pre-intervention Mean (SD)	Post-intervention Mean (SD)	T	P-value (Power)
Vindictive/Self-Centred	52.18 (10.05)	48.24 (8.52)	3.18	< 0.01 (0.85)
Cold/Distant	52.41 (10.80)	49.76 (8.74)	2.23	< 0.05 (0.55)
Intrusive/Needy	54.35 (8.41)	48.65 (8.67)	2.90	<0.05 (0.78)

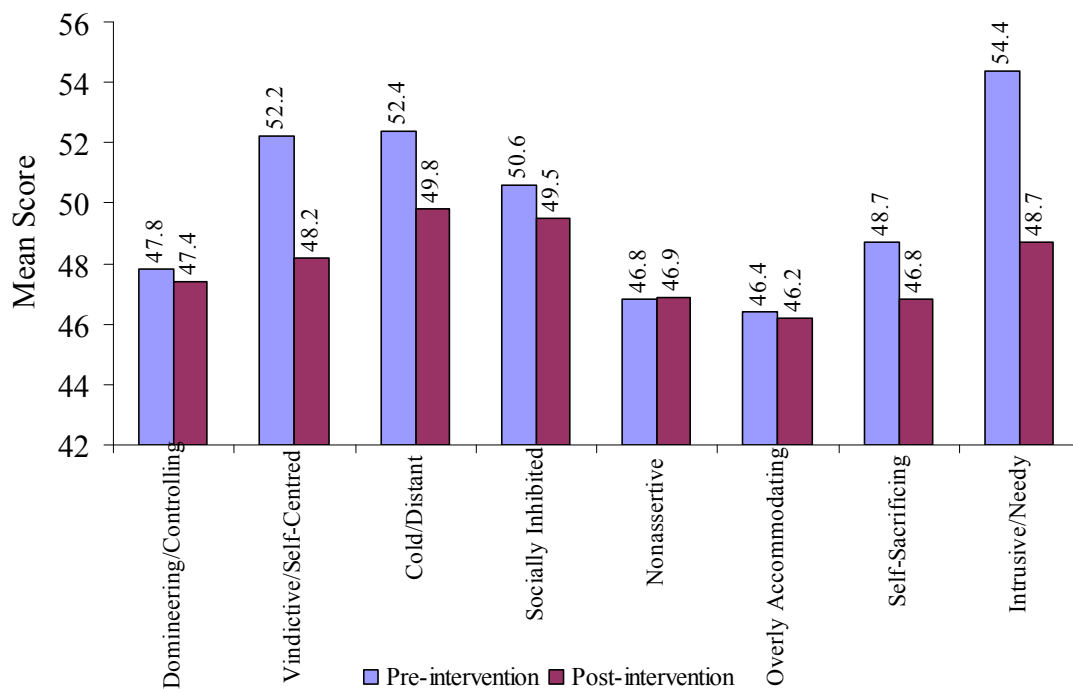


Figure 8. Young person pre- and post-intervention scores of IIP-32 domains.

#### 5. Impact of the intervention on the young person resiliency scores.

There was a marked increase in the young people’s Resiliency scores on the Sense of Mastery and Sense of Relatedness scales after the intervention. See Table 7 for mean scores of these subscales pre-post intervention. The effect sizes indicated for these changes were in the medium (Sense of Relatedness = .59) to large (Sense of Mastery = 1.07) ranges. Appendix 12 provides changes in mean scores for all three subscales as well as a visual assessment of changes across all three subscales.

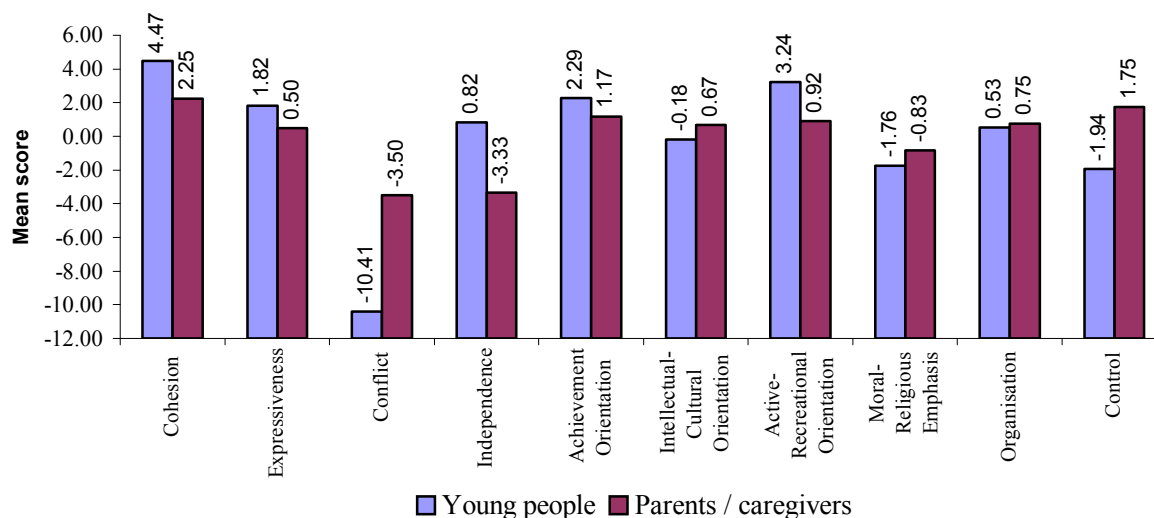
Table 7

*Young Person Pre- and Post Intervention Mean Scores and Standard Deviations of RSCA Domains Showing Statistical Significance*

Sub-scale	Young person (n = 17)		Paired t-test	
	Pre-intervention Mean (SD)	Post-intervention Mean (SD)	T	P-value (Power)
Sense of Mastery	36.41 (7.00)	43.39 (5.70)	5.35	< 0.001
				(0.10)
Sense of Relatedness	35.18(10.24)	40.82 (8.61)	3.86	< 0.01
				(0.95)

*6. Comparison of overall family environment 'gain' in scores (10 sub-scales) between young persons and caregivers*

The MANOVA analysis indicated that there was no statistically significant difference between young persons and caregivers on the FES subscales,  $F(10, 18) = 1.62$ ,  $p = .18$ ; Pillai's Trace = .47; partial eta squared = .57. Thus, the 'gain' in sub-scale scores was non-significant which suggests that the overall pattern of gain in scores (Figure 9) was similar among young people and caregivers after intervention.



*Figure 9.* Gain in FES subscale scores among young people and caregivers post-intervention.

### Ultimate Outcomes

Of the final sample of young people who completed both pre-and post-intervention assessments (n= 17), 16 were considered at risk of out-of-home placement and all 17 were considered (by their respective referrers) to be at risk of educational failure at the point of referral for the intensive intervention. At the point of case closure, 15 young people were continuing to reside at home with their caregiver(s). There were two cases whereby the young persons (both siblings) were accommodated by the Local Authority into out-of-borough residential placements. The primary concerns in these cases was significant escalation of negative behaviour (thus of risks to themselves and others) and lack of caregiver investment in the intervention. Regarding education, all 17 young people were engaged in a suitable educational or

vocational placement by the end of the intervention. This includes the two young people who were placed out-of-borough.

## DISCUSSION

The current study set out to examine the changes in a sample of young people and their caregivers following an intensive community-based intervention for young people presenting with complex psychological needs including aggressive, violent, delinquent, and sexualised behaviours, and their families. A battery of five individual and family functioning measures were administered to seventeen young people and twelve caregivers prior to and following the completion of the six-nine month intensive intervention based on the principles of MST, to examine what changes, if any, would be observed. The study results that showed significance or near significance are explored individually below.

### **Family functioning**

#### **Conflict**

The first important set of findings showed that the level of 'Conflict' in the sample of young people significantly decreased. The parent data also showed a non-significant decrease in this subscale post-intervention; however, power analysis established that a higher sample size ( $n = 71$ ; See Appendix 13) would have demonstrated this. This is a very important finding in light of research that has highlighted the negative consequences of conflict which may affect and alter a child's typical trajectories (e.g., Bandura, 1997; Fauber, Forehand, Thomas, & Wierson, 1990; Forehand, Biggar, & Kotchick, 1998; Loeber & Dishion, 1983; Patterson et al., 1992).

It is difficult to determine the exact source(s) of conflict measured by the Family Environment Scale (e.g., parent-child conflict, parent-parent conflict, conflict among



siblings). However, one hypothesis is that a reduction in self-reported conflict in the home post-intervention is due to the focus of the intervention on breaking negative coercive cycles (Patterson, 1982) between parents and young people by addressing communication and problem-solving training in working towards mutual goals. These have been identified as core components of effective treatment programmes for adolescents (Alexander & Sexton, 2003; Henggeler & Lee; 2003). It is not uncommon for multi-problem families, where adolescents have pervasive behaviour difficulties, to have low communication and problem-solving skills resulting in significant aggressive communication amongst family members (Carr, 2006).

From the pre-intervention FES scores, a high level of conflict suggests that prior to treatment, many family members were caught up in a cycle of perceived or real mutual aggression, attack, and counterattack. The intervention used several techniques to alter this cycle. Assessment of the family dominance hierarchy, parental control strategies, affective aspects of the marital relationship (where applicable), parent-child relations, and sibling relations was necessary to identify the specific familial drivers related to the young person's negative behaviour. Based on this information, clinicians would have used individual, joint, or family sessions to coach, encourage and support family members in communicating with one another clearly and negotiating a set of rules, roles and routines and consequences associated with adhering to or breaking rules, while avoiding elements that fuel conflict such as negative mind-reading, blaming, abusing and interrupting. These components of the intervention were aimed to resolve underlying conflicts among family members,

develop positive reciprocity, and support caregivers in the implementation of effective discipline strategies.

### **Cohesion**

While the increase observed in the level of ‘Cohesion’ in this sample of young people and caregivers did not reach significance, power analysis suggested that a higher sample size in both groups (n=43 for young persons and n= 103 for caregivers; See Appendix 10) would have achieved this.

A noteworthy observation is that the general direction of change in both Cohesion and Conflict domains across both groups post-intervention was similar. Although these changes were non-significant, they are worth commenting on due to the findings of the power analysis outlined above. Although each family’s difficulties were idiosyncratic, a mutual theme in the family environment appeared to be poor affective relations and control strategies (i.e., low cohesion, high conflict, and high control on the FES). As such, each family was treated differently to optimise the probability of change. The intervention aimed to promote greater autonomy within enmeshed families and increase emotional support within disengaged families (Minuchin, 1974). A key strategy integrated into the treatment process was psychoeducation of the young person’s difficulties. This aimed to help caregivers understand an ecological formulation of the young person’s needs and the influence of patterns of interaction within the family and wider network that maintain these difficulties.

Treatment-specific approaches used by clinicians to achieve a more cohesive family environment included encouraging the assumption of increased developmentally appropriate responsibilities by the young person, supporting mature input into the caregivers rule-making decisions, encouraging positive feelings among family members to be labelled and enhanced, and arranging situations that would facilitate enjoyable family interactions. A further key strategy included reframing the meaning of hostile communications (e.g., parental discipline is actually a sign of caring) so that both young people and caregivers were able to develop an increased commitment to the change process as well as empathy for one another.

From the young persons' perspective, a more cohesive and less conflictual family environment may reflect a shift in their caregivers' view of their negative behaviour, as being associated with internal, global, stable, negative factors to being able to view the young person as a good individual with negative behaviours that are triggered by certain stimuli and reinforced by certain consequences. The treatment strategies that were used aimed to increase family members' levels of support for one another, and help young people feel more integrated into the family unit rather than blamed and ostracised. An improvement in family cohesion is a key instrumental outcome targeted by family-oriented interventions for young people (e.g., MST, Henggeler et al., 1995; FFT, Sexton & Alexander, 1999) as it serves as a key protective factor in helping to decrease the risk for negative outcomes among high-risk young people.

### **Achievement orientation and Active Recreational Orientation**

The power analysis highlights that significant increases in the domains of 'Achievement Orientation' and 'Active Recreational Orientation' may also have been observed in the young person sample had the sample size been higher (n= 85 and n=44 respectively).

Often, with multi-problem families containing a child with conduct problems, family-school relationships are antagonistic (Dowling & Osborne, 1994). Thus, the intervention placed significant emphasis on achievement-orientation within the family environment, by aiming to increase parent-school communication and understanding, and improve parental involvement in the young person's educational process. These have been identified as important components of a therapeutic intervention as they can dramatically improve the achievement motivation and academic performance of young people (e.g., Rodick & Henggeler, 1980). Specific strategies used to achieve these outcomes included helping caregivers see the consequences of a poor home-school link (e.g., the young person is able to use one microsystem to undermine the other), overcoming barriers to parental involvement in the young person's educational activities, acting as advocates for parents and young people, encouraging parents to advocate for their children, and facilitating positive parent-school communication via school meetings.

Furthermore, by involving caregivers in the intervention when working towards mutual goals set by the family, they were typically encouraged to jointly participate with the young persons in some highly valued activities, which aimed to increase the

amount of participation in social and recreational activities as a family unit, thereby providing an important step towards increasing family cohesion (Moos & Moos, 2002). However, it appears that these treatment efforts did not translate into significant post-treatment change in the Achievement Orientation and Active Recreational Orientation domains in this sample.

### **Young person interpersonal functioning**

Further significant findings from this study include post-intervention improvements in three of the eight domains assessed by the Inventory of Interpersonal Problems: ‘Vindictive/Self-Centred’, ‘Cold/Distant’, and ‘Intrusive/Needy’. This suggests that post-intervention, these young people reported more concern and support of the safety and rights of other people, more trust towards others, more of a connection with others, i.e. more sympathetic, warm and forgiving towards them, and more likely to take appropriate responsibility. These highlight key protective individual factors in the maintenance of maladaptive behaviour difficulties (Carr, 2006).

It is difficult to identify the mechanism by which these changes were effected; however, it could be that the improvements in the family environment outlined in the previous sections positively impacted on the young persons’ interpersonal functioning. This has been supported by previous research on family-based interventions for this population of young people. For instance, decreased symptoms, increased social competence, and improved peer relations have been positive young person-specific outcomes achieved as a result of the MST intervention (e.g., Timmons-Mitchell et al., 2006; Ogden & Halliday-Boykins, 2004). While the current

study has not measured these particular outcomes, improvements in this overall hostile dominance domain would suggest an enhanced ability to facilitate and maintain positive social interactions with others.

However, in some cases caregivers were not heavily involved in the intervention, or young person individual difficulties (e.g., lack of social competence, poor emotional management skills, and poor social-cognitive skills) were found to be powerful drivers to their negative behaviour. In such instances, the clinician often sought to develop a close personal relationship that could be used as a vehicle to teach instrumental and affective interpersonal skills. Some of the specific treatment strategies that targeted the identified individual needs included introducing the role of thoughts in helping control strong feelings, learning to recognise physiological cues that serve as early warning signs of negative emotions, and encouraging practice of self-instruction techniques, distraction, and relaxation methods as ways to manage feelings and reactions. There was an emphasis on generalisability and sustainability of gains; thus, the transfer of these skills to the social environment was always stressed by using real-life problems and assigning behavioural experiments as homework tasks.

Interestingly, the interpersonal domains that showed significant changes post-intervention appear parallel to deficits in affective and interpersonal functioning that are typically associated with callous-unemotional personality characteristics (Frick, 1998). These have been implicated as unmalleable to parent-focused intervention (discussed briefly in the introduction; Wootton, Frick, Shelton, & Silverthorn, 1997).

However, it has been proposed that that decreases in the level of these traits may be related to, among other variables, the quality of parenting the child received, i.e., a parent–child mutually responsive orientation that encompasses shared positive affect, parent–child cooperation, and parental warmth and responsiveness (i.e., cohesion) (Kochanska, 1997; Kochanska & Murray, 2000). Therefore, the changes in domains observed in the current study may offer support to the notion that these subscales associated with externalising difficulties are at least somewhat malleable and seem to be influenced by factors in the child’s psychosocial environment, which can serve as a protective factor.

### **Young person resiliency**

The changes in Resiliency Scales scores shed an interesting light on the young persons’ individual protective factors. The low sense of Mastery and Sense of Relatedness self-reported at pre-intervention level is typical of the adolescent clinical disorder groups (Price-Embury, 2007).

#### **Sense of Mastery**

The results indicate that post-intervention, the young persons’ Sense of Mastery, recognised as a core characteristic of resiliency in children and adults (Price-Embury, 2007), significantly increased, suggesting an increased self-esteem, a more positive attitude about the world/life in general, a sense of competence, and enhanced problem solving skills compared to pre-intervention scores. Whether conducted in individual sessions with the young person, jointly between young person and caregiver, or within the family context, the intervention, where necessary, was focused on helping young

people to take a more systematic approach to trying to resolve emotionally-laden problems. The intervention used strategies aimed to assist young people in enhancing their abilities to take others' perspectives, encourage generation of multiple alternatives to a problem situation, identify the potential consequences of each choice, choose to implement an appropriate solution based on this assessment, and determine whether the outcome of this solution was positive or negative. It is interesting that the results in the present study did not find a significant shift in the Nowicki-Strickland Locus of Control Scale; however, it may be that an increased Sense of Mastery is indicative of a more internal locus of control post-treatment.

### **Sense of Relatedness**

Increments in the domain of Sense of Relatedness suggest that following the intervention, young people were starting to view relationships as generally available and needed, and able to trust others, feel comfortable in social interactions and be tolerant of distress experienced. Adolescents with externalising difficulties, as noted in the introduction section; Table 1), often are characterised by a hostile attributional bias and poor social problem solving skills, which underpin their difficulties in making and maintaining non-deviant peer relationships (Carr, 2006). Thus, the intervention may have helped to enhance the young people's skills necessary to manage peer-group relationships more effectively, by learning to take perspectives, empathise with the viewpoints of others, and manage anger using adaptive strategies. Some of the specific strategies that were implemented have been outlined in the 'Sense of Mastery' section above and in the section on 'Young Person Interpersonal Functioning' (p. 111). The intervention may have provided young people with the



opportunity to shift their dysfunctional attribution biases by learning to view ambiguous situations positively and problematic social situations as opportunities to learn to practice newly-learned problem solving skills, rather than as threats to their self-esteem. This is a particularly positive outcome given that research has consistently shown that problems in peer relations (e.g., association with deviant peers; little association with prosocial peers; and poor relationship skills) are strong predictors of antisocial behaviour in youth (e.g., Dodge, Dishion, & Lansford, 2006; Hoza et al., 1995).

It may also be that the impact of an improved family environment, characterised by positive caregiver-young person interactions, generalised to the young persons' relationships with peers and non-parental adults. Therefore, in attachment theory terms (Bowlby, 1969), it is possible that by including caregivers in interventions, they were more likely to be able to act as secure bases from which their adolescent could explore new ways of relating, thus consolidating a healthier model of attachment. Or, in cases whereby caregivers were not heavily involved in the intervention, through individual therapy, the clinician was able to offer a secure base from which the young person could explore their internal working model and try out new ways of relating (Sonkin, 2005). Interestingly, the increment in the Sense of Relatedness domain of the Resiliency Scale mirrors the shifts observed in the three interpersonal functioning domains described in the preceding section.

### **Instrumental outcomes**

It is a remarkable outcome that the vast majority of young people continued to reside with their caregivers, and all were re-engaged with an appropriate educational/vocational placement by the end of the intervention. Both outcomes are protective factors, or strengths, that have been associated with reduced risk of delinquent behaviour (e.g. Farrington, 1995; Henggeler, Melton, & Smith, 1992). These outcomes may have been facilitated by the positive familial (such as increased cohesion and reduced conflict) and youth (such as an enhanced ability to relate to others appropriately) changes described above that were self-reported by the participants.

### **Strengths of study**

The current study has several strengths. First, it investigated the impact of an intensive home-based service using a moderately aggressive sample in the community that was considered to be at risk of an out-of-home placement (based on the presenting problems defined in Table 2, p.78 – 79). Most studies looking at a similar cohort do so in a secure setting (e.g., Leichtman et al., 2001; Moody, 1997; Rohde et al., 2004), therefore it is anticipated that the current study's encouraging findings make a helpful contribution to the literature, as the findings support the value and need for assertive, intensive, and flexible community-based services for these high risk, and high need, group of young people on the edge of care or custody. Thus, the findings from this study reflect the successful dissemination of a treatment model based on the principles of Multi-Systemic Therapy in a community setting.

Secondly, careful thought was given to the number of measures families could complete and every effort was made to select measures with good reliability and validity, which has been evidenced in the results obtained. Thirdly, not only did the young persons and their families engage in treatment, but also complied fantastically with the research measures, which is a further strength, bearing in mind that this is typically a hard-to-reach and engage population (French, 2009; Henggeler et al., 1996; Henggeler, Schoenwald, & Pickrel, 1995). It is very difficult to get a high level of compliance with vulnerable and stressed families (Henggeler & Borduin, 1990; Kazdin, 1995) and the researcher was able to overcome barriers to retention in the study. Fourthly, the use of more than one informant – young person and caregiver – overcame the mono-respondent bias. In addition, the use of self-report measures meant that the young persons' views of their difficulties could be seen through their perspectives, thus potentially being more effective in helping the youth build strengths and use assets in managing liabilities.

A final strength is that the treatment model did not apply a single program to all clients referred to the service, recognising that a 'one-size-fits-all' model is unlikely to be effective for all clients. Thus, families did not receive an identical treatment package. For example, one family's treatment package consisted of weekly individual sessions with the young person as well as individual sessions with the caregivers separately; in another family, the focus of the intervention became joint family therapy sessions between the young person and his caregiver after several separate individual sessions; while in a third family joint sessions between caregiver and young person from the start of the intervention were recommended. The clinical

rationale for this was that the treatment dose was tailored to the formulation of each family's needs, with each intervention under the close supervision of the team lead.

### **Methodological limitations**

It is important to consider any methodological limitations that may account for the findings in this study. The most significant limitations are the small sample size and lack of control or comparison group; therefore, the current study should be considered a preliminary examination given that there may not have been adequate power to detect some of the effects of interest. While post-hoc power analyses were conducted to highlight potentially overlooked areas of significance due to the modest sample size, access to larger sample sizes would have allowed more sophisticated analytic tools to be employed.

Additionally, although every effort was made to involve caregivers of the young person in the intervention, it was not possible to do so in every case, and even when caregivers were included, their involvement differed in each case dependent on their engagement and alignment with the intervention, which was not accounted for in the analyses. This may have been the reason behind non-significant results in the caregiver sample (Family Environment Scale measure), as the target of the intervention was the young person, although as mentioned above, every effort was made to include the caregiver.

A third limitation is that longer-term follow-up assessments were unable to be completed within the time-frame of this study. Although research has demonstrated

that family therapy models generally maintain their effects for months or even years after the end of treatment (Borduin et al., 1995; Liddle et al., 2001; Szapocznik et al., 1989), this study would have been strengthened by a formal test of treatment maintenance, for instance, re-administration of the measures at 12-months to detect sustainability of progress. In addition, it was not possible within the scope of the study to access participant data on re-offending and reconviction rates which would have strengthened the ultimate outcomes reported in this study. Finally, some young people were also receiving other interventions, e.g., supervision by the Youth Offending Service and/or support from Children's Services, the separate and cumulative effects of which have not been accounted for.

### **Implications for practice**

It is important to bear in mind that the Youth in Need Team is a Tier 3 Child and Adolescent Forensic Mental Health Service for severe and complex mental health problems; thus one of the most important implications for practice is that these findings demonstrate that severe and complex emotional and behaviour problems in young people as well as family dysfunction, which may all be difficult to modify, can be positively impacted. However, traditional, once-per-week, office-based models of treatment are not always the most effective in engaging the client group that would typically be referred to such a service. For young people presenting with severe emotional behavioural difficulties, increasingly the literature supports intensive family-based models, such as Functional Family Therapy, Brief Strategic Family Therapy, Treatment Foster Care and Multisystemic Therapy, that provide several sessions per week, include both home and office visits, and work in multiple systems

(e.g., Henggeler et al., 1999; Liddle et al., 2001). Clearly, not all young people need a highly intensive community intervention, thus, there is a need to match family treatment intensity and focus to clinical severity of adolescent's presenting problem, and it may be that for adolescents with mild-to-moderate clinical dysfunction, there is a place for less intensive family treatments. However, for those at risk of care or custody, this study's results are encouraging as they highlight the potential value of an intensive, flexible, and assertive community-based service that targets the young person, as well as caregiver and wider ecology. However, it is important to note that some of the study's significant methodological flaws outlined above indicate cautious support for the results obtained.

Secondly, the findings from this study support the notion that the most fruitful approach to working with young people and their families with complex needs would be to understand the needs of each individual from multiple systems. A focus on the family as a unit must be considered in planning in implementation of an intervention. Rather than grouping individuals together and assuming they are homogeneous, interventions are likely to produce the most positive outcomes if they are designed to meet individual needs. Furthermore, including key participants of the intervention from the very beginning of the intervention in defining and planning treatment goals facilitates engagement and collaboration in working towards these goals, which is reflected in improvements in family climate and interpersonal functioning in the young people.

Finally, the intervention used a strength-based approach in systematically identifying both individual and ecological strengths and needs, in order to maximise each young person's chances of dealing successfully with life circumstances. This is a very important aspect of MST (Principle 2; Henggeler et al., 1998) which originates from the system of care model (Stroul & Friedman, 1986). The principle highlights that it is important to learn to value and activate strengths in youth and their families who tend to be primarily regarded as 'multiple problem'. The strength based approach allows practitioners to regard each youth, his/her family, and community as a person in need of support, guidance and opportunity, but also in possession of previously unrealised resources which must be identified and mobilised to successfully resolve presenting problems and circumstances (Stroul & Friedman). This is fuelled by a sense of hope and a belief that every young person every family and every community – no matter how distressed or compromised as they are presented to agencies and professionals – have strengths (Henggeler et al.).

### **Future Research**

There are several ways in which future research in this field can be enhanced. The current study did not take into account that families entered treatment at different levels of functioning; therefore, future research investigating mechanisms of family-based change might more closely examine the effects of differential levels of individual functioning at intake on families' responses to treatment. Due to the ecological nature of such an intensive community-based intervention, it would be interesting to investigate the changes that occur in each system which could be measured by questionnaires that not only relate to child and family functioning (as in

this study), but also include peer, school and community related measures. Furthermore, future research could administer questionnaires at multiple points to highlight the trajectory of change as well as use multiple perspectives to obtain a full picture of change (and increase validity) by having measures or reports from several family members, school teachers, Youth Offending Service officers, social workers and other individuals involved in the care and management of the young persons. The use of qualitative methods to elicit the parents' and young persons' views of receiving treatment could potentially uncover factors that were previously unknown or not anticipated in being related to treatment outcome. Finally, the process of change has been a topic that has sparked much interest and debate in the psychotherapy literature for some time (e.g., Barber, 2007; Grencavage & Norcross, 1990; Lambert & Ogles, 2004; Wampold, 2001). Thus, it would be valuable if future research could look into not only moderators (family structure and function, youth characteristics, ethnic and cultural groups) and mediators (parenting styles, youth attachment) of change, but also what happens in treatment that is associated with both positive and negative outcomes. This could take into account organisation, supervisor, team and therapist factors as well as those of the parent, that impact on the functioning of the young person.

## **Conclusion**

The efficacy of an intensive, flexible, home-based, comprehensive and individually-tailored intervention for at-risk youth and their families investigated in the current study was evidenced by participants' reports of positive changes in certain domains of family functioning post-intervention: decreased levels of Conflict and increased levels



of Cohesion, reported by both young people and caregivers, and increased levels of Achievement Orientation and Active Recreational Orientation, reported by the young persons, in the Family Environment Scale. Furthermore, the results highlighted enhanced individual protective factors in the youth in reports of their interpersonal functioning and resiliency. Specifically, youth self-reports demonstrated decreases in the Vindictive/Self-Centred, Cold/Distant, and Intrusive/Needy domains of the Inventory of Interpersonal measure and increases in the Sense of Mastery and Sense of Relatedness in the Resiliency Scales. Positive effects of the intensive intervention on these family and individual outcomes are consistent with the instrumental outcomes targeted by MST and compatible with the causal modelling literature.

These results are highly encouraging and support the core assumption among family system theorists and researchers that improvement in family functioning contributes to reductions in problem behaviour among disturbed youth (Henggeler & Borduin, 1990; Mann et al., 1990). Although the developing child and adolescent is exposed to a variety of social contexts in schools and the community, the family continues to play a central role in the healthy development of the young person. The current results highlight that following the intensive intervention, families were reporting to be less disengaged, more able to express their negative feelings appropriately, more supportive of one another, placing an increased emphasis on educational activities and participating in joint family social activities, all contributing to a more healthy family environment. These changes in the family environment may then have played a part in the improvements observed in young person functioning.

The results in the study are consistent with other studies that have recognised bidirectional influences on family socialisation related to child aggressive and antisocial behaviours (Lytton, 1990) which highlight that the young person's behaviour can shape parenting techniques, and the parents can shape the child's behaviours. For instance, it is possible that adolescents' conduct problems result in the withdrawal of parental support and increase conflict regarding the youths' antisocial behaviour (Tolan & Thomas, 1995) and these young people may be so difficult to parent that families may choose to spend less time interacting with them over time. This escalating cycle may result in increasing family problems, less ability to manage and control youth behaviour, and continued or escalating delinquent involvement. By supporting caregivers in strengthening their skills in providing the structure and support necessary to have an impact on youth behaviour, while simultaneously, enhancing protective individual factors (problem solving ability, social skills, emotional management skills) through individual work with the young person, the intensive intervention may have supported both groups in breaking this negative coercive cycle. As such, this study would support research which has implicated individual functioning as a total, integrated, complex, and dynamic developmental process or phenomenon that involves the interaction of personal attributes with environmental circumstances (e.g. Price-Embury, 2007).

Finally, the current study is consistent with research that highlights that because complex psychological difficulties in young persons are caused by several risk factors across multiple domains across the young person's social network, treatment must have the capacity to identify and address a broad range of problems. The most

successful interventions for children and adolescents with severe antisocial and aggressive behaviour problems have two important characteristics: they tend to be comprehensive by focusing on a number of different risk factors that could lead to a youth's behavioural problems and they tend to be individualised in that the focus of the comprehensive intervention is tailored to the youth's unique needs, having clear and comprehensive case formulations and aimed at specific treatment goals (Conduct Problems Prevention Research Group, 2004; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998).

## **CHAPTER 3**

### **A Critique of a Psychometric Assessment Measure: The Family Environment Scale**

## **INTRODUCTION**

Family life cycle theorists (e.g., Framo, 1994) have proposed that families go through various emotional and intellectual stages, and too often some of these are difficult and may involve crisis situations. For instance the period of adolescence, in the normal course, is marked by at least minimal conflict between parent and child in preparation for separation of the child from the parents and development of an adult identity. This period can be even more taxing when youths show difficulty adjusting to the pressures of adolescence, which may manifest in externalising and internalising behaviours. Youth offending teams and forensic child and adolescent mental health services working with young persons who have been involved with the criminal justice system as a result of high-risk behavioural problems (e.g., violent, sexual, fire-setting offending behaviours) often attempt to engage the family as well as the young person in treatment and intervention. For instance Multi-systemic Therapy is a family-based treatment model whose ultimate goal is to empower families to build an environment, through the mobilisation of indigenous child, family, and community resources that promotes health (Henggeler et al., 1998).

A large number of family functioning measures have been developed for use in both clinical and research settings, as diagnostic tools, measures of therapy progress and outcome, or instruments for basic research on family processes. Researchers, clinicians and family life educators have consistently identified several key areas or characteristics that are common to successful families, and have found that families that function within the key areas are more likely to have fewer problems and are able to deal more effectively with problems once they arise.

Self-reports of family functioning are possibly the most common method for use in research contexts for assessing family relations and processes. Hundreds of such measures exist, and probably the three most common ones in use are the Family Adaptability and Cohesion Evaluation Scales (FACES; Olson, Bell & Portner, 1983), the Family Environment Scale (FES; Moos & Moos, 1974) and the Family Assessment Device (FAD; Epstein et al., 1983). Moos and Moos (1974) developed the FES to measure the social-environmental characteristics of all types of families. Given that all families go through various transitions, some of these involving difficult crisis situations, an assessment like the FES can help individuals better understand their family, learn how other family members perceive the family, and become more aware of how their behaviour and ways of coping affect the family. This review will focus on the FES in an attempt to examine its theoretical relevance, psychometric properties and clinical application.

### **Overview of the Family Environment Scale**

The Family Environment Scale (Moos & Moos, 1986) is a 90-item measure that describes different aspects/habits of an individual's family. It contains ten subscales, which are proposed to characterise three key dimensions associated with the family environment (Moos & Moos; and see Table 1). Individuals are required to mark with an 'X' whether each statement is 'True' or 'False' on a separate answer sheet, and the total score is estimated for each subscale, with a maximum score of nine for each subscale. FES subscale scores are reported as standard scores (Mean = 50, SD = 10).

Table 1

*FES Dimensions and Subscales (from Moos & Moos, 1986)*

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*A. Relationship Dimensions*

1. *Cohesion*: degree of commitment, help and support family members provide for each other.
2. *Expressiveness*: extent to which family members are encouraged to act openly and to express their feelings.
3. *Conflict*: amount of openly expressed anger, aggression and conflict in the family.

*B. Personal Growth Dimensions*

4. *Independence*: extent to which family members are assertive and self-sufficient, and make their own decisions.
5. *Achievement Orientation*: extent to which activities (e.g. school or work) are seen in an achievement-oriented or competitive manner.
6. *Intellectual-Cultural Orientation*: interest in political, social, intellectual and cultural activities.
7. *Active-Recreational Orientation*: participation in social/recreational activities.
8. *Moral-Religious Emphasis*: emphasis on ethical/religious issues and values.

*C. System Maintenance Dimensions*

9. *Organisation*: degree of importance of clear organisation and structure in planning family activities and responsibilities.
  10. *Control*: how much set rules and procedures are used to run family life.
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The FES has three forms whose scoring keys and answer sheets are identical: R (Real – an individual's perceptions of family functioning), I (Ideal – an individual's perceptions of the family they would like ideally) and E (Expectations – what individuals expect a family climate to be like). Forms I and E are parallel to form R; that is, each of the 90 items in Form I and Form E corresponds to an item in Form R.

The FES professional manual, now in its third edition (Moos & Moos, 2002), is comprehensive and contains information on materials, administrations, scoring, interpretation, development, psychometric characteristics and normative data. It also describes its applications for clinicians, consultants and program evaluators which appear to be widespread, ranging from understanding how a person views the family and his or her place in it to evaluating the impact of an intervention programme.

### **Test Development**

The ethos behind the development of the FES was to have an assessment that could provide a quick 'snapshot' of the major dimensions that differentiate family settings which could help to diagnose problems; to appraise and improve parenting; to strengthen the family unit and to identify risk factors.

Moos and Moos (1974) describe that both conceptual and empirical steps were taken in the development of the FES. The initial choice and wording of the 200 items was guided by information obtained from observations and interviews, and by a conceptual formulation of the authors' general formulation of three sets of social climate dimensions. Each of the items in the original Form A of the FES was



constructed with each item identifying a family's emphasis on Interpersonal Relationships (e.g., Cohesion), on an area of Personal Growth (e.g., Achievement or Moral-Religious Emphasis), or on Family Structure (e.g., the level of Organisation).

Form A was completed by a total of 1,000 people in 285 different types of families such as families from church groups, from a newspaper advertisement, from contact with students at a local high school as well as a sample of ethnic minority families. A group of 42 'distressed' families in treatment was also included. Several empirical criteria were then employed to select the final set of items and develop the ten FES subscales. The authors selected items that: (a) had a reasonable response distribution, that is, were not answered in one direction (true or false) by more than 80% of the respondents; (b) discriminated significantly among families; (c) were positively correlated with other items on their subscale; and (d) correlated more highly with their subscale than with any other subscale. Thus, the authors argue that the selected items met empirical criteria in addition to a conceptual criterion of 'fit' with the dimension to which they were assigned.

### **Psychometric Characteristics**

The reliability and validity of the FES was established with a normative sample consisting of 1,432 'normal' and 788 'distressed' families, which included the respondents and families that completed Form A. Both types of families came from a wide range of sources.

The inclusion of multiple samples is a strength which improves the overall validity and reliability of the psychometric characteristics. However there are limitations that have been pointed out and in summary, these include:

- (a) two-point versus multi-point response formats
- (b) lack of factor analysis and priori defined subscales
- (c) methodological flaws with the standardisation sample
- (d) different reliabilities for different samples
- (e) reliabilities being below the preferred 0.70
- (f) focus on US citizens, which may limit cultural applicability

## **Reliability**

### **Internal Consistency**

Internal consistency describes how well each item relates independently to remaining items on the scale and how these relate to the overall test (Janda, 1994). The ten subscales were analysed for internal consistency using the standardisation sample. Reliability coefficients for the final version of the FES scales are reported to being all in an acceptable range, and vary from moderate for Independence (.61) and Achievement Orientation (.64) to substantial for Cohesion (.78), Organisation (.76), Intellectual-cultural Orientation (.78), and Moral-Religious Emphasis (.78) (Moos & Moos, 1994). All the reported alphas are above .60 and are therefore considered to be internally consistent (Field, 2000) which suggests that most of the items are reliably related to the social climate of the family, as measured by the dimensions. However, some of the subscales would not be considered internally consistent by Nunnally and

Bernstein (1994) who regard alphas over .70 as being acceptable.

The psychometric characteristics of the subscales have been re-examined by various researchers in varying samples who have unfortunately obtained lower internal consistencies in their samples than those reported in the manual (e.g., Boyd et al., 1997; Roosa & Beals, 1990; Rousey, Wild & Blacher, 2002; see Table 2). Some of the reliabilities have been reported to fall in the unacceptable range and Roosa and Beals (1990) suggest that the higher reliability estimates reported in the manual may be artefacts of the methodological decisions made rather than representative of the FES. First, the standardisation sample included many raters per family which may have introduced bias into the instrument-development process due to the lack of independence of the data. Secondly, the test developers calculated subscale reliabilities using the standardisation sample which is a further shortcoming as ideally, one should confirm reliabilities on a different sample than the ones used to select the items for the scales.

However, Moos (1990) argues that these relatively low alphas found by other researchers are the result of 'shrinkage' that is expected with scales whose development is conceptually based. He also criticises the restricted range in the specialised samples that some of the investigators have used as the cause of low subscale internal consistencies, specifically that the sample used by Roosa and Beals (1990) included few individuals of: low socioeconomic status; ethnic minority individuals; adolescents; and currently 'distressed' families. This is supported by the adequate internal consistency reliability coefficients reported by Moos in various

projects that have utilised new groups of individuals (Table 2). However, the test developers do acknowledge that the Independence subscale tends to show relatively low internal consistency.

Table 2

*FES Subscale Internal Consistencies across Samples*

Source	Sample	Cohesion	Conflict	Expressiveness	Achievement- Orientation	Active- Recreational	Independence	Intellectual- Cultural	Moral- Religious	Control	Organisation
<b>FES manual</b>	'Normal' & 'distressed' families N = 1,067	.78	.75	.69	.64	.67	.61	.78	.78	.67	.76
<b>Rousey et al. (2002)</b>	Children with severe disabilities N = 100	.72	.68	.68	.46	.70	.38	.54	.75	.59	.67
<b>Roosa &amp; Beals (1990)</b>	Whole sample N = 385	.62	.71	.46						.47	.63
<b>Roosa &amp; Beals (1990)</b>	Alcoholic families N = 26	.58	.72	.52						.47	.74
<b>Roosa &amp; Beals</b>	Asthma families	.61	.70	.49						.42	.55



Factor analysis is one method used to maximise internal consistency (Kline, 1986); unfortunately, no factor analytic studies of the FES at the item level were found, and any factor analytic studies that have been done have used subscale scores rather than the individual items, and thus provided no information about the subscale structure of the FES (Roosa & Beals, 1990). Furthermore, various researchers have identified from two (e.g., Boake & Salmon, 1983) to eight (e.g., Humphrey, 1986) factor solutions and even when the same number of factors have been identified it appears that the specific item composition of the factors has varied (Gondoli & Jacob, 1993; Kronenberger & Thompson, 1990; Oliver, May & Handal, 1988). This lack of factor analytic studies could be a critical shortcoming since many researchers have used individual subscales (e.g., Barrera, Sandler, & Ramsay, 1981) or groups of subscales (e.g., Boss, 1977) that often do not correspond to either the original dimensions of the FES or the dimensions derived from factor analysis.

Roosa and Beals (1990), as well as other researchers (Boake & Salmon, 1983; Humphrey, 1986), have performed Confirmatory Factor Analyses (CFA) which have indicated that most subscales of the FES could achieve acceptable reliability coefficients by dropping one or two poorly fitting items from each subscale. They then used an expert panel to guide the scale development process of five of the FES subscales (see section on content and face validity) and obtained internal reliability coefficients for the new subscale structure in a wide range of samples. Their findings were that although the reliabilities for the individual samples were quite varied, the Goodness-of-Fit Index of .91 from their CFA using the total sample showed that the new structure provided a somewhat better fit to the data than the original.

Although Moos (1990) accepts this argument, he stresses that their intent was to create conceptually broad subscales composed of a diverse set of items therefore the emphasis was on more stability over time and greater validity, and that this may have contributed to less than ideal internal consistency.

### **Test-Retest Reliability**

The test-retest reliability and longer-term stability of an assessment procedure in different samples are also important psychometric characteristics and generally a minimum level of .70 should be achieved to ensure accurate interpretation of scores (Guilford, 1956). In this respect, the FES subscales have acceptable two-month and four-month test-retest reliabilities, varying from a low of .68 for Independence to a high of .86 for Cohesion for two months. Subscale stabilities have been examined over one-year, three- to four-year, six-year and nine- to ten-year intervals for samples of psychiatric patients and case controls.

The 12-month subscale stabilities varied from .53 for Conflict to .84 for Moral-Religious Emphasis (mean for the nine subscales = .70); from .51 to .77 over the 3-4 year interval (mean = .64), from .45 to .81 over the 6-year interval (mean = .61) and from .38 to .77 over the 9-year period (mean = .54). Generally the most stable subscales were reported to be Intellectual-Cultural Orientation, Moral-Religious Emphasis and Organisation, perhaps reflecting the relative consistency over time of family members' basic values and ways of structuring their family (Moos & Moos, 2002), whereas the least stable were Cohesion and Independence.



Findings supporting the FES' stability have also been reported by Rousey et al. (2002), who found a remarkable degree of stability for the FES over a 9-year period in a sample of families of children with severe disabilities. Their own examination of the FES' internal consistency reliability coefficients highlighted that the subscales with the lowest reliabilities (Independence, Intellectual-Cultural Orientation and Achievement Orientation) tended to show the most instability. They also found that any changes highlighted in the FES scores over time were due to significant changes that occurred in the family, for example, changes in marital or employment status, thereby showing that the FES is sensitive to changes in the family environments over time.

## **Validity**

### **Face Validity and Content Validity**

The face and content validity of the instrument are supported by clear statements about family situations that relate to subscale domains. The authors emphasise that these were built into the FES indices by the combination of conceptual and empirical procedures that were used in the preparation and selection of the items. However this has been questioned by Roosa and Beals (1990) who state that this process has led to the development of subscales of dubious validity. They asked 12 Psychology graduate students to assign 45 of the FES items to the correct five subscales on the basis of the subscale descriptions provided in the manual. The panellists were asked to place the item in a 'discard' pile if they were unsure of the appropriate placement of an item, or if an item fit equally well in more than one category. Sixty seven percent of the panellists correctly placed twenty four of the forty five items, highlighting

considerable disagreement with the face validity of the items originally assigned to the subscales.

However Moos argues that actually, these untrained raters did moderately well in placing the FES items given the limited information they were provided about the dimensions. To further illustrate the good content validity, Moos (1990) repeated this exercise using untrained raters who were given reasonably adequate information about the conceptual content of the dimensions. Furthermore the raters were allowed to provide a 'probable' judgement. It was found that a total of 39 of the 45 items were categorised correctly by at least six of the nine (67%) raters. Thus, Moos argues that Roosa and Beals' (1990) relatively modest results may have been due to the paucity of the information provided as well as the high level of certainty they required in making judgements.

Moos and Moos (1986) state that the wording of the FES makes it suitable for use with most age groups as well as with those who have cognitive difficulties. However feedback from participants who have completed the FES in relation to the current thesis has not been entirely positive. First, the ease with which the measure is read and understood can be hindered by the way in which several items are phrased (reverse wording, e.g. statement 65. 'In our family we don't try that hard to succeed'). Such wording has tended to confuse both young persons and adults. Secondly, the content of the Moral-Religious Emphasis scale does not take other cultures and religious beliefs into account (e.g. statement 78. 'The Bible is a very important book in our home'). Thirdly, participants have tended to complain about the length of the measure

and displayed signs of restlessness during its completion. Fourthly, participants have also commented on the content of the questions, for instance, that certain questions have been repeated or asked in a slightly different light, or that certain questions are atypical and are not areas openly discussed in the UK cultural norm. Finally, the dichotomous (yes/no) response format has been a significant barrier to the efficient completion of the measure as participants have often commented that the question only applies to them ‘sometimes’ and have either declined to make a forced response or have omitted the question. It is therefore better to administer the FES in individual interviews to ensure that respondents fully understand the questions.

### **Construct Validity**

Construct validity is concerned with the behaviour of the scale relative to how theory suggests it should operate (DeVellis, 1991). Extensive evidence of construct validity is presented in the manual through comparative descriptions of ‘distressed’ and ‘normal’ family samples; comparisons of parent responses with those of their adolescent children; descriptions of responses by families with two to six or more members; and descriptions of families with a single parent, of minority families and of older families.

Space constraints do not permit in depth exploration of the measure’s construct validity. In summary, FES Cohesion is associated with more parental care and less parental overprotection (Sarason et al., 1987). It is also positively related to measures of dyadic and marital adjustment (Waring et al., 1981; Abbott & Brody, 1985), as well as to reports of support from other family members (Vaux et al., 1986). FES

Conflict is positively associated with family arguments, and such families are characterised by less perceived support and poorer dyadic and marital adjustment. Couples' perceptions of high family cohesion and expressiveness and lack of conflict are related to their reports of their social, emotional, and sexual intimacy (Schaefer & Olson, 1980). In addition, FES Organisation and Control are linked to reliance on predictable and regular family routines, and such families also tend to be more cohesive and low on family conflict (Fiese & Kline, 1993; Jensen et al, 1983). However, the manual does not report any statistics on the magnitude of the relationships.

### **Convergent Validity and Discriminant Validity**

A study by Dickerson and Coyne (1987) assessed the convergent and discriminant validity of the three most commonly used self-report measures of family Cohesion and Control: the FES, the FAD, and the FACES (version II) and this study has been cited in the FES manual as support for the validities. Moos and Moos (2002) report that FES Cohesion was 'highly correlated' with Cohesion as measured by the FAD and FACES, and it was 'moderately correlated' with family members' but not with therapists' ratings of Cohesion. While the FES and FAD measures of Control were 'significantly correlated', FES and FACES indices of Control were unrelated. With respect to discriminant validity, FES Cohesion and Control were uncorrelated, but these indices were highly correlated (about .60) in both the FAD and FACES. However, examination of the Dickerson and Coyne article suggests that they were only 'partially successful' in demonstrating convergent and discriminant validity for the Cohesiveness trait across the measures, 'and even less so for family Control'. The

authors feel that their results cast doubt on the construct validity of some of the best measures of family functioning.

Feldman and Gehring (1988) focused on adolescents' perceptions of family relationships by also using the FES Cohesion and Control subscales and the Family System Test (FAST), a special technique in which wooden figures are placed on a board to represent Cohesion and Power. Convergent validity was shown by correlations between FES and FAST Cohesion and between FES Control and FAST Dyadic Power. In addition, discriminant validity was shown by lack of correlations between FES Cohesion and FAST Dyadic Power and between FAST Cohesion and FES Control.

Russell (1980) found relatively little association between FES Cohesion and Cohesion as measured by the Family Sculpture Test or by an adapted version of the Bowerman and Bahr Identification Scale (Bowerman & Bahr, 1973). Interestingly, rather than this highlighting a lack of convergent validity, Moos and Moos (1994) report that this finding is evidence for the subscales' discriminant validity as these three assessment procedures 'tap quite different aspects of family cohesion' (Moos & Moos, p 31).

No associations between the FES and the Card Sorting Procedure, a measure of family problem solving behaviour is further evidence of discriminant validity as the FES taps family members' perceptions of the family while the CSP taps how family members behave in a problem-solving situation with unclear external demands (Dickerson & Coyne, 1987; Oliveri & Reiss, 1984).

### **Concurrent validity and predictive validity**

Concurrent validity is demonstrated where a test correlates well with a measure that has previously been validated, where the two measures are taken at the same time. This is in contrast to predictive validity, where one measure occurs earlier, and is meant to predict some later measure (Kline, 1986), and is regarded by some as the most convincing evidence for the effectiveness of a test.

Moos (1990) explains that the FES dimensions tend to be predictably related to external criteria in both concurrent and predictive studies. For instance, aspects of the family environment are associated with (a) adaptation to pregnancy and parenthood, (b) childhood and adolescent adjustment to parental divorce, (c) adaptation to chronic childhood illness and other life stressors, (d) children's cognitive and social development, and (e) adjustment among families of psychiatric and medical patients. Certain FES subscales are also linked to the outcome of treatment for alcoholism, depression, and other psychiatric and medical disorders (Moos & Moos, 2002).

Research focusing on how the family environment helps to predict the outcome of family-oriented interventions suggests that higher family Conflict and less Cohesion and Moral-Religious Emphasis is associated with more frequent delinquent behaviour in youth with behaviour problems or conduct disorders (Tolan & Lorion, 1988). In a sample of drug-abusing youth, young persons and their mothers who saw their families at intake of treatment as low in Conflict and as having high expectations for performance, tended to show better outcome (Friedman, Tomko, & Utada, 1991). In youth with developmental disabilities distinctive family clusters have been predictably

associated with child characteristics and behaviour: Cohesion was linked to increased self-esteem and better psychosocial adaptation in home and at school in the children in this sample, with the reverse findings in children in Control-oriented and disengaged families (Mink et al., 1984). Much research has also focused on families of children and adolescents who have a long-term physical illness. From a general perspective the FES can help to identify and characterise at-risk families that may need a referral for further evaluation or treatment (e.g. Murphy & Jellinek, 1988).

### **Applicability of the FES**

From 1982 to 1997, the FES was used in over 400 published articles, book chapters, and dissertations (Piotrowski, 1999). The FES has been applied in research with an extraordinary diverse array of groups, including families of alcoholics (Moos & Moos, 1984), of children with cystic fibrosis (Thatcher-Benza, 1999), native born and immigrant Asian-Americans, Latinos, and Anglos (Moos & Moos, 1986), families of children with disabilities (Boyce, Behl, Mortenses & Akers, 1991). In addition, the FES has been translated and adapted for use in a number of European, Asian and African countries (e.g. Cheung & Lau, 1985; Noguchi et al., 1991).

The FES has also been adapted for use in child samples. The Children's Version of the Family Environment Scale (CVFES; Pino, Simons, & Slawinowski, 1984) is a 30-item pictorial adaptation of the FES for use with children aged 5-11 years. A separate manual for this version exists, which provides additional normative and psychometric information. Given its widespread use and its adaptation for child samples the FES appears to be a valid and reliable measure of the underlying family dimensions.

### **Normative data**

The third edition of the FES manual provides normative data reported for 1,432 'normal' and 788 'distressed' families, which include the over 1,000 respondents in the 285 families who completed Form A. Separate norms exist for parents and adolescents (both 'distressed' and 'normal'); however not for males and females as Moos and Moos (1994) report that no significant gender differences were established in perceptions of family climate. In addition, normative samples for Form I (Ideal) come from 'normal' and 'distressed' families, which are reported in the manual. However the authors have no separate norms for Form E (Expectations); it is suggested that scores on this form's subscales can be compared to the Form R norms reported in the manual. Other investigators' data on 'normal' and 'distressed' families is generally comparable to that reported by Moos and Moos. While it is clear that the norms were derived from a wide range of sources, a drawback lies in the fact that the families were predominantly middle and upper socioeconomic status European American families. In addition, the applicability of the FES could be developed by obtaining normative data for United Kingdom samples given the multi-cultural society residing in the country.

### **Advantages of the Family Environment Scale compared to other self-report measures**

While the FACES measure (24 items) and FAD tool (53 items) may be quicker to administer and score, there appear to be two main advantages of the FES over either of the other self-report measures. First, both the FACES and FAD measures are rated with a five-point and four-point likert scale respectively. This can create problems



stemming from personal styles, such as preferences for middle-of-the-road, undecided, extreme, or deviant responses. Research has in fact used multi-point response formats for the FES, which have revealed that the two-point response styles have comparable reliability and subscale intercorrelations to those using multi-point (two to six) formats (Ladewig & White, 1984; Plomin & DeFries, 1985). The dichotomous format of the FES is believed to be simpler and more easily understood, and is therefore recommended.

A second advantage of the FES relates to the measure's subscale length which affects its internal consistency. Given that there are ten dimensions of the FES, Moos and Moos (1974) assigned a maximum of nine or ten items per subscale in order to develop an assessment that could provide a view of some of the major dimensions that differentiate families. The FACES measure taps four family functioning dimensions, with six items per subscale; while the FAD measure consists of seven subscales, with a maximum of six or seven items per subscale. Longer subscales are likely to be more internally consistent (Moos, 1990) and have greater content validity (Kline, 1986); on this basis it would appear that the FES is a better-quality measure.

## **Summary**

Research into the psychometric characteristics of the FES has raised considerable concerns about the sizeable variation in reliability coefficients across samples; however it would appear that in some cases such findings can be attributed to the investigators' lack of diversity and heterogeneity in their samples used. The fact that many have critiqued the psychometric characteristics of the FES can be viewed

constructively, as it is only through such research that the validity of a measure can improve and contribute to advances in the field of family assessment to keep abreast of changing times, family compositions, and cultural and value contexts.

In conclusion, the FES is one of the most widely used family assessment instruments, which is fairly easy to understand and administer. In line with the authors' intentions, it provides a quick picture of the extent to which an individual views his/her family environment as functional. However, as with all self-report measures, the FES should be used to complement clinical assessment, observational measures and outcome measures of symptomatic change.

## **CHAPTER 4**

**A Single Case Study Examining the Influence of an Intensive  
Intervention on a Young Male with emotional and behavioural  
difficulties.**

**[The Case Study is not available in the digital version of this thesis]**

## **CHAPTER 5**

### **Discussion**

The main aim of this thesis was to examine the effectiveness of an intensive community-based intervention, based broadly on the principles of Multi-Systemic Therapy (MST), a treatment model for antisocial and aggressive youth, on young people with complex forensic needs.

One of the strengths of MST, the treatment modality evaluated in the narrative review in Chapter 1, is that it places a huge emphasis on the assertive engagement of the caregiver(s) in the intervention. This is because the caregiver(s) are considered key to long-term positive outcomes. By focusing clinical attention on strengthening the caregiver's capacity to parent effectively and building the family's indigenous support systems, treatment gains are more likely to be maintained (Henggeler et al., 1998; 2009). However, in my clinical experience to date, I have found that there can be several significant barriers to successfully engaging and aligning caregivers in the intervention. For instance, caregivers who present with entrenched beliefs about the causes of the young person's behaviour (e.g., 'he is mentally unwell') may feel blamed or judged by being the primary focus of the intervention. This may lead to unwillingness to engage consistently in the intervention, failure to follow-through on intervention plans, or total dropout from treatment. Furthermore, caregivers with severe mental health difficulties may struggle to prioritise the needs of their children and may be unable to follow-through on intervention plans, despite their best intentions and commitment to the goal of preserving the family unit.

A vast majority of the clients referred to MST tend to be supervised by the Youth Justice System and/or are under the care of Children's Services and present with a

high level of risk and/or need (Webb, 2009); thus, it is crucial to bear in mind at all times the threshold for risk, and when it has been exceeded. As outlined in Chapter 1, MST places significant emphasis on maintaining the young person in their natural ecology. However, when the level of risk and/or need can no longer be safely managed by keeping the child within the family unit, there is no other choice but to accommodate the young person. In some instances, the goal is to use the least restrictive placement, which can take the form of a short- or long-term foster placement within the child's local community. However, for the most severe, complex, and difficult to engage clients, this out-of-home placement is likely to be a children's residential facility or secure unit. In such instances, therapeutic residential facilities can provide the young person with a high level of structure, containment, warmth, and nurturing that is designed to help shape desirable behaviours and emotional responses (Rosen, 1998).

Out-of-home placements were previously viewed as producing detrimental outcomes, carrying the connotation of family failure, and absolving the parents of any responsibility of the youth (e.g., Menses & Durant, 1987). However, over the last few decades research has highlighted several positive outcomes for the most difficult-to-treat population of young people (e.g., Lyons et al., 2001; Shapiro, Welker, & Pierce, 1999), as well as factors that increase the likelihood that positive individual and systemic changes are sustained following discharge from residential treatment (e.g., Hair, 2005; Knorth et al., 2008). For instance, family involvement throughout treatment, stability of the discharge placement, and aftercare supports (e.g., community and vocational support) have been consistently linked to positive post-

discharge functioning (Burns, Hoagwood, & Mrazek, 1999; Frensch & Cameron, 2002; Hair). The involvement of the family and an emphasis on building supportive networks around the young person are consistent with the MST ethos, and highlight that the right residential care should be a positive option as it can be the most appropriate setting for young people with more complex emotional and behavioural difficulties.

The participants of the research study investigated in Chapter 2 presented predominantly with moderate to severe externalising difficulties (according to data presented in ‘Additional Participant Data’; Chapter 2, Table 2, p.78 – 79). In the absence of the intensive intervention within the borough, these clients would typically be referred to office-based outpatient services within CAMHS, whereby clinicians are office-based, operate at fixed times, use an eclectic blend of psychotherapies, carry a high caseload of clients, and target the individual child/young person in therapy (Henggeler et al., 1998; Webb, 2009). Wagner, Munt, and Briner (2006) highlight that a common challenge in child and youth mental health services is the tacit assumption of the medical model that underpins service provision, thus creates a strong culture that is biased toward the provision of individual treatment.

The clients typically referred to the type of Tier 3 service evaluated in Chapter 2 have a history of previous service involvement, present with multiple and chronic problems, and do not have the capacity to engage in an office-based, individual-focussed, weekly/fortnightly intervention (French, 2007; Henggeler et al., 1998). Due to failure to be engaged in any intervention, the young person’s level of risk and need

may remain unaddressed, and with one, for instance, sexually abusive or violent incident, there may be a radical shift in service response (i.e., over-intervention; French, 2009). Thus, what is original about this piece of work is that it highlighted that a home-based, intensive, and assertive approach can be successful in engaging, aligning, and retaining families in the effective treatment of young people with difficulties across several domains of functioning.

The intervention aimed to prevent further deterioration in young persons' behaviour by improving family and individual functioning. One interesting aspect that emerged from this work was that there were improvements in the functioning of the young persons following improvement to the family environment's functioning. This is consistent with aspects of the social ecological theory highlighting the multidetermined nature of problem behaviour and bidirectional influences on family variables related to young persons' behaviour (Bronfenbrenner, 1979), as well as the coercive family process theory (Patterson, 1982). It is also noteworthy that the individual gains observed in the interpersonal functioning domains of the young persons' appear to relate to improvements in the way in which information is processed in social situations, as outlined in the Social Information Processing model of aggressive behaviour (Crick & Dodge, 1994).

The lack of control or comparison group and modest sample size are significant flaws that may question the feasibility of the results of the study. For instance, it could be hypothesised that participants who completed the intervention successfully were 'less disordered' cases than those who were moved to out-of-home placements. However,



there was no selection bias in the recruitment of participants into the study, and the participant data (Table 2, p.78 – 79) highlights the complexity of the cases that were included, thus the sample is representative of one that was at significant risk of care or custody. Furthermore, the intervention adopted an assertive, flexible, strengths-based, assertive, and multisystemic approach in working with each client. It used a comprehensive yet individualised approach to the treatment of the young people, and was successful in preserving the family unit in 79% of the clients recruited into the intervention. As such, outcomes highlighting positive individual and family functioning are very encouraging in this population of young people. In the cases whereby the intervention was not successful and the young people were accommodated by the Local Authority, it could be argued that out-of-home placements were indeed used as a last resort, following exhaustive attempts to engage the clients and their wider ecology to work towards positive changes.

Chapter 3 reflected on the use of the Family Environment Scale (FES) as a measure of family functioning. This scale was specifically chosen over the other two popular family unit measures due to its perceived ease of administration, higher internal consistency, and broader number of domains measured (including a ‘Conflict’ domain). Thus, it was deemed to be a more comprehensive measure of family functioning. When carrying out therapeutic work with young people and their caregivers, the information gained from a measure such as the FES is invaluable as not only does it provide a snapshot of strengths and weaknesses of the family environment as perceived by the family members, but also highlights areas of

discrepancy amongst family members, and allows clinicians to track the progress that has been made through the course of the intervention (Moos & Moos, 2002).

The FES is a well-validated measure in both research and clinical settings. However, it does have limitations that may have contributed to the findings observed in the thesis. For instance, this measure has been constructed and validated in a particular social demographic area (the U.S.) whereby its developers have established the presence of the ten constructs that make up the scale. However, it is difficult to establish or measure whether the U.K. has the same constructs. For this reason, the results may be biased in showing changes in certain constructs which are more standard across the two countries (e.g., Cohesion and Conflict). A second drawback is the forced choice paradigm, which reduces sensitivity of the measure. As well as having been reported to be a limitation by a number of participants of the study, this may have contributed to some of the significant and/or non-significant results obtained, as participants may have either erred on the side of caution or been over inclusive in their responses. However, despite the limitations, the results obtained in the current research study are noteworthy due to the pre-post intervention changes. It is positive that the changes observed in the FES constructs in this study (e.g., Conflict) were those that were targeted by the intervention. In addition, the FES authors report that certain constructs, particularly those measuring attitudes and beliefs, tend to be more stable over time (e.g. Moral-Religious Emphasis; Moos & Moos, 2002), which is consistent with the non-significant findings in these constructs in the current study.

Finally, Chapter 4 examined an individual needs-based approach to intervention with a young person with significant emotional and behavioural needs. This young male, who presented with a conviction for a sex offence, was at risk of educational failure and living within a very emotionally constricted and controlling family environment. While the treatment was aimed to be family-based, it is clear in the case study that from the outset, the primary focus was on individual sessions with S following a Cognitive-Behaviour Therapy approach. It could therefore be argued that a single-component intervention style was followed, which appears to contradict the overall theme of the thesis – a multisystemic approach to the treatment of complex difficulties in young people. However, there are two important points to highlight in this context.

First, while the intensive intervention was broadly based on the principles of MST, it did not stringently follow the strong emphasis that MST adopts in engaging primarily the caregivers. As aforementioned, caregivers are viewed as key to sustainable positive outcomes for these young people, thus every effort is made to overcome barriers to engage them in treatment, rather than the young person (Henggeler et al., 1998). In the intensive intervention there was an emphasis on engaging both subsystems, the young person alongside the caregiver, especially in instances whereby significant barriers to caregiver engagement were evident from the start. This is because a sole emphasis on working with caregivers was atypical of traditional CAMHS services in the Greenwich borough, especially for older adolescents presenting with complex needs, who are typically engaged in individual or group-based skills building treatment modalities (Lochman et al., 2010). Thus, as discussed above, clinicians are often confronted with significant barriers to engaging caregivers.

As a new type of community-based intervention for young people in the borough, it was important to adopt an engagement approach that would maximise retention of clients in treatment.

Secondly, there was a significant focus on maintaining positive and consistent links with other systems surrounding S, particularly Education and the Youth Offending Service in order to ensure collaborative working. Although S's parents did not engage fully in the intervention, they attended five individual sessions (separately), and five review meetings, thus they were not totally absent throughout treatment. This would suggest that the intervention did not have a sole individual focus on S. S can be considered partially treated, given that his parents were not fully aligned with the intervention, and the findings from this case study highlight that caregiver engagement and alignment for the success of an intervention is crucial.

Finally, it is worth commenting on two broad issues highlighted in the thesis that are key in the successful implementation of interventions within communities. The importance of maintaining open channels of communication with the client's multi-agency network and the need to match treatment type to client need have been discussed in the Chapters 2 and 4. There have been recent changes in ways of working in both the Social Care and Youth Justice System that allow practitioners to embed a shared language in their work with young people, in order to prevent fragmentation of information and repetition of interventions across various agencies, as well as facilitate early intervention and speed up service delivery (French, 2009). For example, an important recent change in youth justice practice and legislation has been

the development of the scaled approach to dealing with young offenders. This has brought about a new generic community sentence for young offenders (the Youth Rehabilitation Order) in order to improve flexibility of interventions and provide a more individualist risk and needs-based approach to community sentencing (Youth Justice Board, 2009). Implementing such a tiered approach to interventions is anticipated to reduce the risk of re-offending and serious harm, and allow youth justice services to direct time and resources to young people appropriately, in accordance with their risk assessment. Furthermore, the Integrated Working approach (Children's Workforce Development Council, 2008) in the Social Care model adopted across London boroughs uses a holistic assessment process in identifying the level of need that a child presents with. It identifies four levels of need in supporting practitioners when developing care pathways. Such changes are positive as they facilitate the development of closer links with outside agencies, allow a better understanding of the roles and responsibilities across agencies and systems, and help practitioners to intervene appropriately in preventing further deterioration of behaviour.

### **Suggestions for future research**

This thesis outlines the value of therapeutic work conducted in a real world setting in order to prevent custody or care for young people, while helping them embark on an adaptive, as opposed to maladaptive, developmental trajectory. Given the implications for longer-term consequences for these young people, their families and wider society if left without intervention, this work is invaluable. However, clinical work follows research, and research with this population must follow sound methodological

procedures in order to increase the reliability of results, and for them to be disseminated accurately. As such, the RCTs that are to be conducted across the ten new MST sites in the UK, under the supervision of the Department of Health, are in line with this and will establish clearly whether such an intensive community-based intervention can be effectively translated in this cultural context. This transportability trial will answer important questions, such as does MST reduce out-of-home placements and offending in high-risk youth? Does MST lead to improved well-being (emotional & behavioural functioning, closer family relationships, enhanced parenting skills, & improved educational outcomes) of young people and their families? And, further to evaluation from a clinical point of view, an important question from a cost point will be addressed, that is, will MST be more cost-effective against management/treatment-as-usual? This clearly has implications for longer-term government funding in the current unstable economic climate. Furthermore, it is important to know not only whether an intervention is effective, but what specific mechanisms are involved in bringing about change – that is, therapist, client and organisational factors. For instance, are there groups of young people that benefit more, or are harder to help? In my experience at the clinical level to date, I have experienced negative outcomes (from an MST perspective) in families whereby there is a caregiver with significant mental health difficulties and a young person with early-onset Conduct Disorder. In such instances, it has not been possible to successfully engage the caregivers in bringing about sustainable positive changes required to prevent an out-of-home placement. However, this observation is based on a handful of clinical cases. Carefully controlled studies by researchers who are independent from developers of the intervention can answer these questions so that

research can move forward in order to obtain the best possible outcomes for high risk young people and their families with complex needs.

## **Conclusion**

This thesis provides support for the notion that young people with complex needs present with multiple risk factors across several domains, and a central theme through this thesis is that these young people deserve and benefit from services that are well coordinated, comprehensive, and delivered in their natural environments. The content of this thesis is in parallel with the values and principles adopted by the system of care model (Stroul and Friedman, 1986) which has effected three key shifts in the way services are delivered: (1) change in the location of services from institutions to family-based care, (2) changes in the manner of service delivery from office-based to community-based care; and (3) change from a ‘pathological family’ perspective to a strengths-based approach that capitalises on the resilience of youth and the supportive capacities of their families. It is anticipated that the clinical interventions and service delivery mechanisms described in this thesis contribute to effective community-based service delivery systems, decrease the need for unnecessary out-of-home placement and increase the probability that a child can continue living with his or her family, remain in school, and maintain social relationships with healthy, prosocial peers, thus developing along an adaptive, as opposed to a maladaptive, developmental trajectory (Henggeler et al., 1998; 2009). Traditional approaches involving unstructured psychotherapy, interventions based upon medical models, and measures intended to punish and deter have been cited as ineffective (Andrews, 1995; Gatti, Tremblay, & Vitaro, 2009; NACRO Youth Crime Briefing, 2006), yet continue to receive funding

from public resources. Therefore, important questions exist about the wisdom of continuing this level of investment in these interventions, bearing in mind the long-term consequences to young people, their families, and communities relating to failure to intervene appropriately and effectively (e.g., Elliott, 1998; Farrington, 1991; Henggeler et al., 2009; Laub & Sampson, 2003; Office of Justice Programs, 2005; Serbin et al., 1991).



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## **APPENDIX 1**

## **APPENDIX 2**

## **APPENDIX 3**



## **APPENDIX 4**

## **APPENDIX 5**

## APPENDIX 6

## **APPENDIX 7**

## APPENDIX 8

## APPENDIX 9

# Young Person Pre- and Post-Intervention Means and Standard Deviations on FES

## Subscales

Sub-scale	Young person (n = 17)		Paired t-test	
	Before Mean (SD)	After Mean (SD)	t	P-value (Power)
				0.1941
Cohesion	39.8 (10.1)	44.2 (12.6)	-1.36	(0.247) > 0.20
Expressiveness	43.2 (12.5)	45.0 (10.8)	-0.78	(0.114) < 0.01
Conflict	61.9 (12.5)	51.2 (13.8)	3.57	(0.917) > 0.20
Independence	50.2 (10.2)	51.0 (9.9)	-0.40	(0.067) > 0.20
Achievement Orientation	49.2 (8.6)	51.5 (8.2)	-1.23	(0.211) > 0.20
Intellectual-Cultural Orientation	43.4 (12.8)	43.2 (10.6)	0.07	(0.050) 0.1157
Active-Recreational Orientation	48.9 (8.5)	52.2 (8.3)	-1.66	(0.346) > 0.20
Moral-Religious Emphasis	43.4 (11.6)	41.6 (10.5)	1.24	(0.214) > 0.20
Organisation	49.1 (11.8)	49.6 (10.0)	-0.25	(0.057) > 0.20
Control	56.6 (11.2)	54.6 (10.3)	0.71	(0.102)

## **APPENDIX 10**



# Caregiver Pre- and Post-Intervention Means and Standard Deviations on FES

## Subscales.

Sub-scale	Caregiver (n = 12)		Paired t-test	
	Before Mean (SE)	After Mean (SD)	t	P-value (Power) 0.0921
Cohesion	52.2 (10.4)	54.4 (6.7)	-1.85	(0.392) > 0.20
Expressiveness	47.8 (9.0)	48.3 (8.3)	-0.43	(0.068) 0.0538
Conflict	50.6 (9.0)	47.1 (9.5)	2.16	(0.504) 0.0668
Independence	53.7 (8.3)	50.3 (8.3)	2.03	(0.459) > 0.20
Achievement Orientation	54.8 (8.4)	56.0 (7.2)	-1.01	(0.152) > 0.20
Intellectual-Cultural Orientation	51.7 (6.9)	52.3 (6.0)	-0.63	(0.089) > 0.20
Active-Recreational Orientation	53.1 (8.8)	54.0 (8.5)	-0.86	(0.124) > 0.20
Moral-Religious Emphasis	45.4 (10.9)	44.6 (9.7)	0.96	(0.142) > 0.20
Organisation	55.2 (8.2)	55.9 (6.7)	-0.77	(0.108) 0.1360
Control	51.9 (12.9)	53.7 (12.1)	-1.61	(0.312)

## **APPENDIX 11**

# Young Person Pre- and Post-Intervention Means and Standard Deviations on IIP-32

## Domains

Sub-scale	Young person (n = 17)		Paired t-test	
	Pre-intervention Mean (SD)	Post-intervention Mean (SD)	T	P-value (Power)
				> 0.20
Domineering/Controlling	47.8 (10.5)	47.4 (8.4)	0.48	(0.073)
				< 0.01
Vindictive/Self-Centred	52.18 (10.05)	48.24 (8.52)	3.18	(0.85)
				< 0.05
Cold/Distant	52.41 (10.80)	49.76 (8.74)	2.23	(0.55)
				> 0.20
Socially Inhibited	50.6 (8.7)	49.5 (9.4)	0.99	(0.155) > 0.20
Nonassertive	46.8 (7.9)	46.9 (8.5)	-0.10	(0.051) > 0.20
Overly Accommodating	46.4 (8.5)	46.2 (7.6)	0.14	(0.052) 0.1086
Self-Sacrificing	48.7 (9.2)	46.8 (9.1)	1.70	(0.359) <0.05
Intrusive/Needy	54.35 (8.41)	48.65 (8.67)	2.90	(0.78)

## **APPENDIX 12**

# Young Person Pre- and Post-Intervention Means and Standard Deviations of RSCA

## Subscales

Sub-scale	Young person (n = 17)		Paired t-test	
	Pre- intervention Mean (SD)	Post- intervention Mean (SD)	T	P-value (Power)
				< 0.001
Sense of Mastery	36.41 (7.00)	43.39 (5.70)	5.35	(0.10)
				< 0.01
Sense of Relatedness	35.18(10.24)	40.82 (8.61)	3.86	(0.95)
				> 0.20
Emotional Reactivity	49.8 (10.1)	51.1 (6.8)	-0.76	(0.110)

## **APPENDIX 13**

# Post-Hoc Power Analysis Data

Measure and sub-scale	Pillai’s trace (Sig.).	Observed power	Required N	
			YP	Caregiver
<i>Family Environment Scale</i>				
Cohesion	0.103 (0.194)	24.7%	43	103
Expressiveness	0.037 (0.447)	11.4%	260	1844
Conflict	0.443 (0.003)	91.7%	14	71
Independence	0.010 (0.691)	6.7%	932	40
Achievement Orientation	0.086 (0.238)	21.1%	85	281
Intellectual-Cultural Orientation	0.000 (0.948)	5%	302464	601
Active-Recreational Orientation	0.147 (0.116)	34.6%	44	547
Moral-Religious Emphasis	0.087 (0.234)	21.4%	245	941
Organisation	0.004 (0.802)	5.7%	2653	631
Control	0.030 (0.490)	10.2%	192	318
<i>Locus of Control Measure</i>	0.063 (0.317)	16.3%	199	
<i>Emotional Loneliness Scale</i>	0.120 (0.160)	28.3%	41	

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*Inventory of Interpersonal Problems*

• Domineering/Controlling	0.014 (0.641)	7.3%	2608
• Vindictive/Self-Centred	0.388 (0.006)	84.8%	37
• Cold/Distant	0.237 (0.041)	55.3%	89
• Socially Inhibited	0.058 (0.335)	15.5%	453
• Nonassertive	0.001 (0.923)	5.1%	28793
• Overly Accommodating	0.001 (0.892)	5.2%	7593
• Self-Sacrificing	0.153 (0.109)	35.9%	138
• Intrusive/Needy	0.345 (0.010)	77.8%	16

*Resiliency Scales for Children and Adolescents*

• Sense of Mastery	0.642 (0.000)	99.9%	7
• Sense of Relatedness	0.482 (0.001)	95.2%	20
• Emotional Reactivity	0.035 (0.459)	11%	293

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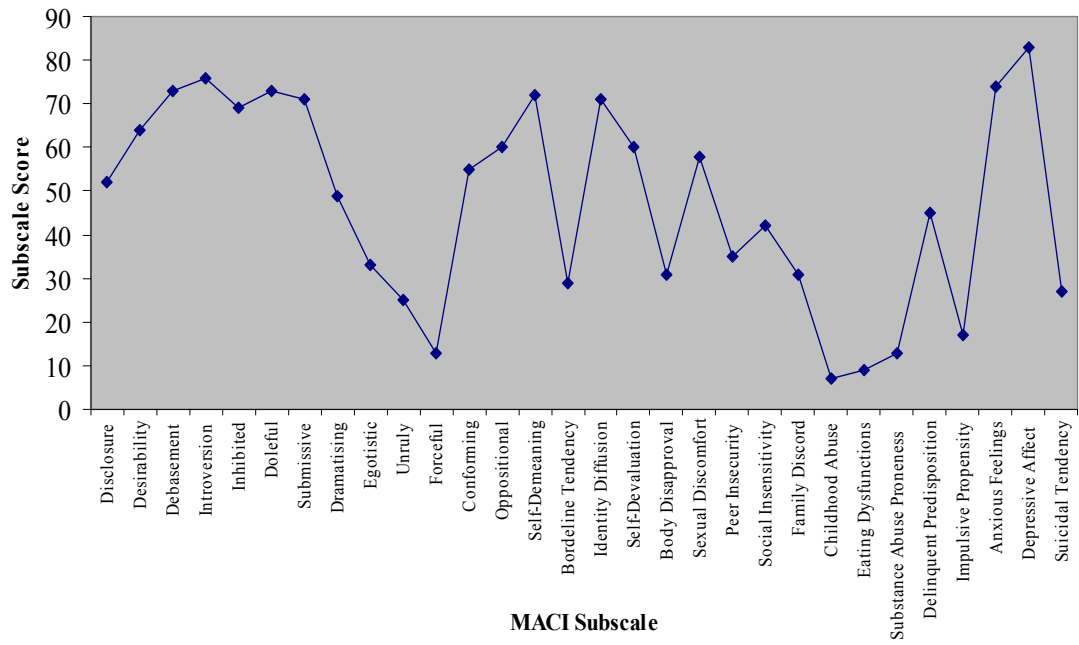
## **APPENDIX 14**

## **APPENDIX 15**

## **APPENDIX 16**

## **APPENDIX 17**

Client S's MACI profile.



## **APPENDIX 18**

## **Outlines of Client S Sessions**

This section outlines the main aims and outcomes of the individual sessions with S, individual sessions with his parents and review meetings, the latter were held every 6-8 weeks throughout the intervention.

### *Initial planning meeting*

- Each individual's current concerns discussed
- Discussion of what YIN could offer
- Treatment goals set by family and referring agency

### *Pre-intervention sessions with S*

- Introductions
- Questions that the client previously raised
- Outline of the intervention
- Practicalities of the intervention
- Consent
- Psychometric assessment including cognitive, personality and clinical screening measures
- Intervention-specific baseline measures including the Family Environment Scale, Locus of Control, UCLA Loneliness Scale, Inventory of Interpersonal Problems and Resiliency Scales for Children and Adolescents.

### *Individual session 1*

- Exploring goals set in the initial planning meeting

- Background history, with focus on relationship with parents
- Explanation of content of each session & what S can expect

#### *Individual session 2*

- Difficulty expressing thoughts and feelings
- Relationship with his father
- Asserting himself

#### *Individual session 3*

- Impact of father's age and missed childhood with father on S (feelings explored)
- Repression of feelings discussed and functional analysis of what happens when stressed completed
- Link of childhood and relationships with parents linked by S to probable precipitating factors related to the offence (showing evidence of accurate reflection)
- Preferred future explored and how it would be different emotionally

#### *Session 1 with S's father*

- Exploration of father's view of current difficulties S is experiencing
- Discussion of S's strengths and positive qualities
- Brief exploration of own life history/circumstances
- Possibility of joint sessions



#### *Individual session 4*

- Relationship with father
- Impact of father's mood on S via exploration of his thoughts and feelings
- Father's perceived high expectations of S explored including the impact on S
- Cognitive restructuring exercise to enable S to understand various viewpoints
- Impact of ongoing tension between S's parents on S explored

#### *Individual session 5*

- Father's attendance to individual session to discuss S explored – S's view on this and whether he feels joint sessions would be useful
- Recent setback with school due to behaviour and achievement difficulties explored
- Offence and Court case explored, with S finding it very difficult to name the offence
- Constricted emotions explored, focusing on anger – how he deals with it, the cost of repressing it.
- S's dichotomous presentation broached via visual means (diagram) “good me/bad me”

#### *Session 1 with S's mother*

- Genogram and early family life
- Difficulties in relationship between S's mother and her ex-husband
- Perceived relationship between S and his father as well as other siblings
- Possibility of joint sessions

### *Multi-agency review meeting*

- Updates from all agencies
- S's impending court appearance and possible outcomes
- Action plan

### *Individual session 6*

- Explored S's thoughts and feelings around transfer to Pupil Referral Unit
- Dichotomous presentation and ways of managing "bad me" side highlighted biased thinking
- Cognitive continuum to enable challenging of biased thinking and mind-reading
- Cognitive re-structuring exercise to target defectiveness schema

### *Individual session 7*

- Cognitive disputation techniques regarding core belief "I am bad"
- Identification of intermediary beliefs (rules and assumptions) that link to core belief.
- Discussion as to the origin of the core belief
- Disputation of intermediary beliefs
- Disputation of belief "I must be perfect" via guided discovery/Socratic questioning
- Identification of maladaptive coping strategies
- Cost analysis of strategy (S discovered that is perpetuates the core belief)

- ‘Shame attacking’ exercise (and identification of negative automatic thoughts in situ)

#### *Session 2 with S’s mother*

- Relationship with her ex-husband
- Circumstances surrounding her imprisonment
- Perceived impact of imprisonment on children, specifically S
- Perceived reasons behind S’s current difficulties

#### *Individual session 8*

- Challenging of core belief, “I’m bad”, by considering the evidence for and against it
- Benefit analysis of assumptions that link to this belief – “I should always do things the right way”; “I should try to be perfect all the time”
- Exploration of this assumption, where it arises from
- Challenging of assumption through various exercises to enable cognitive restructuring

#### *Individual session 9*

- Thoughts and feelings around re-integration into mainstream school and how these fit in with and perpetuate S’s core belief
- Exploration and challenging of core belief of defectiveness
- Discussion of origin of core belief

- Imagery work attempted to enable S to picture asserting himself in front of his father
- Impact on S of constant concern around how others perceive him to be and cost of doing so

#### *Individual session 10*

- Thoughts and feelings around asserting himself to his parents
- Core belief “I’m a failure” discussed and evidence for this belief explored
- Considering a more balanced belief through confidence building exercise (listing all of S’s positive qualities)

#### *Individual session 11*

- Explored S’s progress and the markers he uses to monitor this
- Restricted feelings with focus on how S copes with these in response to father’s manner towards S, both positive and negative.
- Exploration of thoughts, feelings, and beliefs related to expressing his views to his father
- Future explored, without father physically present but in S’s mind and consideration of what ‘parts’ of father S would like to keep in mind

#### *Multi-agency review meeting*

- Progress in therapy including sessions attended, engagement, attitude and work covered
- Progress on YOT supervision objectives

- Current education progress in relation to targets
- Action plan

### *Session 3 with S's mother*

- How mother perceives court ruling for S
- View of why difficulties have emerged with S
- Contrasting parenting styles explored and possible impact on S
- S's current needs and what he may benefit from (from his parents)

### *Individual session 12*

- Discussed father with focus on S feeling responsible for his father's happiness and general well-being due to old age
- Missed childhood explored and S's ideal life if father were younger discussed – S's feelings related to this explored and connection made with vulnerable child
- Maladaptive cyclical pattern introduced to S via visual means
- Self-esteem building exercise via listing of all S's positive qualities
- Formulation proposed to S and cost of carrying on with maladaptive cyclical pattern explored

### *Individual session 13*

- Review of maladaptive cycle in repressing feelings
- Exploring of current thoughts and feelings in relation to unpleasant incident that occurred with father prior to session

- Encouragement of S to link this to his formulation
- Discussion of possible ways to break maladaptive pattern of coping using this example

#### *Individual session 14*

- Thoughts and feelings around incident prior to last session with father re-visited and exploration of how S has coped with the situation thus far
- Link of this manner of coping to formulation and maladaptive effects of this
- Re-discovering feelings that have been previously repressed by exploring and rating physical feelings related to anger and sadness
- Specific behaviours related to these feelings explored
- Formulation re-visited
- Self-esteem building exercise

#### *Multi-agency review meeting*

- Educational progress – attendance, punctuality, attitude, social adjustment and predicted GCSE grades
- Update on therapy, including S's views on benefits to him
- Progress on YOT Supervision Order – attendance, engagement and attitude

#### *Individual session 15*

- Thoughts and feelings from review meeting and link with formulation
- Relationship with parents and coping techniques with negative comments from father

- Self-esteem building exercise
- Connection made between S and his father at S's age – similarities and differences explored
- Replication of parenting styles in generations explored
- S's preferred future explored and link made with changes to maladaptive cycle to break it.

#### *Session 2 with S's father*

- Father's desires explored (primarily desire to see S back in mainstream school) and reasons behind these
- Explored knowledge/awareness of his son's feelings via Socratic questioning
- Socratic questioning about the future
- S's father's own upbringing and manner in which he and his siblings were disciplined
- Educational pathway from his son and impediments that may derail successful educational attainment.
- Importance of joint-working to assist S achieve academically but also to discuss concomitant emotional difficulties that may get in the way of this.

#### *Final multi-agency review meeting*

- Update on YOT attendance, motivation, engagement and work undertaken
- Education – attendance, predicted achievement, relationship with staff and students.

- Therapy – number of sessions to date, summary of S's engagement, outline of work conducted, possibility of family sessions, S's view of therapy and recommendations for future work

#### *Post-Intervention Session*

- Quantitative post-intervention measures of change including the FES, Locus of Control, UCLA Loneliness Scale, Inventory of Interpersonal Problems and Resiliency Scales for Children and Adolescents
- Feedback about the overall intervention.
- Discussion regarding the post-intervention summary and consent to discuss the clients progress with his Youth Offending Officer.



## **APPENDIX 19**

### **Qualitative Feedback from Client S**

At the end of each session, S was typically asked to summarise the key points he had taken away from the session. This is provided below:

- ‘I don’t want to upset people because I’m used to it because of my dad’ (comment that he ‘surrenders’ to his schema rather than face up to people; desperately desires to be accepted by others and hence will do as asked to fit in).
- ‘I am more uncomfortable around people than with myself’ (realisation that avoidance is the primary coping mechanism)
- ‘I can present in two different ways’
- ‘Doing bad in school does not make me a bad person’
- ‘I can do a lot worse in school than falling asleep and not completing homework’
- ‘I should always look for evidence for my beliefs’ (i.e. question the credibility of a belief in the absence of any evidence)
- ‘I’m not as bad as I thought I was’ (i.e. less rigid thinking about the self)
- ‘I’m starting to be more confident about being good’ (i.e. that he is also good and not always bad as he’d perceived before)
- ‘There’s no point in being perfect because no one can ever be’
- ‘I shouldn’t let bad thoughts effect me because if someone does not like me, someone else might think good of me’
- ‘The sessions are more helpful than I thought’ (rated session 9/10 in terms of usefulness)

- 'I still believe that I know what others think of me' (i.e. acknowledged that he is still trying to read minds)
- 'I'll never be perfect and I need to stop trying'
- 'I always worry what others think of me'
- 'I always try to do what my dad tells me to'
- 'I need to change the way I think'
- 'I can have a disagreement with someone without anything bad happening' [following a 'small disagreement' (exercise) in session]
- 'I feel more comfortable expressing my opinions in a disagreement with friends, but not with my parents'
- 'I don't like to upset my dad'
- 'I usually wait for others to tell me about my progress'
- 'The cycle repeats itself...goes on in a circle and it doesn't solve anything in the end' (i.e. S's self-perpetuating cycle)
- 'The cycle will carry on unless something changes'
- 'I underreport my feelings'
- 'I try to shut off my feelings by sleeping....I sleep a lot'
- 'I don't talk about my feelings much'
- 'I'll probably end up like my dad if something doesn't change'
- 'My dad's dad was like that' (i.e. realisation that parenting styles, attitudes and beliefs can be transmitted from generation to generation)
- 'My mum couldn't think of anything good to say about me...I already know that...but mum could have said a lot of good things about me'.