Multisystemic Therapy in New Zealand: Effectiveness and Predictors of Outcome

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Claire Jennifer Russell

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Abstract

A one-group pre-test post-test design (including 6- and 12-month follow-up), supplemented with benchmarking analyses, was employed to assess the effectiveness of Multisystemic Therapy (MST) for youth displaying antisocial behaviours in New Zealand. An additional aim of the current study was to assess for predictors and moderators of outcome. The predictor variables assessed included: Client satisfaction, therapeutic and supervisory alliance, therapist and supervisor adherence, therapist and supervisor allegiance, and therapist and supervisor accountability. Seventy-three youth and their families completed the MST program (*M* = 162 days) and the present study's measures. Youth and their families experienced improvements in ultimate outcomes (offending frequency, offending seriousness, and days in out-of-home placements) and instrumental outcomes (youth positive and negative behaviour, parent well-being and psychopathology, parent ability, and family functioning) following MST treatment. With a few exceptions, these gains were largely maintained up to 12 months following treatment. Benchmarking analyses indicated that the completion rate and effect sizes were comparable with those from previous MST studies both in New Zealand and the United States. The predictor variables of service satisfaction, therapeutic alliance, and therapist adherence predicted higher levels of change in most instrumental outcomes as expected. However, of significant importance, higher supervisor adherence and supervisory alliances were associated with significantly lower therapist adherence, therapeutic alliance, and some client outcomes. Furthermore, the few significant interactions between predictor variables produced mixed findings, many of which contradicted widely held assumptions. As MST has been demonstrated to be an effective treatment for youth offenders in New Zealand, continuing dissemination and ongoing evaluation of MST in New Zealand is recommended. In particular, given the negative impact of supervision variables on therapist adherence, therapeutic alliance, and some client outcomes, this would include research aimed at assessing various quality control functions of supervision, including supervisor training, mechanisms of supervision related to therapist and client variables, and the potential value of more closely monitoring the process of supervision.

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Chapter One

Antisocial Behaviour and Conduct Disorder

A growing number of young people are experiencing mental health problems internationally (Kazdin, 2000). In Aotearoa / New Zealand, youth aged 11 to 19 years make up 20% of those affected by mental illness, yet constitute only 12% of the national population (Mental Health Commission, 1998). Furthermore, the number of youth with mental illness has increased significantly over the last 20 years (Lucassen, Doherty, & Merry, 2005; Ministry of Health, 1998; Te Puni Kokiri, 1996). One of the most common problems of contemporary youth is conduct disorder and related antisocial behaviours (Fergusson & Horwood, 1998; Fergusson, Horwood, & Lynskey, 1997; Lucassen et al., 2005). Conduct disorder is an impairing condition associated with psychological, physical, socio-economic, and interpersonal problems for the youth, their family, victims of their antisocial behaviour, and society as a whole (Caspi, Wright, Moffitt, & Silva, 1998; Farrington, 1995; Moffitt, Caspi, Harrington, & Milne, 2002). Collectively, these problems create an enormous societal burden (Potter & Mercy, 1997).

This chapter will clarify the characteristics of conduct disorder including the two subtypes and their developmental trajectories. The prevalence rates and common comorbid psychiatric disorders will also be discussed. The various multi-system risk factors and protective factors prominent in the development and persistence of conduct disorder and antisocial behaviours will be reviewed. Finally, this chapter will summarise antisocial behaviour in New Zealand.

What is Conduct Disorder and How Common is It?

Conduct Disorder

Conduct disorder is one of the main reasons children and adolescents are referred for psychiatric assessment and treatment (Finch, Nelson, & Hart, 2006; Kazdin, 2001). It

includes a pattern of extreme and persistent non-compliance and aggressive behaviour where the basic rights of others' and societal norms or rules are violated (American Psychiatric Association [APA], 2000). Characteristics of the disorder include physical harm to people and animals, property loss and damage, deceitfulness and theft, and violation of rules and laws (parental, school, and societal). Antisocial youth typically engage in threatening and intimidating behaviour, initiate physical fights, possess and use weapons, force others into sexual activity, run away from home, and are often truant from school (APA, 2000). Loeber and Farrington (2000) suggest that criminal behaviour is the distinguishing feature of conduct disorder and is a main indicator of severity.

Developmental Trajectories

There are different manifestations of conduct disorder based on the degree of persistency and the escalation in severity of the disruptive behaviour. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; APA, 2000) specifies two subtypes of conduct disorder: (1) Child-onset and (2) adolescent-onset. These subtypes are differentiated by age at onset, presenting conduct problems, developmental course, prognosis, and gender ratio.

The child-onset subtype is the most severe with the onset of at least one conduct disorder criterion prior to 10 years of age. These children are generally male, have disturbed peer relationships, exhibit frequent physical aggression, come from highly dysfunctional backgrounds, and are likely to meet full criteria for conduct disorder prior to puberty (APA, 2000; Lahey, Goodman, et al., 1999; Lahey, et al., 1998; Moffitt, 1993). Many children with this subtype have also had diagnoses of Oppositional Defiant Disorder (ODD) and Attention Deficit Hyperactivity Disorder (ADHD). For these youth, the behavioural problems tend to increase in severity as the youth gets older. Compared to adolescent-onset, individuals with child-onset are more likely to develop antisocial personality disorder (ASPD) in adulthood (APA, 2000; Frick, 1998). The risk of becoming serious, violent offenders in the early onset type is three times that of the late onset type.

In comparison, the adolescent-onset subtype of conduct disorder is defined by the presence of antisocial behaviours but the absence of criteria prior to 10 years of age.

There are more individuals with adolescent-onset than child-onset in the population, a ratio estimated to be approximately 3:1 (Moffitt, Caspi, Dickson, Silva, & Stanton, 1996). The gender ratio for this subtype is more evenly distributed than the child-onset subtype of the disorder. These youth have more normal peer relationships and adaptive social qualities. They tend to be less aggressive and violent, are less impulsive, and come from less dysfunctional family backgrounds than individuals with the childhood-onset subtype (Hinshaw, Lahey, & Hart, 1993; Moffitt, 1996; Moffitt et al., 1996; Moffitt, Lynam, & Silva, 1994). Moffitt (1996) uses the term 'adolescent limited' as these individuals are thought to have a reduction in antisocial behaviours by adulthood.

Prevalence Rates

Accurate prevalence rates of conduct disorder are difficult to ascertain. Factors that affect the accuracy include: (1) High comorbidity with other mental disorders, (2) the use of different diagnostic criteria in the health, justice, and social service settings, and (3) the setting and location from which the sample has been obtained (Carr, 1999; Moffitt, Caspi, Rutter, & Silva, 2001). Nevertheless, rates have been reported to vary from 1% to 16% among youth under 18 years of age (APA, 2000; Carr, 1999; Kaplan & Sadock, 1998). In New Zealand, two large-scale health studies (i.e., the Dunedin-based Multidisciplinary Health and Development Study and the Christchurch-based Health and Development Study) found that 9.1% of 11 year olds and 10.8% of 15 year olds met a diagnosis of conduct disorder, respectively (Fergusson, Horwood, & Lynskey, 1993; McGee, Feehan, Williams, & Anderson, 1992). Internationally, males are more likely to receive a diagnosis of conduct disorder than females, a ratio of 2:1 to 4:1 (Carr, 1999). This gender ratio is consistent with New Zealand research where males are approximately three times more likely to be diagnosed than females (Fergusson et al., 1997; Moffitt et al., 2001). International and New Zealand research demonstrates a narrowing of the gender gap in mid to late adolescence, at approximately 15 years of age (Carr, 1999; Moffitt et al., 2001; Rutter, Giller, & Hagell, 1998; Zoccolillo, 1993). At this particular age, there appears to be a temporary peak in diagnostic rates among females.

North American research has demonstrated that youth from ethnic minorities (such as African American, Latino American, Asian American, and Native Hawaiian) are more likely to be diagnosed with conduct disorder and other disruptive behaviours than their

White, Caucasian peers (Costello et al., 1988; Delbello, Lopez-Larson, Soutullo, & Strakowski, 2001; Fabrega, Ulrich, & Mezzich, 1993; Mak & Rosenblatt, 2002; Nguyen, Huang, Arganza, & Liao, 2007; Untalan, Guillory, & Titcomb Hartley, 1997; Yeh et al., 2002). These results are evident after socioeconomic status, age, gender, and functional impairment are controlled for (Nguyen et al., 2007). Similarly, the Christchurch Health and Development Study found that Māori aged 18 years are three times more likely to be diagnosed with conduct disorder than their non-Māori counterparts (12.1% versus 3.9%) (Fergusson et al., 1997).

Comorbidity

Conduct disorder has a high degree of comorbidity with other mental health disorders. Only 10% of conduct disorder diagnoses are considered 'pure' (Moffitt et al., 2001). New Zealand-based research has found that 90% of youth with conduct disorder have at least one other psychiatric diagnosis (Anderson, Williams, McGee, & Silva, 1987; Moffitt et al., 2001). In comparison to their peers, youth with conduct disorder are significantly more likely to be diagnosed with other mental health disorders (Anderson et al., 1987). The most common diagnoses are anxiety disorders, depression, substance dependence, ADHD, and learning disabilities (Moffitt et al., 2001). Research findings indicate that ADHD may co-exist in 65% to 90% of conduct disorder cases (Frick, 1998; Kazdin, 1993). It is not fully clear how these disorders relate. It has been suggested that some particular disorders are precursors to developing conduct disorder (e.g., ODD), others are risk factors (e.g., ADHD), while others are perhaps a consequence of conduct disorder (e.g., substance abuse) (Loeber, Burke, Lahey, Winters, & Zera, 2000; Loeber, Green, Lahey, Frick, & McBurnett, 2000). Furthermore, the combination of certain disorders, particularly conduct disorder and ADHD, increase the potential and severity of developing adult antisocial behaviour compared to the presence of either disorder in isolation (Babinski, Hartsough, & Lambert, 1999; McBurnett & Pfiffner, 1998). As discussed in the next section, another hypothesis is that at least some comorbid disorders share common risk factors.

Furthermore, there are high correlations between conduct disorder and multiple health-related problems including poor nutrition, sexually transmitted diseases, hepatitis, motor

vehicle accidents, gunshot wounds, and self-inflicted injuries (Fergusson, Lynskey, & Horwood, 1995; Silva, 1990).

Risk and Protective Factors

A considerable amount of research has demonstrated that a combination of individual, family, peer, school, and community factors contribute to the development and perpetuation of antisocial behaviour among youth (Elliot, Huizinga, & Ageton, 1985; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998; Loeber, Farrington, & Waschbusch, 1998). It is important to note that typically it is not simply one factor, but the cumulative impact of multiple factors from multiple systems that impact on the development and maintenance of conduct disorder and antisocial behaviour (Rutter et al., 1998). The combined impact of these risk factors place these youth at an increased risk for exhibiting delinquent and aggressive behaviour (Rutter et al., 1998). In essence, it appears that the emergence and persistence of adolescent antisocial behaviour is linked with multiple risk factors found across various socio-ecological and socio-cultural systems (i.e., individually-, family-, peer-, school-, and community-based). Major risk factors across these systems are discussed in the following sections. Factors that protect at risk youth from developing conduct disorder and antisocial behaviour will also be discussed.

Individual Risk Factors

A variety of individual factors have been found to be associated with the existence of antisocial behaviour. Genetic research on the heritability of conduct disorder is currently inconclusive. The research literature involving twin, adoption, and half-sibling studies has had mixed results; some research has demonstrated comparatively stronger genetic links (Arseneault et al., 2003; Cadoret, Yates, Troughton, Woodworth, & Stewart, 1995; Grove et al., 1990; van den Oord, Verhulst, & Boomsma, 1996; van der Valk, Verhulst, Neale, & Boomsma, 1998) whilst other research indicates stronger environmental links (Cloninger & Gottesman, 1987; DiLalla & Gottesman, 1989; Lyons et al., 1995; Rutter et al., 1990; Simonoff, 2001). A recent community based study involving 2,682 Australian

twins found a higher concordance rate among monozygotic twins than dizygotic twins (Slutske et al., 1997). The Slutske et al. study asserted that genetic factors accounted for 71% of the variance in the development of conduct disorder (1997). Furthermore, a meta-analysis of adoption and twin studies found that 50% of the variance in measures of antisocial and aggressive behaviour was attributable to genetic factors (Mason & Frick, 1994). Precisely how genetic factors operate is still unclear.

Research-based evidence indicates a strong association between parental ASPD and offspring conduct disorder. The literature indicates that children whose biological parents have ASPD or are involved in antisocial behaviours are more at risk of developing conduct disorder than children whose biological parents did not have ASPD or were not antisocial (Faraone, Biederman, Keenan, & Tsuang, 1991; Frick et al., 1992; Lahey, Piacentini, et al., 1988). Boys who have a biological father diagnosed with ASPD are significantly more likely to be diagnosed with conduct disorder (49%) than those whose fathers did not have a diagnosis (17%) (Lahey et al., 1988). Furthermore, in the Lahey et al. study (1988), this link was also evident among children who did not share the same environment with their biological parent.

Abnormal neurobiology and/or neurotransmitter activity may also contribute to the genetic vulnerability of conduct disorder. Certain biochemicals such as monoamine oxidase (MAO) and particular hormones such as tri-iodothyronine (T3) have further been implicated in the development of antisocial behaviour. Low activity levels of MAO (a strongly heritable biochemical involved in the metabolism of serotonin, dopamine, and noradrenalin) has been found to be associated with more persistent and violent offending (Alm et al., 1996; Alm et al., 1994; Belfrage, Lidberg, & Oreland, 1992; Oreland, Ekblam, Garpenstrand, & Hallman, 1998) as well as impulsive, hyperactive, aggressive, and sensation or thrill-seeking behaviour (af Klinteberg & Oreland, 1995; Manuck et al., 1998; Stalenheim, von Knorring, & Oreland, 1997). Elevated levels of the hormone T3 has also been found to be associated with antisocial disorder and criminality (Stalenheim, von Knorring, & Wide, 1998); recidivism (Alm et al., 1996; Stalenheim, 2004); and conduct disorder (Ramklint, Stalenheim, von Knorring, & von Knorring, 2000). Additional research has demonstrated that MAO activity and T3 levels can distinguish between those with early behavioural risk patterns (e.g., child-onset conduct disorder)

who engage in, or do not engage in violent offending (Eklund, Alm, & af Klinteberg, 2005).

Temperament is a further genetically-determined factor found to be associated with the development of conduct disorder. Some research suggests that children with a 'difficult' temperament are more likely to be aggressive, fearless, impulsive, and develop antisocial behaviours during childhood and adolescence compared to children with an 'easy' and/or 'slow to warm up' temperament (Bates, Bayes, Bennett, Ridge, & Brown, 1991; Pepler & Slaby, 1994). Children with a 'lack of control' temperament (i.e., emotional lability, restlessness, impulsiveness, and negativism), measured at three and five years of age, were associated with parent and teacher reports of externalising behaviour problems up to ten years later (Caspi, Henry, McGee, Moffitt, & Silva, 1995). Additional research has found that although family environment (e.g., number of parent changes, single parent status, and/or number of residence changes) can be a risk factor for offending, temperament is more likely to distinguish between violent, serious offending and non-serious, less extreme-type offending (Henry, Caspi, Moffit & Silva, 1996; Sigvardsson, Bohman & Cloninger, 1987).

Further research has demonstrated that early aggressive behaviour (i.e., in children aged as young as five) predicts aggression and the development of antisocial behaviour in adolescence (White, Moffitt, Earls, Robins, & Silva, 1990). Additionally, adolescent aggression and antisocial behaviour is a predictor of antisocial behaviour during adulthood (Farrington, 1996). Young people with conduct disorder are thought to exhibit distorted information processing patterns and tend to have a hostile attribution bias, where they misperceive the intentions of others, especially in ambiguous situations, as being hostile and threatening. They then are more likely to respond with aggression, which they may feel is reasonably justified (APA, 2000). Other processing bias and beliefs have also been linked to conduct disorder such as favourable attitudes towards antisocial behaviour, peer beliefs such as 'false consensus', and immature or distorted moral reasoning (Moffitt et al., 1994). Low academic achievement and low intelligence, specifically verbal skills, have also been suggested to be risk factors (Moffitt et al., 1994; White, Moffitt, & Silva, 1989), as have poor problem solving abilities, limited social skills, and low conformity.

Familial Risk Factors

Some of the most significant risk factors for the development and maintenance of conduct disorder have been shown to be related to the family system. Links between conduct disorder and the following factors have been found: High levels of family conflict and hostility; parental use of coercive problem solving strategies; punitive, critical, and inconsistent parenting styles; lax or ineffective discipline; maltreatment; and low parental warmth, cohesion, empathy, and affection (Frick, 1998; Henggeler & Borduin, 1990; Jaffee et al., 2005; Patterson, DeBaryshe, & Ramsey, 1989; Snyder, Schrepferman, & St. Peter, 1997). Henggeler and Borduin (1990) indicated that one of the strongest predictors of antisocial behaviour among youth is a low level of parental monitoring and supervision. Stability of the family environment, parental conflict, and exposure to early trauma or conflict may also contribute to aggressive and antisocial behavioural problems among youth (Loeber & Stouthamer-Loeber, 1986; Whitfield, 2006).

Theorists have also suggested that parent-child interactions and reinforcement contingencies increase child engagement in antisocial behaviour and decrease parental control and management of childhood antisocial behaviour (Granic & Patterson, 2006). This coercion model suggests that parents and children "train each other" (Granic & Patterson, 2006, p. 101) to behave in maladaptive ways. By way of explanation, this cycle appears to start with multiple parent requests or demands for compliance from the child. The child at various points refuses to comply and engages in behaviours such as tantrums and whining. The parent then becomes frustrated and with time begins to 'give in' to the child's behaviour. When the parent gives in, the child's behaviour is reinforced, increasing the likelihood that child coercive behaviour will be repeated in the future. Furthermore, when the child's oppositional behaviour reduces, the parent is reinforced for giving in as they receive temporary relief from tantrums and whining (i.e., a parent is negatively reinforced). Due to the reinforcement contingencies, this behavioural cycle may then become habitual and more likely to recur. This reinforcement of oppositional and coercive behaviours has been founds to predict the development of antisocial behaviours (Granic & Patterson, 2006). Research has also indicated that angry and dismissive responses to children's anger is associated with shorter latencies between child anger outbursts compared to positive (e.g., sensitive responses, appropriate emotion

regulation) or neutral responses (Snyder, Stoolmiller, Wilson, & Yamamoto, 2003). Thus, parental reciprocation of negative or hostile emotions is related to some extent to an escalation of this coercive pattern.

Parental psychopathology has further been associated with antisocial behaviours and conduct disorder among youth. In particular, maternal depression (Downey & Coyne, 1990; Williams, Anderson, McGee, & Silva, 1990), parental substance abuse (Reich, Earls, & Frankel, 1993), and parental antisocial behaviour and criminal history (Lahey, Loeber, Burke, & Rathouz, 2002) have been implicated. By way of explanation on the association between parent and child pathology of this kind, there is potential that parental psychological disorder will negatively influence parenting style, will limit time and energy spent on monitoring and supervising children, and may contribute to a dysfunctional family environment (e.g., level and quality of expressed emotion, 'poor modelling'), all of which may adversely influence the emotional development and behaviour of youth. Equally, some of these factors (e.g., maternal depression, family dysfunction) might be seen, at least in some circumstances, to be a reaction to (or result of) child behaviour and/or other known risk factors.

Peer Group Risk Factors

One of the most robust predictors of antisocial behaviour is an association with deviant peers (Henggeler, Cunningham, Pickrel, Schoenwald, & Brondino, 1996). Adolescents who lack social and interpersonal skills, and who favour an aggressive and disruptive disposition, are typically rejected by their peers (Coie, Lochman, Terry, & Hyman, 1992). This rejection appears to have a two-fold effect: (1) The adolescent's prosocial engagements are limited and (2) it sets the scene for contact with other deviant peers who accept the youth and encourage antisocial activities (Coie, Dodge, & Kupersmidt, 1990; Parker & Asher, 1987).

School Risk Factors

Antisocial youth are known to be disruptive in the classroom and school, spend more time off task than on task, and interact negatively with teachers (Coie et al., 1992). As a result, non-compliant youth tend to experience learning difficulties and poor academic performance as well as exhibiting an increased level of school dropout rates (Patterson,

Capaldi, & Bank, 1991). Furthermore, low levels of parent and child commitment to education, poor relationships between parents and the school, and chaotic school environments (e.g., lack of structure) are related to school failure (Farrington, 1991) and contribute to increased risk for antisocial outcomes.

Community and Neighbourhood Risk Factors

A body of research has indicated that antisocial behaviours are more common in low socio-economic areas, urban communities, areas where there are low social supports and networks, and in families where parents are unemployed (Lahey, Miller, Gordon, & Riley, 1999; Smith, 1996). Deprived home environments tend to have lower levels of family or household cohesion, higher rates of domestic violence, and parental conflict (Kazdin, 1996; Rutter et al., 1998). Economically deprived communities are also more likely to have inadequate educational and community facilities relative to others; higher rates of truancy, school failure and dropout; and are more likely to have increased exposure to a criminal subculture (e.g., violence, drug use and trafficking, and youth prostitution).

Protective Factors

Not all children and youth exposed to various risk factors go on to develop conduct disorder. A variety of dispositional, familial, and extra-familial factors are known to protect some youth from developing problem behaviours, despite their exposure to adverse experiences. Such protective factors are argued to moderate the relationship between risk factors and psychopathology. Examples of individual dispositional factors that may protect at-risk youth from engaging in delinquent behaviour include the absence of genetic vulnerability, a high IQ (i.e., Intelligence Quotient as determined by formal assessment of intellectual functioning), an easy or sociable temperament, absence of impulsive and risk-seeking behaviour, good academic performance (grades) and school commitment (attendance), good social skills, and high levels of self-esteem and self-efficacy (Fergusson & Lynskey 1996; Goldstein & Rider, 2005; Rutter et al., 1998; Smith, Lizotte, Thornberry, & Krohn, 1995; Steiner & Wilson, 1999; Werner & Smith, 1992; Zingraff, Leiter, Johnsen, & Myers, 1994).

Notably, current expert opinion considers the most important protective factors to be (1) a positive, stable, and warm relationship with at least one parent, family member, or

significant other (Werner & Smith, 1992) as well as (2) an authoritative discipline environment that includes parental supervision and monitoring (Jessor, van den Bos, Vanderryn, Costa, & Turbin, 1995; Rutter et al., 1998). In addition to a protective family environment, prosocial peer relationships (i.e., non-delinquent) and the selection of a stable partner also protect against the development or continuation of delinquent behaviour (Quinton, Pickles, Maughan, & Rutter, 1993; Rutter et al., 1998; Steiner & Wilson 1999). Healthy or pro-social peer relationships may provide sources of support and positive role models that may mitigate against the effects of adverse (e.g., family) circumstances (Quinton et al., 1993).

New Zealand-based research concerning protective factors suggests that resilient youth have higher IQ levels at the age of eight, have lower rates of novelty-seeking at age 16, and are less likely to have deviant peer affiliations than their peers (Fergusson & Lynskey, 1996).

Research on protective and resilience factors demonstrates that not all children and youth who are exposed to adverse experiences go on to develop problem behaviour and psychopathology. Risk and protective research has also formed a foundation for the development of a number of current intervention models, including Multisystemic Therapy (MST) (Henggeler et al., 1998). The MST treatment approach will be discussed in Chapter 2.

Conduct Disorder and Antisocial Behaviour in New Zealand

As noted above, prevalence rates of conduct disorder in New Zealand range from 9% to 11% (Fergusson et al., 1993; McGee et al., 1992). Although there are a variety of characteristics of the disorder including physical harm to people and animals, property loss and damage, deceitfulness and theft, and violation of rules and laws (parental, school, and societal), the distinguishing feature of conduct disorder is criminal behaviour (Loeber & Farrington, 2000).

In New Zealand, 25% of youth between the ages of 14 and 19 years offend (McLaren, 2000). Fortunately, the vast majority offend only once or twice. The majority of adolescent crime is committed by 6% to 10% of adolescent offenders. This relatively small group commits 50% to 70% of general crime and 60% to 85% of all serious crime committed by adolescents (McLaren, 2000). It is likely that most of this small group of youth offenders meet the child-onset trajectory of conduct disorder.

In 2005, 21% of all convicted crimes were committed by youths between the ages of 14 and 19 years (Soboleva, Kazakova, & Chong, 2006). From 1996 to 2005, there was relative stability in the overall rate of offending among 14 to 16 year olds. However, there were significant peaks in offending during 2002 and 2003. The most common offences committed by 14 to 16 year olds in 2005 were property offences (64%; e.g., burglary, theft, arson, motor vehicle conversion, and wilful damage), good order offences (13%; e.g., disorderly behaviour, offensive language, carrying an offensive weapon, trespassing, and unlawful assembly), and violent offences (11%; e.g., common assault, aggravated assault, grievous assaults, homicide, kidnapping, and abduction). Twenty-five percent of all property offences are committed by youth aged 14 to 16. The largest increases in offence categories for 14 to 16 year olds between 1996 and 2005 were in the violent crime category (increase from 9% to 11%) and crimes against good order (increase from 10.7% to 12.7%). Between 1996 and 2005, 77% to 80% of offences for 14 to 16 year olds were committed by males. In 2005, 42% of crime by 14 to 16 year olds was committed by New Zealand European / Pākehā, 48% by Māori, and 7% by Pacific youth. Based on population, Māori youth offend two times more than Pacific peoples and three times more that New Zealand European / Pākehā.

In the New Zealand context, children and young people under the age of 17 years who offend are generally managed through Police Youth Aid and Child Youth and Family Services with the use of Family Group Conferences. Furthermore, many offending youth initially receive warnings or diversions. This suggests that statistics reporting on court appearances and convictions under-represent the actual youth offending rates (Soboleva et al., 2006). In 2005, 23% of youth offenders were prosecuted through formal court (an increase of 9%), 46% through Police Youth Aid (a reduction of 7%), 20% received a formal warning, and 5% were referred to Child Youth and Family Services for a Family

Group Conference (reduction of 4%) (Soboleva et al., 2006). Although there has been relative stability in youth crime rates between 1996 and 2005, the overall rate of youth offending is high. In addition, a significant increase in violent offending illustrates that youth offending in New Zealand is a major problem, particularly amongst a core group of young people.

Conclusion

Through their antisocial behaviour, youth with conduct disorder alienate themselves from family, peers, teachers, and the wider community in which they reside. There are major developmental, social, and future costs for the individuals concerned as well as costs extending to their families, peers, classmates, and teachers. There are fiscal and societal costs of the disorder in terms of lost productivity, welfare dependency, and the high tax-payer costs associated with law enforcement and incarceration (Caspi et al., 1998; Farrington, 1995; Moffitt et al., 2002). The high costs (some unquantifiable and lifelong in terms of suffering) also extend to the victims of their crimes (i.e., both personal and property crime). The number of youth diagnosed with conduct disorder coupled with the increase in violent antisocial acts and the high overall rate of youth offending in New Zealand is of great concern. The fact that there are multiple system risk factors as well as multiple costs to the wider community indicates the entrenched nature and significance of this social problem.

Chapter Two

Multisystemic Therapy: Description of the Treatment Approach

Numerous treatment approaches have been developed and trialled for helping youth with antisocial behaviours and/or conduct disorder. These approaches range from individually-based (e.g., residential interventions and Problem-Solving Skills Training [PSST]) to family-based (e.g., Parent Management Training [PMT] and Functional Family Therapy [FFT]), school-based, and community-based interventions (e.g., Family Group Conferences, Strengthening Families, and mentoring). Although some such approaches have demonstrated reductions in problematic behaviours (e.g., PSST, PMT, and FFT), others, particularly some residential or group interventions, have been associated with an increase in problematic behaviours (Arnold & Hughes, 1999; Dishion & Dodge, 2005; Dishion, McCord, & Poulin, 1999; Dishion, Spracken, Andrews, & Patterson, 1996; Lipsey, 1992; Ronan & Curtis, 2008). The long-term effectiveness of a number of these approaches is also questionable. Overtime, any beneficial outcomes that are seen immediately following treatment tend not to be maintained (Long, Forehand, Wierson, & Morgan, 1994; McLaren, 2000; McLean & Grace, 1998; Ronan & Curtis, 2008; Sherman, Gottfredson, McKenzie, Edck, & Bushway, 1998). Furthermore, the majority of these approaches have been developed overseas, with little or no research being conducted on the efficacy of these models and interventions in the Aotearoa / New Zealand context.

Many of the commonly employed approaches to the treatment of conduct disorder and associated antisocial behaviour tend to be of a singular modality (Kazdin, 1987; Ronan & Curtis, 2008). These approaches are either individualised towards the youth concerned, focus on training parents how to manage problematic behaviours, or are focused on 'at risk' families. These approaches generally fail to take into account the multiple risk factors discussed in Chapter One. The evidence strongly supports the idea that these multiple systems-based risk factors influence the development and maintenance of the target problem behaviours in question. The thinking here is that for interventions to be effective and enduring for this population, they need to incorporate all factors which

impact (directly or indirectly) on the problematic behaviour (Kazdin, 2001). A model which developers claim does this is Multisystemic Therapy (MST; e.g., Henggeler et al., 1998). MST is said to target the known determinants of delinquent behaviour and intervenes in the key social systems, directly targeting developmental processes (e.g., family coercive cycles; deviant peer associations) known to be related to serious conduct problems with adolescents.

In this chapter MST will be introduced. It will discuss the foundation on which it was developed and how MST is employed following nine treatment protocols. Treatment interventions used in the various systems (e.g., parent(s) and family, school, peer group, and individual) are also outlined. Finally, this chapter will discuss the five factors that differentiate MST from other approaches for working with youth with antisocial behaviour.

What is Multisystemic Therapy?

Originally developed in the 1970's, MST has been regarded as the treatment of choice for working with youth with antisocial behaviours (Levesque, 1996; Kazdin & Weisz, 1998; Tate, Reppucci, & Mulvey, 1995). MST is an intensive, time-limited, home-based therapeutic approach predicated on Bronfenbrenner's social-ecological perspective of human development. It is focused on the known causes and correlates of antisocial behaviour. Following Bronfenbrenner, problematic behaviours are thought to develop and are perpetuated by dysfunctional transactions across multiple interconnected and reciprocal systems (Henggeler & Borduin, 1990; Henggeler et al., 1998). These systems include individual, family, peer group, school, and community systems.

MST intervenes within and between the multiple systems surrounding the adolescent that are known to contribute to problem behaviour by applying empirically supported interventions (Henggeler et al., 1998). Interventions used are intended to capitalise on strengths, with a focus on the needs and goals of the adolescent and family (Henggeler et al., 1998). Thus, treatment is individualised and intended to be flexible. Treatment

interventions the model employs are based on cognitive behavioural principles (Braswell & Bloomquist, 1991), behavioural parent training models (Briesmeister & Schaefer, 1998), and structural (Minuchin, 1974) and strategic (Haley, 1987) family therapies. Empowering both the adolescent and their primary caregivers to develop, mobilise, and maintain indigenous resources and competencies which aid in adaptive and responsible functioning is the ultimate goal of MST (Henggeler, Schoenwald, & Pickrel, 1995). Treatment is aimed at helping families and adolescents develop the skills to overcome both current and future difficulties related to antisocial functioning.

Foundations of MST

MST is based on two related foundations: (1) Social ecology and (2) the causes and correlates of antisocial behaviour. Social ecology theory states that people are embedded in a multitude of complex social systems which directly and indirectly influence their behaviour. The behaviour of one person in a system has a 'ripple effect' on all other systems (Bronfenbrenner, 1979). According to MST theory, problem behaviour should not be examined in isolation from a person's social context, but rather be understood within its natural systemic context (Schoenwald, Brown, & Henggeler, 2000). MST adopts the social-ecological premise that interventions that address multiple known factors contributing to a problem maximises the probability of positive or therapeutic change (Schoenwald, Brown, et al., 2000). MST is also founded on causal modelling studies, where research has consistently demonstrated that a combination of factors as reviewed in Chapter One contribute to the development and perpetuation of delinquent behaviour (Garbarino, 2001; Henggeler et al., 1998; Elliot et al., 1985; LaGrange & White, 1985; Loeber et al., 1998; Patterson & Dishion, 1985).

What Happens in MST Treatment?

The MST treatment process is intensive, time limited, home- and community-based, and is strengths-focused (as opposed to interventions founded on a deficit model). MST therapists are available to families 24 hours, 7 days a week for a period of 4 to 6 months. Therapists visit families and youths at their home or in community settings (e.g., school) at times scheduled by the family. Therapists help families address needs first through identifying strengths and then using these strengths to 'leverage change'. Significant emphasis is placed on MST practitioners holding themselves accountable for engaging

families and other key participants (e.g., schools, teachers, social workers, and/or police youth aid officers) in treatment and for obtaining favourable outcomes (Curtis, Ronan, Heiblum, Reid, & Harris, 2002; Henggeler et al., 1996; Henggeler et al., 1998). Practitioners are supported and monitored through initial training, booster sessions, weekly group supervision, and ongoing consultation. This intensive support is designed to ensure that MST is practiced at a high professional standard and that interventions and monitoring are implemented effectively and in line with the MST protocol.

The MST protocol is founded on nine treatment principles which provide the basis for intervention design and implementation. These principles are used to define MST operationally and to evaluative practitioner fidelity. A considerable amount of contemporary research has indicated that therapist adherence to these principles directly influences client outcome (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler, Pickrel, & Brondino, 1999; Huey, Henggeler, Brondino, & Pickrel, 2000; Schoenwald, Ward, Henggeler, & Rowland, 2000). The nine specified treatment principles of the MST approach are outlined as follows:

1. **Understanding the identified problem/s and how they 'fit' with the broader systemic context.** The seminal principle of MST concerns how identified problems fit within a youth's ecology or socio-cultural context. The principle asserts that in order to understand the function of a behavioural problem, it is important to look within and between contextual social systems to see how each respective system contributes to the behaviour or problem in question (Henggeler et al., 1995; Henggeler, Schoenwald, Pickrel, Rowland, & Santos 1994). A contextual and sequential approach to understanding the issue(s) at hand enables a more accurate assessment of the factors that maintain or perpetuate behavioural difficulties. Comprehensive assessment is conducted within the youth's home in the presence of significant others to identify circumstances under which problems occur and to identify factors that may serve to maintain or attenuate these difficulties. After gathering information from multiple sources, therapists develop hypotheses regarding the link between multiple systems and the identified problem(s). A continuing focus on linking influential factors within and across systems helps to ensure that therapists find all potential variables that require

attention in order to produce sustained change (Letourneau, Cunningham, & Henggeler, 2002).

2. **Positives and strengths are identified and used as 'levers for change'**. As relationships that are built on weaknesses or deficits are difficult to maintain, MST therapists focus on family and system strengths (i.e., positive or protective factors). Through focusing on and articulating youth, parent, and family strengths, as well as positive attributes, engagement, and collaboration, positive change is thought to be more probable (Letourneau et al., 2002). Focusing on and employing strengths is also designed to boost self-esteem and confidence in a youth's or family's own abilities, to enhance alliance and rapport, and to contribute to the overall successfulness of specific interventions used. MST interventions focus on and call on areas of strength to target problematic behaviours. In this way, strengths are used as levers of change.

3. **Interventions focus on increasing responsible behaviour while reducing irresponsible behaviour.** Rather than providing a diagnosis for behaviour, problems are reframed as behaviours that need to decrease. Conversely, adaptive behaviours are identified as needing to increase in frequency and/or intensity. Additionally, rather than labelling behaviours as bad or good per se, behaviours are framed as responsible or irresponsible. Thus, goals to increase responsible and decrease irresponsible behaviour are more realistic and viewed as more achievable than goals to eliminate psychopathology (Letourneau et al., 2002).

4. **The focus is on well-defined, proximal problems using active interventions.** When problems are well defined and are immediate (e.g., here and now), factors associated with their maintenance are more readily identifiable. This is thought to facilitate interventions more effectively to bring immediate, meaningful, and rapid change. Through focusing on proximal factors, therapists can readily assess intervention success and barriers. Additionally, the quicker positive changes are achieved among families with problems, the more likely families will remain committed to, and engaged in, further treatment (Letourneau et al., 2002).

5. **All systems that contribute to the maintenance of the identified problem/s are targeted in sequential fashion.** In order to produce meaningful and lasting change, aspects in all systems that are contributing to the maintenance of the problem behaviour/s need to be identified so that interventions can target and change dysfunctional sequences. MST interventions are designed to restructure the family system ecology (i.e., systemic context) and are often implemented simultaneously in multiple systems in anticipation of synergistic effects. Therapists must also identify possible barriers to effective change (e.g., parental psychopathology) and resolve these issues to promote lasting changes.

6. **Developmentally appropriate interventions are employed.** When designing interventions, the physical, intellectual, and social needs of both youth and family are considered in order to enhance treatment success. Interventions need to be comprehensible (e.g., understood in terms of language and reading ability) and must make sense to family members. For example, interventions with young children should be carried out largely by parents and emphasise the needs of that particular age group. By contrast, interventions with older adolescents should be directed towards helping parents help the youth to develop more independent living skills (Letourneau et al., 2002). Contingencies for behavioural plans must also be developmentally appropriate and suited to the needs and wants of the youth and family concerned.

7. **Daily and/or weekly effort is required by family members.** Once a treatment plan is identified, the idea is for family members to begin work immediately with intensive therapist support. Through daily/weekly effort, measurable change is thought to occur more quickly and barriers to change can be identified earlier in treatment. Homework is provided to facilitate out of session practice and progress towards goals. Through working on tasks every day, the chances for observing positive changes increase. Change is then thought to help enhance satisfaction, empowerment, and continuing motivation.

8. **The effectiveness of interventions is continuously evaluated and providers assume accountability for outcomes.** Through including information from

multiple perspectives, data validity is enhanced and ongoing intervention focus is relevant and up-to-date. Treatment success also requires that key family members are actively engaged in the treatment process. Therapists must recognise when change is not occurring, identify barriers, and target these barriers in order to remove obstacles to successful outcomes. In assuming accountability for outcomes, therapists are encouraged to use creative solutions rather than repeating methods that have previously resulted in failure.

9. **The ultimate goal of MST is to empower caregivers to address family needs and to improve and maintain healthy functioning.** The ultimate goal of MST treatment is empowering parents to handle the inevitable challenges that arise when raising children and to empower youth to cope with family, peer, school, and neighbourhood problems. Therapists support caregivers in achieving desired change through providing them with encouragement and the necessary skills, tools, and resources required for managing their child's problem behaviour(s). Helping caregivers obtain both skills and contextual resources helps to promote the idea of the therapist gradually becoming unnecessary.

Interventions Employed in MST

As discussed, MST employs empirically-supported interventions such as cognitive behavioural therapy, behavioural parent training models, and structural and strategic family therapies. The selection of an intervention is determined by the specific issue at hand and the empirical efficacy of the particular intervention for treating that problem. Interventions are used in line with the nine MST treatment principles outlined above. An important ingredient to all MST interventions is the assumption that parents and caregivers are the key ingredient in changing antisocial behaviour and maintaining positive treatment gains, regardless of the specific therapy goals. This is because parents have the most direct, immediate, and consistent impact on their children's lives (Letourneau et al., 2002). By emphasising caregivers as agents of change, it is intended that they will be able to handle future difficulties that may arise. Thus, caregivers are the

essential part of the solution to a youth's behavioural problems. This idea contrasts with traditional therapies which tend to view the parents as the main contributors to 'problematic' youth. With this in mind, a significant amount of time, energy, and resources are directed towards supporting and developing the capacity of caregivers to achieve the goals of therapy (Cunningham & Henggeler, 1999).

Parent and Family Level Interventions

Family level interventions focus on providing the parents and/or caregivers with resources and skills for effective parenting and the development of healthy family structure. Addressing problems and promoting parental teamwork, parenting knowledge, and social support networks as well as introducing systematic reward and discipline systems, promoting effective communication and affection, and developing and enhancing parent-child problem solving and negotiation skills are typical areas of family system intervention attention (Schoenwald, Borduin, & Henggeler, 1998). Additionally, barriers to effective parenting and to intervention success need to be identified and resolved. Such barriers could be parental substance abuse, parental psychopathology, low social support, high stress, conflict, and parental unemployment or poverty.

School Level Interventions

School interventions are based on facilitating communication and cooperation between school personnel and parents in order to improve the adolescent's behavioural and academic performance. Increased parent-teacher communication is vital for consistency, for appropriate academic supports to be arranged, and for mutual understanding of behavioural expectations (Scherer, Brondino, Henggeler, Melton, & Hanley, 1994). Greater parental involvement in the education process has been shown to dramatically improve the achievement, motivation, and academic performance of low achieving, inner-city (urban) adolescents (Rodick & Henggeler, 1980). Parents are encouraged to plan after school hours to promote academic efforts, to monitor homework assignments and exam grades, to have contact with the school, and to support educational goals. Teachers are encouraged to supply regular feedback on the child's performance and classroom goals. Of obvious importance is an assessment of the youth's academic and cognitive ability and the degree to which this capacity and/or behavioural problems contribute to academic performance difficulties (Scherer et al., 1994).

Peer Level Interventions

Interventions directed towards the peer group are focused on decreasing the youth's involvement with deviant (i.e., antisocial) peers and in turn, increasing the youth's involvement with pro-social peers. This is achieved through therapists facilitating parental capacity to initiate and monitor their youth's whereabouts and the youth's peer interactions over time. Parents are encouraged to support their children's associations with pro-social peers (e.g., providing transportation) and strongly discourage, prohibiting if necessary, interactions with deviant peers (Schoenwald, Borduin, et al., 1998). Such interventions are conducted by parents with therapist guidance and support.

Individual Level Interventions

Individual interventions facilitate behavioural change in the youth and/or caregivers. Most common youth interventions have been directed towards teaching social perspective-taking and problem-solving skills, altering belief systems, enhancing motivation, and assertiveness training such as resisting peer pressure (Schoenwald, Borduin, et al., 1998). Individual interventions are also oriented towards reducing psychopathology such as depression and substance use, abuse of the youth and/or parents, and relationship difficulties.

How is MST Different from Other Approaches?

Apart from being a holistic approach to treating conduct disorder among youth, MST is distinguishable from other treatment approaches in five unique ways (Curtis et al., 2002; Henggeler et al., 1995): (1) MST is delivered in the natural ecology of the adolescent and their family (Henggeler et al., 1998); (2) there is rigorous scientific evaluation conducted on MST (i.e., it is an empirically supported approach) (Curtis, Ronan, & Borduin, 2004; Schaeffer, 2000); (3) MST employs empirical interventions across multiple systems (Henggeler et al., 1998); (4) there are stringent quality assurance mechanisms (Rowland et al., 2000; Schoenwald, Brown, et al., 2000); and (5) MST is cost effective (Aos, Phipps, Barnoski, & Lieb, 2001). These five factors contrast with most existing practice

approaches in the field and differentiate MST from other empirically supported treatment approaches (Henggeler et al., 1995).

1. **MST incorporates the family preservation approach to service delivery through delivering treatment in families' homes**. This approach is intended to enhance the ecological validity of MST while promoting compliance through removing barriers to treatment access (Fuller, 2004; Kazdin, Holland, & Crowley, 1997). There are many benefits to this delivery approach. Meeting families in their homes at convenient times helps establish rapport and engagement and helps to overcome access barriers (e.g., transport issues, inflexible work schedules, child care and mental health problems that interfere with appointment keeping) (Fuller, 2004; Kazdin et al., 1997; Letourneau et al., 2002). Through meeting in the homes of clients, the identified problem, family relationships and interactions, contingencies that are maintaining the problem, and circumstances that may reduce treatment gains are observable, enhancing the validity and accuracy of assessment (Fuller, 2004; Henggeler et al., 1996; Letourneau et al., 2002). This information is critical in designing effective interventions as it is thought to enhance treatment generalisation and increase the probability that therapeutic gains will be maintained (Henggeler & Borduin, 1990; Borduin, 1999). Treatment delivery in the family home also avoids potential negative effects of placing problematic youth together in treatment groups (Arnold & Hughes, 1999; Dishion et al., 1999), and it is intended to help promote family cooperation. As MST is delivered in the home or community, and is directed towards the goals of the family, empowerment, and the development of contextual resources, MST is oriented towards family preservation.

2. **MST has been subjected to rigorous scientific evaluation which supports its long term effectiveness.** Scientific evaluation has been a fundamental cornerstone to the development of MST. The accumulation of empirical research findings from almost 3 decades has indicated that MST has long-term efficacy in treating antisocial behaviour in adolescents and their families, adolescent substance abuse and dependence, sexual and violent offending, and

severe emotional disturbances (e.g., Henggeler, Melton, Smith, Schoenwald, & Hanley, 1993; Henggeler et al., 1994). Specifically, MST has been related to more improved family relations and functioning, improved youth emotional and behavioural functioning, decreased caregiver and youth psychiatric symptoms, increased school attendance, and decreased substance use. MST has also been associated with a reduction in recidivism, re-arrest rates, and out-of-home placements (e.g., Henggeler et al., 1993; Henggeler et al., 1994). Furthermore, rigorous follow-up findings demonstrate that therapeutic effects have been sustained over 13 years (Schaeffer, 2000). Additionally, these outcomes have been obtained with youth and families who have multiple, comorbid problems. While MST has been supported overall (see meta-analysis by Curtis et al., 2004), there remain unresolved issues, including the ability of MST to be delivered effectively by community clinical teams and delivered independently from MST developers (Curtis et al., 2004; Henggeler, 2004).

3. **The scientific emphasis of MST is also illustrated through the employment of empirically based interventions.** Interventions employed in MST therapy are consistent with therapeutic models (e.g., behavioural, cognitive-behavioural, and pragmatic family systems) that have been associated with the largest effect sizes in the meta-analytic literature (Lipsey, 1992; Weisz & Weiss, 1993). However, MST integrates these empirically based treatment models which have typically been oriented towards a limited aspect of the youth's social ecology into a broad based ecological framework (Henggeler, 1999). The interventions are highly individualised, are based on the strengths and needs of the child, family, and extrafamilial ecology, and may be directed towards individuals or the whole family as appropriate. MST employs multiple treatment techniques due to the multidimensional nature of the causes and perpetuating factors of antisocial behaviour and thus, accommodates to the heterogeneous nature of clinical problems (Henggeler et al., 1995). Treatment procedures are focused and intense, and are used on an 'as needed' basis. The interventions are not delivered as separate elements or self-contained modules such as in eclectic practice, but are selected and

integrated in ways to maximise synergistic interaction in accordance with the MST principles.

4. **The fourth aspect of MST that sets it apart from other efficacious treatments is that MST employs stringent quality assurance mechanisms aimed at ensuring adherence to the treatment model** (Rowland et al., 2000; Schoenwald, Brown, et al., 2000). These mechanisms include weekly team supervision, quarterly booster training, weekly consultation, adherence monitoring, manualisation of therapy and supervision, and provider accountability. Therapists are also provided with intensive and ongoing training rather than the traditional 'train and hope' model (Henggeler, 1999). Two measures have been developed to evaluate adherence to the nine MST treatment principles: The Therapist Adherence Measure (TAM: Henggeler & Borduin, 1992) and the Supervisor Adherence Measure (SAM: Schoenwald, Henggeler, & Edwards, 1998). The assessment, evaluation, and maintenance of treatment adherence is crucial as research has demonstrated that high treatment adherence predicts successful treatment outcomes, and that low adherence is linked to worse treatment outcome (Henggeler, Rowland, et al., 1997; Henggeler et al., 1999; Huey et al., 2000; Schoenwald, Ward, et al., 2000). The relationship between treatment fidelity and ultimate outcomes is an ongoing area of MST research designed to help guide the successful dissemination and implementation of MST model into additional therapeutic settings and clinical populations (Schoenwald, Henggeler, Brondino, & Rowland, 2000). Related to adherence, another treatment fidelity variable that would be useful to examine is the impact of therapist and supervisor allegiance to the MST model.

5. **MST is cost effective.** Although MST has been reported as one of the more expensive programs to implement, costing on average $12,000 per family in New Zealand (J. Harris, personal communication, December 12, 2005) or $4,743 in the United States of America (Aos et al., 2001), the benefits to society appear to outweigh benefits produced from other treatment approaches. Aos et al. (2001) reported that the net benefits of MST range from $31,661

(tax payer benefits only) to $131,918 (taxpayer and crime victim benefits). Thus, there is a benefit to cost ratio of US$28.33 for every dollar spent on MST. In comparison, although boot camps appear to be lower in cost initially, costs to tax payers and victims are much higher due to high recidivism rates, resulting in a negative cost to benefit ratio of US$3,587 per participant (Aos et al., 2001).

Conclusion

MST is an intensive, time-limited, home-based therapy approach offering 24 hours, 7 days a week therapist availability for youth offenders and their families. Founded in social-ecology and incorporating the known causes and correlates of antisocial behaviour, MST targets multiple systems which influence the development and perpetuation of antisocial functioning. Following nine treatment principles, MST intervenes in the youth, family, peer, school, and community systems using strengths as levers for change and employing already tested interventions. MST is differentiated from typical usual services approaches due to its family preservation approach, rigorous scientific evaluation, employment of empirical interventions across multiple systems, quality assurance monitoring, and cost effectiveness. Overall, MST offers a dynamic, multi-systems approach to reducing offending behaviours in youth.

Chapter Three

MST and Antisocial Behaviour Research

Reviewers of treatment outcome literature on juvenile offenders have agreed that MST is one of the treatments of choice for serious juvenile offenders (Kazdin & Weisz, 1998; Levesque, 1996; Ronan & Curtis, 2008; Tate et al., 1995). Empirical research illustrates that MST is superior in improving family relations and functioning and increasing school attendance, as well as decreasing adolescent psychiatric problems, substance use, re-arrest rates (by 25% to 75%), and days in out-of-home placements (by 47% to 64%) compared to a range of 'usual services' (e.g., individual therapy, probation, court-ordered activities, and boot camps) (Borduin et al., 1995; Henggeler, Melton, & Smith, 1992; Henggeler et al., 1986). Studies up to 13 years post-treatment have also shown that these outcomes are maintained (Schaffer, 2000).

To start with, this chapter will review the only meta-analysis conducted on MST outcome research to date. This will be followed by a summary of research examining the effectiveness of MST in improving ultimate outcomes (or the primary goals e.g., offending behaviour and out-of-home placements) and instrumental outcomes (or the secondary goals e.g., family functioning, psychopathology, and behavioural problems) for youth with antisocial behaviour. Research on the effectiveness of MST for other youth problems such as substance abuse and dependence, sexual offending, psychiatric emergencies, and abuse and neglect will also be reviewed. Finally, research conduct on MST in New Zealand will be discussed.

MST Meta-Analytic Findings

To date one meta-analysis has been conducted on MST. This meta-analysis included 11 MST outcome studies published between 1987 and 2002 (Curtis et al., 2004). All studies involved random assignment of participants to MST and comparison treatment groups.

In total, there were 708 participants and 35 therapists included in the analysis. Fifty-nine percent (n = 415) of the youths were chronic and/or violent offenders and 84% (n = 593) of the youths had been arrested at least once. Youth who received MST had treatment for 15 to 24 weeks and an average of 40 hours of therapist contact. Control groups consisted of a range of usual services (provided through juvenile justice agencies, a community mental health center, an outpatient substance abuse treatment program, and an inpatient psychiatric hospital) and comparison treatment programs (including parent training and individual therapy). Youth in usual services received on average 20 more hours of services (average total of 60 hours) and youth in comparison treatments received on average 6.3 more hours of treatment (average total of 46.3 hours) than youth in MST.

Results indicated that the average effect of MST was d = 0.55 or U_3 = 0.70[1]. This indicated that youth who were involved with MST were functioning better and offending less often than 70% of youth who were involved in the alternative treatment conditions (Curtis et al., 2004). In addition, the 86% completion rate for youth in MST services is much higher than the completion rate of 40% to 60% in usual child and family therapy settings (Nock & Kazdin, 2005). Among the MST participants, there were higher effect sizes for measures of family relations (d = 0.57) than measures of individual adjustment (d = 0.28) and peer relations (d = 0.11). This is consistent with MST emphasis on the wider family system. There was no difference in MST results based on youth presenting problems (e.g., violent and chronic juvenile offenders vs. psychiatrically disturbed, substance abusing juvenile offenders, and abused and neglected youths). There was however a difference in effect sizes between studies that involved closely supervised graduate students as therapists (d = 0.81) and studies that were conducted in community settings (d = 0.26). These results indicate that MST is more effective than usual services, but that there is need for more research to ensure that MST is delivered effectively by community clinical teams.

[1] U_3 is another way of interpreting the d index and indicates the percentage of people in the lower mean group who are surpassed by the average person in the higher mean group (i.e., 70%).

Effectiveness of MST in the United States of America

MST and Antisocial Youth

Ultimate Outcomes

To date, three outcome studies have evaluated the effectiveness of MST compared to alternative services in reducing re-arrest rates and decreasing formal out-of-home placements for youth with documented antisocial behaviour. In the first of these studies, Henggeler et al. (1992) randomly assigned 84 serious juvenile offenders to one of two conditions, MST or usual services. Fifty-nine weeks following referral, youth in the MST condition were less likely to be re-arrested (43%) and incarcerated (20%) than youth in usual services (62% and 68%, respectively). Additionally, of those incarcerated, youth in the MST condition spent on average 73 fewer days detained compared to youth in the usual services condition. Follow-up studies of this sample on arrest rates confirmed treatment gains 120 weeks post referral (60% in MST vs. 80% in usual services) (Henggeler et al., 1993). In the second study, Borduin et al. (1995) randomly assigned 176 chronic juvenile offenders to one of two conditions, MST or individual therapy. They found that youth in MST had significantly lower re-arrest rates (26%) at a 4 year follow-up compared to youth in individual therapy (71%). Among recidivists, MST youth committed fewer and less serious offences than youth in individual therapy. A follow-up study on this sample indicated that treatment gains were maintained 13 years post-treatment where youth in MST condition had 50% fewer arrests, 33% fewer days on probation, and 60% fewer days detained than youth in individual therapy (Schaffer, 2000). In the third study, Henggeler, Melton, et al. (1997) randomly assigned 155 chronic and violent juvenile offenders to one of two conditions, MST or usual services. Over a 19 month period, youth in the MST condition had a lower re-arrest rate and spent 47% fewer days incarcerated compared to youth in usual services. Overall, MST has been shown to be more effective in reducing recidivism and days in out-of-home placements compared to usual services or individual therapy.

Instrumental Outcomes

To date, five outcome studies have evaluated the effectiveness of MST compared to alternative services in producing instrumental outcomes, such as improved family

functioning, reduced psychopathology, and reduced behavioural problems, for youth and their families with documented antisocial behaviour. In the first of these, Henggeler et al. (1986) compared inner city adolescent offenders in an MST condition (*n* = 57) with adolescent offenders in usual services (*n* = 23). Youth who received MST demonstrated fewer behavioural problems and had more adaptive family interactions than youth in usual services who showed either no improvements or deterioration in family functioning. In the second study, Henggeler et al. (1992) (detailed above) demonstrated that families who received MST (*n* = 43) reported more family cohesion whereas families in the usual services (*n* = 41) reported a decline in family cohesion. Youth in the MST condition also reported decreased peer aggression whereas youth in the usual service condition reported no change. In the third study, Scherer et al. (1994) randomly assigned 55 serious juvenile offenders to one of two conditions, MST or a juvenile justice program (involving probation and community service). They found that youth who received MST (*n* = 31) demonstrated a significantly higher reduction in aggression, fewer psychiatric symptoms, increased parental monitoring, and fewer maternal psychiatric problems than youth in the juvenile justice program (*n* = 24). In the fourth study, Borduin et al (1995) (detailed above) found that families in the MST condition (*n* = 92) experienced greater improvements in family supportiveness and family adaptability and cohesion, as well as greater reduction in parental symptomatology and youth problematic behaviour compared to youth in individual therapy (*n* = 84). In comparison to these four above studies that have clearly demonstrated that MST is more effective in improving family functioning and psychopathology than alternative services, the study by Henggeler, Melton, et al. (1997) (detailed above in the ultimate outcome section) found no difference in family functioning and peer relationships for families and youth in the MST condition (*n* = 82) and those in usual service (*n* = 73). Nevertheless, youth in the MST condition reported substantially reduced psychiatric symptomatology at post-treatment whereas their peers in usual services reported slightly increased symptomatology. Overall, MST has generally been shown to be more effective in improving family relations and functioning, youth behaviour, parent and youth psychopathology, parental monitoring, and peer relations than usual services or individual therapy.

MST and Other Youth Problems

Various studies have also demonstrated that MST is more effective for youth with substance abuse and dependence, sexual offending, youth presenting with psychiatric emergencies, and abused and neglected youth than usual services and comparison treatments (see also Curtis et al., 2004).

Substance Abuse and Dependence

MST is effective at reducing substance abuse and substance related crimes among juvenile offenders. In a study by Henggeler, Pickrel, et al. (1999), 118 juvenile offenders who met diagnostic criteria for substance abuse or dependence were randomly assigned to one of two conditions, MST or usual services. Juvenile offenders who participated in MST reported less drug use, had a greater reduction in criminal arrests and general recidivism, and had fewer days placed out of the home at 6- and 11-month follow-up than youth in usual services.

Sexual Offenders

MST has been shown to be effective at reducing sexual offences among adolescent sexual offenders. A study by Borduin, Henggeler, Blaske, and Stein (1990) involving 16 adolescents randomly assigned to MST or individual therapy found that MST was more effective in reducing recidivism rates for sexual offences and general offences than individual therapy. Over a 3-year follow-up period, less than 13% of youth who received MST were involved in sexual offences compared to 75% of youth who received individual therapy (Borduin et al., 1990). Additionally, while three years following treatment only 25% of youth on MST committed non-sexual offences, 50% of youth who received individual therapy had committed non-sexual offences.

Psychiatric Emergencies

MST has more recently been evaluated as an alternative to hospitalisation for psychiatrically disturbed adolescents. A study by Henggeler, Rowland, et al. (1999) involving 116 children and adolescents approved for emergency psychiatric hospitalisation were randomly assigned to MST or inpatient hospitalisation. MST was more effective than emergency psychiatric hospitalisation at decreasing externalising behaviour, improving family functioning, and increasing school attendance. Youth in the

MST condition also experienced a 72% decrease in days hospitalised, a 50% decrease in days in general out-of-home placements, and were more satisfied with their treatment compared to their counterparts in the hospitalised condition (Henggeler, Rowland, et al., 1999).

Abuse and Neglect

MST has also been demonstrated to be more effective than parent training for child abuse and neglect. A study by Brunk, Henggeler, and Whelan (1987) involving 32 children and adolescents who were randomly assigned to MST or parent training, found that MST was more effective at restructuring parent-child relations. Participants in MST had greater decreases in parental psychopathology, overall reduction in identified problems, reduced stress, and an increased responsiveness to children's needs compared to participants in parent training (Henggeler et al., 1998).

Summary of MST Effectiveness in United States of America

Almost three decades of research suggests that MST is effective in ameliorating factors known to be associated with juvenile offending and related disturbances. Families who participate in MST exhibit warmer and less conflictual family relations, increased parental monitoring, decreased individual symptomatology, lower levels of adolescent aggression, and more positive adolescent peer relations than families in usual services or alternative therapies. Moreover, MST has been shown to have positive effects on ultimate outcomes such as fewer and less serious crimes and lower rates of incarceration which have been maintained up to 13 years post-treatment. Finally, the effectiveness of MST does not appear to be moderated by youth or family demographics (age, ethnicity, social economic status, and gender), initial problem severity, or past arrest rates (Borduin et al., 1995; Henggeler, Melton, et al., 1997; Henggeler et al., 1992).

Effectiveness of MST in Aotearoa / New Zealand

To date there has been one study examining the effectiveness of MST in Aotearoa / New Zealand. Curtis, Ronan, Heiblum, and Crellin (2008) conducted a study involving 3 MST

teams, 14 therapists, 5 supervisors, and 64 families. This research demonstrated a consistent reduction in the frequency of offending and the severity of offences. There was a consistent reduction across post-treatment, and 6- and 12-month follow-up intervals in frequency and severity of offending. However, in terms of the severity of offences, this change reached significance only by the 12-month follow-up interval. At post-treatment there was a significant reduction in formal out-of-home placements, declining from 38 days to 13 days. This reduction was not maintained at follow-up. School attendance also increased at post-treatment by 14%. Although the attendance declined at 6-month follow-up, there was an increase in attendance at 12-month follow-up. There were also instrumental outcome improvements at post-treatment in parental monitoring, improved family relations, and an improvement in youth behaviour. Youth tended to be more compliant, less aggressive, less likely to associate with deviant peers, and experienced a reduction in externalising behaviours. These gains were generally maintained at follow-up. Furthermore, demographic variables of the family and youth, including ethnicity, did not moderate outcomes. Importantly, this study had a 98% completion rate, much better than usual services (e.g., Nock & Kazdin, 2005) and significantly higher than the average MST completion rate of 86% (Curtis et al., 2008).

Conclusion

MST has been demonstrated to be an effective treatment approach for helping youth with conduct disorder and antisocial behaviours, a disorder which once was referred to as being untreatable. First, as demonstrated by successful completion rates (average of 86%), MST appears quite effective in engaging families in treatment. Second, MST has been demonstrated to be 70% more effective at improving youth and family functioning and reducing offending compared to a range of usual services (Curtis et al., 2004). Third, recent research has indicated that MST is effective in New Zealand. MST has been shown not only to help to reduce offending behaviour and out-of-home placements, it has also been shown to help to improve the family situation, youth and parent psychopathology, reduce youth problematic behaviours, and to increase school attendance. However, a currently unanswered question is “can MST be delivered as effectively by therapists in non-university settings as those who employ therapists

supervised by MST developers?" As a consequence, one aim of the current study was to conduct an effective-based evaluation of MST to determine the extent to which MST delivery in clinical settings in New Zealand is capable of producing outcomes comparable to MST efficacy, or highly controlled studies. Additionally, given no previous research on client satisfaction with MST, another aim here was to assess whether families themselves were satisfied with the services received from MST therapists and whether satisfaction was related to outcomes.

Chapter Four

Treatment Outcome Success Factors

In more recent years psychotherapeutic evaluation research has focused on investigating variables that are common among most therapies regardless of modality (i.e., common factors). Meta-analytic findings have demonstrated that common variables explain at least 30% of variance in treatment outcome (Wampold, 2001). However, this research has focused on the adult population and has largely ignored the family, adolescent, and child population. Nevertheless, it is plausible that the same common variables that are related to treatment success in adult psychotherapy will also be related to success in family, adolescent, or child psychotherapy. The MST model itself places an emphasis on particular common variables (Henggeler et al., 1998).

As a consequence, this chapter will review the following common variables emphasised by MST and that are investigated in the current study as predictors of outcome: (1) Therapeutic alliance, (2) therapist adherence, (3) therapist allegiance, and (4) accountability. The theory behind each common variable will be discussed and research examining the variable and client outcome will be reviewed. The literature reviewed has an adult focus, however where available, research involving families, adolescents, and/or children will be discussed, particularly research involving antisocial youth. Links will also be made between the common variables and MST.

Therapeutic Alliance

Alliance Theory

Of all common factors identified, relationship variables have been the most comprehensively investigated in the adult literature (Luborsky, Crits-Christoph, Mintz, & Auerbach, 1988; Wampold, 2001). Among these relationship variables, the therapeutic alliance has received the most attention and has been found to contribute the largest

portion to positive client outcome in psychotherapy (Grencavage & Norcoss, 1990; Lambert, 1992; Wampold, 2001). This section on the alliance will review the (1) theoretical literature, (2) client outcome research in the adult population, (3) research on the alliance in family and adolescent therapy including therapy with adolescents presenting with antisocial behaviours, and (4) research on the alliance and MST.

Originally developed out of the psychoanalytic tradition, the therapeutic alliance is the basic platform for therapeutic change in all psychotherapies (Horvath & Bedi, 2002; Wampold, 2001). Although there is no universally accepted definition of the alliance (Horvath & Bedi, 2002; Horvath & Luborsky, 1993), one of the most widely used definitions is that of Bordin (1979). Bordin suggested that the alliance between the therapist and client consists of three components: (1) Task, (2) goal, and (3) bond. The task component reflects therapy process and the timing/pacing of therapy activities and procedures. The goal component reflects the importance of the therapist and client mutually collaborating, accepting, and working towards realistic and specific objectives of therapy. The last factor, bond, pertains to a positive personal attachment between the therapist and client. This component emphasises generic Rogerian factors that are fundamental to positive relationships such as trust, likeability, acceptance, warmth, empathy, and genuineness. A strong affective relationship is intended to provide a safe environment for the client to explore personal topics.

How the Alliance Works

Not only is the relationship between the therapist and client thought to be curative in and of it self (Wampold, 2001), the emotional climate produced by a healthy therapeutic alliance is also thought to serve as a catalyst for mediating the effectiveness of specific therapeutic interventions and tasks (Horvath & Bedi, 2002; Wampold, 2001). Clients who perceive their therapist as providing relevant suggestions in treatment, and view them as trustworthy, genuine, honest, and respectful are more committed to therapy and are more likely to follow instructions and suggestions (i.e., comply with therapeutic interventions) (Burns & Nolen-Hoeksema, 1992; Lambert, 1992). Furthermore, clients who are committed to therapy are more likely to remain in therapy and have more favourable outcomes in response to treatment (Kazdin et al., 1997). In addition, therapists who perceive that their clients are benefiting from intervention, complying, and actively

engaged in therapy are more likely to actively collaborate and create a positive therapeutic environment. Thus, the therapeutic relationship is recursive, wherein both the therapist and client play a central role and both influence each other mutually (Lambert, 1992; Wampold, 2001).

In summary, the alliance is a collaborative entity, based on the agreement and negotiation on the tasks and goals of therapy within an affective relationship (Horvath & Luborsky, 1993; Wampold, 2001). The term alliance has been used interchangeably with the terms therapeutic alliance, therapeutic relationship, working alliance, therapeutic bond, and helping alliance.

Alliance and Client Outcome Research

Alliance and Adult Outcome

The alliance is a robust predictor of therapeutic outcome in the adult literature (Horvath & Bedi, 2002). Three meta-analytic studies involving 90 alliance research studies published between 1977 and 2000 reported effect sizes ranging between 0.22 to 0.26 (Horvath & Bedi, 2002; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000). This effect size remains stable regardless of presenting problem, alliance and outcome measures employed, timing of measurement, and therapeutic approach (Horvath & Bedi, 2002; Horvath & Symonds, 1991; Krupnick et al., 1996; Martin et al., 2000). The effect sizes obtained indicate that approximately 5% to 7% of adult client outcome in therapy is explained by the therapeutic alliance. This is at least seven times more than the variance in outcome explained by the treatment approach (Wampold, 2001). The alliance, measured as early as the first session, is predictive of premature termination and eventual therapeutic outcome, and can distinguish between those who will benefit from therapy and those who will not (Barber et al., 1999; Kokotovic & Tracey, 1990; Tryon & Kane, 1993). Together, this research indicates that failure to engage adult clients, and inability to agree on mutually accepted tasks and goals between client and clinician, can lead to poorer outcomes and higher rates of dropout from therapy.

Alliance and Child, Adolescent, and Family Outcome

Although there are over 2,000 studies examining the therapeutic relationship in adult psychotherapy (Horvath & Bedi, 2002), research examining the alliance in child,

adolescent and family psychotherapy is sparse (Kazdin & Whitley, 2006). This is despite the fact that research has demonstrated that children, parents, and therapists view the relationship as a pivotal ingredient to treatment and positive therapeutic change (Glueckauf et al., 2002; Kazdin, Siegel, & Bass, 1990; Pinsof & Catherall, 1986). In their recent review of the available literature, a meta-analysis conducted by Shirk and Karver (2003) involved 23 studies published between 1973 and 2001 and investigated the association between the alliance and child, adolescent, and family outcomes. This study obtained an overall effect size of 0.22. Notably, this effect size is comparable to those reported in the adult meta-analytic research. Research has also indicated that the relationship between parents/caregivers and their children may be enhanced when parents/caregivers have a supportive relationship with the therapist (Diamond, Diamond, & Liddle, 2000). The parent-therapist relationship can offer support and encouragement to the family unit and household thereby building confidence and empowering parents to try new ways of interacting with their child/children in their natural environment. Furthermore, problematic therapeutic relationships have been suggested to be the most robust predictor of child, adolescent, and family premature termination from therapy (Garcia & Weisz, 2002; Kazdin et al., 1997; Robbins et al., 2006; Robbins, Turner, Alexander, & Perez, 2003).

Alliance and Youth Antisocial Behaviour

As adolescents with antisocial behaviour are frequently brought into treatment against their will, are rarely invested in changing their behaviour, and often disagree with their parents about the goals of therapy, they can be particularly hard to engage in the therapeutic process (Kazdin, 1990, 1991; Shirk & Karver, 2003). Engagement is said to be especially challenging among children and adolescents with externalising behavioural problems such as conduct disorder (Kazdin, 1993). This population has been associated with high dropout rates and low levels of clinically significant psychological and behavioural changes (Carr, 1999; Kazdin, 1993). Nevertheless, in the only meta-analysis examining the alliance in child, adolescent, and family therapy, Shirk and Karver (2003) found a stronger relationship between alliance and outcome for youth displaying externalising problems (M = .30, SD = 0.18) compared to youth displaying internalising problems (M = .10, SD = .08): t (7) = 2.00, p <.05. Furthermore, community-based research involving 121 delinquent male youth (mean age of 15.6) in a 3 month residential

program demonstrated that the alliance measured at the end of treatment was related to a reduction in externalising (standardised β weight = -.427) and internalising behaviours (β = -.515), and predicted lower rates of recidivism 1 year after treatment (β = -.448) (Florsheim, Shotorbani, Guest-Warnick, Barratt, & Hwang, 2000). Additional research involving children and youth (aged 2 to 14) with oppositional, aggressive, and antisocial behaviour found that the better the quality of the alliance, the more improved positive behaviour, parental practices, treatment participation and acceptability, and the greater the reduction in deviant behaviour (Diamond et al., 2000; Hogue, Dauber, Stambaugh, Cecero, & Liddle, 2006; Kazdin, Marciano, & Whitley, 2005; Kazdin & Whitley, 2006; Kazdin, Whitley, & Marciano, 2006). Thus, establishing and maintaining a positive alliance with adolescents and their families as quickly as possible, particularly for engaging the child or adolescent with antisocial behaviours, and his or her parent(s), appears important.

The Alliance and MST

MST places significant emphasis on adolescent and family engagement in therapy. Therapists and supervisors are held accountable for engaging families. Their adherence to this process is assessed, in part, with the Therapist Adherence Measure. It is also seen as vital for youth and families to be full and active participants in therapy and actively collaborate with their therapist on goals and plans. This is the best way to empower family members, to help families develop, mobilise, and maintain indigenous resources and competencies, and to enhance treatment generalisation (Borduin, 1999; Henggeler & Borduin, 1990). The family preservation approach of MST is one way the program attempts to increase positive therapeutic relationships and active participation. Through providing treatment in families' homes, many barriers which may prevent or limit engagement are reduced or eliminated (Fuller, 2004; Kazdin et al., 1997; Letourneau et al., 2002).

Despite the (1) emphasis MST places on the alliance and engagement, (2) the claim from MST experts that MST treatment cannot progress without engagement and the active participation of key family members in the treatment process (Henggeler & Schoenwald, 1998), and (3) the rigorous empirical research conducted on MST to date, there has been no research examining the alliance and family and adolescent outcomes in MST.

Adherence

Another common factor linked with client outcome is adherence. Adherence is the degree to which therapists use interventions and procedures employed by a particular therapeutic model and avoid techniques which are inconsistent with the model (Multon, Kivlighan, & Gold, 1996; Waltz, Addis, Koerner, & Jacobson, 1993; Wampold, 2001). This section on adherence will review the (1) theoretical literature, (2) client outcome research in the adult population, (3) research on adherence in family and adolescent therapy, and (4) research on adherence and MST.

Adherence Theory

In order to conclude that a therapy works, research must confirm that the therapy in question was implemented as intended and in accordance with its protocol (Hogue, Liddle, & Rowe, 1996; Moncher & Prinz, 1991). That is, research needs to provide confirmation that the manipulation of the independent variable (i.e., therapy) occurred as planned (Moncher & Prinz, 1991; Waltz et al., 1993). Without empirical monitoring and measurement of therapy adherence, it is difficult to conclude whether outcomes are due to therapy or other extraneous factors. Adherence represents a quality control mechanism, is thought to be essential to clinical efficacy (Kazdin & Bass, 1989), and is fundamental to therapeutic accountability (Yeaton & Sechrest, 1981). Despite its importance, there remains limited research on adherence, particularly in child, adolescent, and family literature.

Historically, assessing treatment adherence in psychotherapy practice was rare (Kazdin, Bass, Ayera, & Rodgers, 1990; Waltz et al., 1993). Only 18% of 359 studies published between 1980 and 1988 included adherence checks (Moncher & Prinz, 1991). In a meta-analysis involving 223 child and adolescent psychotherapy studies published between 1970 and 1988, Kazdin, Bass, et al. (1990) reported that, at most, only one fifth of studies reported checking, monitoring, or assessing whether treatment was implemented as intended. This figure is comparable with those reported in the adult literature. With the emergence of user-pays and the demands for accountability in psychotherapy, awareness and concern about treatment fidelity has increased over time. In a review of 342 articles published between 1990 and 2000, Borrelli et al. (2005) identified that 27% of studies

assessed therapist adherence to protocol. However, there still remains a lack of research on adherence and client outcome, particularly in the child, adolescent, and family literature.

One method for increasing treatment integrity has been the development and implementation of treatment manuals. Adherence to a treatment manual is assumed to increase therapy outcomes due to the application of specific therapeutic elements that the treatment program deems as remedial for disorder. Thus, therapists who adhere to the manual by providing specific ingredients are assumed to have better outcomes than therapists who do not adhere, or who have low adherence. Research has found that it is possible to train therapists to adhere to a manual and that such training increases adherence (Binder, 1993; Crits-Christoph et al., 1991; Henry, Schacht, Strupp, Butler, & Binder, 1993; Henry, Strupp, Butler, Schacht, & Binder, 1993; Multon et al., 1996). The employment of treatment manuals has increased over time where research conducted between 1990 and 2000 (Borrelli, et al., 2005) indicated that slightly more studies employ treatment manuals than studies conducted between 1980 and 1988 (Moncher & Prinz, 1991) (35% vs. 31.5%). In addition to employing therapy manuals, intensive training in therapeutic techniques, booster training, and supervision are thought to maintain and/or increase treatment fidelity (Borrelli, et al., 2005; Houge et al., 1996; Moncher & Prinz, 1991).

Adherence and Client Outcome Research

Adherence and Adult Outcome

To date research on adherence and client outcome is limited and the findings thus far have been inconsistent. A group of researchers have found no relationship between adherence and adult client outcome (Castonguay, Goldfied, Wiser, Raue, & Hayes, 1996; Huppert, Barlow, Gorman, Shear, & Woods, 2006; Shaw et al., 1999; Weisman, et al., 2002). It has also been argued that adherence suppresses the effects of competence (Shaw et al., 1999), has potential for deteriorating the relationship between the therapist and client (Henry, Schacht, et al., 1993), and can be practically detrimental when there is already a poor interpersonal relationship between the client and therapist (Castonguay et al., 1996; Henry, Schacht et al., 1993). Thus, this line of research in the adult literature has suggested that adherence to protocol can in fact produce counterproductive results.

Nevertheless, there is a large body of empirical research indicating that adherence is related to positive treatment outcome for adults (Barber et al., 2006; Bright, Baker, & Neimeyer 1999; DeRubeis & Feeley, 1990; Feeley, DeRubeis, & Gelfand, 1999; Frank, Kupfer, Wagner, McEachran, & Cornes, 1991; Happe, 1983; Luborsky, McLellon, Woody, O'Brien & Auerbach, 1985; Spanier, Frank, McEachran, Grochocinski, & Kupfer, 1996).

Adherence and Child, Adolescent, and Family Outcome

Research on adherence in the child, adolescent, and family outcome literature is "virtually absent" (Houge et al., p.332). With the exception of research conducted with MST, the researcher was only able to find one child, youth, or family therapy study that examined the relationship between adherence and outcome in the literature. In this study, 84 youth (aged between 5 to 18 years) with emotional and behavioural disorders and their families were found to have higher satisfaction with services and lower rates of missed appointments when their therapist had higher levels of adherence to the treatment protocol (Cox, 2006). The largest body of treatment outcome literature which has examined the relationship between adherence and adolescent and family outcome has involved MST.

Adherence and MST

The success of MST has often been related to the model's extensive quality assurance mechanisms (Cunningham, Randall, Henggeler, & Schoenwald, 2006; Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002; Matarazzo & Garner, 1992; Weisz, Donenberg, Weiss, & Han, 1995). MST contains seven quality assurance mechanisms aimed at enhancing and maintaining adherence to MST treatment protocols, these are:

1. Agency and organisational consultation to address agency and community barriers to program effectiveness;
2. Intensive five day initial training;
3. Quarterly booster sessions on topics and concerns identified by therapists and supervisors;
4. Treatment manuals that specify therapist practice, supervisory practice, as well as consultation;

5. Weekly supervision of therapists, coupled with regular supervision for supervisors by more senior MST staff;
6. Weekly phone consultation with an off-site MST expert who reviews the progress of each youth on the MST program; and
7. Adherence questionnaires providing regular feedback on therapist (rated by primary caregiver) and supervisor (rated by therapist) adherence.

According to the MST model, assuring therapist adherence to MST protocol is essential in achieving desired outcomes for youth and their families (Henggeler & Schoenwald, 1999).

MST Therapist Adherence and Adolescent and Family Outcomes

Numerous studies evaluating MST have found that therapist adherence to treatment protocols correlates positively with instrumental and ultimate outcomes for youth and their families presenting with serious antisocial behaviour (Henggeler, Pickrel, et al., 1999; Henggeler, Rowland, et al., 1997; Henggeler et al., 2002; Huey et al., 2000; Schoenwald, Henggeler, et al., 2000). Adherence reported from multiple sources (i.e., therapist, parent, and youth) has directly predicted increases in family functioning and parental monitoring, and predicted decrease in delinquent behaviour (e.g., arrest rates), delinquent peer affiliation, and days in incarceration and out-of-home placements (Henggeler, Pickrel, et al., 1999; Henggeler, Rowland, et al., 1997; Huey et al., 2000; Schoenwald, Henggeler, et al., 2000; Schoenwald, Sheidow, Letourneau, & Liao, 2003). Overall, these studies found that greater treatment protocol adherence is related to higher rates of improved treatment outcome.

As reviewed in Chapter Three, outcome evaluation research for MST has generally demonstrated clinically significant outcomes. However, two MST studies have shown modest to non-significant reductions in features of antisocial behaviour and family functioning. The authors of these studies attributed the low and inconsistent outcomes to low therapist adherence to treatment protocol (Henggeler, Melton, et al., 1997; Henggeler, Pickrel, et al., 1999). In the first of these studies, Henggeler, Melton, et al. (1997) found that low levels of adherence predicted higher frequency of offences, arrests, and incarceration, and more symptomatology. To examine further whether low adherence is

linked to reduced effectiveness of MST, Henggeler, Pickrel, et al. (1999) compared their obtained adherence scores with adherence scores from a MST study which displayed significant positive results (i.e., Henggeler, Rowland, et al., 1997). When comparing caregiver and therapist reports of adherence and youth reports on non-productive sessions, the more recent study by Henggeler, Pickrel, et al. (1999) observed lower adherence scores and a higher number of non-productive sessions. Based on caregiver adherence scores, no family in the 1999 study reported a level of adherence equal to, or higher than, the average (e.g., 50th percentile) score that was achieved in the study by Henggeler, Rowland and colleagues (1997). Owing to low adherence to MST treatment protocol, the question then is whether families in the 1999 study actually received MST. These studies illustrate the potential impact of low levels of treatment fidelity.

The New Zealand based research by Curtis et al. (2008) also found no relationship between therapist adherence and client outcome. Therapist adherence in this research was assessed monthly throughout treatment with a mean of 4.6 administrations per family. Although adherence increased significantly over the course of treatment (M = 155 days), adherence did not significantly predict client outcome. The researchers speculated that this inconsistent finding with the body of MST adherence research may have been due to difference in methodology. In the study by Curtis et al., therapist adherence was collected from the primary caregiver by an independent evaluator over the telephone. In contrast, therapist adherence in previous MST studies (e.g., Henggeler, Rowland, et al., 1997; Henggeler, Pickrel et al., 1999; Huey et al., 2000) was collected from the primary caregiver by their therapist or their therapists' supervisor. This administration difference may have influenced the nature of the data collected. It is plausible that more accurate data was collected by the independent researcher (i.e., the New Zealand study) as social desirability would have been reduced compared to data collected by heavily invested therapists and supervisors. Another issue may have related to the higher adherence scores obtained in the research by Curtis et al., thereby reducing the variability necessary to produce significant correlations.

MST Supervisor and Therapist Adherence

Supervision and consultation are mechanisms that can enhance treatment fidelity and increase the probability of therapist adherence. Of the quality assurance mechanisms, supervision is assumed to be the most proximal and significant contributor to therapist fidelity and adherence in MST (Cunningham et al., 2006; Henggeler et al., 2002). MST is one of the only therapy programs that has developed its own supervision manual and supervisor adherence measure (i.e., the Supervisory Adherence Measure [SAM]) (Henggeler & Schoenwald, 1998). The MST manual specifically states that supervisors have responsibility to assist therapist attainment and implementation of the skills required to adhere to the MST protocol.

Across both adult and child treatment research, the association between quality assurance mechanisms such as supervision and therapist adherence has rarely been examined (Ellis, Ladany, Krengel, & Schult, 1996; Henggeler et al., 2002; Huey et al., 2000; Lambert & Ogles, 1997; Mann, Borduin, Henggeler, & Blaske, 1990). The sole study which has examined the relationship between MST supervisor adherence and MST therapist adherence has produced contrary findings. Henggeler et al. (2002) examined the relationship between supervisor adherence to supervision protocols (reported by therapist) and therapist adherence to treatment protocols (reported by primary caregiver). The study found that supervisor adherence on expertise in MST and the use of empirically supported treatments was positively associated with family-therapist collaboration, follow-up on treatment progress, and attempts to change family interactions. However, supervisor adherence on analytic process (i.e., emphasising the conceptual foundation of MST) and promoting clinician competencies was negatively associated with therapist adherence to family collaboration and follow-up on treatment progress. Surprisingly, and contrary to assumptions, the results of this study illustrated that high supervisor adherence in certain areas is associated with low therapist adherence. These results raise the question of whether supervisor adherence interferes with therapist engagement of families and other clinical processes. However, this study did not assess for any relationships between supervisor and therapist adherence and client outcomes. To date, no study has examined the relationship between supervisory adherence, therapist adherence, and client outcome.

Pertinent to this issue, the application of supervision in MST has been said to underpin favourable client outcomes. The early empirical research on MST has produced more favourable outcomes than more recent research which has produced modest and non-significant findings. The meta-analysis on eight MST empirical studies reviewed earlier found that the effect size obtained in earlier studies (d = 0.81) was significantly higher than the effect size for more recent studies (d = 0.26) (Curtis et al., 2004). A crucial difference between these studies, which has been suggested to explain the inconsistent findings, is in the delivery of supervision. In the earlier research on MST, supervision was employed by the developers of MST (Borduin et al., 1990; Borduin et al., 1995; Brunk et al., 1987; Henggeler et al., 1992; Scherer et al., 1994) whilst the supervision in the more recent research was delivered by people other than the developers who were trained in MST treatment and supervisory practices (Henggeler, Melton, et al., 1997; Henggeler, Pickrel, et al., 1999; Henggeler, Rowland, et al., 1999). Thus, a possible explanation for the difference in effectiveness is the adherence of the supervisor where developers of MST would be presumed to adhere more closely to MST protocol than trained supervisors (Curtis et al., 2004). This would suggest that the better client outcomes obtained in the earlier MST research were perhaps, at least in part, due to higher supervisor adherence. However, supervisor adherence was not reported in these studies. As a consequence, research examining supervisor adherence, therapist adherence, and client treatment outcome is required.

Allegiance

The degree to which therapists believe that the therapy model they employ is effective is termed allegiance (Wampold, 2001). A therapists' belief and expectation that therapy will work is critical to improvement where it is assumed that the stronger this belief, the greater the client outcome (Wampold, 2001). This concept is contrary to traditional theory which suggests that it is the specific ingredients or interventions that are associated with outcome. This section on allegiance will review the (1) research on allegiance and outcome, (2) research on allegiance and child, adolescent, and family therapy, followed by (3) research involving allegiance and MST.

Allegiance and Client Outcome Research

Allegiance and Adult Outcome

Therapist allegiance may be crucial for efficacious treatment delivery. Research on allegiance published in the adult literature has demonstrated that allegiance relates positively to outcome, and that this association is larger than that of specific treatment ingredients (Berman, Miller, & Massman, 1985; Dush, Hirt, & Schroeder, 1983; Luborsky et al., 1999; Robinson, Berman, & Neimeyer, 1990; Smith, Glass, & Miller, 1980; Wampold, 2001). Allegiance research has largely focused on researcher allegiance which has generally been inferred through calculating how many publications the researcher has produced on a particular therapy model. The earliest attempt to identify allegiance effects appeared in Smith et al.'s 1980 meta-analysis involving 475 studies. Smith and colleagues identified that when there was a positive allegiance with therapy, there was an effect size of 0.95 compared with 0.66 when there was no such allegiance with therapy. Research by Dush and colleagues (1983), Berman and colleagues (1985), Robinson and colleagues (1990), and Luborsky and colleagues (1999) found comparable findings with higher allegiances relating to higher client outcome. In a review of 29 studies comparing two therapies, Luborsky and colleagues reported that 69% of the variance in outcome was explained by researcher allegiance. Researcher allegiance in this study was measured with self-ratings of allegiance, colleague ratings, and inferred from prior publications. Overall, allegiance effects explain up to 69% of the variance in outcome which is dramatically higher than the effect of particular type of treatment (at most 5%) (Wampold, 2001). While this research has examined researcher allegiance, it is suggestive that therapist attitude towards treatment may well be a strong determinant of client outcomes.

Allegiance and Child, Adolescent, and Family Outcomes

To date literature searching indicates that there has been no research on the effects of therapist allegiance and child, adolescent, and family outcome. Nevertheless, there are no reasons why this relationship would not exist in this population. Having said that, the issue remains as an empirical question.

Allegiance and MST

Although there are no studies examining the direct relationship between therapist allegiance and child, adolescent, and family outcome, research on MST offers some indirect support. The significant differences between outcomes obtained from MST studies involving MST developers (Borduin et al., 1990; Borduin et al., 1995; Brunk et al., 1987; Henggeler et al., 1992; Scherer et al., 1994) and those involving individuals trained in MST supervision (Henggeler, Melton, et al., 1997; Henggeler, Pickrel, et al., 1999; Henggeler, Rowland, et al., 1999) could additionally be a result of allegiance effects. That is, the stronger relationship in the earlier studies may have been due to MST developers having a stronger allegiance, or belief in their therapeutic model, than individuals merely trained in the model. Furthermore, therapists supervised by the developers of MST may also feel more loyalty towards their supervisor and the treatment model and thus, have higher allegiance and belief that the model works than individuals trained by others. Supervisor allegiance may relate directly to client outcomes, may influence the allegiance of other team practitioners, and may influence the degree of adherence to the MST treatment protocols. For example, low adherence scores and client outcomes may be a result of a weaker belief in the therapy model and perhaps a poor ‘fit’ between the therapist/supervisor and treatment philosophy. Lower allegiance levels might also help to explain a practitioner’s disregard of treatment principles.

Accountability

Increasingly, treatment programs and practitioners are required to be accountable for achieving positive therapeutic outcomes. Accountability involves providing an explicit rationale for utilising techniques and for procedural choices, providing evidence of accomplishments and gains, assuming responsibility for those gains, and producing gains in an efficient manner (Holahan & Galassi, 1986). Although managed health care has increased awareness of accountability, cost efficiency, and therapy efficacy, there is no direct research on practitioner perceptions of accountability and client outcomes. Of particular relevance, there is no research on accountability and child, adolescent, and family outcome. This section will (1) review the limited research on accountability and (2) discuss the importance of accountability in MST.

Accountability Research

It is typically assumed that when therapists are held accountable, they make more accurate decisions and work more efficiently and thus, produce more positive outcomes than when they are not held accountable. However, there is little research to support these assumptions. Research has suggested that when people are held accountable for their decisions, they tend to be more selective in their attention to information, use a wider range of information in making decisions, produce more complex interpretations, make more accurate predictions, and engage in fewer judgemental biases than people who are not held accountable (Tetlock, 1983a, 1983b; Tetlock & Boettger, 1989; Tetlock & Kim, 1987). However, Pfeiffer, Whelan, and Martin (2000), found that decision-making on adult psychopathology was not influenced by whether therapists were held highly, minimally, or not accountable for their decisions.

Accountability and MST

The concept of accountability is fundamental to MST and is a factor assumed to relate to MST's high success rate among difficult to treat populations. Significant emphasis is placed on MST practitioners and MST teams holding themselves accountable for engaging families in treatment and for obtaining favourable outcomes (Curtis et al., 2002; Henggeler et al., 1996; Henggeler et al., 1998). In contrast to the traditional view that therapeutic failure is due to client resistance or lack of motivation in therapy, MST suggests that the MST therapist and MST teams are responsible for finding ways to engage the youth and families and obtain outcomes. MST therapists must do 'what ever it takes' to engage the family and to bring about enduring change (Henggeler et al., 1996). Administrators must also assume responsibility and thus not blame other agencies or others for failures.

To help achieve high accountability and therapeutic outcomes, it is assumed that therapists need to be provided with low case loads, extensive training, supervisory support, and case consultation (Henggeler et al., 1996). Low case loads allow therapists time and flexibility to implement treatment plans that address the multiple correlates of serious clinical behaviours within the context which they occur, allow time for alliance building, and time to facilitate attainment of goals. Clinical supervision provides much-needed support, reinforces MST approach to case conceptualisation and interventions,

and allows for close monitoring of integrity and therapist performance and wellbeing. Providing these resources and associated support is also thought to help attenuate typical stressors such as burnout and frustration that are commonly encountered when treating serious clinical problems.

As accountability is a vital feature in achieving treatment success, it is surprising that there has been no research examining the impact of accountability in MST. It is important for future MST research to assess whether therapist and supervisor perceptions of accountability associate favourably with adherence and client outcome.

Conclusion

Research has indicated that common factors shared by most therapies contribute more to client outcome than specific therapy approaches and interventions implemented (Luborsky, Singer, & Luborsky, 1975; Smith & Glass, 1977; Stiles, Shapiro, & Elliot, 1986; Wampold, 2001). Considerable meta-analytic research has demonstrated that the relationship between therapist and client is a robust predictor of client outcome regardless of presenting problem (Horvath & Bedi, 2002; Horvath & Symonds, 1991; Krupnick et al., 1996; Martin et al., 2000). Although children and adolescents with externalising problem behaviours and their families can be extremely challenging to engage in therapy, developing a therapeutic relationship with them and their caregivers is thought to be of vital importance in achieving positive therapeutic outcomes (Diamond et al., 2000; Florsheim et al., 2000; Kazdin, 1993; Kazdin et al., 2005; Kazdin & Whitley, 2006; Shirk & Karver, 2003). Research on MST has illustrated that therapist adherence to treatment protocol generally predicts reduced frequency of offending behaviour, out-of-home placements, and incarceration as well as predicting improved family functioning and parental monitoring. There is also suggestion that allegiance to MST may relate to favourable outcomes where outcome evaluation research involving the original developers of MST produced more robust findings than when these key people were absent. Although research is limited, it is assumed that increased therapist/practitioner accountability in psychotherapy should lead to more positive outcomes. As highlighted in the research reviewed, further research is required to examine the associations between

therapeutic alliance, therapist and supervisor adherence, allegiance, and accountability, particularly in the adolescent and family population. Given its philosophy, research on these variables is particularly crucial in research involving the MST model.

Chapter Five

Supervision, Therapist Skill, and Client Outcomes

As introduced earlier, supervision is considered a critical element in MST service delivery. Given that issue, in addition to the therapist factors reviewed in the previous chapter, another focus of the current study was on what are thought to be important features of supervision.

It is widely accepted that supervision is critical to the professional development of therapists and mental health professions as a whole. More specifically, supervision is thought to be an essential vehicle for preparing mental health specialists for the practice of psychotherapy, is an integral component of credentialing, and is critical for ongoing quality assurance (Anderson, 1992; Bernard & Goodyear, 2004; The New Zealand Psychological Society, 2004). Despite the scarcity of empirical research examining or evaluating supervision, available findings tentatively support the effectiveness of supervision in increasing therapist skill development and positive client outcome. While the employment of supervision has been found to influence favourable outcomes, other factors have also been implicated. The most crucial factor uncovered to date appears to be the quality of the relationship between the supervisor and supervisee.

This chapter on supervision will (1) describe the practice of supervision, including its functions and objectives; (2) review research on supervision and therapist skill development and client outcome; (3) discuss the supervisory alliance and review the relationship between the supervisory alliance, therapist skill development, and client outcome; (4) additional supervision factors related to therapist skill and client outcome will also be summarised including supervisor characteristics, supervision focus and style, and supervision satisfaction; finally (5) MST supervision practice and research on MST supervision and therapist adherence and client outcome will be reviewed.

What is Supervision?

Therapist professional development and identity formation is thought to be enhanced through a supervisory relationship with an experienced and expert clinician. This supervisor-supervisee relationship extends over time, is instructive and evaluative, monitors quality of services, and ensures client safety (Bernard & Goodyear, 2004). The evaluative and monitoring nature of supervision is used as a gate-keeping tool, regulating who is suitable to enter and remain within the profession (Bernard & Goodyear, 2004). The maintenance of professional standards and accountability are also facilitated through supervision (Holloway & Neufeldt, 1995; Proctor, 1997; Wampold & Holloway, 1997).

Supervision Functions

Irrespective of professional and theoretical backgrounds, the underlying functions of supervision are quite similar (Rich, 1993). Three salient functions of supervision derived from the literature include: (1) Education, (2) support and guidance, and (3) administration.

The educative function of supervision involves the transmission of professional knowledge, skills, and values. This is intended to facilitate successful client outcomes through extending supervisee's professional skill-development and competencies (e.g., assessment, diagnosis, case conceptualisation, therapy, and outcome evaluation). Facilitating supervisee self-awareness, self-understanding, and emotional growth are also educative functions of supervision (Kadushin, 1974). Overall, the educative aspect of supervision involves improving practice skills and knowledge derived from best practice as well as increasing self-awareness.

Supervision also provides support and guidance for supervisees. This is achieved through optimising motivation, morale, and commitment; minimising work-related stress, burnout, and other work-related mental health problems; helping supervisees to develop conflict resolution and other skills; and helping supervisees to resolve problematic emotions relating to clients and colleagues (Bernard & Goodyear, 1998; Spence, Wilson, Kavanagh, Strong, & Worrall, 2001). Supervision also provides support through socialising

supervisees within the profession. Supervision involves a supportive relationship where clinicians feel comfortable to express their needs as well as problematic issues.

The third function of supervision is administrative in nature. The administrative side of supervision is based on assigning tasks, reviewing and evaluating, coordinating the understanding of agencies, budgeting, providing feedback about performance; and clarifying job roles and responsibilities (Rich, 1993; Spence et al., 2001). An additional component that cuts across the three major functions of supervision described in the literature includes the maintenance of professional standards such as awareness and adherence to clinical, ethical, legislative, professional, and organisational standards. Supervision plays a significant role in ensuring that standards and procedures of relevant agencies and professional groups are understood and applied in practice.

With the advent of managed health care, supervision tends to be focused primarily on administration issues with apparently little time concentrated on clinical issues and professional development (Munson, 2001; Schroffel, 1999; Shulman, Robinson, & Luckyj, 1981). Up to 49% of supervision time, and up to 80% of the tasks performed in supervision, have been reported to be administrative in nature (Poertner & Rapp, 1983; Shulman, 1982). The time devoted to administrative issues in supervision is surprising considering that the majority of supervisors and supervisees rate the educative functions of supervision as most important (Kadushin, 1992a, 1992b). Supervisees have also reported that they prefer spending more time on practice skills and less time on administrative requirements in supervision (Shulman et al., 1981). Furthermore, research has indicated that less than 40% of supervision time is directed towards discussing client cases (Harkness & Hensley, 1991).

Supervision Objectives

In addition to the functions of supervision, there are two prominent objectives: Professional development and improved client outcome. Supervision is employed as a primary means to ensure that clinical practitioners are trained adequately, are competent, and are practicing effectively. Thus, it is important that supervision improves therapist skill in areas that are related to therapeutic success. Enhancing supervisee relationship formation, conceptualisation skills, and intervention implementation are some examples.

In addition to the aim of therapist professional development is the ultimate criterion of supervision, client outcome and improvement. Client outcome is thought to be the acid test for the impact and effectiveness of clinical supervision (Avis & Sprenkle, 1990; Ellis & Ladany, 1997; Harkness & Hensley, 1991; Holloway & Neufeldt, 1995; Matarazzo, 1978; Wampold & Holloway, 1997). Thus, the primary goal of supervision is to facilitate positive client outcomes through increasing supervisee competence, skill development, and knowledge.

Supervision Research

For supervision to be effective, it is important that the two foremost goals of supervision, enhancement of therapist skill and client outcome, are achieved. However, despite the widespread acceptance of the value of supervision, there is scarce empirical research evaluating the primary forms of supervision effectiveness. This is surprising due to the resources, time, and money directed towards the practice. Nevertheless, the available research provides tentative support for the effectiveness of supervision. A review on the larger body of supervision research investigating the relationship between supervision and therapist skill and supervision and client outcome follows[2]. The impact that the supervisory alliance has on skill development and client outcomes is also detailed. Additional factors that also impact on the effectiveness of supervision such as supervision focus, supervision style, and satisfaction with supervision are likewise discussed. A summary of research on MST supervision will also be outlined.

Supervision and Therapist Professional Development

Supervision has been found to enhance skill development and skill maintenance (Lambert & Ogles, 1997; Stirrett-Berg & Stone, 1980; Wiley & Ray, 1986). In a research review on the effect of supervision on skill acquisition, Lambert and Ogles (1997) concluded that supervision is better at increasing skill development and producing greater personal adjustment compared to no supervision. However, although these studies referred to supervision, the majority were examining the effectiveness of training rather than supervision in routine clinical practice. Research conducted by Stirrett-Berg and Stone

[2] The focus in this chapter is on general supervision rather than treatment approach specific supervision.

(1980), included in the review by Lambert and Ogles, is particularly relevant to the present chapter. In the Stirrett-Berg and Stone study, 60 university students watched a 23 minute instructional videotape on reflection of feeling. The videotape contained detailed instructions and included appropriate and inappropriate examples of reflection of feeling. One week after receiving didactic training on reflection of feeling, the therapists were randomly assigned to one of three supervision conditions: (1) High structure supervision, (2) low structure supervision, and (3) no supervision. High structure supervision was supervisor controlled and consisted of feedback and reinforcement. The low structure supervision condition was trainee controlled and discovery based, consisting of self-determined feedback and reinforcement. The 23 minute supervision sessions were provided by one of two female doctorate students with a minimum of one year supervisory experience.

After watching the didactic videotape and following supervision, the trainees completed a series of measures assessing reflection of feeling, empathy, trainee's perceptions of the amount learnt, and general satisfaction with the supervision session. Stirrett-Berg and Stone (1980) found that supervised participants had a superior performance to the control group who had no supervision. The supervised therapists gave more frequent responses, higher quality responses, and were rated as more empathic than control therapists. Individuals receiving supervision also significantly improved their skills in reflection of feeling and reported a significantly higher level of learning compared to control participants. Additionally, high and low supervision structure conditions produced virtually equivalent results. In support of Stirrett-Berg and Stone's findings, Wiley and Ray (1986) also demonstrated that ongoing clinician development is associated with supervised practice but not unsupervised practice.

The question of whether supervision facilitates the maintenance of skills is considered to be vitally important. Available research has indicated that following graduation and training, practitioners increasingly fail to employ best practice techniques (Borders & Usher, 1992; Kavanagh et al., 1993; Spooner & Stone, 1977; Wiley & Ray, 1986). For example, research conducted by Kavanagh et al. (1993) involving 45 therapists trained in cognitive and behavioural techniques for working with people with schizophrenia, demonstrated that within six months of being trained, 70% of therapists could not recall

enough information to deliver therapy competently and without consulting their manual. As another notable example of this skill decline, Spooner and Stone (1977) assessed 10 categories of a counsellor's response repertoire including goal-setting, reflection, interpretation, probing, and self-disclosure. Spooner and Stone found that within nine months after graduation, there was a decline in many of the higher order, more complex responses, especially confrontation, goal-setting, rapport-building, and interpretation. In addition, over time counsellors increased their use of less appropriate responses such as probing. Obviously, and as suggested by preliminary research reviewed in the previous paragraph, engagement in supervision may help to reduce skill deterioration. This is important as it is widely acknowledged that individuals decrease their use of supervision over time, where in reality many mental health staff receive little if any supervision. Reasons for low levels of supervision relate primarily to budget constraints, high work loads of staff and supervisors, higher priorities, and lack of available supervisors (Ladany, Ellis, & Friedlander, 1999).

Research has also examined the impact of supervision on therapist perceptions of ability and skill. It is essential that practitioners are confident in their ability to implement acquired skills successfully (Spence et al., 2001). Cashwell and Dooley (2001) examined whether receiving supervision is associated with therapist perception of competence and self-efficacy. Of the 33 counsellors included in the study, 22 were receiving supervision. Results indicated that counsellors who received supervision had significantly higher self-efficacy scores compared to counsellors who received no supervision. Self-efficacy was assessed using the Counseling Self-Efficacy Inventory which measures microskills, counselling process, ability to work with difficult client behaviours, cultural competence, and values. However, it is unknown as to why, or why not, therapists received supervision in this research. Nevertheless, this research suggests that the employment of supervision is related to higher self-efficacy and therapist perceived performance. A well known finding in psychology is that self-efficacy is related to higher levels of task performance (Bandura, 1982). However, the link between supervision, therapist sense of efficacy, and therapist task performance has not been established.

Supervision and Client Outcome

One of the prominent objectives of supervision is enhancing and maintaining client outcomes. Despite limited research, available findings have initially demonstrated that when psychotherapy is supervised, clients appear to attend more psychotherapy sessions and, though less clear, quite possibly experience more positive outcomes. Recent research conducted in Australia on brief problem-solving treatment for depression found that 94% of clients whose therapists were supervised (n = 65) completed all eight psychotherapy sessions compared with only 69% of clients whose therapists were not supervised (n = 38) (Bambling, King, Raue, Schweitzer, & Lambert, 2006). Burgoyne, Santini, Kline, and Staples (1976) had similar outcomes where 47% of clients whose therapists were supervised (n = 59) continued to attend individual psychotherapy compared with only 20% of clients whose therapists were not supervised (n = 30). Steinhelber, Patterson, Cliffe, and LeGoullon (1984) also demonstrated comparable results and further demonstrated that it is not only the presence, but also the frequency of supervision which impacts on client attendance. Steinhelber and colleagues found that when therapists received supervision at least once a week, clients attended significantly more sessions than clients whose therapists received less than weekly supervision.

Although the presence and frequency of supervision is related to client attendance in psychotherapy, research examining whether the presence of supervision relates to client outcome is limited. The recent Australian-based study introduced above involved 127 clients, 127 therapists, and 40 supervisors. Not only did it assess client session frequency, but its main aim was on whether the employment of supervision was related to improved client outcomes (Bambling et al., 2006). Clients and therapists were randomly assigned to two conditions: (1) Supervision or (2) no supervision. Within the supervised condition, therapists and clients were further randomly assigned into one of two supervision types: (1) Alliance skill (focus on the development of skills thought to enhance the alliance) or (2) alliance process (awareness and understanding of the therapeutic alliance). Regardless of supervision condition, clients whose therapist was supervised had higher working alliances, higher symptom reduction, and higher satisfaction than clients whose therapist was not supervised.

Despite favourable findings, there are limitations to the research by Bambling and colleagues (2006). The eight supervision sessions provided were focused solely on the therapeutic alliance and how to improve and enhance this relationship. Supervision in most practices is not usually this specialised and narrowly focused. This suggests that what was provided might be better categorised as 'training' in specific skills rather than supervision. Additionally, prior to providing therapy sessions, all therapists in the supervision conditions attended a pre-treatment training session on early alliance management principles. This pre-treatment training session is a potential confound in their research design, potentially clouding results and conclusions. As client outcomes, especially the alliance, were "markedly higher" (p. 325) for supervised clients than non-supervised clients after the initial therapy session, and as this disparity was maintained throughout the treatment program, it is possible that the differences in outcome between the supervised and non-supervised conditions were due to the pre-treatment training rather than the actual supervision. Furthermore, all potential therapists were aware that they would be randomly assigned to supervision or no supervision. This suggests that therapists who received supervision may have held themselves more accountable to achieve positive outcomes as their work was being scrutinised and/or were affected by expectancy effects. Finally, whilst 39 supervisors provided supervision to one therapist each in the study, one supervisor, an author of the research, supervised 13 therapists in each supervision condition. The non-significant differences in outcome based on supervision condition (alliance skill and alliance process) may be due to the same supervisor supplying similar supervision to the two different groups of therapists.

Although the frequency of supervision is related to client attendance in therapy, and despite the findings by Bambling et al. (2006), the association between supervision frequency and client outcome is less clear. Both Burgoyne and colleagues (1976) and Steinhelber and colleagues (1984) found no association between supervision frequency and client outcomes. However, there is a possible confound as supervision in both studies was based on therapist perception of need. Thus, supervision may have been sought with more complex, less likely to improve cases and from therapists who were less experienced. Indeed, it appears from the descriptions provided that case complexity did in fact determine, to some extent, supervision and supervision frequency. For example, therapists were more likely to receive supervision with clients who had personality

disorders than with other client groups. Given this methodological weaknesses, the question of whether supervision frequency influences client outcome is still unanswered.

To maximise client outcomes, it may be important that supervisors and supervisees have congruent theoretical orientations. In a test of this, Steinhelber et al. (1984) demonstrated that congruence between supervisor and supervisee theoretical orientations was correlated with client outcome as measured on the Global Assessment Scale (GAS). Clients whose therapist had a congruent orientation with their supervisor experienced a significantly higher mean change on the GAS (pre-treatment $M = 62.5$ and post-treatment $M = 68.6$) compared to clients whose therapist had a non-congruent orientation with their supervisor (pre-treatment $M = 59.4$ and post-treatment $M = 61.1$). Additionally, and representing a confound, congruent dyads were significantly more likely to have regular supervision. Despite this confound, these findings highlight that there may be value in supervisees opting for supervisors who are like-minded in their approach to psychotherapy. However, clearly additional research is required to make a more conclusive statement.

Another area that has been examined is the effectiveness of live supervision. Early research found that live supervision is associated with client improvement. Jaynes, Charles, Kass, and Holzman (1979) examined the impact of live supervision (supervisor present in session) in the initial clinical interview on client outcome. Therapists who were directly supervised in the initial session had significantly more clients who improved (44%) and significantly fewer clients who experienced no changes (28%) compared to therapists who did not receive live supervision (20% improved, 60% unchanged). Clients in the directly supervised group also attended more sessions and were less likely to terminate treatment prematurely compared to their counterparts. Additionally, when the supervisor was present in the initial session, therapists made more accurate diagnoses. However, there were confounds in the Jaynes et al. study. Although the clients were randomly assigned to therapists, it is unknown whether therapists were randomly assigned to the supervision or no supervision conditions, and/or whether the level and nature of client pathology was held constant in both conditions. Additionally, therapists who received live supervision may have held themselves more accountable as they were being directly watched. Recent research has also demonstrated that clients report stronger

alliances with therapists who receive live supervision compared to therapists who receive video-taped supervision (Kivlighan, Angelone, & Swafford, 1991). As the therapeutic relationship is related to client outcome (Horvath & Bedi, 2002; Horvath & Symonds, 1991; Howgego, Yellowlees, Owen, Meldrum, & Dark, 2003; Lambert & Barley, 2002), therapists who receive live supervision may be mindful of being monitored in supervision and therefore devote more attention to establishing rapport and ensuring client commitment and compliance with interventions and subsequently achieve greater therapeutic change. These two studies suggest that it may be quite important for supervisors to directly observe their supervisees' therapy sessions. However, with so few studies in this area, more confident conclusions await further evidence.

To summarise then, although inconclusive, research findings to date provide tentative support for the argument that supervision facilitates skill development, impacts on skill maintenance and skill deterioration, and has an influence on therapist self-efficacy. There is also some support that supervision is related to client attendance in therapy and client therapeutic outcomes. Furthermore, Jaynes et al. (1979) and Kivlighan et al. (1991) have illustrated that the employment of live supervision appears to enhance factors related to client outcome. Despite supervision being widely accepted as a main means of therapist development and client outcome, and as has been evident in the review this far, research to date is scarce and inconclusive. The review clearly illustrates the need for further research on the effectiveness of supervision.

The Supervisory Alliance

A growing area of supervision research has focused on the relationship between the therapist and supervisor and how this relationship impacts on therapist skill development and client outcome (Efstation, Patton, & Kardash, 1990; Ladany, Ellis, et al., 1999). The measurement of the supervisory alliance (i.e., the relationship between the therapist and their supervisor) has consisted of three interrelated factors: (1) Agreement and mutual understanding of supervision goals (e.g., professional development and mastery of skills), (2) agreement on tasks of supervision (e.g., feedback and observing therapy sessions), and (3) emotional attachment and rapport between supervisor and supervisee (e.g., trust,

respect, genuineness, and liking) (Bordin, 1983). Kilminster and Jolly (2000) and Ellis (1991) have suggested the supervisory relationship to be the most critical element in supervision and have further suggested it to be more important than supervisor techniques or methods used for enhancing client outcome.

Therapist Professional Development

The relationship between the supervisor and supervisee has been found to impact on therapist skill development. More precisely, the supervisory alliance has been found to influence therapist adherence to treatment protocol (Holloway & Neufeldt, 1995; Patton & Kivlighan, 1997). In a study involving 75 therapists and 25 supervisors, Patton and Kivlighan (1997) found that the supervisory relationship accounted for 27% of the variance in therapist adherence to treatment protocol. This relationship is important as a substantial amount of research reviewed in Chapter Four has associated adherence with client outcome, including MST studies (Bright et al., 1999; Henggeler, Melton, et al., 1997; Henggeler, Pickrel, et al., 1999; Huey et al., 2000; Luborsky et al., 1985; Schoenwald, Henggeler, et al., 2000). The supervisory alliance has also been correlated with factors related to therapist skills such as self-efficacy, therapist role conflict and ambiguity, and supervisee self-disclosure (Efstation et al., 1990; Ladany & Friedlander, 1995; Ladany, Lehrman-Waterman, Molinaro, & Wolgast, 1999; Lehrman-Waterman & Ladany, 2001; Webb & Wheeler, 1998). Thus, existing research suggests that alliance between supervisors and supervisees may well ensure therapeutic skill retention and development, including therapist fidelity.

Client Outcome

Given the limited research to date, the relationship between supervisors and supervisees appears to be the most robust supervisory predictor of client outcomes and satisfaction. The most convincing findings regarding the supervisory relationship and client outcomes are those reported by Patton and Kivlighan (1997). Patton and Kivlighan found that 44% of the variance in the therapeutic alliance (relationship between client and therapist) was explained by the supervisory alliance (relationship between therapist and supervisors). In addition, changes in the therapeutic alliance were accounted for by changes in the supervisory relationship. This finding is crucial as the therapeutic alliance is one of the strongest predictors of client outcomes (Horvath & Bedi, 2002; Horvath & Symonds,

1991; Howgego et al., 2003; Lambert & Barley, 2002). Harkness (1995) also demonstrated that the supervisory relationship is a better predictor of client outcomes than supervisor helpfulness and the supervisor skills of empathy, trust building, and problem-solving. Thus, while more research is needed, in order to increase favourable outcomes in therapy, it appears important that the therapist and their supervisor have a positive alliance.

Additional Factors Related to Supervision Effectiveness

Supervisor Characteristics and Styles

Therapist Professional Development

Supervisor characteristics and styles appear to influence the professional development and self-efficacy of therapists (Efstation et al., 1990). Research has indicated that particular supervisors are more effective than other supervisors at facilitating supervisee change and development (Henry, Schacht, et al., 1993). Some positive supervisor characteristics are empathy, understanding, flexibility, accessibility, and attentiveness (Carifio & Hess, 1987). In terms of supervisory style or the manner in which supervisors conduct supervision, structural, systemic (learning specific interpersonal and counselling skills), and goal directed styles (focused on clinical needs, goals, and strategies) have been considered the most effective styles in enhancing therapist skill particularly in diagnosis and treatment planning (Henry, Schacht, et al., 1993; Lambert & Arnold, 1987; Lambert & Ogles, 1997; Shiffman, 1987; Talen & Schindler, 1993). However, the optimal supervisory style may vary according to the supervisee's experience, stage of career development, cognitive style, and preferred clinical orientation (Heppner & Roehlke, 1984; Swanson & O'Saben, 1993). Thus, it is not exclusively the employment of supervision that influences skill acquisition, but other factors including supervisor characteristics and his or her ability to fit those characteristics to an individual supervisee's developmental needs.

Client Outcome

Client improvement also appears to be influenced by various supervisor characteristics. Harkness (1995, 1997) demonstrated numerous links between supervisor characteristics

and client outcome. Supervisee ratings of supervisor helpfulness, empathy, and problem-solving ability have been associated with client generalised contentment, client goal attainment, and client perception of supervisee helpfulness (Harkness, 1995, 1997). Dodenhoff (1981) has also demonstrated that supervisee perceptions of supervisor expertness, trustworthiness, and attractiveness were related to supervisor ratings of client well-being.

The focus and style of supervision has also been shown to influence client outcomes. Client focused supervision has consistently been associated with enhanced client outcomes compared to administrative and mixed focus supervision (Harkness, 1995, 1997; Harkness & Hensley, 1991; Triantafillou, 1997). Clients whose therapist received client-focused supervision (e.g., client-focus, conceptualisation of client problems, and intervention ideas), compared to mixed focus supervision (administration, training, and clinical consultation) had superior increases in client goal attainment and generalised contentment, higher satisfaction with therapist helpfulness, higher problem-solving ability, and stronger therapeutic alliances (Harkness, 1995, 1997; Harkness & Hensley, 1991). Overall, Harkness and Hensley (1991) reported that 87% of clients in the client-focused supervision group experienced improvement compared to 50% of clients in the mixed focus supervision group. Clients perceived therapists who received client-focused supervision as being more attentive, supportive, empathic, collaborative, and encouraging. Research with children has also found this age group to engage in fewer and less serious negative behavioural incidents (M = 2.50) as reported by residential staff when their therapists received client-focused supervision compared to children whose therapists received administrative supervision (M = 10.14) (Triantafillou, 1997). Furthermore, while children whose therapist received client-focused supervision had reductions in psychophamological medication, 66% of children whose therapist received administrative supervision had an increase in their level of psychophamological medication (Triantafillou, 1997). Finally, Dodenhoff (1981) demonstrated that a direct supervisor style (i.e., corrective feedback, requests and directions, criticism, responses to supervisee questions, and praise and reward) predicted client outcomes compared to an indirect supervisory style (i.e., affective clarification and acceptance, cognitive and skill clarification, and supervisor questions). Thus, the research to date suggests that directive

and client-focused supervision is superior at improving client well-being compared to other supervision styles.

Supervisory Alliance

Supervisor characteristics and styles have also been shown to influence the supervisory relationship. The supervisory alliance has been found to be positively correlated with supervisee perceptions of supervisor expertness, attractiveness, and trustworthiness (Heppner & Handley, 1981; Schiavone & Jessell, 1988). The alliance has also been demonstrated to correlate with the supervisor styles of attractiveness (i.e., warm, friendly, open, flexible, and supportive), interpersonally sensitive (invested, therapeutic, resourceful, and perceptive), and task oriented styles (i.e., focused, goal oriented, and structured) (Efstation et al., 1990; Ladany, Walker, & Melincoff, 2001). The higher the level of commitment to a given supervisor style, the higher the alliance (Efstation et al., 1990; Ladany et al., 2001). While all three styles positively correlated with supervisory alliance, when the supervisor was rated as warm, friendly, open, and supportive by their supervisee, there were stronger correlations. Chen and Bernstein (2000) have also demonstrated that supervisors from dyads with strong supervisory alliances are more likely to have attractive and interpersonally sensitive styles than supervisors from dyads with low supervisory alliances. Thus, particular supervisors may be more effective, based on their characteristics and working style, at influencing client outcome through enhancement of supervisory alliance.

Supervision Satisfaction

Therapist Professional Development and Client Outcome

Satisfaction with supervision is also associated with increased therapist competence and self-efficacy (Cohen & Laufer, 1999; Larson & Daniels, 1998). It has been demonstrated that higher supervisee satisfaction with supervision is related to perceived competence and superior implementation of skills and behaviours (Larson & Daniels, 1998). As supervisees rated their own competence, it is unknown whether satisfied supervisees were actually more effective or competent according to objective ratings, client ratings, or in relation to outcome. Nevertheless, as suggested in Chapter Four, and a feature under study in the current research, one’s belief in their ability to carry out effective treatment may be important in its own right.

Supervisory Alliance

The supervisory alliance is also associated with client outcomes (Harkness, 1995) and therapist satisfaction with supervision (Ladany, Ellis, et al., 1999; Ladany, Lehrman-Waterman, et al., 1999). Ladany, Ellis, et al. (1999) and Ladany, Lehrman-Waterman, and colleagues (1999) demonstrated that supervisee satisfaction with supervision correlated with the three alliance dimensions (goals, tasks, bond). Additionally, as the supervisory alliance improved over time, supervisees rated higher levels of comfort with supervision, greater positive perception of supervisor qualities and performance, and increased positive perception of personal behaviour. Alternatively, lower supervisory relationships have predicted lower comfort and satisfaction with supervision, higher negative perception of supervisor qualities and performance, and lower perception of personal competence (Ladany, Ellis, et al., 1999; Ladany, Lehrman-Waterman, et al., 1999; Newsome & Pillari, 1991). The supervisory alliance has also correlated with job satisfaction, satisfaction with clients, and supervisee perception of professional competence (Cohen & Laufer, 1999; Newsome & Pillari, 1991). Importantly, supervisee satisfaction with the supervisory relationship has been correlated with client ratings of goal attainment and generalised contentment with therapy (Harkness, 1995). As satisfaction with supervision impacts on therapist perceptions of supervisors and perceived performance, as well as affecting client outcome, a satisfying supervisory relationship appears important.

MST Supervision

As with the larger body of supervision research, there have been few studies examining the effectiveness of supervision in MST. Supervision is the primary forum supervisors have to obtain evidence of whether MST practitioners are implementing MST effectively and in accordance to the nine treatment principles. Thus, supervision is an integral component of quality assurance (Cunningham et al., 2006; Henggeler et al., 2002). Supervision in MST is generally conducted in group format consisting of one supervisor and three to four therapists. The sessions are held as often as needed to achieve treatment fidelity and favourable outcomes, generally once a week for 1.5 to 2 hours. The

frequency of sessions depends on the maturity of the MST team and nature of the clinical population. Supervisors are also available to the therapists 24 hours, 7 days a week.

Therapist Professional Development

The limited research examining the relationship between MST supervision and MST therapist adherence and client outcome was reviewed in Chapter Four. In summary, supervisor adherence to MST protocol, reported by MST therapists, produced some contrary findings. Although supervisor expertise in MST and the use of empirically supported treatments was positively related to therapist adherence to family-therapist collaboration, follow-up on treatment progress, and attempts to change family interactions, supervisor adherence to MST analytic process (i.e., emphasising the conceptual foundation of MST) and promoting clinician competencies was negatively associated with therapist adherence (Henggeler et al., 2002). Surprisingly, the results illustrated that high supervisor adherence in certain areas is associated with low therapist adherence. This is concerning as research has demonstrated that high therapist adherence is related to better outcomes compared to low therapist adherence (Henggeler, Pickrel, et al., 1999; Henggeler, Rowland, et al., 1997; Henggeler et al., 2002; Huey et al., 2000; Schoenwald, Henggeler, et al., 2000). Although the study by Henggeler and colleagues did not examine the impact of supervisor adherence on client outcomes, the results obtained raise the question of whether supervisor adherence interferes with clinical processes and therapist-family engagement and consequently client outcome.

Client Outcome

Although there has been no research directly assessing the relationship between MST supervision and client outcomes, results from the meta-analysis by Curtis et al. (2004) found that studies that employed the developers of MST as supervisors (Borduin et al., 1990; Borduin et al., 1995; Brunk et al., 1987; Henggeler et al., 1992; Scherer et al., 1994) had significantly better outcomes compared to studies that did not include the developers of MST (d = 0.81 vs. d = 0.26) (Henggeler, Melton, et al., 1997; Henggeler, Pickrel, et al., 1999; Henggeler, Rowland, et al., 1999). As the relationship between supervision and client outcomes was not directly assessed, the reasons for the different outcomes are unknown. Possible differences in outcomes between the two types of supervisors (i.e.,

MST developers vs. people trained in MST supervision) could be related to supervision delivery, supervisor characteristics, supervisor adherence to MST protocol, level of expertise and experience with the specific presenting problems, supervisor allegiance to the MST model, and supervisor perceived accountability to obtain outcomes.

In summary, research exploring the relationships between MST supervision, therapist fidelity, quality assurance, and client outcomes is required. Identifying factors of supervision that hinder and/or enhance therapist development and client outcome will be beneficial to MST practice.

Conclusion

Supervision represents one component of the ongoing life-long professional development of mental health practitioners to ensure that they maintain and update their skills and practice in line with best practice ideals and advances in knowledge (Spence et al., 2001) [3]. Despite some problems, a review of the literature on the effectiveness of supervision provides some encouragement. There is support that supervision not only increases therapist skill more than no supervision, but that it is also associated with positive client outcome. The developing research literature also highlights the importance of a collaborative and supportive relationship between supervisors and therapists. Although the body of research on the links between supervision and client outcome is limited, including for MST, it is possible to associate supervision with client outcomes on the basis of direct findings (i.e., discussed in this chapter) as well as logical and inferential conclusions. That is:

1. Supervision is associated with the supervisory alliance, therapeutic alliance, therapist skill and adherence, and therapist satisfaction;
2. Supervisory alliances have been associated with supervisor therapeutic alliance, supervisee satisfaction, and therapist skill;
3. As the therapeutic alliance, therapist satisfaction, and therapist skill are associated with client outcomes, it can be inferred that features of supervision should be able to enhance client outcomes directly or indirectly.

[3] Based on clinical psychology training in New Zealand, the ethic of life long supervision is considered important, even for experienced and expert clinicians.

Expanding on supervision research by examining relationships between supervisors, therapists, and client outcomes that have largely been overlooked in the literature would be thought to be beneficial for the future practice of MST as well as for supervision practice in general.

Chapter Six

Summary and Research Goals

Youth antisocial behaviour in New Zealand, particularly violent acts, has been increasing (Soboleva et al., 2006). Treatment for this population group has been largely ineffective owing to the limited focus of service delivery and interventions (see Chapters One and Two). In 2001 Richmond Fellowship New Zealand joined USA-based MST Services to introduce MST in New Zealand. Through rigorous evaluation, MST has been demonstrated to be an effective treatment approach and has been referred to as the treatment of choice for antisocial youth (Levesque, 1996; Kazdin & Weisz, 1998; Tate et al., 1995). In 2004, when this research commenced there were three New Zealand teams (North and South Island) applying the MST model. In 2005 two new teams were developed. In New Zealand, MST has four primary goals:

1. Reducing the frequency and severity of offending;
2. Reducing the number of days youth spend in formal out-of-home placements;
3. Increasing school attendance; and
4. Supplying families with tools and strategies to overcome current and future difficulties.

Owing to the relative newness of the model in New Zealand, research on the effectiveness of this treatment approach here, with our unique social and cultural structure, is limited. Furthermore there has been limited research into factors that moderate and predict outcome. The current research intends to replicate and expand on the research conduct by Curtis et al. (2008; see also Curtis, 2004) which to date is the sole research on MST in the New Zealand context. The current research is divided into 5 Sections: The first section will examine the effectiveness of MST in New Zealand while Sections 2 to 5 will examine possible predictors and moderators of outcome.

Section 1: Effectiveness of MST in New Zealand

The first set of aims in the current research is in line with the four fundamental goals of MST and expand on the first four objectives in the original research by Curtis (2004). The first set of aims was:

1. To evaluate the effectiveness of MST in reducing the frequency and seriousness of youth offending behaviour;
2. To evaluate the effectiveness of MST in reducing the number of days youth spend in formal out-of-home placements;
3. To evaluate the effectiveness of MST in increasing school attendance and/or the pursuit of employment related skills or employment;
4. To evaluate the effectiveness of MST in reducing youth antisocial functioning and improving youth pro-social functioning;
5. To evaluate the effectiveness of MST in reducing caregiver psychopathology and improving caregiver well-being;
6. To evaluate the effectiveness of MST in improving parent ability; and
7. To evaluate the effectiveness of MST in improving family relations and functioning.

Section 2 to 5: Predictors and Moderators of Outcome

To expand the currently available research on MST, the present research intended to investigate the relationships between a number of common factors in treatment and client outcome. Common factors of interest are service satisfaction, the therapeutic and supervisory alliance, therapist and supervisor adherence, therapist and supervisor allegiance, and therapist and supervisor accountability. With the exception of adherence, these factors have not been investigated in previous research on MST.

Section 2: Service Satisfaction, Therapeutic Alliance, Therapist Adherence, and Outcome

The three variables of service satisfaction, therapeutic alliance, and therapist adherence are referred to as 'quality assurance indicators' as they evaluate the direct family-therapist contacts.

Service Satisfaction

Research has indicated that clients who are more satisfied with treatment services are less likely to drop out of therapy prematurely and are more likely to improve than clients who report low satisfaction with treatment (Attkisson & Zwick, 1982; Deane, 1993; Watson, 1993). There is limited research examining client satisfaction with MST and there is a lack of studies involving the measurement of satisfaction while the respondent is still receiving services (Attkisson & Greenfield, 1999). The current study proposed that:

1. Client satisfaction with MST services would predict client outcomes (e.g., reduction in the frequency and seriousness of youth offending behaviour and out-of-home placements (OHP); improvement in school attendance and youth, parent, and family functioning): The higher the satisfaction, the better the outcomes.

Therapeutic Alliance

Consistent findings have linked a positive therapeutic alliance with client outcome (Horvath & Bedi, 2002; Horvath & Symonds, 1991; Martin et al., 2000). However, there is sparse research on the alliance and family, child, and youth outcomes and there is no published research on the alliance and MST. This study proposed that:

2. The therapeutic alliance would predict client outcomes (e.g., reduction in the frequency and seriousness of youth offending behaviour and OHP; improvement in school attendance and youth, parent, and family functioning): The higher the alliance, the better the outcomes.

Therapist Adherence

Research on therapist adherence to treatment protocol, particularly research involving MST, has found that higher adherence is related to improved client outcomes (see Chapter Four). This current study intends to replicate this relationship and proposed that:

3. Therapist adherence to MST protocol would predict client outcomes (e.g., reduction in the frequency and seriousness of youth offending behaviour and OHP; improvement in school attendance and youth, parent, and family functioning): The higher the therapist adherence, the better the outcomes.

Section 3: Supervisor Adherence, Therapist Adherence, and Outcome

One research study has indicated that MST supervisor adherence is related to MST therapist adherence (Henggeler et al., 2002). The current study intends to replicate this relationship as well as assess whether this relationship directly impacts on client outcome.

4. Supervisor adherence to MST protocol would predict therapist adherence where the higher the supervisor adherence, the higher the therapist adherence.
5. Supervisor adherence would also positively moderate the relationship between therapist adherence and client outcomes (e.g., reduction in the frequency and seriousness of youth offending behaviour and OHP; improvement in school attendance and youth, parent, and family functioning).

Section 4: Allegiance, Accountability, and Outcome

Therapist and Supervisor Allegiance

The research literature suggests that allegiance, or belief that a therapy model works, is related to client outcome (see Chapter Four). It is also plausible that therapist allegiance is influenced by supervisor allegiance. Based on this research, the current study proposed that:

6. Therapist and supervisor allegiance to the MST model would predict client outcomes (e.g., reduction in the frequency and seriousness of youth offending

behaviour and OHP; improvement in school attendance and youth, parent, and family functioning): The higher the allegiance, the better the outcomes.

7. Supervisor allegiance would positively moderate the relationship between therapist allegiance and client outcomes.

Therapist and Supervisor Accountability

Although limited, research has suggested that therapist perceptions of accountability may be related to increased efficacy (see Chapter Four). Although MST therapists are held accountable for engagement and for producing favourable outcomes for families and MST supervisors are held accountable for ensuring that therapists adhere, there has been no research conducted on whether therapist and supervisor perceptions of accountability are related to client outcomes. It is also plausible that therapist accountability is influenced by supervisor accountability. The present study proposed that:

8. Therapist and supervisor perception of accountability would predict client outcomes (e.g., reduction in the frequency and seriousness of youth offending behaviour and OHP; improvement in school attendance and youth, parent, and family functioning): The higher the accountability, the better the outcomes.
9. Supervisor accountability would positively moderate the relationship between therapist accountability and client outcomes.

Section 5: Supervisory Alliance, Therapist Adherence, Therapeutic Alliance, and Outcome

Research has indicated that the supervisory alliance, or the relationship between the supervisor and supervisee/therapist, is associated with therapist adherence to treatment protocol and the client therapeutic alliance (Ladany, Lehrman-Waterman, et al, 1999; Patton & Kivlighan, 1997). As reviewed earlier, both adherence and the therapeutic relationship have been found to be related to client outcomes. Based on this research, the current study proposed that:

10. The supervisory relationship would positively predict therapist adherence and would positively moderate the relationship between therapist adherence and client

outcomes (e.g., reduction in the frequency and seriousness of youth offending behaviour and OHP; improvement in school attendance and youth, parent, and family functioning).

11. The supervisory relationship would positively predict the therapeutic alliance and would positively moderate the relationship between therapeutic alliance and client outcomes.

Chapter Seven

Method

Study Design

A one-group pre-test post-test design (6- and 12-month follow-up) was employed to assess the effectiveness of MST therapy and to assess for predictors and moderators of outcome for youth displaying antisocial behaviours. There was considerable effort by the researcher to obtain a wait-list control group. Despite efforts, a range of funding and organisational factors outside the researcher's control resulted in this proposal being declined. However, consent was provided to conduct a one-group pre-test post-test design, supplemented with treatment completion and effect size calculations to allow for benchmarking current findings.

Participants

The participants (client families, therapists, and supervisors) for this study were obtained from four MST team sites. The MST teams were located in Christchurch (Site 1), Wellington (Site 2), Hamilton (Site 3), and the Manawatu (Site 4). Site 1, 3, and 4 consisted of 2 therapists and 1 supervisor and Site 2 consisted of 3 therapists and 1 supervisor. Youth and their families were referred to MST teams from relevant services, namely Child Youth and Family Services (CYFS), police, youth aid workers, and education providers. For inclusion in the MST program youth were required to meet the following criteria: Be between 9 and 18 years of age; have evidence of externalising behaviour problems; be at risk of out-of-home placements; have engaged in criminal behaviour and be involved in the youth justice system; have physical and/or verbal aggression in the home, at school, or in the community; have school truancy and/or failure associated with behavioural problems; have a mental health disorder in the context of the above problems; have a substance abuse problem in the context of problems listed

above; and have a parent or caregiver motivated to engage in the program. Youth who meet any of the following criteria are excluded from MST: Youth for whom a primary caregiver cannot be identified; youth whose sole presenting problem is sexual offending; youth in need of crisis stabilization because of active suicidal, homicidal, or psychotic behaviour; youth with a pervasive developmental disorder (e.g., autism); and youth with an IQ < 70. Families referred to one of the four MST teams were assigned to a therapist based largely on therapist availability and caseload. Families who agreed to participate in treatment received MST for approximately 4 to 6 months. This treatment involved 24 hour, seven day a week therapist availability to families. Interventions were directed to each individual family in a flexible manner consistent with the family's identified problems and goals. Treatment was conducted in the family's home or in an additional community setting specified by the families in question.

Families: Youth and Their Parent(s)/Caregiver(s)

Families who entered an MST program during March 2004 to November 2005 were invited to partake in the current research. During this period, 93 families entered the program. Of the 93 families, 2 families were excluded as they had no home telephone or cellular phone. Of the 91 families who were contacted and asked to partake, 2 families declined. This resulted in 89 families. Of the 89 families, 8 families dropped out of the program, 5 families were unable to be reached subsequent to initial contact though remained on the program, and 3 families withdrew consent though remained on the program, leaving 81 families. Of these, a total of 73 families (82%) completed the MST program and the current study's questionnaires at T1 through to T2. However, overall, 91% of families who started at T1 completed the MST program[4].

Assessment consisted of completing questionnaires within two to three weeks of commencing MST, monthly there after until finishing the program, and at exit from the program. Figure 1.7 illustrates participant recruitment from pre-treatment (T1) to post-treatment (T2). Of the 73 families, 42 families (58%) completed 6-month follow-up (T3) questions. Of the 31 families who did not complete the T3 questionnaire, 15 youth were no longer living with the same caregivers, 12 were unable to be contacted due to change

[4] Given that some families (n = 8) completed the program but not both T1 and T2 measures, there was a 91% program completion rate (i.e., 81 families completed the MST program out of a total of 89 families).

of contact details[5], 1 family no longer lived in New Zealand, 1 family was back on the MST program, 1 family was unable to complete the questions in the required time frame, and 1 family declined to participate. Figure 2.7 illustrates participant recruitment from T2 to T3. Of the 42 families who completed the T3 questions, 30 completed the 12-month follow-up (T4) questions (71%). Of the 12 families who did not complete the T4 questions, 6 youth were no longer living with the same caregivers, 2 families were unable to be contacted due to change of contact details[6], 1 family was unable to complete the questions in the required time frame, 1 family declined to participate, and for 2 families the T4 period had not elapsed. Figure 3.7 illustrates participant recruitment from T3 to T4.

The identified primary caregiver responded to all questions at each administration. Of the identified caregivers, 86% (n = 63) were in the mother/female caregiver role (e.g., biological mother, foster mother, adoptive mother, step-mother), 8% (n = 6) were biological fathers, and 6% (n = 4) were grandmothers. The mean number of days on the program was 162 (range 100 to 226 days, SD = 26.20).

Of the 73 families who completed both the MST program and T1 and T2 measures, 73% (n = 53) of the youth were male and 27% (n = 20) were female. Youth were 9 to 16 years of age (M = 13 years, SD = 1.93). Seventy percent (n = 51) of the youth were Pākehā/NZ European; 23% (n = 17) Māori; 1.4% (n = 1) Cook Island Māori; 1.4% (n = 1) Tongan; 1.4% (n = 1) Filipino; 1.4% (n = 1) Romanian; and 1.4% (n = 1) English. Household size ranged from 2 to 9 people (M = 3.9 people, SD = 1.42). Fifty-five percent (n = 40) of the youth lived with one parent/caregiver: Forty-seven percent (n = 34) lived with their mother, 4% (n = 3) lived with their father, 3% (n = 2) lived with an adoptive or foster parent, and 1% (n = 1) lived with their grandmother as a sole caregiver. Forty-five percent (n = 33) of the youth lived with two parents/caregivers: Twenty-six percent (n = 19) of the youth lived with one biological parent and their parents partner (including step-parent and adoptive parent), 15% (n = 11) of the youth lived with two biological parents, and 4% (n = 3) lived with their grandparents. Table 1.7 details youth and family characteristics.

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[5] Significant effort was made by the researcher to obtain new current contact details including contacting Telecom Directory Services, therapist, and contact person specified by family.
[6] Significant effort was made by the researcher to obtain new current contact details including contacting Telecom Directory Services, therapist, and contact person specified by family.

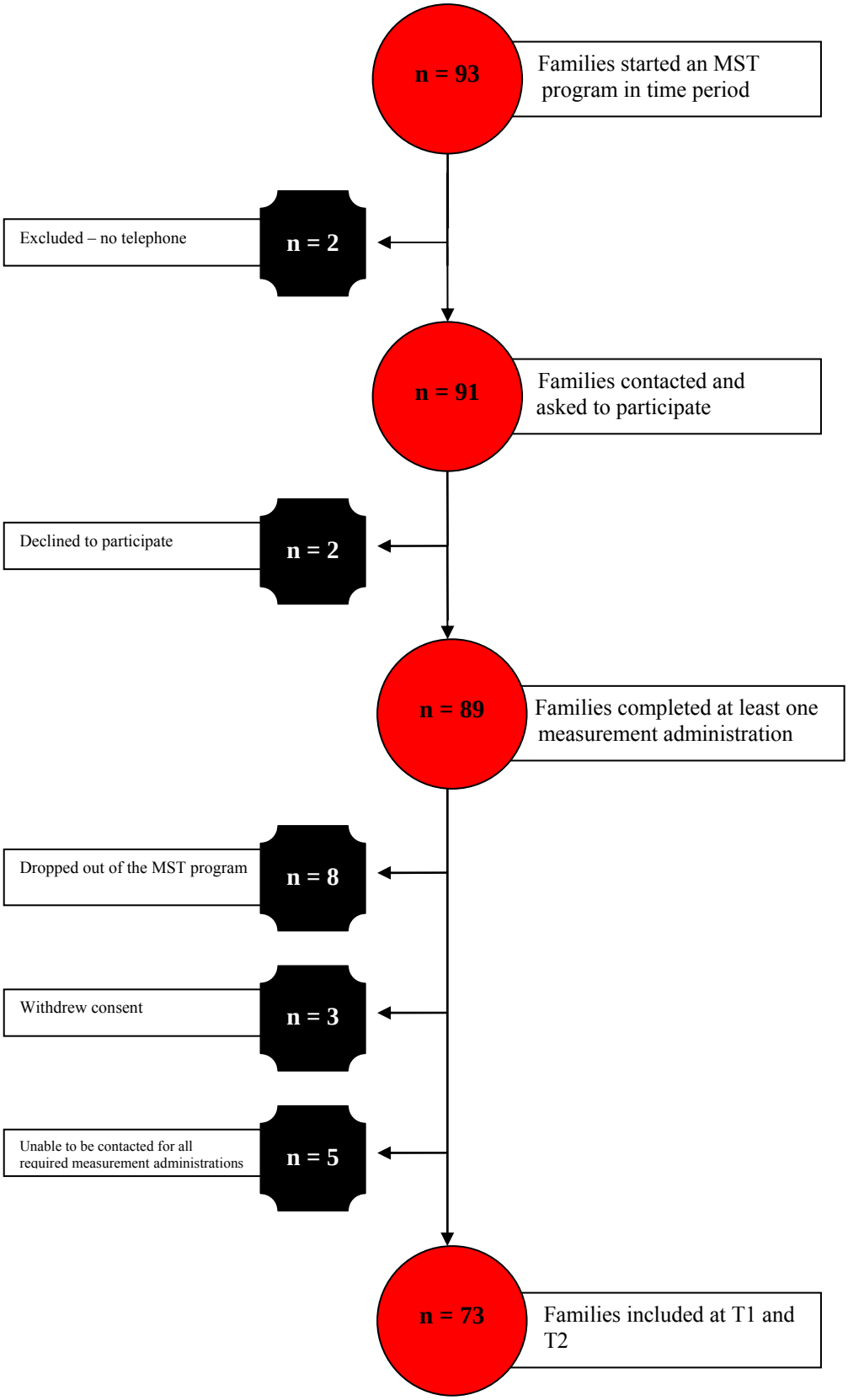

Figure 1.7. Recruitment of participants from T1 to T2.

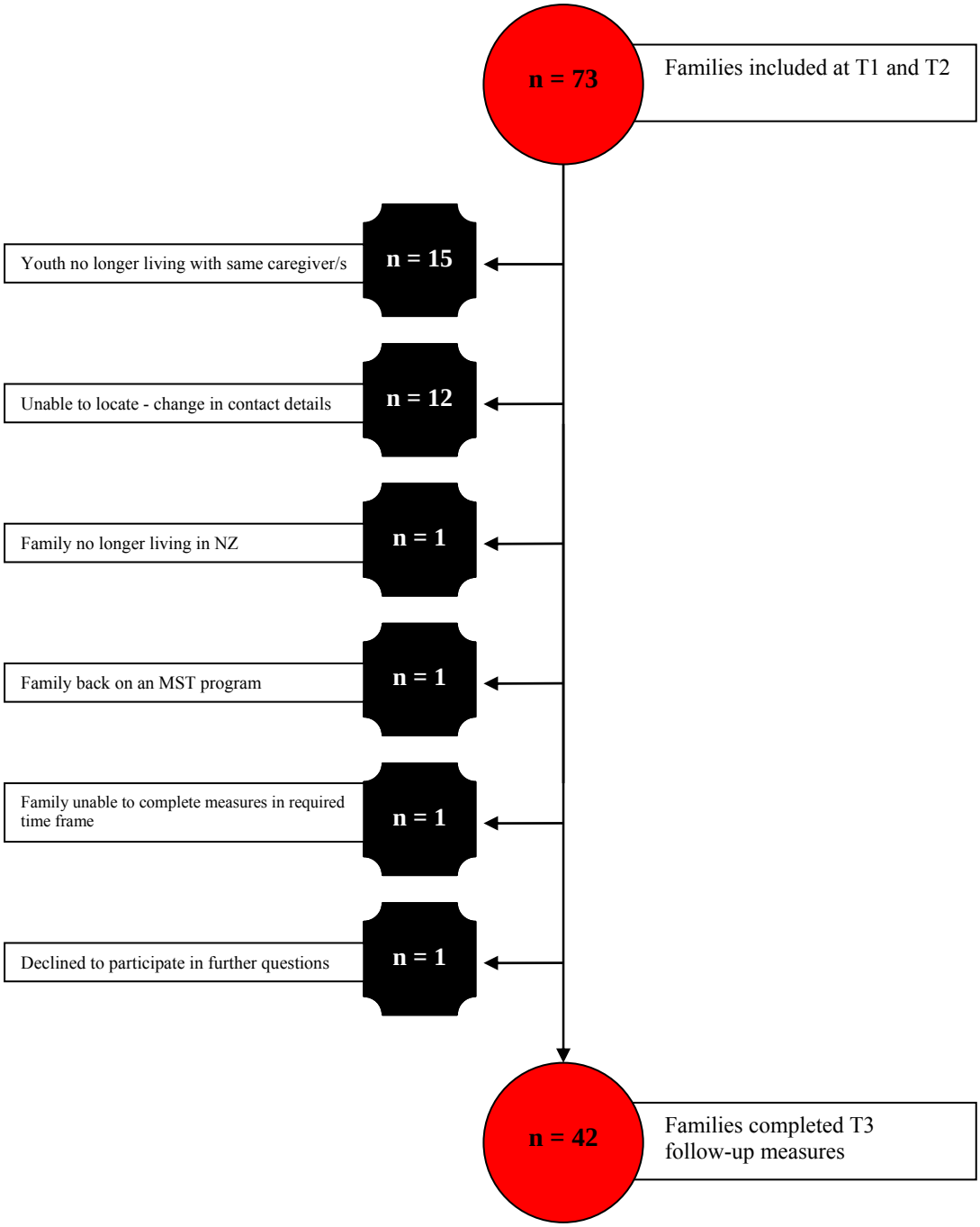

Figure 2.7. Recruitment of participants from T2 to T3 follow-up.

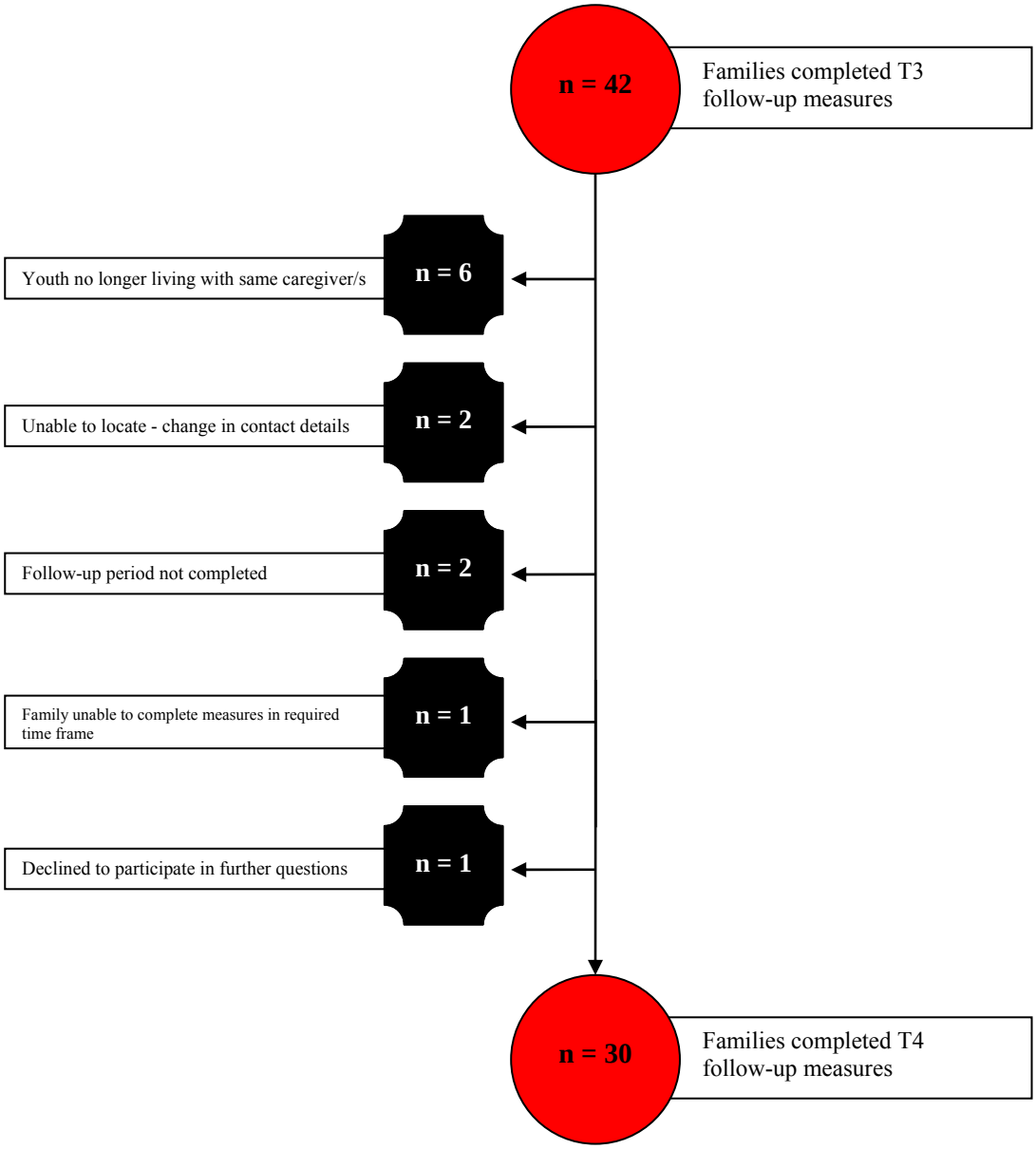

Figure 3.7. Recruitment of participants from T3 to T4 follow-up.

Table 1.7
Youth and Family Demographic Characteristics

		n	Total Sample %	*M*	*SD*
Youth Gender	Male	53	73		
	Female	20	27		
Age				13	1.93
Ethnicity	Pākehā/NZ European	51	70		
	Māori	17	23		
	Other	5	7		
Family Size				3.9	1.42
	2	11	15		
	3	19	26		
	4	25	34		
	5	7	10		
	6	8	11		
	7 plus	3	4		
Parent/Caregiver Composition	Single Caregiver - Mother	34	47		
	- Father	3	4		
	- Grandmother	1	1		
	Two biological parents	11	15		
	Biological mother plus her partner	18	25		
	Biological father plus his partner	1	1		
	Grandparents	3	4		
	Foster/adoptive parents	2	3		
Custody Status	Primary caregiver	61	84		
	Child, Youth, and Family Service	12	16		

Eighty-one percent of the youth had at least one psychiatric diagnosis: Seventeen percent had one diagnosis, 45% had two diagnoses, and 19% had three diagnoses. Only 19% (n = 14) of the youth had no psychiatric diagnosis. The most common primary diagnoses were Attention-Deficit Hyperactivity Disorder (ADHD; 39%, n = 23), Oppositional Defiant Disorder (ODD; 18%, n = 11), depression (14%, n = 8), and conduct disorder (12%, n = 7). Fifty-two percent of the youth were on psychiatric medication: Fourteen percent were on more than one psychiatric medication. The most common medications were

antidepressants, medication for ADHD, and antipsychotic medication. Table 2.7 outlines youth psychiatric diagnoses.

Table 2.7
Youth Psychiatric Diagnoses

		n	**Total Sample %**
Psychiatric Diagnosis	No diagnosis	14	19
	One diagnosis	12	17
	Two diagnoses	33	45
	Three diagnoses	14	19
Primary Diagnosis	ADHD	23	39
	ODD	11	18
	Depression	8	14
	Conduct Disorder	7	12
	Post-Traumatic Stress Disorder	6	10
	Asperger's Disorder	2	3
	Other	2	4
Psychiatric Medication	None	35	48
	One	28	38
	More than one	10	14

Seven percent (n = 5) of the families had been experiencing the difficulties they were seeking MST treatment for, for less than 1 year, 16% (n = 12) had been experiencing the problems for 1 to 2 years, 21% (n = 15) had been experiencing the problems for 2 to 3 years, and 56% (n = 41) had been experiencing the problems for more than 3 years. All families had received input from at least one other service such as mental health, social, educational, or judicial services prior to MST involvement. Eighteen percent had been involved with one or two services, 33% had been involved with three or four services, 22% had been involved with five or six services, and 27% had been involved with seven or more services. Table 3.7 outlines the number of years youth experienced their current difficulties for and the number of services that they have been involved with.

Table 3.7
Years Experiencing Current Problems and Number of Services Involved

	n	Total Sample %	*M*	*SD*
Years Experiencing Current Difficulties			3.30	1.02
Less than 1 year	5	7		
1 to 2 years	12	16		
2 to 3 years	15	21		
More than 3 years	41	56		
Number of Services Involved			3.60	1.08
None	0	0		
1 to 2	13	18		
3 to 4	24	33		
5 to 6	16	22		
7 or more	20	27		

Thirty families were seen at Site 1, 23 families were seen at Site 2, 12 families were seen at Site 3, and 8 families were seen at Site 4.

Therapists

Eight therapists who provided treatment for the youth and families involved in this study agreed to participate in this research. One MST therapist declined. Two therapists resigned during the research period. All participating therapists were female. Seventy-five percent (n = 6) of therapists were Pākehā; 12.5% Māori (n = 1), and 12.5% (n = 1) other European. Thirty-eight percent (n = 3) of the therapists had a social work qualification, 25% (n = 2) had a counselling degree, 12.5% (n = 1) had a Bachelor of Arts (Hons) degree, 12.5% (n = 1) had a Masters degree, and 12.5% (n = 1) had no professional university training. MST therapists had between 2 and 30 years of clinical experience (M = 14.88, SD = 9.75) in social work, counselling, family therapy, youth work, teaching, and occupational therapy. Therapist demographic characteristics are included in Table 4.7.

Prior to becoming an MST therapist all therapists received 40 hours of MST training. They also attended quarterly booster training workshops. All therapists received on average two hours of weekly group supervision and had weekly consultation with the MST clinical director. Therapists had a caseload ranging from 2 to 12 families (M = 5.89).

Table 4.7
Therapist Demographic Characteristics

		n	Total Sample %	*M*	*SD*
Gender	Female	8	100		
Ethnicity	Pākehā/NZ European	6	75.0		
	Māori	1	12.5		
	Other European	1	12.5		
University Qualification	Social Work	3	37.5		
	Counselling Degree	2	25.0		
	Honours Degree	1	12.5		
	Masters Degree	1	12.5		
	None	1	12.5		
Years of Clinical Experience				14.88	9.75

Supervisors

Four MST supervisors agreed to partake in this study. One supervisor declined. Throughout the treatment period, Site 3 had 2 supervisors. Two supervisors also had a caseload, supplying therapy to 2 and 10 families, respectively. Seventy-five percent (*n* = 3) of the supervisors were female and 25% (*n* = 1) were male. Of the supervisors, 75% (*n* = 3) were Pākehā and 25% (*n*= 1) were of other European ethnicity. Seventy-five percent (*n* = 3) of the supervisors had a Masters degree and 25% (*n* = 1) was a clinical psychologist. Supervisors had a mean of seven years of clinical experience as a therapist and a mean of four years of experience as a supervisor prior to MST involvement. Supervisor demographic characteristics are included in Table 5.7.

All supervisors received 40 hours of MST training and had been trained in MST supervision protocol prior to becoming an MST supervisor. All supervisors had weekly consultation with the MST clinical director and attended quarterly booster training workshops.

Table 5.7
Supervisor Demographic Characteristics

		n	Total Sample %	*M*	*SD*
Gender	Female	3	75		
	Male	1	25		
Ethnicity	Pākehā/NZ European	3	75		
	Other European	1	25		
University Qualification	Masters Degree	3	75		
	Clinical Psychologist	1	25		
Years of Clinical Experience Prior to MST				7	4.55
Years of Supervisor Experience Prior to MST				4	3.16

MST Intervention

MST was implemented following the treatment manual (see Henggeler et al., 1998) and in accordance with the nine MST treatment protocols (see Chapter Two). MST is based on a social-ecological model where problematic behaviours are thought to develop and be perpetuated by dysfunctional transactions across multiple interconnected and reciprocal systems (Henggeler & Borduin, 1990; Henggeler et al., 1998). These systems include individual, family, peer group, school, and community systems. MST intervenes within and between the multiple systems surrounding the adolescent that are known to contribute to problem behaviour by applying empirically supported interventions (Henggeler et al., 1998). Treatment interventions include cognitive behavioural principles (Braswell & Bloomquist, 1991), behavioural parent training models (Briesmeister & Schaefer, 1998), and structural (Minuchin, 1974) and strategic (Haley, 1987) family therapies and are directed towards the family as a whole. Interventions used are intended to capitalise on strengths, with a focus on the needs and goals of the adolescent and family (Henggeler et al., 1998). Treatment is individualised and intended to be flexible. MST is intensive, time-limited (four to six months in duration), and is home- and community-based.

Procedure

Families: Youth and Their Parent(s)/Caregiver(s)

Within the first week of treatment commencement, therapists introduced families to MST and written consent was obtained from the youth and primary caregiver. This outlined that they consented to participate in MST and consented to MST employees having the right to access confidential information about the youth from other relevant organisations (e.g., CYFS, school). This procedure is mandatory to MST NZ and is a prerequisite for participating in MST. At this point MST therapists also informed families about the current research. Families were informed that participation in the research was voluntary and that refusal to participate (or exercising the right to discontinue at any time) would not jeopardise the receipt of treatment services or result in harmful consequences. Therapists informed the researcher of interested families.

Once this information was received, the researcher contacted the families and explained the general procedure and purpose of the research and the accompanying assessments. The researcher then sent out detailed caregiver and youth information sheets which described the nature of the study and outlined their rights as participants and the responsibilities of the researcher. They were informed of the time required to complete the measures, that their responses were confidential, that if they so wished they could refuse to answer any of the interview questions, and that they could further withdraw from the study at any time (including the follow-up parts of the research). Respondents were also informed on how they could obtain feedback about the results of the study. They were further supplied with detailed contact information about the researcher and her supervisor so they could ask additional questions or seek further clarification about any aspect of the research. Caregiver and youth consent forms were also sent to the family. Parent and youth information sheets and consent forms are included in Appendix 1 and 2. After consent was obtained, a convenient time for the primary caregiver was arranged to conduct the T1 assessment. The primary caregiver was subsequently contacted at convenient times on a monthly basis until program completion and at T3 and T4 follow-up. Consent was also gathered for the researcher to access information on the youth's school attendance, offending behaviours, and out-of-home placements (i.e., ultimate

outcome indicators). (See Figure 4.7 on page 94 for an outline of the time intervals for the ultimate outcomes data collection and Table 6.7 on page 104 for an outline of the measures administered to the primary parent/caregiver at each measurement administration.)

Therapists and Supervisors

The researcher attended a MST quarterly booster training workshop in February 2004 to discuss the nature, procedure, and aims of the research and to distribute therapist and supervisor information sheets. Information sheets described the nature of the study and outlined their rights as participants and the responsibilities of the researcher. They were informed of the time required to complete the required measures, that their responses were confidential, that if they so wished they could refuse to answer any of the interview questions and that they could further withdraw from the study at any time. They were ensured that refusal to participate (or exercising the right to discontinue at any time) would not jeopardise their working condition, would not prevent them from accessing possible future work promotions, and would not harm them in any way. Respondents were also informed of how they could obtain feedback about the results of the study. They were further supplied with detailed contact information about the researcher and her supervisor so they could ask additional questions or seek further clarification about any aspect of the research. Therapists and supervisors were contacted two weeks later and asked to participate. Consent forms were subsequently sent out. Supervisor and therapist information sheets and consent forms are included in Appendix 3 and 4. Once consent was obtained therapists completed a questionnaire every three months and supervisors completed a questionnaire every 6-months. These questionnaires were sent via post and the participants received a pre-paid return envelope. Therapists and supervisors had the option of receiving (and completing) the questions via post or by telephone administration with the researcher.

This research was conducted in accordance with the ethical guidelines laid down by the New Zealand Psychological Society. Massey University, Canterbury, Waikato, and Wellington Human Ethics Committees approved the research project.

Measures

A multi-method self-report and archival strategy was employed to examine ultimate or primary outcomes (e.g., offences, out-of-home placements, and school attendance), instrumental or secondary outcomes (e.g., primary caregiver symptomatology and wellbeing, youth behaviour, and family functioning), quality assurance (e.g., service satisfaction, therapeutic alliance, and therapist adherence), therapist and supervisor allegiance, therapist and supervisor accountability, supervisor adherence, and supervisory alliance. All measures administered to the primary caregiver were administered over the telephone.

Measures were selected or developed to tap the key constructs representing ultimate and instrumental outcomes and therapist and supervisor variables relevant to MST treatment goals, treatment process, and the target population. Measures developed and/or employed in New Zealand (i.e., Affectometer 2) were employed where appropriate. Measures were only developed when there was no previously developed or published measure (i.e., allegiance and accountability), and the items were designed to assess key concepts of MST treatment and processes.

Socio-Demographic Information

Socio-demographic information was collected on youth and their families, therapists, and supervisors. Information on youth age, gender, ethnicity, psychiatric diagnosis and psychiatric medication was collected as well as the number of people living in the household and the number of years experiencing the current problems. Information on therapist and supervisor age, gender, ethnicity, marital status, education qualifications, type of previous employment, and years of experience as therapists and/or supervisors was collected.

Ultimate Outcomes

Criminal behaviour, days in out-of-home placements, and school attendance are the ultimate outcomes of MST. The collection of this information is a mandatory process in MST and is collected by an independent evaluation coordinator (the researcher) as

opposed to a MST therapist or supervisor or MST NZ management. In this research ultimate outcome data (frequency and seriousness of offending, school attendance, and days in out-of-home placements) was collected systematically from agencies (police youth aid, CYFS youth justice workers, and education providers) at multiple times (see Figure 4.7 at the end of this chapter).

Offending Behaviour

Details pertaining to offending behaviour was collected from Police Youth Aid and CYFS youth justice officers by the researcher. The date and nature of the offences were recorded. The seriousness of offences was rated using a 17-point Seriousness Scale developed in conjunction with New Zealand Police and MST NZ. This scale was adapted from the Seriousness Scale by Hanson, Henggeler, Haefele, and Rodick (1984) to correspond with New Zealand judicial offence codes. Offences rated 1 to 4 correspond to status offences such as truancy, out-of-parental control, missing person, and disorderly behaviour; offences rated between 5 and 10 comprise of threatening behaviour, assault, breaking and entering, and carrying a dangerous weapon; offences rated between 11 and 17 comprise of armed robbery, grievous assault, criminal sexual conduct, and murder. This scale is included in Appendix 5.

Out-of-Home Placements

Details pertaining to formal out-of-home placements (OHP) organised through CYFS or mandated by the court were collected from CYFS case workers by the researcher. Information on the number of days spent out-of-home and the placement option (e.g., foster care, incarceration, respite care, residential treatment facility, hospital, and CYFS family home) was recorded.

School and Vocational Attendance

Details pertaining to attendance at school or an educational facility and/or employment setting was collected from relevant organisations by the researcher. School attendance was calculated by dividing the total number of possible half days a student could attend by the number of half days they actually attended. Information was also collected on school stand-downs, suspensions, and exclusions.

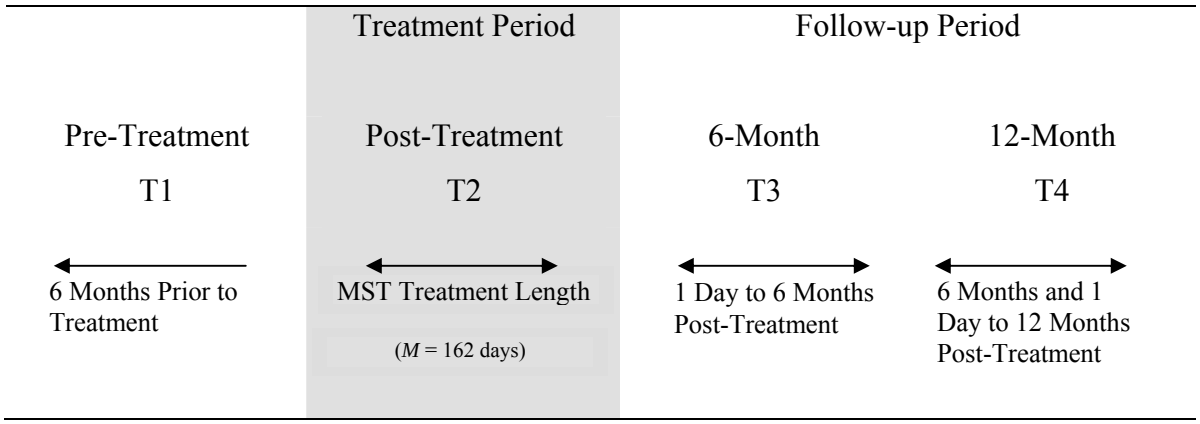

Figure 4.7. Data collection intervals for ultimate outcome indicators.

Instrumental Outcomes

Youth Negative Behaviour

Youth negative behaviour was assessed from the primary caregiver responses to nine questions relating to youth behavioural functioning. The nine-item scale measures a variety of negative behaviours such as fighting, drug use, deviant peer affiliation, and depression (e.g., "My child has gotten into fights in the past month?"). Items are rated on a 5-point Likert scale ranging from 1 (*never*) to 5 (*almost always*). Scale scores ranged from 9 to 45. New Zealand based research on this scale obtained an alpha coefficient of .70 (Curtis et al., 2008). In the current research, the Youth Negative Behaviour Scale (YNBS) had a mean alpha coefficient of .74. This scale is included in Appendix 6.

Youth Positive Behaviour

Youth positive behaviour was assessed from the primary caregiver responses to eight questions relating to youth behavioural functioning. The 8-item scale measures a variety of behaviours such as ability to stay out of trouble, to stay at school, to function responsibly, and to communicate with caregivers (e.g., "How well has your youth been able to get along with his/her peers?"). Items were rated using a scale from 1 (*not able to*) to 10 (*very much able to*). Scale scores ranged from 8 to 80. In the current research, the Youth Positive Behaviour Scale (YPBS) had a mean alpha coefficient of .86. This scale is included in Appendix 7.

Parental Well-Being

Caregiver well-being was measured using a 10-item short form of the Affectometer 2 which is a state measure of the frequency of positive and negative affect (Kammann & Flett, 1983a, 1983b). Five items measure positive affect whilst 5 items measure negative affect. Respondents reply to each item based on how often the feeling was present over the last 7 days on a 5-point Likert scale ranging from 0 *(not at all)* to 4 *(all the time)*. Scale scores ranged from -20 to 20. This two-minute inventory evaluates both positive and negative affect where an overall well-being score is calculated by subtracting the negative affect score from the positive affect score. The 10-item Affectometer 2 short form has an alpha coefficient of .83 and a test-retest correlation of .87 over a two-week period (Kammann & Flett, 1983b). In the current research the Affectometer 2 had a mean alpha coefficient of .83. This scale is included in Appendix 8.

Affectometer 2 has shown consistent correlations with standardised measures of depression and anxiety and is relatively resistant to mood and social desirability response biases (Kammann & Flett, 1983a, 1983b). This scale also has moderate concurrent validity with other well-being measures such as the General Well-being Schedule (.74), Index of Effect (.74), 7-Step Happiness (.74), and Sum of Satisfactions (.69) (Kammann & Flett, 1983b) to name a few. Furthermore, Diener (1984), in a review of well-being measures, stated that "…given the favourable data…it [the Affectometer] deserves to be widely used as a measure of frequency of positive and negative affect" (p. 549). The advantage of the use of this measure, as opposed to another well-being measure, is that this measure was developed in New Zealand using a New Zealand normative sample.

Parental Psychopathology

The primary caregiver psychological functioning was assessed using the Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995). The DASS-21 is a short form of the original 42-item DASS and is a self-report measure of psychological functioning. The DASS consists of 21-items, seven items per subscale: Depression, anxiety, and stress. The DASS-Depression subscale measures dysphoria, low self-esteem, lack of incentive, low positive affect, and hopelessness. The DASS-Anxiety subscale measures autonomic arousal and fearfulness. The DASS-Stress subscale measures persistent tension, irritability, and negative affect. Respondents rate the degree to which

the following situations related to them over the last week on a four-point Likert scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Scale scores ranged from 0 to 63.

Confirmatory and exploratory factor analysis research with clinical and non clinical samples has indicated that both the 42-item and 21-item DASS contain three factors: Depression, Anxiety and Stress (Antony, Bieling, Cox, Enns, & Swinson, 1998; Brown, Chorpita, Korotitsch, Barlow, 1997; Clara, Cox, & Enns, 2001; Lovibond & Lovibond, 1995). The DASS-21 has excellent internal consistencies which are comparable to the DASS-42: Depression .92 to .94, Anxiety .81 to .87, and Stress .88 to .91 (Antony, et al., 1998; Brown et al., 1997; Clara et al., 2001; Lovibond & Lovibond, 1995). Although to date there is no test-retest reliability results for the DASS-21, test-retest for the DASS-42 over a two week interval has demonstrated good temporal stability, .71 to .81. In the current research, the DASS-21 had a total scale mean alpha coefficient of .92. The mean alpha coefficients for the subscales were .89 for depression, .81 for stress, and .84 for anxiety. This scale is included in Appendix 9.

Research on these scales have also indicated that the DASS has good convergent and discriminate validity when compared to other measures of depression (e.g., Beck Depression Inventory and the Negative Affect subscale of the Positive and Negative Affect Schedule), anxiety (e.g., Beck Anxiety Inventory, the trait subscale of the Sate-Trait-Anxiety Inventory, and life time subscale of the Anxiety Disorders Interview Schedule for DSM-IV), and Stress (e.g., Penn State Worry Questionnaire and the Negative Affect subscale of the Positive and Negative Affect Schedule) (Antony et al., 1998; Brown et al., 1997; Lovibond & Lovibond, 1995). Additionally, both the 42 and 21 item versions of the DASS were able to distinguish between different clinical groups (Antony et al., 1998; Brown et al., 1997). Overall, Antony et al. (1998) indicated that the DASS-21 has several advantages over the DASS-42 and is the measure of choice. The DASS-21 has fewer items, has a cleaner factor structure, has smaller inter-factor correlations (especially for distinguishing between depression and anxiety), and is comparable to the DASS-42 in differentiating between different diagnostic populations.

Parent Ability

Parent ability was assessed from the primary caregiver responses to three questions relating to their ability to monitor their youth's behaviour and whereabouts, to get along with their youth, and to communicate with their youth (e.g., "How well have you been able to communicate with your young person?"). Items were rated using a scale from 1 (*not able to*) to 10 (*very much able to*). Scale scores ranged from 3 to 30. In the current research the Parent Ability Scale had a mean alpha coefficient of .83. This scale is included in Appendix 10.

Family Functioning

Family functioning was assessed using the Family Adaptability and Cohesion Evaluation Scales-II (FACES-II; Olson, Portner, & Bell, 1982). The FACES-II assesses instrumental and affective relations within the family through assessing two dimensions of family functioning: Adaptability and cohesion. The FACES-II is a self-report measure consisting of 30 items. Sixteen items relate to cohesion and 14 items relate to adaptability. Family adaptability refers to the ability of a family to be flexible and able to change family rules, roles, discipline, and power structures in times of stress and change (Olson, 1986). The adaptability dimension is assessed by six concepts (two or three questions per concept): Assertiveness, leadership, discipline, negotiation, roles, and rules. Family cohesion refers to the emotional bond family members have towards one another and consists of elements such as boundaries, supportiveness, time and friends. The cohesion dimension is assessed by eight concepts (two questions per concept): Emotional bonding, family boundaries, coalitions, time, space, friends, decision-making, and interests and recreation. Questions are responded to on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*) based on how frequent the described behaviour occurs in the family. Scale scores ranged from 15 to 70 for adaptability and 16 to 80 for cohesion.

The FACES measures are one of the most widely used family assessment devices in the world and they have been translated into many other languages (Kosciulek, 2000). The FACES-II has good reliability and validity. Internal consistency for cohesion (from .86 to .91) and adaptability (from .78 to .80) are adequate (Kosciulek, 1996; Kosciulek & Lustig, 1999; Olson, McCubbin, et al., 1982; Olson, Portner, et al., 1982). Test-retest reliability for the FACES-II ranges from .83 to .84 for cohesion and .80 for adaptability

over a four week interval (Olson, McCubbin, et al., 1982; Olson, Portner, & Bell, 1982). The FACES-II was selected for this study instead of its shorter successor, the FACES-III, due to the FACES-II superior psychometric properties as the FACES-II has higher internal consistency and had higher concurrent validity (Olson, 1986). The FACES-II is recommended for research application due to its superior psychometric properties whereas the FACES-III is recommend for clinical application due to its shorter length (20 items) (Kouneski, 2000). In the current research, the FACES-II had mean alpha coefficients of .78 for adaptability and .85 for cohesion. This scale is included in Appendix 11.

Although the FACES-II was originally developed as a Circumplex Model, research has not supported the curvilinear hypothesis of the FACES-II and III (Pratt & Hansen, 1987). Contrary to expectations, research has found that the FACES-II and III have linear relationships with youth and family health measures (Green, Harris, Forte, & Robinson, 1991; Kouneski, 2000; Olson, 2000). Following the recommendations by Henggeler, Burr-Harris, Borduin, and McCallum (1991) and Kouneski (2000), the current study assessed for linear and curvilinear relationships with outcome measures through examining scatterplots. Because associations between the FACES-II and other measures were linear, the cohesion and the adaptability subscale scores were treated as linear in the analyses. Linear relationships indicate that high scores on cohesion and adaptability subscales reflect more positive or balanced family functioning whereas low scores reflect negative and dysfunctional family functioning.

Research on the validity of the FACES-II has demonstrated that the FACES-II correlates with other prominent measures of family functioning such as the McMaster Family Assessment Device, the Self-Report Family Inventory, and the Family Assessment Measure (see Green et al., 1991, for a review). Studies involving clinical samples (e.g., alcoholics, neurotic, schizophrenic, sexual offenders) demonstrate the differentiating power of the FACES in distinguishing between problematic families and non-symptomatic families (Olson, 1986, 1988). The FACES-II has also been shown to discriminate between families of delinquent and non-delinquent youth and has been supported in previous research on delinquency (Rodick, Henggeler, & Hanson, 1986),

violent juvenile offenders (Blaske, Borduin, Henggeler, & Mann, 1989), and adolescent school refusers (Bernstein, Warren, Massie, & Thuras, 1999).

Quality Assurance

Service satisfaction, therapeutic alliance, and therapist adherence were referred to for the purpose of this study as quality assurance indicators. These variables involve the primary caregiver evaluating the direct family-therapist contacts.

Service Satisfaction

Satisfaction with the MST program was assessed from the primary caregiver responses to 12 items. The first eight items consisted of the Client Satisfaction Questionnaire–8 (CSQ-8; Larsen, Attkisson, Hargreaves & Nguyen, 1979). The additional four items were created to reflect more precisely satisfaction with specific elements of the MST program (e.g., "were you seen as promptly as you found necessary?"). The 12 item CSQ is a self report standardised questionnaire which directly assess an individual's personal experience with a specific service. Participants respond to the 12 items on a 4-point Likert scale (e.g., "How satisfied are you with the quality of the services you have received?"). Scale scores ranged from 12 to 48.

The CSQ-8 was formed by taking the eight items of the original 31-item instrument which had the highest loading on the general satisfaction factor (Larsen et al., 1979; Nguyen, Attkisson & Stegner, 1983). Literature on the CSQ-8 has endorsed the CSQ as being a reliable and valid measure of client service satisfaction (Attkisson & Zwick, 1982; Lebow, 1982a, b; Lebow, 1983; Pascoe, Attkisson, & Roberts, 1983). Internal consistencies have been reported as ranging from .83 to .94 (Attkisson & Greenfield, 1999; Attkisson & Zwick, 1982; Cox, Brown, Peterson, & Rowe, 1982; Nguyen et al., 1983; Roberts & Attkisson, 1983). Two New Zealand studies which have employed the CSQ-8 have also demonstrated comparable internal consistencies for the scale, .91 (Watson, 1993) and .92 (Deane, 1993). The CSQ-8 has good construct validity as it has high correlations (.60 to .80) with other measures of satisfaction (Attkisson & Greenfield, 1999). In the current research, the 12 item CSQ had a mean alpha coefficient of .84. The 12-item scale is included in Appendix 12.

Research has indicated that clients who are more satisfied with treatment services are less likely to drop out of therapy prematurely and are more likely to improve than clients who report low satisfaction with treatment (Attkisson & Zwick, 1982). Furthermore, research conducted in New Zealand found that scores on the CSQ-8 associated positively with therapists rating of change on the Brief Hopkins Psychiatric Rating Scale, client rating of change on the Hopkins Symptom Checklist-21, and client ratings of change on the State Trait Anxiety Inventory (Deane, 1993).

Therapeutic Alliance

The therapeutic alliance was assessed using the Working Alliance Inventory-Short Form (WAI-SF; Tracey & Kokotovic, 1989). The WAI-SF is a brief form of the Working Alliance Inventory (WAI) developed by Horvath and Greenberg (1989). The WAI is a self report measure designed to assess the working alliance construct proposed by Bordin (1979). Based on a factor analysis on the WAI, Tracey and Kokotovic (1989) selected the four items that had the highest loadings on each of the three subscales: Bond, task, and goal. Each of the 12 WAI-SF items are rated on a 7-point Likert scale ranging from 1 (*never*) to 7 (*always*). Total score for the WAI-SF range from 12 to 84 where a higher score indicates a stronger working alliance. Internal consistencies for client responses on the WAI-SF range from .94 to .98 for the total scale, .86 to .92 for the bond factor, .84 to .92 for the task factor, and .89 to .90 for the goal factor (Dunkle & Friedlander, 1996; Tracey & Kokotovic, 1989; Weerasekera, Linder, Greenberg, & Watson, 2001). Busseri and Tyler (2003) examined the interchangeability of the WAI and the WAI-SF. They found that the WAI and WAI-SF items were highly similar in terms of descriptive statistics and showed high levels of internal consistency (between .73 to .93). Predictive validly of WAI and WAI-SF were also very similar for client change. Based on the equivalent psychometric results between the WAI and the WAI-SF demonstrated by Busseri and Tyler (2003), the WAI-SF is recommended as interchangeable with the full scale WAI. Thus, the WAI-SF may be a more practical measure to employ due to its time saving potential and ease of completion.

In the current research the WAI-SF had a total scale mean alpha coefficient of .87. The mean alpha coefficients for the subscales were .77 for task, .80 for bond, and .75 for goal. This scale is included in Appendix 13.

Therapist Adherence

Therapist adherence to the nine MST principles was assessed using the primary caregivers report on the Therapist Adherence Measure (TAM; Henggeler & Borduin, 1992). This 26-item measure was developed to reflect MST treatment principles and assess behaviours (therapist and family) specific to the implementation of MST. Caregiver responses on each TAM were related to the previous two to three sessions with their therapist and were rated on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*almost always*). Scale scores ranged from 5 to 130. In accordance to MST quality assurance protocol, the TAM was administered to the primary caregiver between 2 to 3 weeks after commencing MST treatment and then every month throughout treatment.

This measure has been validated in four MST trials (Henggeler, Rowland, et al., 1997; Henggeler, Pickrel, et al., 1999; Henggeler et al., 2002; Schoenwald et al., 2003). Factor analytic research on the TAM has yielded six factors: Therapist adherence to MST treatment principles, degree to which sessions were non-productive, effort by the family and therapist to solve problems, therapist attempts to change interactions, a lack of therapeutic direction, and the degree of family therapist consensus (Henggeler, Melton, et al., 1997). Research in New Zealand based on 247 TAM administrations demonstrated alpha coefficients ranging from .78 to .90 (Curtis et al., 2008).

In the current research, the TAM was completed 310 times (M = 4.25 times per family) and had a mean alpha coefficient of .83. This measure is included in Appendix 14.

Supervisor Adherence

Supervisor adherence to MST principles was assessed by therapist responses to the Supervisor Adherence Measure (SAM; Schoenwald, Henggeler, et al., 1998). The 43-itemed questionnaire was developed by expert consensus and is based on the rationale of supervision and supervision protocol outlined in the MST supervisory manual (Henggeler & Schoenwald, 1998). In accordance to MST quality assurance protocol, the SAM was completed by therapists every three months. Therapists completed this form over a secure internet based system. Responses to each item were rated on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*almost always*). Scale scores ranged from 43 to 215.

Although originally designed to measure four factors, the only factor analysis on this measure involving 943 SAM's and 93 supervisors identified three factors: Focus on MST analytic process and principles, development of therapist competencies, and supervisor expertise in MST and empirically supported treatments (Henggeler et al., 2002). Internal consistencies for these factors ranged between .86 and .98 (Henggeler et al., 2002).

Although therapists and MST New Zealand consented to the researcher being able to access individual responses to SAM items, changes during the research period in the ethical procedures of the USA-based MST Services made it only possible to access the total score. As a consequence, the reliability scores for this sample are unable to be reported.

In the current research, the SAM was completed 61 times (M = 7.63 times per therapist). This measure is included in Appendix 15.

Allegiance

Therapists and supervisors completed a measure on their allegiance to the MST model of therapy (e.g., "How true do you rate this statement: MST is the most likely treatment to produce positive outcomes for my clients?"). Therapists completed three items and supervisors completed five items using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*almost always*). Scale scores ranged from 3 to 15 for therapists and 5 to 25 for supervisors. Both measures were developed specifically for this study and had a mean alpha coefficient of .72. The therapist and supervisor allegiance scales are included in Appendix 16 and 17.

Accountability

Therapists and supervisors completed a measure on their perceived accountability for client engagement and client outcome (e.g., "How responsible do you think you are [as opposed to others e.g., clients, co workers, supervisor] for ensuring that you clients are engaged in therapy?"). Therapists completed 7 items and supervisors completed 10 items using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*almost always*). Scale scores ranged from 7 to 35 for therapists and 10 to 50 for supervisors. Both measures were

developed specifically for this study and mean alpha coefficients were .71 and .73 for therapists and supervisors, respectively. The therapist and supervisor accountability scales are included in Appendix 18 and 19.

Supervisory Alliance

To assess the supervisory alliance therapists completed the Supervisory Working Alliance Inventory - Trainee Version (SWAI-T; Efstation et al., 1990) and the Working Alliance Inventory - Trainee (WAI-T; Bahrick, 1990). The SWAI-T is a 19-item self-report instrument and the WAI-T is a 36-item self-report instrument both of which assess supervisee perceptions of the supervisory working alliance. The higher the score on these two measures the stronger the supervisory alliance. On both scales supervisees rate their perceptions of the relationship on a 7-point Likert scale ranging from 1 (*almost never*) to 7 (*almost always*). SWAI-T scale score ranged from 2 to 15 and WAI-T scale score ranged from 36 to 252.

The original exploratory factor analysis of the SWAI-T yielded two scales which the authors labelled rapport and client focus (Efstation et al., 1990). Gold (1993) also obtained the two factors in a confirmatory factor analytic study of the SWAI-T. Internal consistency for the total scale and the subscales is adequate: .96 for the total scale, .90 for rapport, and .77 to .95 for client focus (Efstation et al., 1990; White & Queener, 2003). The SWAI-T has adequate convergent and discriminate validity where the SWAI-T correlated significantly with the Supervisory Styles Inventory and the Personal Relations Scale-Revised. Additionally, high scores on SWAI-T have been related positively to satisfaction with supervision, supervisee self-efficacy, client perception of the therapeutic alliance, and therapist adherence to treatment protocol (Efstation et al., 1990; Patton & Kivlighan, 1997).

The WAI-T consists of three subscales: Goals, task, and bond. Each subscale contains 12 items. Cronbach's alphas for all three subscales exceed .90 (Ladany, Brittan-Powell, & Pannu, 1997; Ladany, Ellis, et al., 1999; Ladany & Friedlander, 1995; Ladany, Lehrman-Waterman, et al., 1999). The WAI-T has good convergent and discriminate validity and it has been found to negatively relate to supervisee role conflict and role ambiguity and supervisor ethical breaches, and positively relate to supervisee satisfaction and

supervisory racial identity interactions (Ladany et al., 1997; Ladany, Ellis, et al., 1999; Ladany & Friedlander, 1995; Ladany, Lehrman-Waterman, et al., 1999).

In the current research, the SWAI-T had a total scale mean alpha coefficient of .94. Both the rapport and client focus subscales had a mean alpha coefficient of .89. In the current research, the WAI-T had a total scale mean alpha coefficient of .95. The mean alpha coefficients for the subscales were .86 for task, .91 for bond, and .85 for goal. The total scale score of the SWAI-T was used for the current study. The SWAI-T and the WAI-T inventories are included in Appendix 20 and 21, respectively.

Table 6.7
Overview of Measures Administered to Families

T1 (2 to 3 weeks after MST program commencement)	**Monthly Throughout Treatment**	**T2 (on exit/ program completion)**	**T3 and T4 Follow-up (6- and 12-month follow-up)**
Demographic Questionnaire	Youth Negative Behaviour	Youth Negative Behaviour	Youth Negative Behaviour
Youth Negative Behaviour	Youth Positive Behaviour	Youth Positive Behaviour	Youth Positive Behaviour
Youth Positive Behaviour	Parental Well-Being	Parental Well-Being	Parental Well-Being
Parental Well-Being	Parent Ability	Parental Psychopathology	Parental Psychopathology
Parental Psychopathology	Service Satisfaction	Family Functioning	Family Functioning
Family Functioning	Therapeutic Alliance	Parent Ability	Parent Ability
Parent Ability	Therapist Adherence	Service Satisfaction	
Service Satisfaction		Therapeutic Alliance	
Therapeutic Alliance		Therapist Adherence	
Therapist Adherence			

Plan of Analysis

All analyses were performed using SPSS for Windows, Standard Version 11.0 (SPSS, 2000). To assess the effectiveness of MST (Section 1), repeated measures ANOVA, chi-square tests, *t*-tests, and effect size calculations were conducted. To assess the magnitude of the change between T1 and T2, T1 and T3, and T1 and T4, comparisons in terms of standardised measure of effect size, the *d* index, were made (Cohen, 1977). The *d* index can be defined for the purpose of the current study as “the mean gain score divided by the

pooled standard deviation of the two assessment times" (Curtis et al., 2008, p.15). The results from this calculation indicate the degree to which the two groups differ in standard deviation units. To assess whether quality assurance indicators predicted change in client outcomes (Section 2), partial correlations were conducted. To assess whether therapist and supervisor adherence, therapist and supervisor allegiance, therapist and supervisor accountability, supervisory alliance and therapeutic alliance, and supervisory alliance and therapist adherence interacted to predict client outcome (Sections 3 to 5), hierarchical multiple regressions were conducted. Prior to analysis, the variables involved were screened for assumptions of statistical analysis (normality, linearity, and homoscedasticity) and outliers were identified. Chapters Eight to Twelve contain more detail on the specific analyses conducted.

Chapter Eight

Section 1 Results: Effectiveness of MST in New Zealand

Chapter Overview

As noted in Chapter Six the goals of the research are divided into 5 Sections. This chapter will present the results for Section 1. The aims of this section were to evaluate the effectiveness of MST in improving both ultimate and instrumental outcomes. Results were examined using repeated measures ANOVA, chi-square tests, and *t*-tests.

The measurement of ultimate outcomes was conducted at pre-treatment (T1; 6-month interval prior to treatment commencement), post-treatment (T2; from treatment commencement to treatment completion), 6-month follow-up (T3; from treatment completion to 6-months post-treatment), and at 12-month follow-up (T4; from 6-months to 12-months post-treatment).

The measurement of instrumental outcomes was conducted at pre-treatment (T1; 2 to 3 weeks after treatment commencement), post-treatment (T2; time of treatment completion), 6-month follow-up (T3; 6-months post-treatment), and at 12-month follow-up (T4; 12-months post-treatment).

All analyses were conducted using SPSS for Windows, Standard Version 11.0 (SPSS, 2000).

Participant Attrition

Attrition at Treatment

Ninety-one percent of the families (n = 78) in this study successfully completed the MST treatment. The result of a two sample *t*-test of between percents demonstrated that there was no significant difference between the completion rate from the current study and the

average completion rate (86%) of benchmark studies reported by Curtis et al. (2004): t (187) = 1.027, p = .3056[7].

As illustrated in Figure 1.7 on page 82, 73 youth and their families completed both the MST program and this study's measures (82%). Eight youth and their families dropped out of treatment (9%). Five youth and their families completed the MST program and at least one administration of this studies questionnaires but were then unable to be contacted by the researcher for further measurement administration (5.6%)[8]. Analyses indicated that there were no differences between youth and their families who completed MST treatment, youth and families who dropped out of treatment, and youth and families who were unable to be contacted in terms of youth age, youth gender, youth ethnicity, family composition (one or two parent family), youth custody status (parent or CYFS), history of previous involvement with other agencies, and treatment length (all p's >.05).

There were no significant differences at T1 between the three groups in offending frequency (F (2, 83) = .026, p = .975); offending seriousness (F (2, 83) = 1.092, p = .340); days in out-of-home placements (OHP) (F (2, 83) = .371, p = .691); school attendance (F (2, 80) = .729, p = .486); negative behaviour (F (2, 83) = .281, p = .756); positive behaviour (F (2, 83) = .456, p = .636); parent well-being (F (2, 83) = .805, p = .450); parent psychopathology (F (2, 83) = 1.125, p = .330); parent ability (F (2, 83) = 1.164, p = .317); family cohesion (F (2, 83) = .108, p = .898); family adaptability (F (2, 83) = .100, p = .905); satisfaction with services (F (2, 83) = 1.636, p = .201); therapeutic alliance (F (2, 83) = .066, p = .937); and therapist adherence (F (2, 83) = 1.156, p = .320) (see Appendix 22, Table A22.1 for means and standard deviations). There were also no significant differences at T2 between the three groups in offending frequency (F (2, 83) = .095, p = .910); offending seriousness (F (2, 83) = 1.077, p = .341); days in OHP (F (2, 83) = .486, p = .617); and school attendance (F (2, 80) = .927, p = .400) (see Appendix A22, Table 22.1 for means and standard deviations). As instrumental measures at T2

[7] This was calculated using the Statistics Calculator (2005).
[8] Despite efforts to contact these families, they were unable to be reached. Significant efforts were made to obtain up-to-date contact information including contacting their MST therapist, directory assistance, and their identified family contact.

could not be completed by families who were unable to be contacted and treatment dropouts, comparisons with treatment completers were unable to be made.

There were no significant changes in ultimate outcome indicators from T1 to T2 for the eight youth who dropped out of treatment: Offending frequency (t (7) = 1.080, p = .316); offending seriousness (t (7) = -.844, p = .427); days in OHP (t (7) = 1.000, p = .351); and school attendance (t (7) = -.770, p = .466). There was a significant difference in offending frequency from T1 to T2 for youth who completed the program but were unable to be contacted: t (4) = 3.207, p = .033. Offending frequency at T2 (M = 1.80, SD = 2.17) was significantly lower than offending frequency at T1 (M = 3.00, SD = 1.73). There was no significant change from T1 to T2 for youth unable to be contacted in offending seriousness (t (4) = 1.253, p = .279) and school attendance (t (4) = 1.010, p = .370). There was also no difference in days in OHP. However, since the standard error of the difference between T1 and T2 was zero, the t statistic could not be calculated. See Appendix 22, Table A22.1 for means and standard deviations.

The remaining analyses reported have only included the 73 youth and families who completed MST treatment and who were able to be contacted after T1. Thus, data from treatment dropouts and those unable to be contacted were not included in further analyses.

Attrition at Follow-up

From the total sample of 73 families who completed treatment and this study's measures at T1 and T2, 57.5% (n = 42) completed T3 measures and 41% (n = 30) completed T4 measures. Of the 31 families who did not complete T3 measures, 12 youth and their families were unable to be located due to changes in contact information[9] and 15 youth no longer lived with the same caregiver(s). There were no significant differences in T1 ultimate and instrumental outcomes, service satisfaction, therapeutic alliance, and therapist adherence between families who completed T3 measures, families unable to be located, and families where the youth no longer lived at home (all p's >.05). However, youth (and their families) who were no longer in the home at T3 had significantly worse

[9] Significant efforts were made to obtain up-to-date contact information including contacting their MST therapist, directory assistance, and their identified family contact.

outcomes at T2 than youth who remained living with their caregivers and youth who were unable to be located: Offending frequency (T2 (Welch (2, 22.702) = 4.752, p <.019); school attendance (T2 (F (2, 63) = 6.004, p < .004); negative behaviour (F (2, 66) = 4.372, p <.016); positive behaviour (F (2, 66) = 9.858, p <.0005); well-being (F (2, 66) = 6.660, p <.002); psychopathology (Welch (2, 28.217) = 3.397, p <.048); parent ability (F (2, 66) = 4.115, p <.021); and family adaptability (F (2, 66) = 3.907, p <.025) (see Appendix 22, Table A22.2 for means and standard deviations). Youth who no longer lived at home had significantly higher frequency of offending and negative behaviour and had significantly lower school attendance and positive behaviour. The parents of these youth had significantly lower well-being and parent ability, and had significantly higher levels of psychopathology. These families also demonstrated significantly lower levels of adaptability. There were no differences between the three groups in T2 offending seriousness, days in OHP, family cohesion, service satisfaction, therapeutic alliance, and therapist adherence.

Comparisons of T3 and T4 ultimate outcomes indicated that there were no significant differences between the three groups in offending frequency and seriousness, and T3 school attendance. Those who were not living at home at T3 had significantly more days in OHP at T3 and T4 (Welch (2, 27.286) = 4.561, p <.020 and Welch (2, 27.162) = 5.755, p <.008, respectively) and had significantly lower T3 and T4 school attendance (T3 (F (2, 60) = 3.207, p <.048) and Welch (2, 13.128) = 14.141, p <.001, respectively) than youth who remained in the home and youth who could not be located (see Appendix 22, Table A22.2 for means and standard deviations). Comparisons between the three groups in T3 and T4 instrumental outcomes could not be made as those who were no longer living with their caregivers and those who could not be located could not complete the measures.

Data Screening

Box plots identified that outcome measures had up to two outliers at T1, up to three outliers at T2, up to three outliers at T3, and up to two outliers at T4. No significant differences occurred in the results when the outliers were removed, consequently, outliers were retained in the analyses.

Demographic Characteristics and Client Outcomes

A series of ANOVAs and *t*-test analyses were conducted to explore whether youth age, youth gender, youth ethnicity, family composition (one or two parent family), youth custody status (parent or CYFS), history of previous involvement with other agencies, and treatment length were related to differences in outcome. No significant differences were found for youth ethnicity and youth custody status (all *p*'s >.05). There was a significant difference in T3 school attendance based on youth age (F (2, 62) = 5.388, p <.007) where youth aged 10 to 11 (M = 70.33, SD = 32.62) and youth aged 12 to 13 (M = 69.33, SD = 36.26) had significantly higher school attendance than youth aged 14 to 15 (M = 39.87, SD = 38.73, p <.020 and p <.049, respectively). There was a significant difference in T2 offending seriousness based on youth gender (t (71) = 2.679, p <.009) where males had significantly higher levels of seriousness (M = 5.33, SD = 3.55) than females (M = 2.85, SD = 3.57). There was a significant difference in T3 school attendance based on family composition (t (63) = -2.196, p <.032) where youth who lived with two parent figures (M = 64.59, SD = 37.56) had significantly higher school attendance at T3 than youth who lived with one parent figure (M = 43.83, SD = 38.55). There was a significant difference in T3 parental psychopathology based on previous years of family involvement with other agencies (t (40) = -2.072, p <.045) where parents who had been experiencing problems for more than 3 years reported significantly higher levels of psychopathology (M = 16.20, SD = 10.22) than parents who had been experiencing the problems for less than 3 years (M = 10.71, SD = 4.59). There was a significant difference in T3 parent well-being based on treatment length (F (3, 38) = 4.312, p <.010) where parents on the program for 141 to 160 days had significantly lower well-being (M = -.8667, SD = 9.19) than parents on the program for 100 to 140 days (M = 10.60, SD = 5.55, p <.020). All other comparisons were nonsignificant (*p*'s >.05).

In summary, older youth and youth in one parent households had lower school attendance compared to younger youth and youth in two parent households at T3; males committed more serious offences at T2; parents had higher T3 psychopathology when they had been experiencing the difficulties with their youth for 3 years or more; and parents who were on the treatment program for longer had lower well-being a T3.

Ultimate Outcomes

Pre-Treatment Status

The pre-treatment or T1 measurement of ultimate outcomes was based on the 6-month period prior to commencing the MST program. At T1, 70% (n = 51) of the youth had been in contact with the youth justice system as a result of offending behaviour. Across the sample, the range of offending frequency was from 0 to 13 with a mean frequency of 2.98 (SD = 3.25). The severity ratings ranged from 0 to 9.75 with a mean seriousness rating of 4.73[10] out of a maximum of 17 (SD = 3.23). Throughout the 6-month pre-treatment period, 30% (n = 22) of the youth had lived in a mandated out-of-home placement. These placements ranged from two to 138 days, with an average of 42.91 days (SD = 38.99). The average school attendance in the -month pre-treatment interval was 51% (0% to 97.5%, SD = 34%) of available days (70 to 234 days, SD = 25.86). Twenty-three percent of the youth (n = 16) had been withdrawn from a school: Sixteen percent (n = 11) had been stood down at least once and 7% (n = 5) had been excluded from a school throughout the 6-month pre-treatment period. The average number of days stood down was 1.6 half days (SD = 4.5).

Offending Behaviour: Number of Youth Who Offended

At T1, 70% (n = 51) of the youth had offended at least once. This figure reduced to 64% at T2 (n = 47), 36% (n = 26) at T3, and to 32% (n = 23) at T4.

To assess whether offending behaviour at earlier measurement times was associated with offending behaviour at later offending measurement times, multiple chi-square tests for independence were conducted. There was no significant association between offending behaviour at T1 and offending behaviour at T2 (X^2 (1, N = 73) = .786, p = .375), T3 (X^2 (1, N = 66) = 2.758, p = .097), and T4 (X^2 (1, N = 63) = .173, p = .677). Offending behaviour at T2 and follow-up was independent of offending behaviour at T1. There was a significant association between offending behaviour at T2 and offending behaviour at T3 (X^2 (1, N = 66) = 5.978, p <.014) and T4 (X^2 (1, N = 63) = 4.502, p <.034). The

[10] An offending seriousness rating of 4.73 represents the following offences: Public drunkenness, minors purchasing/consuming alcohol, gaming, sexual affronts, and absconding. Given the SD of 3.23, there was a sub-sample that was engaged in more serious offending.

associations were of a moderate strength (Φ [phi] = .574 and Φ = .548, respectively), indicating that T2 offending behaviour accounted for 33% of the variance in T3 offending behaviour and 30% of the variance in T4 offending behaviour. There was a significant association between T3 offending behaviour and T4 offending behaviour: X^2 (1, N = 63) = 13.875, p <.0005. The association was strong (Φ = .707), indicating that T3 offending behaviour accounted for 50% of the variance in T4 offending behaviour. Table A22.3 in Appendix 22 details the number of youth who offended and did not offend at each time combination.

Offending Behaviour: Average Offending Frequency

A repeated measures ANOVA was conducted to evaluate whether average offending frequency varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .683, F (3, 60) = 9.293, p <.0005, multivariate partial eta squared = .317. Mean offending frequency reduced at each time measurement from 2.98 at T1 (SD = 3.25), 2.16 at T2 (SD = 3.26), 1.19 at T3 follow-up (SD = 2.00), and 0.95 at T4 (SD = 1.78). Bonferroni post-hoc tests were employed to examine the location of the significant differences. There was no significant difference between T1 and T2 offending frequency (p = .285). Pre-treatment offending frequency was significantly higher than offending frequency at T3 (p <.0005) and T4 (p <.0005). Although there was no significant difference between T2 and T3 follow-up offending frequency (p = .165), T2 frequency was significantly higher than offending frequency at T4 (p <.002). There was no significant difference between T3 and T4 offending frequency (p = 1).

Thus, although there was no significant reduction in offending frequency at T2, frequency at T3 and T4 was significantly lower than frequency at T1.

Multiple paired samples t-tests were conducted to analyse whether the offending frequency changed over time for those who offended. There was no significant difference in the frequency of offending for the 35 youth who offended at both T1 and T2: t (34) = .950, p = .349. There were significant differences in the frequency of offending for the 22 youth who offended at both T1 and T3 (t (21) = 3.633, p <.002) and for the 18 youth who offended at both T1 and T4 (t (17) = 2.483, p <.024). Frequency of offending was

significantly lower at T3 and T4 than at T1. The eta squared statistics (.386 and .266) indicated large effect sizes suggesting a substantial difference between the means (See Table 1.8 for means and standard deviations). There was no significant difference in the frequency of offending for the 21 youth who offended at both T2 and T3 (t (20) = .717, p = .482), for the 18 youth who offended at both T2 and T4 (t (17) = 1.319, p = .205), and for the 17 youth who offended at both T3 and T4 (t (16) = .189, p = .853). Thus, of those who offended, T3 and T4 offending frequencies were significantly lower than T1 offending frequency. The means and standard deviations for the measurement time combinations are detailed in Table 1.8.

Table 1.8
N, Means, and Standard Deviations of Offending Frequency for Youth Who Offended Over the Four Measurement Times

	n	*M* (*SD*)		*n*	*M* (*SD*)		*n*	*M* (*SD*)
T1	35	4.46 (3.48)	T1	22	4.77 (3.37)	T1	18	5.11 (3.92)
T2		3.89 (3.55)	T3		2.77 (2.20)	T4		2.83 (2.34)
T2	21	3.81 (3.24)	T2	18	3.83 (3.43)			
T3		3.19 (2.32)	T4		2.83 (2.26)			
T3	17	3.00 (2.06)						
T4		2.88 (2.32)						

Only 10 youth offended at each of the four measurement periods. A repeated measures ANOVA indicated no significant differences in offending frequency over time for these youth: Wilks' Lambda = .661, F (3, 7) = 1.197, p = .378. Although there was an overall reduction in average frequency, there was no significant difference in this sub-samples means at T1 (M = 5.50, SD = 4.22), T2 (M = 4.00, SD = 4.08), T3 (M = 3.10, SD = 2.23), and T4 (M = 3.80, SD = 2.66).

Offending Behaviour: Average Offending Seriousness

A repeated measures ANOVA was conducted to evaluate whether offending seriousness varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .748, F (3, 60) = 6.745, p <.001, multivariate partial eta squared = .252. Offending seriousness reduced at each of the four time periods from 4.73 at T1 (SD = 3.23), to 4.20 at T2 (SD = 3.73), to 2.80 at T3 (SD = 3.47), and to 2.54 at T4 (SD = 3.49).

Bonferroni post-hoc tests were employed to examine the location of the significant differences. There was no significant difference between T1 and T2 offending seriousness (p = 1). Offending seriousness at T1 was significantly higher than seriousness at T3 (p <.002) and T4 (p <.002). Offending seriousness at T2 was also significantly higher than seriousness at T3 (p <.039) and T4 (p <.029). There was no significant difference between T3 and T4 offending seriousness (p = 1).

Overall, although there was no significant reduction in offending seriousness at T2, seriousness at T3 and T4 were significantly lower than T1 and T2 seriousness levels.

Multiple paired samples t-tests were conducted to analyse whether offending severity declined over time for those who offended. There was a significant difference in the severity of offending for the 35 youth who offended at both T1 and T2: t (34) = -2.604, p <.014. Post-treatment levels of offending seriousness were significantly higher than T1 levels of seriousness. The eta squared statistic (.166) indicated a large effect size suggesting that there was a substantial difference in the seriousness of offending. There were no significant differences in the severity of offending for the 22 youth who offended at both T1 and T3 (t (21) = -.310, p = .760), for the 18 youth who offended at both T1 and T4 (t (17) = -1.433, p = .170), for the 21 youth who offended at both T2 and T3 (t (20) = 1.041, p = .310), for the 18 youth who offended at both T2 and T4 (t (17) = .475, p = .641), and for the 17 youth who offended at both T3 and T4 (t (16) = -1.109, p = .284). Thus, for those who offended there was limited change in the seriousness of offences over time. The only significant result was between T1 and T2, where T2 offending seriousness was significantly higher than T1 offending seriousness. The means and standard deviations for the measurement time combinations are detailed in Table 2.8.

Thus, for those who offended, T2 offending severity was significantly higher than T1 severity levels. There were no other significant differences.

Table 2.8
N, Means, and Standard Deviations of Offending Seriousness for Youth Who Offended Over the Four Measurement Times

	n	*M* (*SD*)		*n*	*M* (*SD*)		*n*	*M* (*SD*)
T1	35	6.22 (1.76)	T1	22	6.70 (1.66)	T1	18	6.31 (1.47)
T2		7.06 (1.52)	T3		6.82 (1.35)	T4		7.01 (1.38)

T2	21	7.28 (1.49)	T2	18	6.97 (1.19)
T3		6.91 (1.25)	T4		6.75 (1.68)
T3	17	6.43 (1.22)			
T4		6.88 (1.39)			

Only 10 youth offended at each measurement period. A repeated measures ANOVA indicated no significant differences in offending seriousness over time for these youth: Wilks' Lambda = .790, F (3, 7) = .622, p = .623. There was no significant difference in the offending seriousness at T1 (M = 6.64, SD = 1.60), T2 (M = 6.90, SD = 1.32), T3 (M = 6.59, SD = 1.31), and T4 (M = 6.40, SD = 1.60).

OHP: Number of Youth Who Had an OHP

At T1, 30% (n = 22) of the youth had been placed in a formal OHP (out-of-home placement). This figure reduced to 19% (n = 14) at T2 and then increased to 25% (n = 17) and then 28% (n = 18) at T3 and T4, respectively.

To assess whether OHP at earlier measurement times was associated with OHP at later measurement times, multiple chi-square tests for independence were conducted. There was a significant association between OHP at T1 and OHP at T2: X^2 (1, N = 73) = 4.518, p <.034. The relationship was of a moderate strength (Φ = .539), indicating that T1 OHP accounted for 29% of the variance in T2 OHP. There were no significant associations between OHP at T1 and OHP at T3 (χ^2 (1, N = 73) = 1.860, p = .173) and at T4 (χ^2 (1, N = 65) = .000, p = 1.000). There was a significant association between T2 OHP and T3 OHP: χ^2 (1, N = 68) = 5.358, p <.021. The relationship was of a moderate strength (Φ = .566), indicating that T2 OHP accounted for 32% of the variance in T3 OHP. There was no significant relationship between T2 OHP and T4 OHP: χ^2 (1, N = 65) = 1.734, p = .188. There was a significant relationship between OHP at T3 and OHP at T4: χ^2 (1, N = 65) = 30.753, p <.0005. The relationship was strong (Φ = .854), indicating that T3 OHP accounted for 73% of the variance in T4 OHP. Table A22.4 in Appendix 22 details the number of youth who had and did not have an OHP at each time combination.

OHP: Average Days in OHP

A repeated measures ANOVA was conducted to evaluate whether the number of days spent in OHP varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .814, F (3, 62) = 4.716, p <.005, multivariate partial eta

squared = .186. Mean number of days in OHP reduced from 14 days at T1 to 5 days at T2 and then increased to 11.5 days and 23 days at T3 and T4. Bonferroni post-hoc tests were employed to examine the location of the significant differences. Days spent in OHP was significantly higher at T1 than at T2 (p <.049). There were no other significant differences (all p's >.05).

Overall, the number of days placed out of the home at follow-up was not significantly different from the number of days at T1 or T2. However, in practical terms, but mindful of sampling differences, it is worth noting that the magnitude increased over follow-up.

When examining only those who were placed out of the home, the mean number of days placed out of the home varied from 42.91, 24.29, 43.88, and 81.61 days at T1, T2, T3, and T4, respectively. Table 3.8 outlines the means, standard deviations, and range of days in OHP at each measurement time.

Table 3.8
N, Range, Mean, and Standard Deviations of Days in OHP for Youth Who Were Placed Out of the Home at T1, T2, T3, and T4

	OHP	n	%	Range	M (*SD*)
T1	**No**	51	70		
	Yes	22	30	2 to 132 days	42.91 (38.99)
T2	**No**	59	81		
	Yes	14	19	4 to 75 days	24.29 (23.71)
T3	**No**	51	75		
	Yes	17	25	2 to 182 days	43.88 (57.14)
T4	**No**	47	72		
	Yes	18	28	5 to 185 days	81.61 (79.05)

Multiple paired samples *t*-tests were conducted to analyse whether the days in OHP declined over time for those who had an OHP. There were no significant differences in the days placed in OHP for the 8 youth who had OHP at both T1 and T2 (t (7) = .278, p = .789), for the 8 youth who had an OHP at both T1 and T3 (t (7) = .418, p = .688), or for the 6 youth who had OHP at both T1 and T4 (t (5) = -2.333, p = .067). There were no significant differences in the days placed in OHP for the 7 youth who had OHP at both T2 and T3 (t (6) = -.039, p = .970) and for the 6 youth who had OHP at both T2 and T4 (t (5) = -1.951, p = .109). There was a significant difference in the days placed in OHP for the 14 youth who had OHP at both T3 and T4: t (13) = -3.126, p <.008. The number of days placed in OHP at T3 was significantly lower than the number of days placed in OHP at T4. The eta squared statistic (.429) indicated a large effect size, indicating that the difference between the mean number of days was substantial (see Table 4.8 for means and standard deviations). Thus, for those who had an OHP, there was generally no difference in the mean number of days over time. The exception was that youth who had an OHP at both T3 and T4 had significantly more days out of the home at T4. The means and standard deviations for the measurement time combinations are detailed in Table 4.8.

Table 4.8
N, Range, Mean, and Standard Deviations of Days in OHP for Youth Who Were Placed Out of Home Over the Four Measurement Times

	n	*M* (*SD*)		*n*	*M* (*SD*)		*n*	*M* (*SD*)
T1	8	39.25 (33.43)	T1	8	43.38 (32.26)	T1	6	50.00 (33.72)
T2		35.38 (26.23)	T3		39.50 (46.22)	T4		108.83 (84.80)
T2	7	30.29 (25.00)	T2	6	28.67 (29.26)			
T3		30.57 (41.27)	T4		77.67 (85.21)			
T3	14	49.79 (61.51)						
T4		84.29 (81.43)						

There were only 3 youth who had an OHP at each time period. Owing to this small number, a repeated measures ANOVA could not be calculated. However, mean number of days in OHP for this sample were 48 at T1 (SD = 23.58), 50 at T2 (SD = 27.22), 58.67 at T3 (SD = 55.00), and 124 days at T4 (SD = 101.36). Overall, there was little difference in the number of days in OHP from T1 through to T3. However, there was a substantial increase in days in OHP at T4 for this sample.

School Attendance

A one-way repeated measures ANOVA was conducted to evaluate whether school attendance varied significantly between T1, T2, T3, and T4. There was no significant effect for time: Wilks' Lambda = .941, F (3, 56) = 1.169, p = .330, multivariate partial eta squared = .059. Average school attendance ranged from 51% (*SD* = 33.72) at T1, 54% (*SD* = 34.21) at T2, 53% (*SD* = 39.07) at T3, and 45% (*SD* = 39.18) at T4.

Correlations between ultimate outcome indictors over the four measurement times are included in Appendix 22, Table A22.5.

Summary of Ultimate Outcomes

Overall, improvements in offending indicators were found across time whereas changes for days in OHP and school attendance were largely not seen across time. The mean number of offences reduced from 2.98, 2.16, 1.19, to 0.95 at T1, T2, T3, and T4, respectively. Although there was no significant difference between T1 and T2 offending frequency, T3 and T4 offending frequency was significantly lower than T1 frequency. The average severity of offending behaviour reduced from 4.73, 4.20, 2.80, to 2.54 at T1, T2, T3, and T4, respectively. Although there was no significant difference between T1 and T2 offending severity, T3 and T4 offending severity was significantly lower than T1 and T2 severity. The average number of days spent in OHP reduced from 14 days to 5 days from T1 to T2 and then increased to 11.5 days and 23 days at T3 and T4. There was a significant reduction in days spent in OHP at T2. However, this reduction was not maintained where days spent in OHP at T3 and T4 returned to T1 levels. No changes in school attendance were found.

Supplementary analyses indicated that of those who offended at T1 and T3 and T1 and T4, offending frequencies at T3 and T4 were significantly lower than T1 offending frequency. Of those who offended at T1 and T2, T2 offending seriousness was significantly higher than T1 offending seriousness. Of those who received an OHP at T3

and T4, the mean number of days in OHP at T4 was significantly higher than the mean number of days in OHP at T3.

Additionally, 10 youth offended at all measurement periods. There was no significant change in the frequency or seriousness of offences over time for these youth.

Instrumental Outcomes

Youth Negative Behaviour

A repeated measures ANOVA was conducted to evaluate whether youth negative behaviour varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .562, F (3, 27) = 7.011, p <.001, multivariate partial eta squared = .438. Mean negative behaviour reduced from 21.5 at T1 to 17 at T2 and then remained stable at 17.8 and 17 at T3 and T4, respectively. Bonferroni post-hoc tests were employed to examine the location of the significant differences. Pre-treatment negative behaviour was significantly higher than negative behaviour at T2 (p <.002), T3 (p <.002), and T4 (p <.011). These findings indicate that youth displayed significantly less negative behaviour, internalising behaviour, aggressive and noncompliant behaviour, and had a reduction in associations with deviant peers at the end of treatment. These gains were maintained at T3 and T4.

Negative behaviour was measured each month throughout treatment. Together there were six measurement points: T1, month 2, month 3, month 4, month 5, and T2. As there were only 6 families who completed month 5 measures, these results were not included in the following repeated measures ANOVA. There was a significant effect for time: Wilks' Lambda = .303, F (4, 21) = 12.077, p <.0005, multivariate partial eta squared = .697. Mean negative behaviour measured at T1, month 2, month 3, month 4, and T2 were 23.52 (SD = 5.57), 20.08 (SD = 6.27), 18.32 (SD = 5.52), 18.92 (SD = 5.57), and 18.88 (SD = 7.04), respectively. Bonferroni post hoc tests indicated that negative behaviour measured at month 3 (p <.0005), month 4 (p <.001), and at T2 (p <.006) were significantly lower than negative behaviour measured at T1 and month 2.

Youth Positive Behaviour

A repeated measures ANOVA was conducted to evaluate whether youth positive behaviour varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .699, F (3, 27) = 3.880, p <.020, multivariate partial eta squared = .301. Mean positive behaviour improved from 43 at T1 (SD = 13.09) to 53.77 at T2 (SD = 15.24), and then declined to 50.33 at T3 (SD = 15.42) and to 49.80 at T4 (SD = 17.02). Bonferroni post-hoc tests were employed to examine the location of the significant differences. Mean T1 positive behaviour was significantly lower than T2 positive behaviour (p <.010). No other significant findings were evident indicating that follow-up mean positive behaviour was not significantly different from T1 or T2 positive behaviour. At T2, youth were more likely to stay out of trouble, attend and comply at school, get along with peers and family, contribute to the household, communicate with adults, and manage anger.

Positive behaviour was measured each month throughout treatment. Together there were six measurement points: T1, month 2, month 3, month 4, month 5, and T2. As there were only 6 families who completed month 5 measures, these results were not included in the following repeated measures ANOVA. There was a significant effect for time: Wilks' Lambda = .384, F (4, 20) = 8.031, p <.0005, multivariate partial eta squared = .616. Mean positive behaviour measured at T1, month 2, month 3, month 4, and T2 were 40.58 (SD = 11.39), 48.79 (SD = 10.56), 51.50 (SD = 12.11), 50.42 (SD = 16.62), and 54.75 (SD =16.41), respectively. Bonferroni post hoc tests indicated that positive behaviour measured at T1 was significantly lower than positive behaviour measured at month 2 (p <.006), month 3 (p <.001), month 4 (p <.019), and at T2 (p <.001).

Parent Well-Being

A repeated measures ANOVA was conducted to evaluate whether parent well-being varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .462, F (3, 27) = 10.476, p <.0005, multivariate partial eta squared = .538. Mean parental well-being improved from -1.70 at T1 (SD = 7.65) to 5.00 at T2 (SD = 7.07), reduced to 2.13 at T3 (SD = 7.18) and then improved to 6.43 at T4 (SD = 7.70). Bonferroni post-hoc tests were employed to examine the location of the significant differences. Mean T1 well-being was significantly lower than well-being at T2 (p <.0005)

and T4 (p <.001). No other significant findings were evident. At T2 and T4, parents were more likely to see their future as positive, had higher self-image, had more energy, perceived themselves as more able to handle future challenges, and were more satisfied with their life in general. They were also less likely to feel hopeless and like a failure, and were less likely to feel that their life was 'stuck in a rut'.

Well-being was measured each month throughout treatment. Together there were six measurement points: T1, month 2, month 3, month 4, month 5, and T2. As there were only 6 families who completed month 5 measures, these results were not included in the following repeated measures ANOVA. There was a significant effect for time: Wilks' Lambda = .557, F (4, 20) = 3.979, p <.016, multivariate partial eta squared = .443. Mean well-being measured at T1, month 2, month 3, month 4, and T2 were -2.21 (SD = 8.37), 1.58 (SD = 7.23), 3.92 (SD = 9.03), 2.63 (SD = 8.18), and 4.96 (SD = 9.70), respectively. Bonferroni post hoc tests indicated that well-being at T1 was significantly lower than well-being at month 3 (p <.007) and T2 (p >.0005).

Parent Psychopathology

A repeated measures ANOVA was conducted to evaluate whether parent psychopathology varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .567, F (3, 27) = 6.864, p <.001, multivariate partial eta squared = .433. Parent psychopathology reduced at each measurement period from 21.47 at T1 (SD = 12.36), 15.33 at T2 (SD = 12.17), 14.33 at T3 (SD = 9.25), and to 12.50 at T4 (SD = 10.00). Bonferroni post-hoc tests were employed to examine the location of the significant differences. Mean T1 parent psychopathology was significantly higher than that at T2 (p <.043), T3 (p <.001), and T4 (p <.001). No other significant findings were evident. Parents reported experiencing fewer symptoms of depression, anxiety, and stress at post-treatment and follow-up. This measure was not administered monthly throughout treatment and thus, changes in parent psychopathology over the course of treatment could not be assessed.

Parent Ability

A repeated measures ANOVA was conducted to evaluate whether parent ability varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .582, F (3, 27) = 6.475, p <.002, multivariate partial eta squared = .418. Mean parent ability increased from 16.70 (SD = 6.18) at T1 to 21.77 (SD = 5.42) at T2 and then declined to 18.87 (SD = 6.15) and 18.83 (SD = 6.97) at T3 and T4, respectively. Bonferroni post-hoc tests were employed to examine the location of the significant differences. Mean T1 parent ability was significantly lower than parent ability at T2 (p <.001). Mean T2 parent ability was significantly higher than parent ability at T3 (p <.015). Other comparisons were nonsignificant (p's >.05). These results indicate that although there was a significant increase in parent ability at T2 there was a significant decline at 6-months follow-up. At T2, parents perceived themselves as having more ability to communicate with their youth, and more ability to monitor both the behaviour and whereabouts of their youth.

Parent ability was measured each month throughout treatment. Together there were six measurement points: T1, month 2, month 3, month 4, month 5, and T2. As there were only 6 families who completed month 5 measures, these results were not included in the following repeated measures ANOVA. There was a significant effect for time: Wilks' Lambda = .541, F (4, 20) = 4.237, p <.012, multivariate partial eta squared = .459. Mean parent ability measured at T1, month 2, month 3, month 4, and T2 were 17.13 (SD = 6.26), 19.29 (SD = 5.56), 21.29 (SD = 4.47), 20.79 (SD = 6.18), and 21.13 (SD = 6.24), respectively. Bonferroni post hoc tests indicated that parent ability at month 3 and at T2 was significantly higher than parent ability at T1 (p <.030 and p <.031, respectively).

Family Functioning

Cohesion

A repeated measures ANOVA was conducted to evaluate whether family cohesion varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .520, F (3, 27) = 8.311, p <.0005, multivariate partial eta squared = .480. Mean family cohesion increased from 50.53 at T1 (SD = 8.97) to 55.63 at T2 (SD = 10.30), and then decreased to 52.63 at T3 (SD = 10.20) and then increased to 53.83 at T4 (SD = 11.96). Bonferroni post-hoc tests were employed to examine the location of the

significant differences. Post-treatment family cohesion was significant higher than cohesion at T1 and T3 (p <.0005 and p <.045, respectively). There were no other significant differences. Following MST treatment, families reported having a higher emotional bond between members but these gains where not fully maintained across follow-up. This measure was not administered monthly throughout treatment and thus, changes in family cohesion over the course of treatment could not be assessed.

Adaptability

A repeated measures ANOVA was conducted to evaluate whether family adaptability varied significantly between T1, T2, T3, and T4. There was a significant effect for time: Wilks' Lambda = .546, F (3, 27) = 7.483, p <.001, multivariate partial eta squared = .454. Mean family adaptability increased from 42.77 at T1 (SD = 6.78) to 47.10 at T2 (SD = 7.01), and then decreased to 43.80 at T3 (SD = 6.98) and then increased to 44.70 at T4 (SD = 8.12). Bonferroni post-hoc tests were employed to examine the location of the significant differences. Post-treatment family adaptability was significant higher than adaptability at T1 and T3 (p <.0005 and p <.005, respectively). There were no other significant differences. Following MST treatment, families reported having more flexibility but these gains where not fully maintained across follow-up. This measure was not administered monthly throughout treatment and thus, changes in family adaptability over the course of treatment could not be assessed.

Correlations between instrumental outcome indictors over the four measurement times are included in Appendix 22, Table A22.6

Correlations between ultimate and instrumental outcome indicators across the four measurement times are included in Appendix 22, Table A22.7.

Summary of Instrumental Outcomes

Overall, significant improvements in most instrumental outcome indicators were found at T2 and for a fewer number, across follow-up periods. Mean youth negative behaviour reduced from 21.5 to 17 from T1 to T2 and then remained relatively stable at 17.8 and 17

at T3 and T4. Negative behaviour at T2, T3, and T4 was significantly lower than T1 negative behaviour. Mean youth positive behaviour increased from 43 to 54 from T1 to T2 and then reduced to 50 at both T3 and T4. Although there was a significant improvement in positive behaviour at T2, T3, and T4 positive behaviour was not significantly different from T1 levels. Mean parent well-being improved from -1.70 to 5.00 from T1 to T2, and then reduced to 2.13 at T3 and then improved to 6.43 at T4. Both T2 and T4 well-being were significantly higher than T1 well-being. Mean parent psychopathology reduced from 21.47, 15.33, 14.33, to 12.50 at T1, T2, T3, and T4, respectively. Psychopathology at T2, T3, and T4 was significantly lower than T1 psychopathology. Mean parent ability improved from 16.70 to 21.77 from T1 to T2, and then declined to 18.87 and 18.83 at T3 and T4, respectively. There was a significant improvement in parent ability at T2. However, this improvement was not maintained at follow-up where parent ability returned to levels similar to T1. Family cohesion and adaptability significantly improved from T1 to T2 but significantly declined at T3. Family functioning at T4 was not significantly different from T1 or T2 levels. Instrumental outcomes that were measured monthly throughout treatment[11] indicated that improvements were evident as early as the 2nd (i.e., positive behaviour) and 3rd month (i.e., negative behaviour, parent well-being, and parent ability).

Effect Sizes

Ultimate Outcomes

The effect sizes for T1 to T2 change, T1 to T3 change, and T1 to T4 change in offending frequency were $d = 0.13$, $d = 0.58$, and $d = 0.72$; offending seriousness $d = 0.07$, $d = 0.42$, d = 0.46; days spent in formal OHP $d = 0.39$, $d = 0.43$, and $d = -0.16$; and school attendance $d = 0.13$, $d = 0.10$, and $d = -0.06$. The average overall effect size for T1 to T2 change, T1 to T3 change, and T1 to T4 change in combined ultimate outcomes were $d = 0.18$, $d = 0.38$, and $d = 0.24$. Overall, T1 to T3 changes in combined ultimate outcomes were greater than T1 to T2 changes and T1 to T4 changes.

[11] With the exception of parental psychopathology and family functioning which were only measured at T1, T2, T3, and T4.

Instrumental Outcomes

The effect sizes for T1 to T2 change, T1 to T3 change, and T1 to T4 change in youth focused instrumental outcomes were *d* = 0.67, *d* = 0.45, and *d* = 0.75 for negative behaviour and *d* = 0.77, *d* = 0.36, and *d* = 0.45 for positive behaviour. The effect sizes for T1 to T2 change, T1 to T3 change, and T1 to T4 change in parent focused instrumental outcomes were *d* = 0.69, *d* = 0.40, and *d* = 1.06 for parent well-being; *d* = 0.45, *d* = 0.60, and *d* = 0.80 for parent psychopathology; and *d* = 0.55, *d* = 0.19, and *d* = 0.32 for parent ability. The effect sizes for T1 to T2 change, T1 to T3 change, and T1 to T4 change in family focused instrumental outcomes were *d* = 0.37, *d* = 0.18, and *d* = 0.32 for cohesion and *d* = .32, *d* = 0.09, and *d* = 0.26 for adaptability. The effect sizes for T1 to T2 change, T1 to T3 change, and T1 to T4 change in combined instrumental outcomes were *d* = 0.55, *d* = 0.32, and *d* = 0.54. The effect sizes for instrumental changes between T1 and T3 were smaller than the changes between T1 to T2 and T1 to T4.

Overall, effect sizes for T1 to T2 change, T1 to T3 change, and T1 to T4 change in combined ultimate and instrumental outcomes were *d* = 0.45, *d* = 0.35, and *d* = 0.47. Again, changes between T1 to T3 were smaller than changes between T1 to T2 and T1 to T4. See Table 5.8 for T1 to T2 change, T1 to T3 change, and T1 to T4 change effect sizes.

The *d* = 0.45 calculated for change in combined outcomes at T2 can be categorised as a moderate to large effect (Cohen, 1992). Based on the sample size for this analysis (*n* = 73), the power to detect this effect size was .77 (Cohen, 1988). Thus, on average there was 77% chance of detecting an effect size in the moderate to large range.

Table 5.8
Effect Sizes (d) for T1 to T2 Change, T1 to T3 Change, and T1 to T4 Change

		T1 to T2 (*N* = 73)	**T1 to T3 (*N* = 42)**	**T1 to T4 (*N* = 30)**
Ultimate Outcomes	Offending frequency	0.13	0.58	0.72
	Offending Seriousness	0.07	0.42	0.46
	Days in OHP	0.39	0.43	-0.16*
	School	0.13	0.10	-0.06*
Ultimate Outcomes Total Average		**0.18**	**0.38**	**0.24**
Instrumental Outcomes				
Youth Focused	Negative Behaviour	0.67	0.45	0.75
	Positive Behaviour	0.77	0.36	0.45

Parent Focused	Parent Well-being	0.69	0.40	1.06
	Parent Psychopathology	0.45	0.60	0.80
	Parent Ability	0.55	0.19	0.32
Family Focused	Cohesion	0.37	0.18	0.32
	Adaptability	0.32	0.09	0.26
Instrumental Outcomes Total Average		**0.55**	**0.32**	**0.54**
Ultimate and Instrumental Outcomes Total Average		**0.45**	**0.35**	**0.47**

* T1 levels were higher than T4 levels.

‘Hard to Treat’ Youth and Their Families

Findings indicated that a small sample of youth (and their families) did not appear to benefit from MST treatment. This sample of 10 youth offended at each of the four measurement times. As offending behaviour has been reported to be the main indicator of the seriousness of conduct disorder (Loeber & Farrington, 2000), this finding is valuable.

A series of independent *t*-tests were conducted to explore whether the outcomes for this group of youth differed significantly from the outcomes obtained from the rest of the sample. There were no differences in demographic characteristics between these 10 youth and the rest of sample in youth age, youth gender, youth ethnicity, number and type of youth psychiatric diagnoses, youth psychiatric medication use, family composition (one or two parent family), youth custody status, history of previous involvement with other agencies, and treatment length (all p’s >.05).

This group of 10 youth had significantly higher offending frequency at T1 (t (71) = -3.079, p <.003), T2 (t (71) = -2.609, p <.011), T3 (t (64) = -3.754, p <.0005), and at T4 (t (61) = -7.650, p <.0005); had significantly higher offending seriousness at T1 (t (71) = -2.431, p <.018), T2 (t (71) = -2.141, p <.036), T3 (t (64) = -4.432, p <.0005), and at T4 (t (61) = -4.325, p <.0005); and had significantly higher T3 (t (40) = -2.087, p <.043) and T4 (t (28) = -2.660, p <.013) negative behaviour compared to the rest of the sample. The parents of these youth had significantly higher psychopathology at T2 (t (71) = -2.644, p <.010) and significantly lower well-being at T3 (t (40) = 2.177, p <.035) compared to the rest of the sample. The families of these youth displayed significantly lower cohesion at T1 (t (71) = 2.459, p <.016), T2 (t (71) = 3.756, p <.0005), and at T3 (t (40) = 2.387, p

<.022) compared to the rest of the sample. The means for significant *t*-test results are reported in Table 6.8. There were no other significant differences (all *p*'s >.05).

There were no significant changes in outcomes over time for the 10 youth on every outcome indicator: Offending frequency (Wilks' Lambda = .661, F (3, 7) = 1.197, p = .378); offending seriousness (Wilks' Lambda = .790, F (3, 7) = .622, p = .623); days in OHP (Wilks' Lambda = .580, F (3, 7) = 1.693, p = .255); school attendance (Wilks' Lambda = .931, F (3, 7) = .173, p = .912); negative behaviour (Wilks' Lambda = .323, F (3, 2) = 1.398, p = .443); positive behaviour (Wilks' Lambda = .581, F (3, 2) = .480, p = .729); well-being (Wilks' Lambda = .675, F (3, 2) = .321, p = .815); psychopathology (Wilks' Lambda = .368, F (3, 2) = 1.145, p = .498); parent ability (Wilks' Lambda = .622, F (3, 2) = .405, p = .767); family cohesion (Wilks' Lambda = .570, F (3, 2) = .503, p = .718); and family adaptability (Wilks' Lambda = .359, F (3, 2) = 1.189, p = .487). Results from paired *t*-tests indicated that there were no significant differences between T1 and T2 therapeutic alliance (t (9) = -.245, p = .812) and therapist adherence (t (9) = -.707, p = .497) but that there was a significant difference in satisfaction (t (9) = -3.003, p <.015). Satisfaction at T2 (M = 46.90, SD = 7.52) was significantly higher than satisfaction at T1 (M = 40.60, SD = 3.06).

Thus, to summarise, despite the majority of the sample experiencing significant improvements across ultimate and instrumental outcomes after treatment and over the 12-month follow-up period, a subset of 10 youth and their families experienced no significant improvements. Despite no significant improvements, the parents of these youth reported significantly higher satisfaction with the program at treatment completion.

Table 6.8
Means and Standard Deviations in Ultimate and Instrumental Outcomes for the 'Hard to Treat' Sub-sample and the Remaining Sample

		Sub-sample *M* (*SD*)	**Remaining Sample** *M* (*SD*)
Offending Frequency	**T1**	5.50 (4.2)	2.37 (2.77)
	T2	4.70 (4.08)	2.00 (2.86)

	T3	3.10 (2.23)	0.79 (1.71)
	T4	3.80 (2.66)	0.42 (0.84)
Offending Seriousness	**T1**	6.64 (1.60)	4.04 (3.30)
	T2	6.90 (1.32)	4.29 (3.80)
	T3	6.59 (1.31)	1.98 (3.23)
	T4	6.40 (1.60)	1.81 (3.27)
Negative Behaviour	**T3**	21.75 (6.94)	16.85 (5.74)
	T4	22.20 (5.26)	16.28 (4.41)
Well-being	**T3**	39.63 (19.57)	53.59 (15.55)
Psychopathology	**T2**	24.00 (15.46)	13.30 (11.27)
Family Cohesion	**T1**	45.00 (10.27)	53.29 (9.84)
	T2	45.20 (11.55)	57.76 (9.55)
	T3	46.50 (10.85)	55.21 (8.91)

Chapter Nine

Section 2 Results: Quality Assurance Indicators and Client Outcomes

The current chapter will present results for Section 2, the aims of which were to assess whether quality assurance indicators of service satisfaction, therapeutic alliance, and therapist adherence predict client outcome. The present chapter will firstly present the results from paired samples *t*-tests and repeated measures ANOVA tests examining differences between T1 (measured within 2 to 3 weeks of MST program commencement) and T2 (measured at program completion/post-treatment) service satisfaction, therapeutic alliance, and therapist adherence[12]. Following this, partial correlations will be presented assessing whether T1 and T2 service satisfaction, therapeutic alliance, and therapist adherence correlated significantly with T2 (post-treatment), T3 (6-month follow-up), and T4 (12-month follow-up) outcome when controlling for T1 (pre-treatment) outcome levels.

Test Assumptions and Data Screening

Preliminary analyses indicated that there were no violations of the assumptions of normality, linearity, and homoscedasticity. Box plots identified that outcome measures had up to two outliers at T1, up to three outliers at T2, up to three outliers at T3, and up to two outliers at T4. No significant differences occurred in the results when the outliers were removed. Thus, outliers were retained in the subsequent analyses.

Prior to performing the partial correlations, multiple regressions were conducted. However, as these regressions only contained two variables (a control and independent

[12] As the predictor variables of supervisor adherence, therapist and supervisor allegiance, therapist and supervisor accountability, and supervisory alliance are not directly related to clients and therapist-client contact, partial correlations between these predictors and client outcomes and quality assurance are not included in this chapter and were not a main focus of this research. However, for reader convenience the partial correlations are included in Appendix 23, Table A23.1. In summary, the vast majority of these partial correlations were not significant. Only two predictors, therapist accountability and supervisory alliance, significantly predicted outcome. Pearson correlations between supervisor adherence, therapist and supervisor allegiance, therapist and supervisor accountability, supervisory alliance, client outcomes, and quality assurance indicators are also presented in Appendix 23.

variable), and based on statistical advice, it was decided to conduct partial correlations. There were no differences in outcomes between the multiple regressions and the partial correlations. Nevertheless, multiple regressions are available for inspection from the author.

All analyses were conducted using SPSS for Windows, Standard Version 11.0 (SPSS, 2000).

Quality Assurance Indicators

Service Satisfaction

A paired samples *t*-test was conducted to see if client satisfaction at T1 differed from satisfaction measured at T2. Satisfaction measured at T1 (M = 39.52, SD = 4.16) was significantly lower than satisfaction measured at T2 (M = 47.92, SD = 5.07): t (72) = -12.864, p <.0005. The eta squared statistic (.70) indicated a large effect size[13].

Satisfaction with MST intervention was measured monthly throughout treatment. Altogether there were six measurement points: T1, month 2, month 3, month 4, month 5, and T2. As there were only 6 families who completed month 5 measures, these results were not included in the following repeated measures ANOVA. There was a significant effect for time: Wilks' Lambda = .208, F (4, 21) = 19.990, p <.0005, multivariate partial eta squared = .792. Mean satisfaction measured at T1, month 2, month 3, month 4, and T2 were 39.12 (SD = 4.21), 40.76 (SD = 3.59), 40.76 (SD = 2.76), 40.80 (SD = 3.03), and 47.80 (SD = 5.42), respectively. Bonferroni post hoc tests indicated that satisfaction measured at T2 was significantly higher than satisfaction at all the other measurement intervals (all p's <.0005).

Therapeutic Alliance

A paired samples *t*-test was conducted to see if the therapeutic alliance at T1 differed from the alliance measured at T2. There was no significant difference between the

[13] In reader convenience, the eta statistic has the following conventional ranges: Small effect (.01 - .05), medium effect (.06 - .13), and large effect (.14+).

therapeutic alliance measured at T1 (M = 77.14, SD = 7.93) and the therapeutic alliance measured at T2 (M = 77.96, SD = 7.11): t (72) = -.789, p = .433.

The alliance (relationship between client and therapist, reported by primary parent/caregiver) was measured monthly throughout treatment. Together there were six measurement points: T1, month 2, month 3, month 4, month 5, and T2. As there were only 6 families who completed month 5 measures, these results were not included in the following repeated measures ANOVA. There was no significant effect for time: Wilks' Lambda = .658, F (4, 20) = 2.602, p = .067, multivariate partial eta squared = .342. Mean alliance measured at T1, month 2, month 3, month 4, and T2 were 76.38 (SD = 6.18), 76.50 (SD = 7.20), 79.38 (SD = 4.52), 79.33 (SD = 6.23), and 77.17 (SD = 9.26), respectively.

Therapist Adherence

A paired samples t-test was conducted to see if therapist adherence to MST protocol at T1 differed from therapist adherence measured at T2. Therapist adherence measured at T1 (M = 104.69, SD = 13.52) was significantly lower than therapist adherence measured at T2 (M = 108.73, SD = 11.64): t (72) = -2.468, p <.016. The eta squared statistic (.08) indicated a moderate effect size.

Therapist adherence was likewise measured each month throughout treatment. In total, there were six measurement points: T1, month 2, month 3, month 4, month 5, and T2. As there were only 6 families who completed month 5 measures, these results were not included in the following repeated measures ANOVA. There was a significant effect for time: Wilks' Lambda = .448, F (4, 21) = 6.460, p <.001, multivariate partial eta squared = .552. Mean therapist adherence measured at T1, month 2, month 3, month 4, and T2 were 102.10 (SD = 13.44), 110.84 (SD = 10.20), 111.76 (SD = 9.40), 113.20 (SD = 9.15), and 110.16 (SD =12.18), respectively. Bonferroni post hoc tests indicated that therapist adherence measured at T1 was significantly lower than therapist adherence at month 2 (p <.002), month 3 (p <.002), month 4 (p <.003), and T2 (p <.016).

Correlations between T1 and T2 Quality Assurance indicators are presented in Appendix 23, Table A23.1.

Summary of Quality Assurance Indicators

There were significant improvements in client service satisfaction with MST intervention and therapist adherence to MST protocol over time where T2 levels were significantly higher than T1 levels. Significant improvement in therapist adherence was evident from the second month of treatment whereas significant improvements in satisfaction were only evident at post-treatment. There was no significant difference between T1 and T2 therapeutic alliance.

Partial Correlations between Quality Assurance Indicators and Client Outcomes

The following section presents findings of significant partial correlations between quality assurance indicators and client outcome variables. All significant partial correlations are presented at the end of this chapter, in Table 1.9. Nonsignificant partial correlations and Pearson product-moment correlations between T1 and T2 quality assurance indicators and ultimate and instrumental outcomes are presented in Appendix 23 (see Table A23.2, Table A23.3, and Table A23.4).

For all partial correlation analyses, the relationships between T1 and T2 satisfaction, T1 and T2 therapeutic alliance, and T1 and T2 therapist adherence with T2, T3, and T4 client outcomes were assessed, while controlling for T1 client outcome.

Nonsignificant Findings

T1 quality assurance indicators did not correlate significantly with any client outcomes (all p's >.05). Post-treatment quality assurance indicators did not correlate significantly with offending seriousness or parent psychopathology (p's >.05).

Offending Frequency

There was a significant relationship between T2 satisfaction and T2 offending frequency: $r = -.305$, $n = 70$, $p < .009$. Higher levels of T2 satisfaction were associated with lower levels of T2 offending frequency. An inspection of the zero order correlation ($r = -.319$, $p < .006$) suggested that controlling for T1 offending frequency had a very little effect on

the strength of the relationship between the two variables. Overall, T2 satisfaction explained 9.3% of the variance in T2 offending behaviour.

Days in OHP

There was a significant relationship between T2 therapist adherence and T4 days in OHP (out-of-home placement): $r = .252$, $n = 62$, $p < .042$. High levels of T2 therapist adherence were associated with higher levels of T4 days in OHP. An inspection of the zero order correlation ($r = .257$, $p < .039$) suggested that controlling for T1 days in OHP had little effect on the strength of the relationship between the two variables. Overall, T2 therapist adherence explained 6.4% of the variance in T4 days in OHP.

School Attendance

There were significant relationships between T2 satisfaction and T3 and T4 school attendance: $r = .262$, $n = 65$, $p < .032$ and $r = .272$, $n = 59$, $p < .039$, respectively. High levels of T2 satisfaction were associated with higher levels of school attendance. An inspection of the zero order correlations ($r = .200$, $p = .110$ and $r = .242$, $p = .062$) suggested that controlling for T1 school attendance had a moderate effect on the strength of the relationship between the two variables. Overall, T2 satisfaction explained 6.9% and 7.4% of the variance in T3 and T4 school attendance.

Youth Negative Behaviour

Post-treatment satisfaction, alliance, and therapist adherence significantly associated with T2 youth negative behaviour: $r = -.382$, $n = 73$, $p < .001$; $r = -.457$, $n = 73$, $p < .0005$; and $r = -.356$, $n = 73$, $p < .002$, respectively. High levels of T2 satisfaction, alliance, and therapist adherence were associated with lower levels of negative behaviour. An inspection of the zero order correlations ($r = -.492$, $p < .0005$; $r = -.491$, $p < .0005$; and $r = -.344$, $p < .003$) suggested that controlling for T1 negative behaviour had a small to large effect on the strength of the relationship between the two variables. Overall, T2 satisfaction, alliance, and therapist adherence explained 14.6%, 20.9%, and 12.7% of the variance in T2 negative behaviour, respectively.

Youth Positive Behaviour

Post-treatment satisfaction, alliance, and therapist adherence significantly associated with youth positive behaviour. Post-treatment satisfaction significantly predicted T2, T3, and T4 positive behaviour: $r = .383$, $n = 73$, $p < .001$; $r = .426$, $n = 73$, $p < .006$; and $r = .504$, $n = 73$, $p < .005$, respectively. Post-treatment alliance significantly predicted T2 and T3 positive behaviour: $r = .426$, $n = 73$, $p < .0005$ and $r = .315$, $n = 42$, $p < .045$, respectively. Post-treatment therapist adherence significantly predicted T2, T3, and T4 positive behaviour: $r = .385$, $n = 73$, $p < .001$; $r = .309$, $n = 73$, $p < .049$; and $r = .434$, $n = 73$, $p < .019$, respectively. High levels of T2 satisfaction, alliance, and therapist adherence were associated with higher levels of positive behaviour.

An inspection of the zero order correlations (satisfaction: $r = .448$, $p < .0005$, $r = .485$, $p < .001$, and $r = .486$, $p < .007$; alliance: $r = .463$, $p < .0005$, $r = .365$, $p < .017$, and $r = .315$, $p = .090$; therapist adherence: $r = .361$, $p < .002$, $r = .294$, $p = .059$, and $r = .434$, $p < .017$) suggested that controlling for T1 positive behaviour had a small to moderate effect on the strength of the relationship between the variables. Overall, T2 satisfaction explained between 14.7% and 25.4% of the variance in positive behaviour; T2 alliance explained 18.2% and 9.9% of the variance in T2 and T3 positive behaviour; and T2 therapist adherence explained between 9.6% and 18.8% of the variance in positive behaviour.

Parent Well-being

Post-treatment satisfaction, alliance, and therapist adherence significantly associated with T2 parent well-being: $r = .381$, $n = 73$, $p < .001$; $r = .326$, $n = 73$, $p < .005$; and $r = .346$, $n = 73$, $p < .003$, respectively. High levels of T2 satisfaction, alliance, and therapist adherence were associated with higher levels of well-being. An inspection of the zero order correlations ($r = .229$, $p < .010$; $r = .334$, $p < .004$; and $r = .288$, $p < .003$) suggested that controlling for T1 negative behaviour had a small to large effect on the strength of the relationship between the two variables. Overall, T2 satisfaction, alliance, and therapist adherence explained 14.5%, 10.6%, and 12% of the variance in T2 well-being, respectively.

Parent Ability

Post-treatment satisfaction, alliance, and therapist adherence significantly associated with parent ability. Post-treatment satisfaction significantly predicted T2, T3, and T4 parent ability: $r = .433$, $n = 73$, $p < .0005$; $r = .431$, $n = 73$, p <.005; and $r = .454$, $n = 73$, $p < .013$, respectively. Post-treatment alliance significantly predicted T2 parent ability: $r = .359$, $n = 73$, $p < .002$. Post-treatment therapist adherence significantly predicted T2 and T4 parent ability: $r = .476$, $n = 73$, $p < .0005$ and $r = .439$, $n = 30$, $p < .017$, respectively. High levels of T2 satisfaction, alliance, and therapist adherence were associated with higher levels of parent ability.

An inspection of the zero order correlations (satisfaction: $r = .504$, $p < .0005$, $r = .501$, $p < .001$, and $r = .425$, $p < .019$; alliance: $r = .395$, $p < .001$; therapist adherence: $r = .443$, $p < .0005$, $r = .434$, $p < .017$) suggested that controlling for T1 parent ability had a small to moderate effect on the strength of the relationship between the variables. Overall, T2 satisfaction explained between 18.6% and 20.6% of the variance in parent ability; T2 alliance explained 12.9% of the variance in T2 parent ability; and T2 therapist adherence explained 22.7% and 19.3% of the variance in T2 and T4 parent ability, respectively.

Family Cohesion

Post-treatment satisfaction, alliance, and therapist adherence significantly associated with family cohesion. Post-treatment satisfaction significantly predicted T2, T3, and T4 family cohesion: $r = .422$, $n = 73$, $p < .0005$; $r = .319$, $n = 42$, $p < .042$; and $r = .433$, $n = 30$, $p < .019$, respectively. Post-treatment alliance significantly predicted T2 family cohesion: $r = .262$, $n = 73$, $p < .026$. Post-treatment therapist adherence significantly predicted T2 and T4 family cohesion: $r = .297$, $n = 73$, $p < .011$ and $r = .450$, $n = 30$, $p < .014$, respectively. High levels of T2 satisfaction, alliance, and therapist adherence were associated with higher levels of family cohesion.

An inspection of the zero order correlations (satisfaction: $r = .415$, $p < .0005$, $r = .363$, $p < .018$, and $r = .463$, $p < .010$; alliance: $r = .305$, $p < .009$; therapist adherence: $r = .315$, $p < .007$ and $r = .466$, $p < .009$) suggested that controlling for T1 family cohesion had a small to moderate effect on the strength of the relationship between the variables. Overall, T2 satisfaction explained between 10.2% and 18.7% of the variance in family cohesion;

T2 alliance explained 6.9% of the variance in T2 family cohesion; and T2 therapist adherence explained 8.8% and 20.3% of the variance in T2 and T4 family cohesion, respectively.

Family Adaptability

Post-treatment satisfaction, alliance, and therapist adherence significantly associated with family adaptability. Post-treatment satisfaction significantly predicted T2 and T4 family adaptability: $r = .472$, $n = 73$, $p < .0005$ and $r = .467$, $n = 30$, $p < .011$, respectively. Post-treatment alliance significantly predicted T2 and T4 family adaptability: $r = .290$, $n = 73$, $p < .013$ and $r = .450$, $n = 30$, $p < .014$. Post-treatment therapist adherence significantly predicted T2 and T4 family adaptability: $r = .329$, $n = 73$, $p < .005$ and $r = .413$, $n = 30$, $p < .026$, respectively. High levels of T2 satisfaction, alliance, and therapist adherence were associated with higher levels of family adaptability.

An inspection of the zero order correlations (satisfaction: $r = .458$, $p < .0005$ and $r = .464$, $p < .010$; alliance: $r = .347$, $p < .003$ and $r = .484$, $p < .007$; therapist adherence: $r = .373$, $p < .001$ and $r = .446$, $p < .013$) suggested that controlling for T1 family adaptability had a small to moderate effect on the strength of the relationship between the variables. Overall, T2 satisfaction explained 22.3% and 21.8% of the variance in T2 and T4 family adaptability; T2 alliance explained 8.4% and 20.3% of the variance in T2 and T4 family adaptability; and T2 therapist adherence explained 10.8% and 17.1% of the variance in T2 and T4 family adaptability, respectively.

Chapter Summary

Overall, T1 satisfaction, therapeutic alliance, and therapist adherence did not correlate significantly with any client outcomes. Post-treatment satisfaction, therapeutic alliance, and therapist adherence correlated with a number of outcomes, largely predicting more favourable outcomes. Parent reported satisfaction with MST intervention explained up to 9.3% of the change in offending frequency, 7.4% of the change in school attendance, 14.6% of the change in negative behaviour, 25.4% of the change in positive behaviour, 14.5% of the change in well-being, 20.6% of the change in parent ability, 18.7% of the

change in family cohesion, and 22.3% of the change in family adaptability. Post-treatment therapeutic alliance explained up to 20.9% of the change in negative behaviour, 18.2% of the change in positive behaviour, 10.6% of the change in well-being, 12.9% of the change in parent ability, 6.8% of the change in family cohesion, and 20.3% of the change in family adaptability. Post-treatment therapist adherence explained up to 12.7% of the change in negative behaviour, 18.8% of the change in positive behaviour, 12% of the change in well-being, 22.7% of the change in parent ability, 20.3% of the change in family cohesion, and 17.1% of the change in family adaptability. The only finding contrary to expectations was that higher therapist adherence was associated with more days in OHP at T4, where therapist adherence explained 6.3% of the change in T4 days in OHP. Overall, T2 quality assurance factors predicted more significant change in instrumental outcomes compared to ultimate outcomes, where all T2 and most T4 instrumental outcomes were predicted by the three quality assurance indicators.

Table 1.9

Significant Partial Correlations between T2 Service Satisfaction, Therapeutic Alliance, and Therapist Adherence with T2, T3, and T4 Client Outcome, Controlling for T1 Outcome

		T2 Satisfaction	T2 Alliance	T2 Therapist Adherence
Offending Frequency	T2	-.305**		
	T3			
	T4			
Days in OHP	T2			
	T3			
	T4			.252*
School Attendance	T2			
	T3	.262*		
	T4	.272*		
Negative Behaviour	T2	-.382***	-.457***	-.356**
	T3			
	T4			
Positive Behaviour	T2	.383***	.426***	.385***
	T3	.426**	.315*	.309*
	T4	.504**		.434*
Well-being	T2	.381***	.326**	.346**
	T3			
	T4			
Parent Ability	T2	.433***	.359**	.476***
	T3	.431**		
	T4	.454*		.439*
Family Cohesion	T2	.422***	.262*	.297*
	T3	.319*		
	T4	.433*		.450*
Family Adaptability	T2	.472***	.290*	.329**
	T3			
	T4	.467*	.450*	.413*

T1 = pre-treatment; T2 = post-treatment; T3 = 6-month follow-up; and T4 = 12-month follow-up. Correlations not listed here were nonsignificant (see Appendix 23).
p <.05*, *p* <.01**, *p* <.001***

Chapter Ten

Section 3 Results: Supervisor and Therapist Adherence

The current chapter will present results for Section 3, the aims of which were to assess (1) whether supervisor adherence predicted therapist adherence and (2) whether supervisor and therapist adherence interacted to predict outcomes. The present chapter will firstly present Pearson correlation analysis between therapist and supervisor adherence. Following this, the results from hierarchical multiple regressions analysing whether supervisor and therapist adherence interacted to predict client outcomes and quality assurance will be presented.

Test Assumptions and Data Screening

Prior to correlation and regression analyses, the variables involved were screened for assumptions of statistical analysis (normality, linearity, and homoscedasticity). Following the recommendation of Tabachnick and Fidell (1989), a conservative alpha level (p <.001) was used to evaluate the significance of skewness, kurtosis, and univariate outliers. For all the regressions reported, multivariate outliers detected using Mahalanobis distance and p <.001 were excluded from the analyses. Analyses had a range of zero to three outliers. As suggested by Tabachnick and Fidell (1989), all regression analyses conducted exceeded the minimum ratio of five cases per variable.

Owing to the number of hierarchical multiple regressions conducted, potential for Type I error (finding a significant result when there is not one) is increased. However, owing to the limited research and literature on supervisor and therapist adherence and client outcomes, Type II error (finding no significant result when in fact there is one) was viewed as more problematic. That is, the focus here was to explore the data set and note relationships, or patterns of relationships, that may be worthy of further exploration.

All analyses were conducted using SPSS for Windows, Standard Version 11.0 (SPSS, 2000).

Supervisor and Therapist Adherence

As a repeated measures ANOVA did not find significant differences in supervisor adherence scores over time, mean scores were employed. Mean supervisor adherence scores ranged from 161.00 to 203.10 with an overall mean of 173.31 (*SD* = 18.43).

Supervisor adherence significantly correlated with T1 therapist adherence (measured within 2 to 3 weeks of MST program commencement; $r = -.365$, $n = 53$, $p < .007$) but not T2 therapist adherence (measured at program completion/post-treatment; $r = -.229$, $n = 53$, $p = .099$). As seen by the values of the correlations, higher supervisor adherence predicted lower therapist adherence. Overall, supervisor adherence explained 13.3% of the variance in T1 therapist adherence.

The Pearson correlations between supervisor adherence, therapist adherence, client outcomes, and quality assurance indicators are presented in Appendix 23 (see Table A23.1, A23.3, and A23.4).

Supervisor and Therapist Adherence and Client Outcomes

To analyse whether supervisor adherence moderated the relationship between therapist adherence and T2, T3, and T4 client outcomes, hierarchical multiple regressions were conducted. At step 1, the T1 level of the corresponding outcome measure was entered into the equation. At step 2, supervisor adherence and either T1 or T2 therapist adherence were entered into the equation. At step 3, the interaction term between therapist and supervisor adherence was entered into the equation.

As relevant to the aims, only the significant results at step 2 and/or step 3 are presented in the text in this chapter. However, for each of these significant findings, the full hierarchical regression is presented in tabular form in this chapter and includes all steps (including step 1) of the regression. Nonsignificant findings, including the full regressions, are presented in Appendix 24.

For significant interactions, schematic representations are presented. The data presented in the figures were derived by conducting a median split on the supervisor adherence and therapist adherence measures. This median split classification was done only for the purposes of illustration.

Nonsignificant Results

Supervisor Adherence and T1 Therapist Adherence: At step 2, T1 therapist adherence and supervisor adherence did not make any significant contribution to the variance in T2, T3, or T4 offending frequency, offending seriousness, days in OHP, school attendance, negative behaviour, well-being, psychopathology, parent ability, family adaptability, and family cohesion over and above T1 levels (all *p*'s >.05). At step 3, the interactions between T1 therapist and supervisor adherence did not make any significant contribution to offending frequency, offending seriousness, days in OHP, school attendance, positive behaviour, well-being, psychopathology, parent ability, family cohesion, and service satisfaction (all *p*'s >.05).

Supervisor Adherence and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisor adherence did not make any significant contribution to the variance in T2, T3, or T4 offending frequency, offending seriousness, days in OHP, negative behaviour, psychopathology, family adaptability, and family cohesion over and above T1 levels (all *p*'s >.05). At step 3, the interactions between T2 therapist and supervisor adherence did not make any significant contribution to the prediction offending frequency, offending seriousness, days in OHP, school attendance, negative behaviour, positive behaviour, psychopathology, parent ability, family cohesion, therapeutic alliance, and service satisfaction (all *p*'s >.05).

School Attendance

Supervisor Adherence and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisor adherence made a significant contribution to T4 school attendance, explaining 14.6% of the variance (R^2_{change} = .146, p <.035). However, only therapist adherence added a unique significant contribution (β = .362, p <.016). Post-treatment therapist adherence and supervisor adherence did not make a significant contribution to the variance in T2 and T3 school attendance over and above T1 school attendance. At

step 3, when the interaction term between therapist and supervisor adherence was included in the equations, there were no significant contributions made to the variance in outcome. Data from the hierarchical multiple regression on T4 school attendance is presented in Table 1.10.

Table 1.10
Hierarchical Multiple Regression of T4 School Attendance, T2 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T4 School Attendance (n = 40)		
	Step 1	Step 2	Step 3
T1 School Attendance	.375*	.457**	.395*
T2 Therapist Adherence		.362*	.434**
Supervisor Adherence		-.101	-.098
T2 Therapist Adherence X Supervisor Adherence			-.236
R	.375	.535	.576
Total R^2	.141	.287	.332
Adjusted R^2	.118	.227	.256
R^2_{change}	.141*	.146*	.046
F	6.223*	4.821**	4.352**

p <.05*, p <.01**, p <.001***

Negative Behaviour

Supervisor Adherence and T1 Therapist Adherence: At step 2, T1 therapist adherence and supervisor adherence did not make a significant contribution to the variance in T2, T3, or T4 negative behaviour over and above T1 negative behaviour. At step 3, when the interaction term between therapist and supervisor adherence was included in the equation, there was a significant contribution made to T2 negative behaviour, explaining 5.3% of the variance ($R^2_{change} = p$ <.040). The interaction, illustrated in Figure 1.10, illustrates that when supervisor adherence was high, high therapist adherence was associated with lower negative behaviour compared to when supervisor adherence was low. However, when supervisor adherence was high, low therapist adherence was associated with higher negative behaviour compared to when supervisor adherence was low. Thus, high supervisor adherence was only favourable when therapist adherence was also high. High supervisor adherence under conditions of low therapist adherence was detrimental to outcome. The interaction did not add a significant contribution to the variance in T3 and T4 negative behaviour. Data from the hierarchical multiple regression on T2 negative behaviour is presented in Table 2.10.

Table 2.10

Hierarchical Multiple Regression of T2 Negative Behaviour, T1 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Negative Behaviour		(n = 51)
	Step 1	Step 2	Step 3
T1 Negative Behaviour	.603***	.564***	.612***
T1 Therapist Adherence		-.158	-.097
Supervisor Adherence		.043	.164
T1 Therapist Adherence X Supervisor Adherence			-.261*
R	.603	.627	.668
Total R^2	.363	.393	.446
Adjusted R^2	.351	.355	.398
R^2_{change}	.363***	.030	.053*
F	28.552***	10.364***	9.446***

p <.05*, *p* <.01**, *p* <.001***

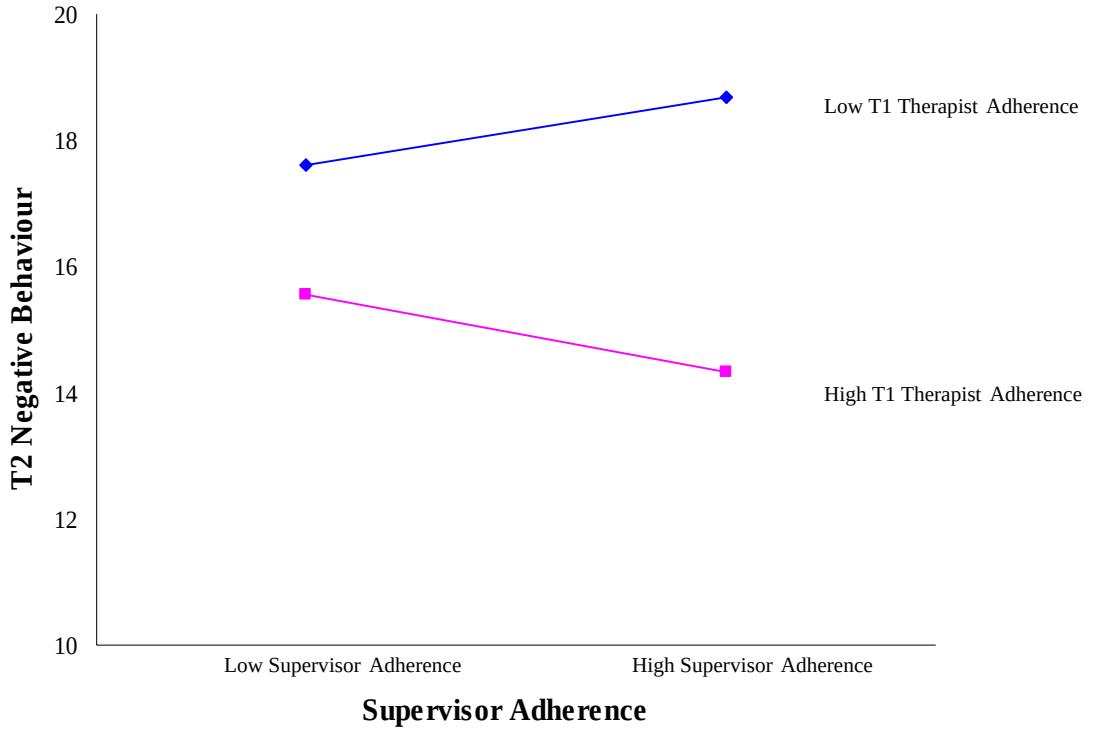

Figure 1.10. Schematic representation of the supervisor adherence X therapist adherence interaction in the prediction of T2 negative behaviour.

Positive Behaviour

Supervisor Adherence and T1 Therapist Adherence: At step 2, T1 therapist adherence and supervisor adherence made a significant contribution to T2 and T3 positive behaviour,

explaining 9.3% (R^2_{change} = .930, p <.039) and 17.7% of the variance (R^2_{change} = .177, p <.039), respectively. No significant contribution was made to the variance in T4 positive behaviour. At step 3, when the interaction term between therapist and supervisor adherence was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regressions on T2 and T3 positive behaviour are presented in Table 3.10.

Table 3.10
Hierarchical Multiple Regressions of T2 and T4 Positive Behaviour, T1 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Positive Behaviour		(n = 51)	T3 Positive Behaviour		(n = 26)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Positive Behaviour	.514***	.481***	.483***	.505**	.464**	.463**
T1 Therapist Adherence		.248	.228		.294	.305
Supervisor Adherence		-.117	-.164		-.222	-.197
T1 Therapist Adherence X Supervisor Adherence			.100			-.054
R	.514	.598	.605	.505	.658	.659
Total R^2	.264	.358	.366	.255	.432	.435
Adjusted R^2	.250	.317	.312	.226	.358	.332
R^2_{change}	.264***	.093*	.008	.255**	.177*	.002
F	17.973***	8.905***	6.771***	8.578**	5.839**	4.228*

p <.05*, p <.01**, p <.001***

Supervisor Adherence and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisor adherence made a significant contribution to T2 positive behaviour, explaining 9.1% of the variance (R^2_{change} = .091, p <.037). However, only therapist adherence added a unique significant contribution (β = .305, p <.012). No significant contribution was made to the variance in T3 and T4 positive behaviour. At step 3, when the interaction term between T2 therapist and supervisor adherence was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T2 positive behaviour is presented in Table 4.10.

Table 4.10
Hierarchical Multiple Regression of T2 Positive Behaviour, T2 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Positive Behaviour		(n = 51)
	Step 1	Step 2	Step 3
T1 Positive Behaviour	.540***	.536***	.542***
T2 Therapist Adherence		.305*	.298*
Supervisor Adherence		.014	.011
T2 Therapist Adherence X Supervisor Adherence			.025
R	.540	.619	.619
Total R^2	.292	.383	.383
Adjusted R^2	.277	.344	.331
R^2_{change}	.292***	.091*	.001
F	20.587***	9.921***	7.303***

p <.05*, *p* <.01**, *p* <.001***

Well-Being

Supervisor Adherence and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisor adherence made a significant contribution to T2 well-being, explaining 12% of the variance (R^2_{change} = .120, p <.019). However, only therapist adherence added a unique significant contribution (β = .338, p <.007). No significant contributions were made to the variance in T3 and T4 well-being. At step 3, when the interaction term between therapist and supervisor adherence was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T2 well-being is presented in Table 5.10.

Table 5.10
Hierarchical Multiple Regression of T2 Well-being, T2 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Well-being		(n = 51)
	Step 1	Step 2	Step 3
T1 Well-being	.461***	.465***	.426**
T2 Therapist Adherence		.338**	.375**
Supervisor Adherence		.173	.189
T2 Therapist Adherence X Supervisor Adherence			-.156
R	.461	.576	.595
Total R^2	.212	.332	.353
Adjusted R^2	.197	.290	.298
R^2_{change}	.212***	.120*	.021
F	13.489***	7.953***	6.423***

p <.05*, *p* <.01**, *p* <.001***

Parent Ability

Supervisor Adherence and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisor adherence made a significant contribution to the variance in T2 parent ability, explaining 17.7% of the variance (R^2_{change} = .177, p <.002). However, only therapist adherence added a unique significant contribution (β = .430, p <.0005). There were no significant contributions made to the variance in T3 and T4 parent ability. At step 3, when the interaction term between therapist and supervisor adherence was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T2 parent ability is presented in Table 6.10.

Table 6.10
Hierarchical Multiple Regression of T2 Parent Ability, T2 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Parent Ability		(n = 52)
	Step 1	Step 2	Step 3
T1 Parent Ability	.495***	.475***	.458***
T2 Therapist Adherence		.430***	.458***
Supervisor Adherence		.065	.078
T2 Therapist Adherence X Supervisor Adherence			-.110
R	.495	.650	.659
Total R^2	.246	.423	.434
Adjusted R^2	.230	.387	.386
R^2_{change}	.246***	.177**	.011
F	16.270***	11.715***	9.003***

p <.05*, p <.01**, p <.001***

Family Adaptability

Supervisor Adherence and T1 and T2 Therapist Adherence: At step 2, T1 and T2 therapist adherence and supervisor adherence did make any significant contribution to the variance in T2, T3, or T4 family adaptability over and above T1 levels. At step 3, when the interaction terms between T1 therapist and supervisor adherence and T2 therapist and supervisor adherence were included in the equations, there was a significant contribution made to T3 family adaptability, explaining 14% (R^2_{change} = .140, p <.025) and 22.5% (R^2_{change} = .225, p <.004) of the variance, respectively. The interaction terms did not make a significant contribution to the variance in T2 or T4 family adaptability. Data from the hierarchical multiple regressions on T3 adaptability are presented in Table 7.10.

The interactions, illustrated in Figure 2.10 and Figure 3.10, show that when supervisor adherence was low, high therapist adherence was associated with higher family adaptability compared to low therapist adherence. However, under conditions of high supervisor adherence, low therapist adherence was associated with an increase in family adaptability, whereas high therapist adherence was associated with a reduction in family adaptability. Under high supervisor adherence, low therapist adherence was associated with equal or higher family functioning than high therapist adherence. Thus, high supervisor adherence was only favourable when therapist adherence was low. High supervisor adherence under conditions of high therapist adherence was detrimental to outcome. Finally, as seen in the figures, the worst outcomes were seen when low therapist adherence was paired with low supervisor adherence.

Table 7.10

Hierarchical Multiple Regressions of T3 Family Adaptability, T1 and T2 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Family Adaptability (*n* = 27)		
	Step 1	Step 2	Step 3
T1 FA	.491**	.521**	.468**
T1 Therapist Adherence		-.185	-.061
Supervisor Adherence		.103	.259
T1 Therapist Adherence X Supervisor Adherence			-.405*
R	.491	.547	.663
Total R^2	.241	.300	.439
Adjusted R^2	.212	.212	.342
R^2_{change}	.241**	.058	.140*
F	8.275**	3.422*	4.502**
T1 FA	.491**	.461*	.419*
T2 Therapist Adherence		.073	.338
Supervisor Adherence		.193	.201
T2 Therapist Adherence x Supervisor Adherence			-.541**
R	.491	.526	.709
Total R^2	.241	.277	.502
Adjusted R^2	.212	.186	.415
R^2_{change}	.241**	.035	.225**
F	8.275**	3.058*	5.797**

p <.05*, *p* <.01**, *p* <.001***

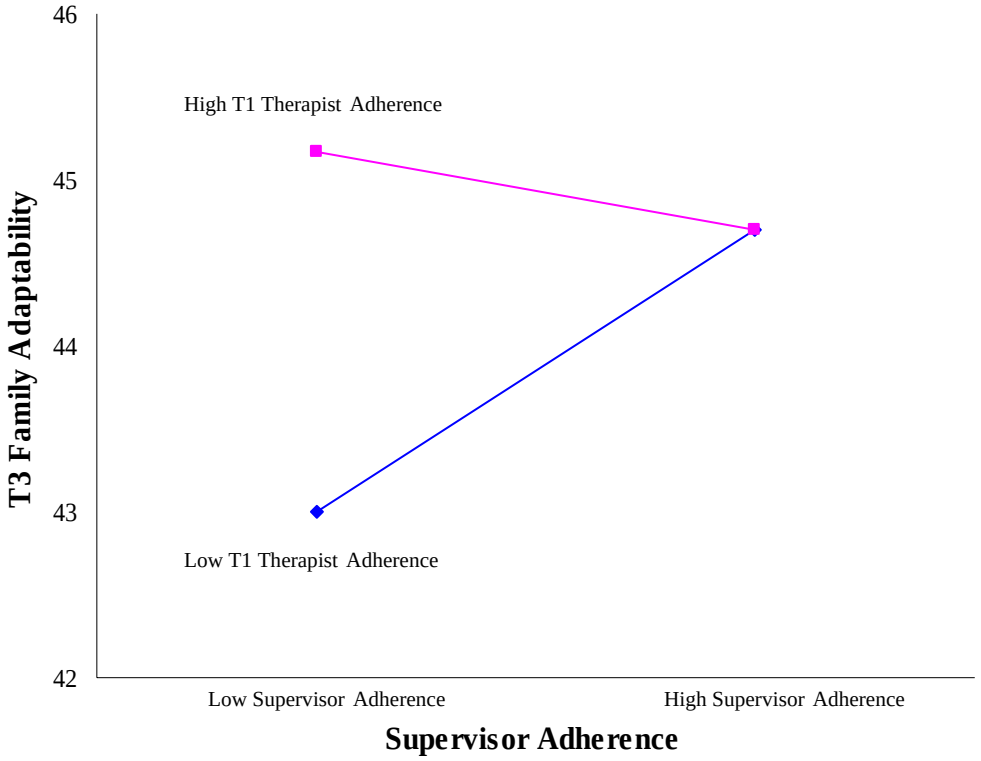

Figure 2.10. Schematic representation of the supervisor adherence X T1 therapist adherence interaction in the prediction of T3 family adaptability.

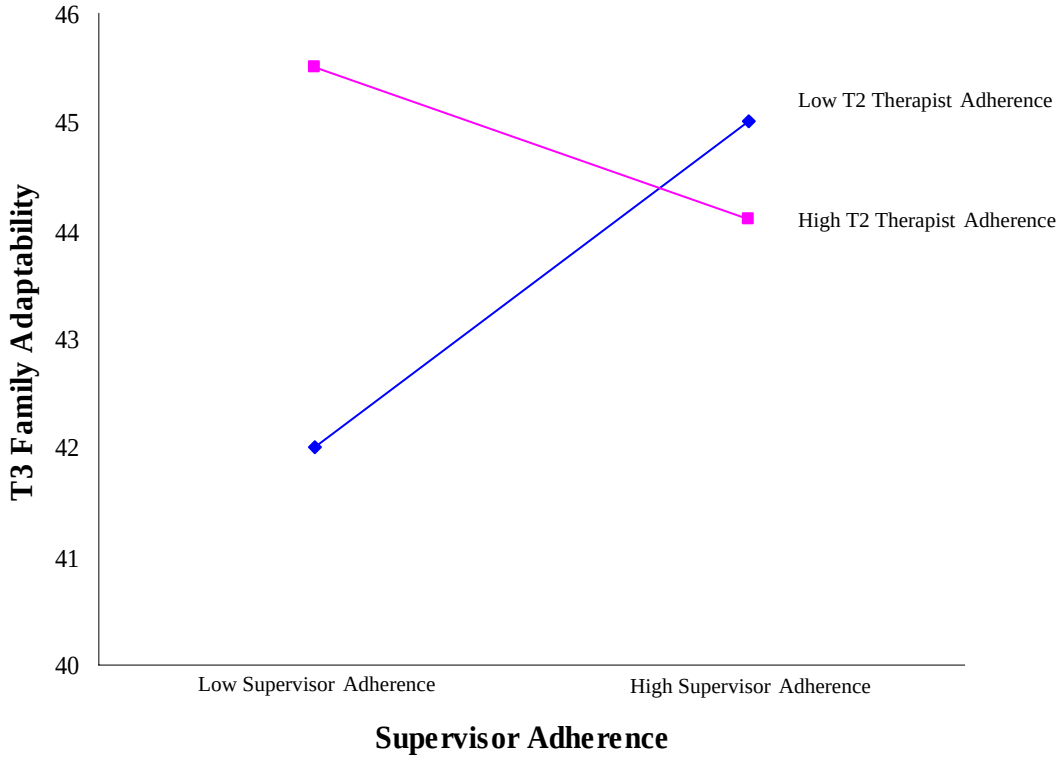

Figure 3.10. Schematic representation of the supervisor adherence X T2 therapist adherence interaction in the prediction of T3 family adaptability.

Supervisor and Therapist Adherence and Quality Assurance Indicators

The following hierarchical regression analyses were conducted identically to the previous regressions in this chapter but with the quality assurance indicators of service satisfaction and therapeutic alliance replacing client outcome variables. Regression analyses on T1 service satisfaction and T1 therapeutic alliance had no control variable and thus, the hierarchical multiple regressions only involved two steps. Regression analyses on T2 service satisfaction and T2 therapeutic alliance involved three steps as T1 measurement levels were entered as control variables.

T1 Service Satisfaction

Supervisor Adherence and T1 Therapist Adherence: At step 1, T1 therapist adherence and supervisor adherence made a significant contribution to the variance in T1 satisfaction, explaining 32.5% (R^2_{change} = .325, p <.0005) of the variance. However, only therapist adherence added a unique significant contribution (β = .545, p = .0005). At step 2, the interactions between therapist adherence and supervisor adherence did not make a significant contribution to T1 satisfaction. Data from the hierarchical multiple regression on T1 satisfaction is presented in Table 8.10.

Table 8.10
Hierarchical Multiple Regressions of T1 Satisfaction, T1 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Satisfaction (n = 52)	
	Step 1	Step 2
T1 Therapist Adherence	.545***	.531***
Supervisor Adherence	-.060	-.078
T1 Therapist Adherence X Supervisor Adherence		.052
R	.570	.572
Total R^2	.325	.327
Adjusted R^2	.298	.286
R^2_{change}	.325***	.002
F	12.036***	7.946***

p <.05*, p <.01**, p <.001***

T2 Service Satisfaction

Supervisor Adherence and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisor adherence made a significant contribution to the variance in T2 satisfaction, explaining 15.6% (R^2_{change} = .156, p <.009) of the variance. However, only therapist adherence added a unique significant contribution (β = .466, p = .003). The interaction between T2 therapist adherence and supervisor adherence did not add a significant contribution to T2 satisfaction. Data from the hierarchical multiple regression on T2 satisfaction is presented in Table 9.10.

Table 9.10
Hierarchical Multiple Regression of T2 Satisfaction, T2 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R², and R^2_{change}

	T2 Satisfaction		(n = 51)
	Step 1	Step 2	Step 3
T1 Satisfaction	.354**	.128	.139
T2 Therapist Adherence		.466**	.469**
Supervisor Adherence		.111	.117
T2 Therapist Adherence X Supervisor Adherence			-.041
R	.354	.530	.532
Total R^2	.125	.281	.283
Adjusted R^2	.108	.236	.222
R^2_{change}	.125**	.156**	.001
F	7.147**	6.265***	4.635**

p <.05*, p <.01**, p <.001***

T1 Therapeutic Alliance

Supervisor Adherence and T1 Therapist Adherence: At step 1, T1 therapist adherence and supervisor adherence made a significant contribution to the variance in T1 alliance, explaining 28% (R^2_{change} = .280, p <.0005) of the variance. However, only therapist adherence made a unique significant contribution (β = .556, p <.0005). At step 2, when the interaction term between therapist and supervisor adherence was included in the equation, there was no significant contribution made to the variance in T1 therapeutic alliance. Data from the hierarchical multiple regressions on T1 alliance is presented in Table 10.10.

Table 10.10
Hierarchical Multiple Regressions of T1 Alliance, T1 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Therapeutic Alliance (*n* = 51)	
	Step 1	Step 2
T1 Therapist Adherence	.556***	.579***
Supervisor Adherence	.081	.111
T1 Therapist Adherence X Supervisor Adherence		-.084
R	.532	.538
Total R^2	.283	.289
Adjusted R^2	.255	.246
R^2_{change}	.283***	.006
F	9.878***	6.651***

p <.05*, *p* <.01**, *p* <.001***

T2 Therapeutic Alliance

Supervisor Adherence and T1 Therapist Adherence: At step 2, T1 therapist adherence and supervisor adherence did not make a significant contribution to T2 alliance over and above T1 alliance. At step 3, the interaction between T1 therapist adherence and supervisor adherence added a significant contribution to T2 alliance, explaining 14.9% (R^2_{change} = .149, *p* <.003) of the variance. However, supervisor adherence shows suppression effects (Smith, Ager, & Williams, 1992) which makes interpretation of the overall equation somewhat more difficult. A suppression effect is caused by later entered variables suppressing the impact or variance of the earlier entered variables…"The definition and interpretation of the suppressor-concept within the context of multiple regression remains a controversial issue" (Holling, 1983, p.1). Pedhazur (1997) defines and distinguishes between three types of regression effects: Classical, negative, and reciprocal. However, a detailed breakdown of the suppression effect in this analysis, as well as analyses presented in Chapter Eleven, was not considered necessary. Owing to interpretation difficulty, the schematic representation of the significant interaction is not presented. Data from the hierarchical multiple regression on T2 alliance is presented in Table 11.10.

Table 11.10

Hierarchical Multiple Regression of T2 Therapeutic Alliance, T1 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Therapeutic Alliance		(n = 49)
	Step 1	Step 2	Step 3
T1 Therapeutic Alliance	.348*	.282	.264
T1 Therapist Adherence		.087	.017
Supervisor Adherence		-.133	-.335*
T1 Therapist Adherence X Supervisor Adherence			.431**
R	.348	.386	.546
Total R^2	.121	.149	.298
Adjusted R^2	.103	.095	.237
R^2_{change}	.121*	.029	.149**
F	6.731*	2.751	4.890**

p <.05*, p <.01**, p <.001***

Supervisor Adherence and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisor adherence made a significant contribution to T2 alliance, explaining 20.5% (R^2_{change} = .205, p <.002) of the variance. However, only therapist adherence added a unique significant contribution (β = .479, p <.0005). At step 3, the interaction between T2 therapist adherence and supervisor adherence did not add a significant contribution to T2 alliance. Data from the hierarchical multiple regressions on T2 alliance is presented in Table 12.10.

Table 12.10

Hierarchical Multiple Regression of T2 Alliance, T2 Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Therapeutic Alliance (n = 49)		
	Step 1	Step 2	Step 3
T1 Therapeutic Alliance	.355 *	.227	.234
T2 Therapist Adherence		.479***	.444***
Supervisor Adherence		.068	.055
T2 Therapist Adherence X Supervisor Adherence			.146
R	.355	.575	.592
Total R^2	.126	.331	.351
Adjusted R^2	.108	.288	.295
R^2_{change}	.126*	.205**	.020
F	7.061*	7.742***	6.220***

p <.05*, p <.01**, p <.001***

Chapter Summary

Supervisor adherence significantly predicted T1 therapist adherence, explaining 13.4% of the variance. However, higher supervisory adherence predicted lower therapist adherence. This was contrary to expectations. Pre-treatment therapist adherence and supervisor adherence added a significant contribution to the variance in the following variables: Positive behaviour, therapeutic alliance, and service satisfaction. However, in all three cases, only therapist adherence, rather than supervisor adherence, made the significant contributions to outcomes, and in the direction expected (i.e., higher therapist adherence was related to benefits). In terms of interactions, supervisor adherence moderated the relationship between T1 therapist adherence and negative behaviour, family adaptability, and T2 therapeutic alliance. Post-treatment therapist adherence and supervisor adherence added a significant contribution to the variance in the following variables: School attendance, positive behaviour, well-being, parent ability, therapeutic alliance, and service satisfaction. Again, it was only therapist adherence, and not supervisor adherence, that made the significant contributions to outcomes, and in the direction expected. In terms of interactions, supervisor adherence moderated the relationship between T2 therapist adherence and family adaptability.

The interactions found that high therapist adherence predicted more favourable negative behaviour outcomes than low therapist adherence. However, although high therapist adherence predicted the most favourable outcomes under conditions of high supervisor adherence, the opposite was true for low therapist adherence. Low therapist adherence under conditions of high supervisor adherence was related to an increase in negative behaviour. Therefore, the most favourable negative behaviour outcomes occurred when there was both high therapist and supervisor adherence. Owing to the suppression effect, the significant interaction between T1 therapist adherence and supervisor adherence in predicting T2 therapeutic alliance is difficult to interpret. However, tentative interpretation indicates a similar pattern, where high supervisor adherence was beneficial to the therapeutic alliance when paired with high therapist adherence but detrimental to the therapeutic alliance when paired with low therapist adherence. For family adaptability, under conditions of low supervisor adherence, high therapist adherence predicted higher

family adaptability compared to low therapist adherence. However, under conditions of high supervisor adherence, low therapist adherence predicted similar or slightly higher levels of family adaptability than high therapist adherence. Here, the worst outcomes were clearly associated with low supervision adherence being paired with low therapist adherence whereas high therapist adherence and low supervisor adherence and/or low therapist adherence and high supervisor adherence were associated with improved outcomes, albeit at slightly different levels depending on the pairing.

As just described, a few interactions were significant. However, it is clear that a main finding of this chapter was that client outcomes were largely not predicted or moderated by the interaction between therapist and supervisor adherence. Of the client outcomes and quality assurance indicators that were significantly predicted and moderated by adherence, outcomes were not in all instances consistent, across variables or across measurement points (i.e., at T2, T3, and at T4). Related, the interactions which were significant have produced mixed findings across the outcome variables where for some outcome variables high supervisor adherence is beneficial whereas for other variables high supervisor adherence is less favourable. However, while these interactions have not produced a consistent pattern of findings, one bivariate relationship that does appear to be fairly clear and important, supplemented by hierarchical regression findings, is the inverse relationship between supervisor and therapist adherence.

Chapter Eleven

Section 4 Results: Supervisor and Therapist Allegiance and Accountability

The current chapter will present results for Section 4, the aims of which were to assess (1a) whether supervisor allegiance and accountability predict therapist allegiance and accountability and (1b) whether supervisor and therapist allegiance and supervisor and therapist accountability interact to predict outcome. The present chapter will firstly present the Pearson correlation analyses between therapist and supervisor allegiance and accountability. Following this, results from hierarchical multiple regressions analysing (2a) whether supervisor and therapist allegiance interact to predict client outcomes and quality assurance and (2b) whether supervisor and therapist accountability interact to predict client outcomes and quality assurance are presented.

Test Assumptions and Data Screening

Prior to correlation and regression analyses, the variables involved were screened for assumptions of statistical analysis (normality, linearity, and homoscedasticity). Following the recommendation of Tabachnick and Fidell (1989), a conservative alpha level (p <.001) was used to evaluate the significance of skewness, kurtosis, and univariate outliers. For all the regressions reported, multivariate outliers detected using Mahalanobis distance and p <.001 were excluded from the analyses. Analyses had a range of zero to three outliers.

As suggested by Tabachnick and Fidell (1989), most regression analyses conducted exceeded the minimum ratio of five cases per variable. The exceptions were T4 instrumental outcomes all of which had a case number of 16. With four variables included in the analyses, the case number needed to be 20. These analyses were still conducted as they provide informative information despite the limited power in detecting significant results (see Tabachnick & Fidell).

Owing to the number of hierarchical multiple regressions conducted, potential for Type I error (finding a significant result when there is not one) is increased. However, owing to the limited research and literature on supervisor and therapist allegiance and accountability and client outcome, Type II error (finding no significant result when in fact there is one) was viewed as more problematic. That is, the focus here was to explore the data set and note relationships, or patterns of relationships, that are worthy of further exploration.

All analyses were conducted using SPSS for Windows, Standard Version 11.0 (SPSS, 2000).

Therapist and Supervisor Allegiance and Accountability

As repeated measures ANOVAs did not find significant differences in therapist and supervisor allegiance and accountability scores over time, mean scores were employed. Mean therapist allegiance scores ranged from 10.33 to 13.89 with an overall mean of 12.16 (SD = 1.16). Mean supervisor allegiance scores ranged from 19.20 to 23.00 with an overall mean of 20.00 (SD = 1.15). Mean therapist accountability scores ranged from 23 to 31.33 with an overall mean of 27.73 (SD = 2.89). Mean supervisor accountability scores ranged from 41.33 to 46.00 with an overall mean of 42.53 (SD = 1.67).

Supervisor allegiance did not significantly correlate with therapist allegiance (r = .075, n = 45, p = .624). However, supervisor accountability did predict therapist accountability (r = .575, n = 45, p <.0005). Overall, supervisor accountability explained 33.1% of the variance in therapist accountability.

The correlations between supervisor allegiance, therapist allegiance, supervisor accountability, therapist accountability, client outcomes, and quality assurance indicators are presented in Appendix 23 (see Table A23.1, A23.3, and A23.4).

Supervisor and Therapist Allegiance and Client Outcomes

To analyse whether supervisor allegiance moderated the relationship between therapist allegiance and T2, T3, and T4 client outcomes, hierarchical multiple regressions were conducted. At step 1, the T1 level of the corresponding outcome measure was entered into the equation. At step 2, supervisor and therapist allegiance were entered into the equation. At step 3, the interaction term between therapist and supervisor allegiance was entered into the equation.

As relevant to the aims, only the significant results at step 2 and/or step 3 are presented in the text in this chapter. However, for each of these significant findings, the full hierarchical regression is presented in tabular form in this chapter and includes all steps (including step 1) of the regression. Nonsignificant findings, including the full regressions, are presented in Appendix 25.

For significant interactions, schematic representations are presented. The data presented in the figures were derived by conducting a median split on the supervisor and therapist allegiance measures. This median split classification was done only for the purposes of illustration.

Nonsignificant Results

At step 2, therapist and supervisor allegiance did not make any significant contribution to the variance in T2, T3, or T4 offending frequency, offending seriousness, school attendance, well-being, psychopathology, family cohesion, family adaptability, therapeutic alliance, service satisfaction, and T2 therapist adherence over and above T1 levels (all p's >.05). Likewise, at step 3, the interactions between therapist and supervisor allegiance did not make any significant contribution to the prediction in all these outcome and quality assurance variables (all p's >.05).

Days in OHP

At step 2, therapist and supervisor allegiance did not make a significant contribution to the variance in T2, T3, or T4 days in OHP over and above T1 days in OHP. At step 3,

when the interaction term between therapist and supervisor allegiance was included in the equations, there was a significant contribution made to T2 days in OHP, explaining 6.1% of the variance (R^2_{change} = .061, p <.028). However, therapist allegiance shows suppression effects (Smith, Ager, & Williams, 1992) which makes interpretation of the overall equation somewhat more difficult. Suppression effects were covered in Chapter 10, page 151. Owing to interpretation difficulty, the schematic representation of the significant interaction is not presented. The interaction did not add a significant contribution to the variances in T3 or T4 days in OHP. Data from the hierarchical multiple regression on T2 days in OHP is presented in Table 1.11.

Table 1.11
Hierarchical Multiple Regression of T2 Days in OHP, Therapist and Supervisor Allegiance, and the Interaction between Therapist and Supervisor Allegiance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Days in OHP		(n = 41)
	Step 1	Step 2	Step 3
T1 Days in OHP	.702***	.707***	.718***
Therapist Allegiance		-.114	-.441*
Supervisor Allegiance		-.024	.066
Therapist Allegiance X Supervisor Allegiance			-.414*
R	.702	.712	.753
Total R^2	.493	.506	.568
Adjusted R^2	.480	.467	.521
R^2_{change}	.493***	.014	.061*
F	38.819***	12.997***	12.140***

p <.05*, p <.01**, p <.001***

Negative Behaviour

At step 2, therapist and supervisor allegiance did not make a significant contribution to the variance in T2, T3, or T4 negative behaviour over and above T1 negative behaviour. At step 3, when the interaction term between therapist and supervisor allegiance was included in the equations, there was a significant contribution made to the variance in T3 negative behaviour, explaining 13.8% of the variance (R^2_{change} = .138, p <.038). However, therapist allegiance shows suppression effects (Smith, Ager, & Williams, 1992) which makes interpretation of the overall equation somewhat more difficult. Owing to interpretation difficulty, the schematic representation of the significant interaction is not presented. The interaction did not add a significant contribution to the variance in T2 and T4 negative behaviour. Data from the hierarchical multiple regression on T3 negative behaviour is presented in Table 2.11.

Table 2.11
Hierarchical Multiple Regressions of T3 Negative Behaviour, Therapist and Supervisor Allegiance, and the Interaction between Therapist and Supervisor Allegiance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Negative Behaviour		(*n* = 22)
	Step 1	Step 2	Step 3
T1 Negative Behaviour	.582**	.603**	.604**
Therapist Allegiance		-.128	-.626*
Supervisor Allegiance		-.180	-.072
Therapist Allegiance X Supervisor Allegiance			-.620*
R	.582	.625	.723
Total R^2	.339	.390	.523
Adjusted R^2	.307	.294	.417
R^2_{change}	.339**	.052	.132*
F	10.749**	4.055*	4.928**

p <.05*, *p* <.01**, *p* <.001***

Positive Behaviour

At step 2, therapist and supervisor allegiance did not make a significant contribution to the variance in T2, T3, or T4 positive behaviour over and above T1 positive behaviour. At step 3, when the interaction term between therapist and supervisor allegiance was included in the equations, there was a significant contribution made to T3 positive behaviour, explaining 48% of the variance (R^2_{change} = .480, *p* <.0005). However, therapist allegiance shows suppression effects (Smith, Ager, & Williams, 1992) which makes interpretation of the overall equation somewhat more difficult. Owing to interpretation difficulty, the schematic representation of the significant interaction is not presented. The interaction did not add a significant contribution to the variance in T2 and T4 positive behaviour. Data from the hierarchical multiple regression on T3 positive behaviour is presented in Table 3.11.

Table 3.11
Hierarchical Multiple Regression of T3 Positive Behaviour, Therapist and Supervisor Allegiance, and the Interaction between Therapist and Supervisor Allegiance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Positive Behaviour (*n* = 22)		
	Step 1	Step 2	Step 3
T1 Positive Behaviour	.429*	.420	.594***
Therapist Allegiance		-.035	.981***
Supervisor Allegiance		.064	-.155
Therapist Allegiance X Supervisor Allegiance			1.216***
R	.429	.435	.819
Total R^2	.184	.189	.670
Adjusted R^2	.145	.061	.597
R^2_{change}	.184*	.005	.481***
F	4.745*	1.478	9.135***

p <.05*, *p* <.01**, *p* <.001***

Parent Ability

At step 2, therapist and supervisor allegiance did not make a significant contribution to the variance in T2, T3, or T4 parent ability over and above T1 parent ability. At step 3, when the interaction term between therapist and supervisor allegiance was included in the equations, there was a significant contribution made to T3 parent ability, explaining 16.9% of the variance (R^2_{change} = .169, p <.023). However, therapist allegiance shows suppression effects (Smith, Ager, & Williams, 1992) which makes interpretation of the overall equation somewhat more difficult. Owing to interpretation difficulty, the schematic representation of the significant interaction is not presented. The interaction did not add a significant contribution to the variance in T2 and T4 parent ability. Data from the hierarchical multiple regression on T3 parent ability is presented in Table 4.11.

Table 4.11
Hierarchical Multiple Regression of T3 Parent Ability, Therapist and Supervisor Allegiance, and the Interaction between Therapist and Supervisor Allegiance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Parent Ability		(n = 22)
	Step 1	Step 2	Step 3
T1 Parent Ability	.520*	.597**	.611**
Therapist Allegiance		.173	.740*
Supervisor Allegiance		-.230	-.355
Therapist Allegiance X Supervisor Allegiance			.701*
R	.520	.584	.714
Total R^2	.270	.341	.510
Adjusted R^2	.235	.237	.401
R^2_{change}	.270*	.071	.169*
F	7.764*	3.274 *	4.683**

p <.05*, p <.01**, p <.001***

Supervisor and Therapist Allegiance and Quality Assurance Indicators

The hierarchical regression analyses involving quality assurance indicators (service satisfaction, therapeutic alliance, and therapist adherence) were conducted identically to the previous regressions in this chapter but with quality assurance indicators replacing client outcome variables. As analyses on T1 quality assurance indicators involved no control variable, the hierarchical multiple regressions only involved two steps.

Regression analyses on T2 quality assurance indicators involved three steps as T1 measurement levels were entered as control variables.

T1 Therapist Adherence

At step 1, therapist and supervisor allegiance made a significant contribution to T1 therapist adherence, explaining 13.4% of the variance (R^2_{change} = .134, p <.049). However, only supervisor allegiance added a unique significant contribution (β = -.322, p <.031), predicting significantly lower therapist adherence. The interaction between therapist and supervisor allegiance did not add a significant contribution to T1 therapist adherence. Data from the hierarchical multiple regression on T1 therapist adherence is presented in Table 5.11.

Table 5.11
Hierarchical Multiple Regression of T1 Therapist Adherence, Therapist and Supervisor Allegiance, and the Interaction between Therapist and Supervisor Allegiance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Therapist Adherence (n = 44)	
	Step 1	Step 2
Therapist Allegiance	-.150	-.081
Supervisor Allegiance	-.322*	-.337*
Therapist Allegiance X Supervisor Allegiance		.086
R	.366	.369
Total R^2	.134	.136
Adjusted R^2	.093	.073
R^2_{change}	.134*	.003
F	3.244*	2.158

p <.05*, p <.01**, p <.001***

Summary

Supervisor allegiance did not significantly predict therapist allegiance. Therapist and supervisor allegiance, supervisor allegiance in particular, only significantly predicted (at step 2) one variable, T1 therapist adherence. In terms of interactions, supervisor allegiance moderated the relationship between therapist allegiance and days in OHP, negative behaviour, positive behaviour, and parent ability. However, owing to suppression effects, interpreting the interactions is complex. Nevertheless, tentative interpretation of the interactions indicated that under low levels of supervisor allegiance, high therapist allegiance was associated with more days in OHP and more negative behaviour, as well as lower positive behaviour and parent ability compared to low

therapist allegiance. Under high levels of supervisor allegiance, the opposite is true where high therapist allegiance predicted more favourable outcomes whereas low therapist allegiance predicted less favourable outcomes. High supervisor allegiance appeared only beneficial when paired with high therapist allegiance. Overall, more beneficial client outcomes were seen when both supervisor and therapist allegiances were low.

Client outcomes were largely not predicted or moderated by therapist and supervisor allegiance. Of the client outcomes and quality assurance indicators that were significantly predicted and moderated by allegiance, outcomes were not in all instances consistent, across variables or across measurement points (i.e., at T2, T3, and at T4).

Supervisor and Therapist Accountability and Client Outcomes

The following analyses were performed identically from the previous analyses in this chapter but with supervisor and therapist accountability rather than allegiance. Again, only the significant results at step 2 and/or step 3 are presented in the text in this chapter. However, for each of these significant findings, the full hierarchical regression is presented in tabular form in this chapter and includes all steps (including step 1) of the regression. Nonsignificant findings, including the full regressions, are presented in Appendix 25.

For significant interactions, schematic representations are presented. The data presented in the figures were derived by conducting a median split on the supervisor and therapist accountability measures. This median split classification was done only for the purposes of illustration.

Nonsignificant Results

At step 2, therapist and supervisor accountability did not make any significant contribution to the variance in T2, T3, or T4 offending frequency, days in OHP, school attendance, negative behaviour, positive behaviour, well-being, psychopathology, T2 service satisfaction, T1 and T2 therapeutic alliance, and T1 therapist adherence over and

above T1 levels (all *p*'s >.05). Likewise, at step 3, the interactions between therapist and supervisor accountability did not make any significant contribution to the prediction in outcomes in these variables (all *p*'s >.05).

Offending Seriousness

At step 2, therapist and supervisor accountability did not make a significant contribution to the variance in T2, T3, or T4 offending seriousness. At step 3, when the interaction term between therapist and supervisor accountability was included in the equations, there was a significant contribution made to the variance in T4 offending seriousness, explaining 12.6% of the variance (R^2_{change} = .126, p <.030). The interaction, illustrated in Figure 1.11, shows that under low levels of supervisor accountability, low therapist accountability was associated with higher offending seriousness compared to high therapist accountability. However, while low therapist accountability associated with a reduction in offending seriousness under high supervisor accountability, high therapist accountability associated with an increase in offending seriousness. Thus, high supervisor accountability was only beneficial when paired with low therapist accountability. Overall, the pairing of low supervisor accountability and high therapist accountability and high supervisor accountability and low therapist accountability predicted lower offending seriousness. The interaction did not add a significant contribution to the variance in T2 and T3 offending seriousness. Data from the hierarchical multiple regression on T4 offending seriousness is presented in Table 6.11.

Table 6.11

Hierarchical Multiple Regressions of T4 Offending Seriousness, Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Accountability Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T4 Offending Seriousness (n = 38)		
	Step 1	Step 2	Step 3
T1 Offending Seriousness	.056	.103	-.052
Therapist Accountability		-.232	.250
Supervisor Accountability		.132	-.095
Therapist Accountability X Supervisor Accountability			.528*
R	.056	.193	.403
Total R^2	.003	.037	.163
Adjusted R^2	-.024	-.045	.064
R^2_{change}	.003	.034	.126*
F	.117	.449	1.651

p <.05*, *p* <.01**, *p* <.001***

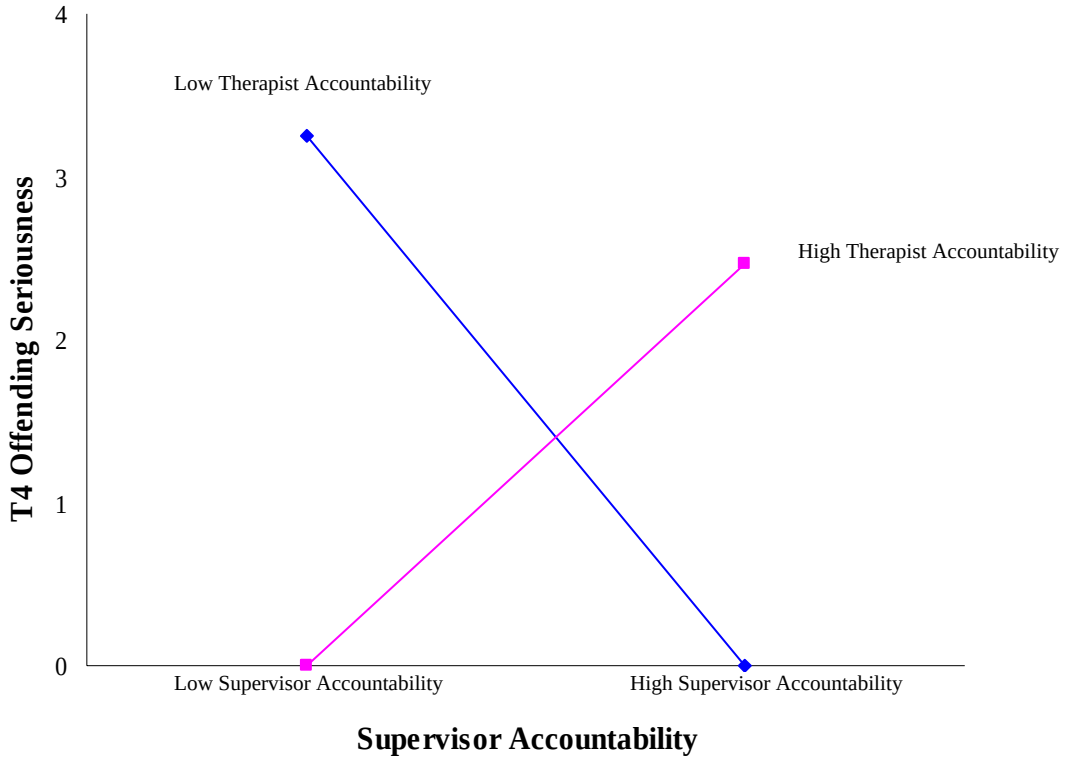

Figure 1.11. Schematic representation of the supervisor accountability X therapist accountability interaction in the prediction of T4 offending seriousness.

Parent ability

At step 2, therapist and supervisor accountability did not make a significant contribution to T2 and T4 parent ability. Therapist and supervisor accountability made a significant contribution to T3 parent ability, explaining 27.6% of the variance (R^2_{change} = .276, p <.011). At step 3, when the interaction term between therapist and supervisor accountability was included in the equations, there was a significant contribution made to T2 parent ability, explaining 8.9% of the variance (R^2_{change} = .089, p <.018). However, therapist accountability shows suppression effects (Smith, Ager, & Williams, 1992) which makes interpretation of the overall equation somewhat more difficult. Owing to interpretation difficulty, the schematic representation of the significant interaction is not presented. The interaction did not add a significant contribution to the variance in T3 or T4 parent ability. Data from the hierarchical multiple regressions on T2 and T3 parent ability are presented in Table 7.11.

Table 7.11
Hierarchical Multiple Regressions of T2 and T3 Parent Ability, Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Accountability Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Parent Ability		(n = 44)	T3 Parent Ability		(n = 22)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Parent Ability	.560***	.555***	.656***	.520*	.504**	.580**
Therapist Accountability		.134	.490*		.596**	.866**
Supervisor Accountability		-.138	-.283		-.539**	-.649**
Therapist Accountability X Supervisor Accountability			.431*			.328
R	.560	.574	.646	.520	.739	.773
Total R^2	.313	.329	.418	.270	.546	.597
Adjusted R^2	.297	.280	.359	.235	.474	.508
R^2_{change}	.313***	.016	.089*	.270*	.276*	.051
F	19.613***	6.699***	7.173***	7.764*	7.614**	6.668**

p <.05*, *p* <.01**, *p* <.001***

Family Cohesion

At step 2, therapist and supervisor accountability did not make a significant contribution to T2 and T3 family cohesion over and above T1 family cohesion. Therapist and supervisor accountability made a significant contribution to T4 family cohesion, explaining 52.1% of the variance (R^2_{change} = .521, *p* <.0005). At step 3, when the interaction term between therapist and supervisor accountability was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T4 family cohesion is presented in Table 8.11.

Table 8.11
Hierarchical Multiple Regression of T4 Family Cohesion, Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Accountability Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T4 Family Cohesion		(n = 16)
	Step 1	Step 2	Step 3
T1 Family Cohesion	.498*	.425**	.428*
Therapist Accountability		.881***	.901**
Supervisor Accountability		-.585**	-.594**
Therapist Accountability X Supervisor Accountability			.024
R	.498	.877	.877
Total R^2	.248	.768	.769
Adjusted R^2	.197	.715	.692
R^2_{change}	.248*	.521***	.000
F	4.935*	14.377***	9.970***

p <.05*, *p* <.01**, *p* <.001***

Family Adaptability

At step 2, therapist and supervisor accountability did not make a significant contribution to T2, T3, and T4 family adaptability over and above T1 family adaptability. However, only therapist accountability added a unique significant contribution (β = .645, p <.021). At step 3, when the interaction term between therapist and supervisor accountability was included in the equations, there was a significant contribution made to T4 family adaptability, explaining 22.7% of the variance (R^2_{change} = .227, p <.010). However, supervisor accountability shows suppression effects (Smith, Ager, & Williams, 1992) which makes interpretation of the overall equation somewhat more difficult. Owing to interpretation difficulty, the schematic representation of the significant interaction is not presented. The interaction did not add a significant contribution to the variance in T2 or T3 family adaptability. Data from the hierarchical multiple regression on T4 family adaptability is presented in Table 9.11.

Table 9.11
Hierarchical Multiple Regressions of T4 Family Adaptability, Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Accountability Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T4 Family Adaptability (n = 16)		
	Step 1	Step 2	Step 3
T1 Family Adaptability	.447	.456*	.630**
Therapist Accountability		.645*	.219***
Supervisor Accountability		-.344	-.564*
Therapist Accountability X Supervisor Accountability			.695**
R	.447	.692	.840
Total R^2	.200	.479	.706
Adjusted R^2	.146	.358	.607
R^2_{change}	.200	.279	.227**
F	3.746	3.977*	7.190**

p <.05*, p <.01**, p <.001***

Supervisor and Therapist Accountability and Quality Assurance Indicators

The hierarchical regression analyses involving quality assurance indicators (service satisfaction, therapeutic alliance, and therapist adherence) were conducted identically to the previous regressions in this chapter but with quality assurance indicators replacing client outcome variables. As analyses on T1 quality assurance indicators involved no control variable, the hierarchical multiple regressions only involved two steps.

Regression analyses on T2 quality assurance indicators involved three steps as T1 measurement levels were entered as control variables.

T1 Service Satisfaction

At step 1, therapist and supervisor accountability made a significant contribution to T1 satisfaction, explaining 17.4% of the variance (R^2_{change} = .174, p <.018). The interaction between therapist and supervisor accountability did not make a significant contribution to T1 satisfaction. Data from the hierarchical multiple regression on T2 satisfaction is presented in Table 10.11.

Table 10.11
Hierarchical Multiple Regression of T1 Satisfaction, Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Accountability Showing Standardised Regression Coefficients, R, R², and R^2_{change}

	T1 Satisfaction (n = 44)	
	Step 1	Step 2
Therapist Accountability	.495**	.613*
Supervisor Accountability	-.385*	-.436*
Therapist Accountability X Supervisor Accountability		.143
R	.417	.430
Total R^2	.174	.185
Adjusted R^2	.135	.125
R^2_{change}	.174*	.011
F	4.425*	3.102*

p <.05*, p <.01**, p <.001***

T2 Therapist Adherence

At step 2, therapist and supervisor accountability did not make a significant contribution to T2 therapist adherence. At step 3, the interaction between therapist and supervisor accountability made a significant contribution to T2 therapist adherence, explaining 8.1% of the variance (R^2_{change} = .081, p <.035). However, supervisor accountability shows suppression effects (Smith, Ager, & Williams, 1992) which makes interpretation of the overall equation somewhat more difficult. Owing to interpretation difficulty, the schematic representation of the significant interaction is not presented. Data from the hierarchical multiple regression on T2 therapist adherence is presented in Table 11.11.

Table 11.11
Hierarchical Multiple Regression of T2 Therapist Adherence, Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Accountability Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Therapist Adherence (*n* = 44)		
	Step 1	Step 2	Step 3
T1 Therapist Adherence	.389**	.324*	.316*
Therapist Accountability		.375*	.699**
Supervisor Accountability		-.235	-.377*
Therapist Accountability X Supervisor Accountability			.390*
R	.389	.492	.568
Total R^2	.152	.242	.323
Adjusted R^2	.132	.187	.255
R^2_{change}	.152**	.090	.081*
F	7.686**	4.365**	4.767**

p <.05*, *p* <.01**, *p* <.001***

Summary

Supervisor accountability significantly predicted therapist accountability, explaining 33.1% of the variance in therapist accountability. Therapist and supervisor accountability made a significant contribution to the variance in the following variables: Parent ability, family cohesion, and T1 satisfaction. In terms of interactions, supervisor accountability moderated the relationship between therapist accountability and offending seriousness, parent ability, family adaptability, and T2 therapist adherence. However, with the exception of offending seriousness all significant interactions had suppression effects, thereby limiting the ability to interpret the overall interaction. Nevertheless, the pairing of high supervisor accountability and low therapist accountability and/or low supervisor accountability and high therapist accountability predicted lower offending seriousness. Tentative interpretation of the three interactions that contained suppression effects indicated that the pairing of high supervisor accountability and low therapist accountability predicted higher family adaptability and higher therapist adherence. However, low supervisor accountability and high therapist accountability levels appeared to predict higher parent ability levels.

Client outcomes were largely not predicted or moderated by therapist and supervisor accountability. Of the client outcomes and quality assurance indicators that were significantly predicted and moderated by accountability, outcomes were not in all instances consistent, across variables or across measurement points (i.e., at T2, T3, and at

T4). Furthermore, interpretation of three of the four significant interactions was limited owing to suppression effects. Nevertheless, all the significant interactions indicated that more favourable outcomes were predicted by supervisor-therapist non-congruent perceived accountability levels.

Chapter Summary

In general, supervisor and therapist allegiance and accountability largely did not predict or moderate client outcomes and quality assurance variables. Of the significant predictions and interactions, the results were not consistent across measurement points (i.e., T2, T3, and at T4) and the findings were mixed. Therapist and supervisor allegiance significantly predicted T1, but not T2, therapist adherence whilst therapist and supervisor accountability made a significant contribution to parent ability, family cohesion, and T1 but not T2 satisfaction. However, interpretation of the four significant interactions between therapist and supervisor allegiance and three of the four significant interactions between therapist and supervisor accountability was limited owing to suppression effects. Overall, the interactions tentatively indicated that more beneficial client outcomes were seen when both supervisor and therapist allegiances were low and when supervisors and therapists had non-congruent perceived accountability levels.

Chapter Twelve

Section 5 Results: Supervisory Alliance, Therapeutic Alliance, and Therapist Adherence

The current chapter will present results for Section 5, the aims of which were to assess (1a) whether the supervisory alliance is associated with the therapeutic alliance and therapist adherence and to assess (1b) whether the supervisory alliance interacts with the therapeutic alliance and therapist adherence to predict outcome. The present chapter will firstly present the Pearson correlation analyses between the supervisory alliance, the therapeutic alliance, and therapist adherence. Following this, results from hierarchical multiple regression analyses analysing (2a) whether the supervisory alliance and the therapeutic alliance interact to predict client outcomes and quality assurance and (2b) whether the supervisory alliance and therapist adherence interact to predict client outcomes and quality assurance are presented.

Test Assumptions and Data Screening

Prior to correlation and hierarchical regression analyses, the variables involved were screened for assumptions of statistical analysis (normality, linearity, and homoscedasticity). Following the recommendation of Tabachnick and Fidell (1989), a conservative alpha level (p <.001) was used to evaluate the significance of skewness, kurtosis, and univariate outliers for hierarchical regression analyses. Multivariate outliers detected using Mahalanobis distance and p <.001 were excluded from the analyses. Hierarchical regression analyses had a range of zero to three outliers.

As suggested by Tabachnick and Fidell (1989), most regression analyses conducted exceeded the minimum ratio of five cases per variable. The exceptions were analyses involving T4 instrumental outcomes, all of which had a case number of 19. With four variables included in the analyses, the case number needed to be 20. These analyses were

still conducted as they provide informative information despite the limited power in detecting significant results.

Due to the number of hierarchical multiple regressions conducted, potential for Type I error (finding a significant result when there is not one) is increased. However, owing to the limited research and literature on the supervisory alliance and client outcome, Type II error (finding no significant result when in fact there is one) was viewed as more problematic. That is, the focus here was to explore the data set and note relationships, or patterns of relationships, that are worthy of further exploration.

All analyses were conducted using SPSS for Windows, Standard Version 11.0 (SPSS, 2000).

Supervisory Alliance, Therapeutic Alliance, and Therapist Adherence

Two measures were used to measure the supervisory alliance: The Supervisory Working Alliance Inventory - Trainee Version (SWAI-T) and the Working Alliance Inventory - Trainee (WAI-T). As both inventories measure slightly different constructs (see Chapter Seven), and have rarely been employed in research, both measures were used in the present study. As repeated measures ANOVA's did not find significant differences in the supervisory alliance scores over time (p's >.05), mean scores were used. Mean SWAI-T scores ranged from 8.61 to 14.00 with an overall mean of 11.74 (SD = 1.67). Mean WAI-T scores ranged from 160.00 to 230.30 with an overall mean of 202.69 (SD = 21.07). There was a strong, positive correlation between both supervisory alliance measures: r = .905, n = 53, p <.0005.

Due to the strong positive relationship between the two measures, it was decided to report results for analyses involving the SWAI-T only[14]. This measure was chosen over the

[14] Correlation and hierarchical regression analyses were conducted with both supervisory alliance measures. There were no differences in outcomes. This further supports the presentation of results for only one of the measures.

WAI-T as this was the measure employed by Patton and Kivlighan (1997) in a seminal study on the supervisory alliance, therapeutic alliance, and therapist adherence.

The supervisory alliance did not significantly correlate with T1 therapeutic alliance (measured two to three weeks after MST program commencement; r = -.154, n = 53, p = .272) or T2 therapeutic alliance (measured at program completion/post-treatment; r = -.155, n = 53, p = .267). The supervisory alliance significantly correlated with T1 therapist adherence (r = -.445, n = 53, p <.001) and T2 therapist adherence (r = -.271, n = 53, p <.050). Overall, the supervisory alliance explained 19.9% and 7.3% of the variance in T1 and T2 therapist adherence, respectively. However, the negative correlations indicated that higher supervisory alliances were linked to lower therapist adherence.

The correlations between supervisory alliance, therapeutic alliance, supervisor allegiance, therapist allegiance, supervisor accountability, therapist accountability, client outcomes, and quality assurance indicators are presented in Appendix 23 (see Table A23.1, A23.3, and A23.4).

The Supervisory and Therapeutic Alliance and Client Outcomes

To analyse whether the supervisory alliance moderated the relationship between therapeutic alliance and T2, T3, and T4 client outcomes, hierarchical multiple regressions were conducted. At step 1, the T1 level of the corresponding outcome measure was entered into the equation. At step 2, the mean supervisory alliance and the therapeutic alliance were entered into the equation. At step 3, the interaction term between the supervisory and therapeutic alliance was entered into the equation.

As indicated in the previous section, analyses with both supervisory alliance measures produced comparable outcomes, and due to the strong positive relationship between the two measures, only analyses involving the SWAI-T are reported.

As relevant to the aims, only the significant results at step 2 and/or step 3 are presented in the text in this chapter. However, for each of these significant findings, the full

hierarchical regression is presented in tabular form in this chapter and includes all steps (including step 1) of the regression. Nonsignificant findings, including the full regressions, are presented in Appendix 26.

For significant interactions, schematic representations are presented. The data presented in the figures were derived by conducting a median split on the supervisory alliance and therapeutic alliance measures. This median split classification was done only for the purposes of illustration.

Nonsignificant Results

Supervisory Alliance and T1 Therapeutic Alliance: At step 2, the supervisory alliance and T1 therapeutic alliance did not make any significant contribution to the variance in T2, T3, or T4 offending frequency, offending seriousness, days in OHP, school attendance, negative behaviour, well-being, psychopathology, parent ability, and family cohesion over and above T1 levels (all *p*'s >.05). At step 3, the interactions between the supervisory alliance and T1 therapeutic alliance did not make any significant contribution to the prediction in offending frequency, offending seriousness, days in OHP, school attendance, negative behaviour, positive behaviour, well-being, psychopathology, parent ability, family cohesion, service satisfaction, and therapist adherence (all *p*'s >.05).

Supervisory Alliance and T2 Therapeutic Alliance: At step 2, the supervisory alliance and T2 therapeutic alliance did not make any significant contribution to the variance in T2, T3, or T4 offending frequency, offending seriousness, days in OHP, school attendance, and psychopathology over and above T1 levels (all *p*'s >.05). At step 3, the interactions between the supervisory alliance and T2 therapeutic alliance did not make any significant contribution to the prediction in offending frequency, offending seriousness, days in OHP, school attendance, negative behaviour, psychopathology, parent ability, family cohesion, family adaptability, service satisfaction, and therapist adherence (all *p*'s >.05).

Negative Behaviour

Supervisory Alliance and T2 Therapeutic Alliance: At step 2, the supervisory alliance and T2 alliance made a significant contribution to T2 negative behaviour, explaining 14.3% of the variance (R^2_{change} = .143, p <.001). However, only T2 therapeutic alliance added a unique significant contribution (β = -.402, p <.0005). The supervisory alliance and T2 alliance did not make a significant contribution to the variance in T3 and T4 negative behaviour. At step 3, when the interaction term between the supervisory alliance and T2 alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T2 negative behaviour is presented in Table 1.12.

Table 1.12
Hierarchical Multiple Regression of T2 Negative Behaviour, T2 Alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Negative Behaviour		(n = 50)
	Step 1	Step 2	Step 3
T1 Negative Behaviour	.631***	.497***	.499***
T2 Therapeutic Alliance		-.402***	-.403***
Supervisory Alliance		-.043	-.042
T2 Therapeutic Alliance X Supervisory Alliance			.019
R	.631	.736	.736
Total R^2	.399	.542	.542
Adjusted R^2	.387	.513	.503
R^2_{change}	.399***	.143***	.000
F	33.143***	18.909***	13.905***

p <.05*, p <.01**, p <.001***

Positive Behaviour

Supervisory Alliance and T1 Therapeutic Alliance: At step 2, the supervisory alliance and T1 alliance made a significant contribution to T2 and T3 positive behaviour, explaining 11.8% (R^2_{change} = .118, p <.015) and 17.2% (R^2_{change} = .172, p <.044) of the variances, respectively. However, only T1 therapeutic alliance added a unique significant contribution to T2 positive behaviour (β = .356, p <.005) whereas only the supervisory alliance added a unique significant contribution to T3 positive behaviour (β = -.381, p <.026). The supervisory alliance and T1 alliance did not make a significant contribution to the variance in T4 positive behaviour. At step 3, when the interaction term between the supervisory alliance and T1 alliance was included in the equations, there were no

significant contributions made to the variances in outcome. Data from the hierarchical multiple regressions on T2 and T3 positive behaviour are presented in Table 2.12.

Table 2.12
Hierarchical Multiple Regressions of T2 and T3 Positive Behaviour, T1 Alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Positive Behaviour		(n = 50)	T3 Positive Behaviour		(n = 26)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Positive Behaviour	.528***	.425***	.423***	.527**	.529**	.517**
T1 Therapeutic Alliance		.356**	.362**		.104	.143
Supervisory Alliance		-.010	-.006		-.381*	-.355*
T1 Therapeutic Alliance X Supervisory Alliance			-.016			-.106
R	.528	.630	.630	.527	.671	.678
Total R^2	.279	.396	.397	.277	.450	.459
Adjusted R^2	.264	.358	.344	.249	.378	.361
R^2_{change}	.279***	.118*	.000	.277**	.172*	.010
F	18.927***	10.289***	7.560***	9.599**	6.263**	4.673**

p <.05*, p <.01**, p <.001***

Supervisory Alliance and T2 Therapeutic Alliance: At step 2, the supervisory alliance and T2 therapeutic alliance made a significant contribution to T2 and T3 positive behaviour, explaining 21.7% (R^2_{change} = .217, p <.0005) and 21% (R^2_{change} = .210, p <.020) of the variances, respectively. However, only T2 therapeutic alliance added a unique significant contribution to T2 positive behaviour (β = .473, p <.0005) whereas only the supervisory alliance added a unique significant contribution to T3 positive behaviour (β = -.350, p <.029). The supervisory alliance and T2 alliance did not make a significant contribution to the variance in T4 positive behaviour. At step 3, when the interaction term between the supervisory alliance and T2 alliance was included in the equations, there was a significant contribution made to T3 positive behaviour, explaining 16.8% of the variance (R^2_{change} = .168, p <.003). The interaction, illustrated in Figure 1.12, shows that under low supervisory alliance, high T2 alliance predicted higher positive behaviour compared with low alliance. However, the opposite was true under conditions of high supervisory alliance. Under high levels of supervisory alliance, high T2 alliance predicted a reduction in positive behaviour whereas low T2 alliance predicted an increase in positive behaviour. Overall, high supervisor alliance predicted higher positive behaviour under low T2 alliance conditions but was detrimental to outcome when paired with high T2 alliance. The interaction did not add a significant contribution to the variance in T2

and T4 positive behaviour. Data from the hierarchical multiple regressions on T2 and T3 positive behaviour are presented in Table 3.12.

Table 3.12
Hierarchical Multiple Regressions of T2 and T3 Positive Behaviour, T2 alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Positive Behaviour		(n = 50)	T3 Positive Behaviour		(n = 26)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Positive Behaviour	.540***	.448***	.447***	.525**	.499**	.504***
T2 Therapeutic Alliance		.473***	.474***		.278	.218
Supervisory Alliance		-.016	-.017		-.350*	-.325*
T2 Therapeutic Alliance X Supervisory Alliance			-.003			.416*
R	.540	.713	.713	.525	.697	.809
Total R^2	.292	.508	.508	.276	.485	.654
Adjusted R^2	.277	.478	.467	.247	.418	.591
R^2_{change}	.292***	.217***	.000	.276**	.210*	.168**
F	20.587***	16.545***	12.150***	9.519**	7.230***	10.385***

p <.05*, *p* <.01**, *p* <.001***

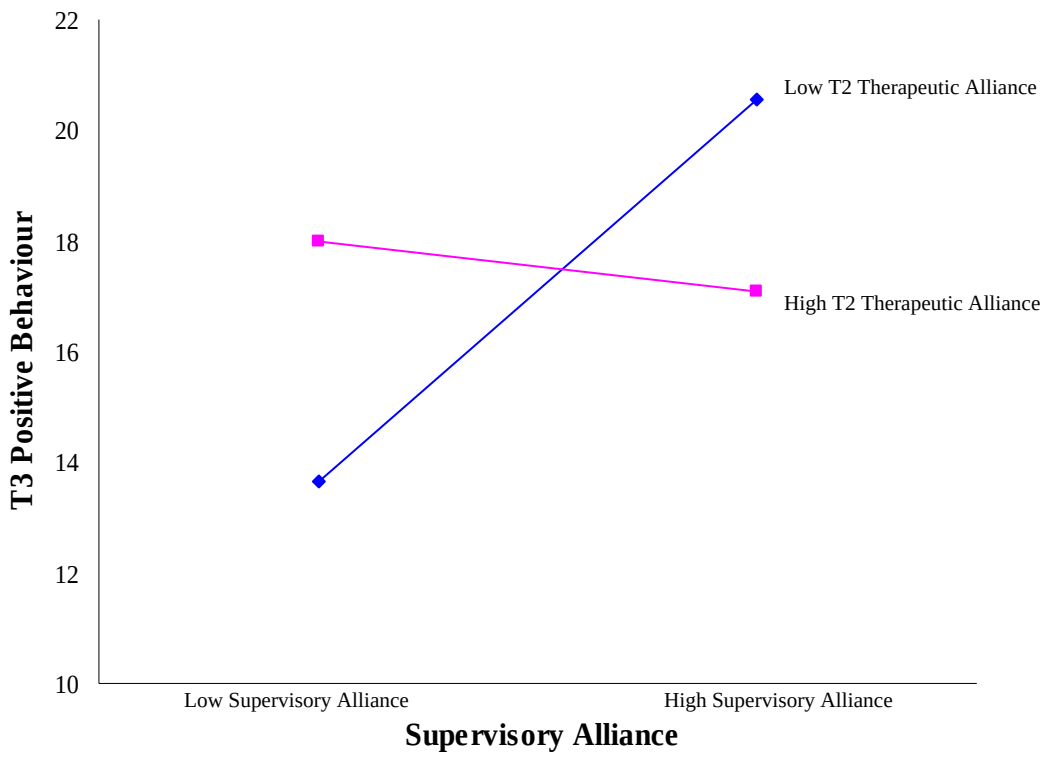

Figure 1.12. Schematic representation of the supervisory alliance X T2 therapeutic alliance interaction in the prediction of T3 positive behaviour.

Well-being

Supervisory Alliance and T2 Therapeutic Alliance: At step 2, T2 alliance and supervisory alliance made a significant contribution to T2 well-being, explaining 16.2% of the variance (R^2_{change} = .162, p <.004). However, only T2 therapeutic alliance added a unique significant contribution to T2 positive behaviour (β = .393, p <.001). The supervisory alliance and T2 therapeutic alliance did not make a significant contribution to the variance in T3 and T4 well-being. At step 3, when the interaction term between the supervisory alliance and T2 therapeutic alliance was included in the equations, there was a significant contribution made to T3 well-being, explaining 15.2% of the variance (R^2_{change} = .152, p <.023). The interaction, illustrated in Figure 2.12, shows that low and high T2 therapeutic alliance predicted higher levels of well-being under low supervisory alliance compared with under high supervisory alliance. Overall, higher well-being was predicted under low levels of supervisory alliance whereas high supervisor alliance was detrimental to well-being under low and high T2 alliance conditions. The interaction did not add a significant contribution to the variance in T2 and T4 well-being. Data from the hierarchical multiple regressions on T2 and T3 well-being are presented in Table 4.12.

Table 4.12
Hierarchical Multiple Regressions of T2 and T3 Well-being, T2 Alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Well-being		(n = 50)	T3 Well-being		(n = 26)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Well-being	.461***	.413***	.425***	.473*	.472*	.512**
T2 Therapeutic Alliance		.393***	.376**		.104	.044
Supervisory Alliance		.125	.132		-.225	-.203
T2 Therapeutic Alliance X Supervisory Alliance			.113			.396*
R	.461	.612	.622	.473	.537	.663
Total R^2	.212	.375	.387	.224	.288	.440
Adjusted R^2	.197	.336	.335	.193	.195	.338
$R^2change$	.212***	.162**	.012	.224*	.064	.152*
F	13.489***	9.587***	7.418***	7.218*	3.102*	4.317**

p <.05*, p <.01**, p <.001***

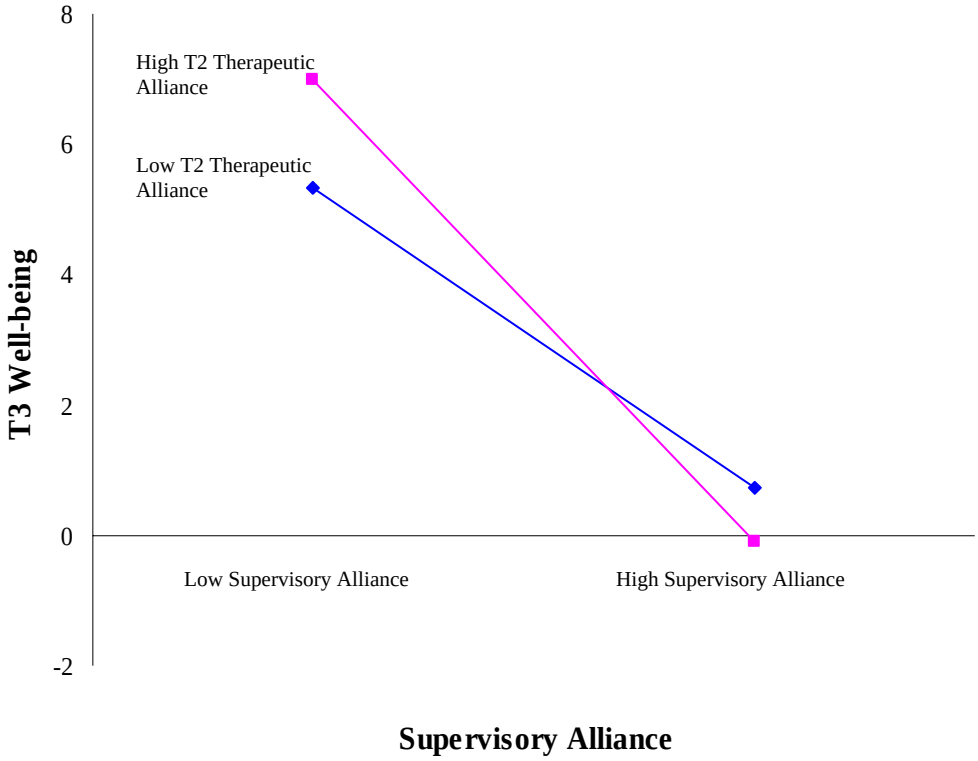

Figure 2.12. Schematic representation of the supervisory alliance X T2 therapeutic alliance interaction in the prediction of T3 well-being.

Parent Ability

Supervisory Alliance and T2 Therapeutic Alliance: A step 2, T2 alliance and supervisory alliance made a significant contribution to T2 parent ability, explaining 13.6% of the variance (R^2_{change} = .136, p <.008). However, only T2 therapeutic alliance added a unique significant contribution to T2 parent ability (β = .375, p <.001).T2 alliance and supervisory alliance did not make a significant contribution to the variance in T3 and T4 parent ability. At step 3, when the interaction term between the supervisory alliance and T2 alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T2 parent ability is presented in Table 5.12.

Table 5.12
Hierarchical Multiple Regressions of T2 Parent Ability, T2 Alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Parent Ability		(n = 50)
	Step 1	Step 2	Step 3
T1 Parent Ability	.495***	.428***	.427***
T2 Therapeutic Alliance		.375**	.378**
Supervisory Alliance		.001	.000
T2 Therapeutic Alliance X Supervisory Alliance			-.018
R	.495	.618	.618
Total R^2	.246	.382	.382
Adjusted R^2	.230	.343	.330
R^2_{change}	.246***	.136**	.000
F	16.270***	9.883***	7.268***

p <.05*, *p* <.01**, *p* <.001***

Family Cohesion

Supervisory Alliance and T2 Therapeutic Alliance: At step 2, T2 alliance and supervisory alliance made a significant contribution to T2 family cohesion, explaining 6.8% of the variance (R^2_{change} = .068, p <.030). However, only T2 therapeutic alliance added a unique significant contribution to T2 family cohesion (β = .270, p <.010). Post-treatment alliance and supervisory alliance did not add a significant contribution to the variance in T3 and T4 family cohesion. At step 3, when the interaction term between T2 alliance and supervisory alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T2 family cohesion is presented in Table 6.12.

Table 6.12
Hierarchical Multiple Regressions of T2 Family Cohesion, T2 alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Cohesion		(n = 50)
	Step 1	Step 2	Step 3
T1 Family Cohesion	.716***	.652***	.646***
T2 Therapeutic Alliance		.270**	.321**
Supervisory Alliance		.066	.056
T2 Therapeutic Alliance X Supervisory Alliance			-.106
R	.716	.762	.767
Total R^2	.513	.580	.589
Adjusted R^2	.503	.554	.553
R^2_{change}	.513***	.068*	.008
F	51.550***	21.668***	16.458***

p <.05*, *p* <.01**, *p* <.001***

Family Adaptability

Supervisory Alliance and T1 Therapeutic Alliance: At step 2, T1 alliance and supervisory alliance made a significant contribution to T4 family adaptability, explaining 33% of the variance (R^2_{change} = .329, p <.013). However, only the supervisory alliance added a unique significant contribution to family adaptability (β = -.497, p <.011) and predicted significantly lower adaptability. Pre-treatment alliance and supervisory alliance made no significant contribution to the variance in T2 or T3 family adaptability. At step 3, when the interaction term between T1 alliance and supervisory alliance was included in the equations, there was a significant contribution made to T4 family adaptability, explaining 11.3% of the variance (R^2_{change} = .113, p <.041). The interaction, illustrated in Figure 3.12, shows that high T1 therapeutic alliance predicted higher family adaptability under low and high supervisory alliance conditions compared to low T1 therapeutic alliance. However, although there was limited change in family adaptability under low and high supervisory alliance for low T1 alliance, there was a decline in family adaptability at high supervisory alliance for high T1 alliance. Overall, T1 alliance predicted higher family adaptability but only under low supervisory alliance conditions. High supervisory alliance conditions were detrimental to family adaptability when T1 alliance was high. The interaction did not add a significant contribution to the variance in T2 and T3 family adaptability. Data from the hierarchical multiple regression on T4 family adaptability is presented in Table 7.12.

Table 7.12
Hierarchical Multiple Regression of T4 Family Adaptability, T1 alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T4 Family Adaptability (n = 19)		
	Step 1	Step 2	Step 3
T1 Family Adaptability	.467*	.531**	.498**
T1 Therapeutic Alliance		.209	.329
Supervisory Alliance		-.497*	-.412*
T1 Therapeutic Alliance X Supervisory Alliance			-.361*
R	.467	.740	.813
Total R^2	.218	.547	.660
Adjusted R^2	.175	.462	.570
R^2_{change}	.218*	.329*	.113*
F	5.029*	6.449**	7.293**

p <.05*, p <.01**, p <.001***

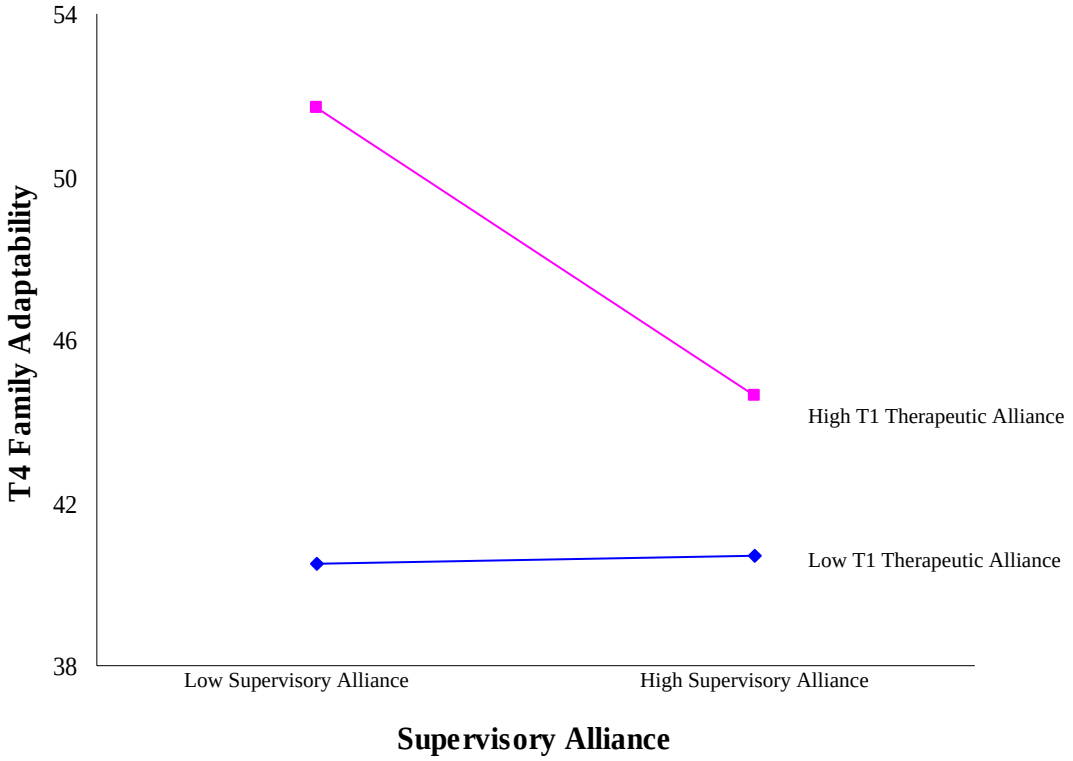

Figure 3.12. Schematic representation of the supervisory alliance X T1 therapeutic alliance interaction in the prediction of T4 family adaptability.

Supervisory Alliance and T2 Therapeutic Alliance: At step 2, T2 alliance and supervisory alliance made a significant contribution to T2 and T4 family adaptability, explaining 11.3% (R^2_{change} = .113, p <.011) and 38.9% (R^2_{change} = .389, p <.004) of the variances, respectively. Post-treatment alliance and supervisory alliance did not add a significant contribution to the variance in T3 family adaptability. At step 3, when the interaction term between T2 alliance and supervisory alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regressions on T2 and T4 family adaptability are presented in Table 8.12.

Table 8.12
Hierarchical Multiple Regressions of T2 and T4 Family Adaptability, T2 alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Adaptability		(n = 50)	T4 Family Adaptability (n = 19)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Adaptability	.590***	.513***	.523***	.467*	.471*	.484**
T2 Therapeutic Alliance		.350**	.428***		.331*	.433*
Supervisory Alliance		.047	.027		-.480**	-.506**
T2 Therapeutic Alliance X Supervisory Alliance			-.171			-.222
R	.590	.679	.695	.467	.779	.802
Total R^2	.348	.461	.483	.218	.607	.644
Adjusted R^2	.335	.427	.438	.175	.533	.549
R^2_{change}	.348***	.113*	.022	.218*	.389**	.037
F	26.139***	13.418***	10.748***	5.029*	8.238**	6.773**

p <.05*, *p* <.01**, *p* <.001***

The Supervisory and Therapeutic Alliance and Quality Assurance Indicators

The hierarchical regression analyses involving quality assurance indicators (service satisfaction and therapist adherence) were conducted identically to the previous regressions in this chapter but with quality assurance indicators replacing client outcome variables. As analyses on T1 quality assurance indicators involved no control variable, the hierarchical multiple regressions only involved two steps. Regression analyses on T2 quality assurance indicators involved three steps as T1 measurement levels were entered as control variables.

T1 Service Satisfaction

Supervisory Alliance and T1 Therapeutic Alliance: At step 1, T1 alliance and supervisory alliance made a significant contribution to T1 satisfaction, explaining 42% (R^2_{change} = .416, p <.0005) of the variance. At step 2, when the interaction term between T1 alliance and supervisory alliance was included in the equation, there were no significant contributions made to the variance in T1 satisfaction. Data from the hierarchical multiple regressions on T1 satisfaction is presented in Table 9.12.

Table 9.12
Hierarchical Multiple Regression of T1 Satisfaction, T1 Alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Satisfaction	(*n* = 50)
	Step 1	Step 2
T1 Therapeutic Alliance	.570***	.523***
Supervisory Alliance	-.206*	-.238*
T1 Therapeutic Alliance X Supervisory Alliance		.146
R	.645	.659
Total R^2	.416	.434
Adjusted R^2	.391	.398
R^2_{change}	.416***	.019
F	17.083***	12.030***

p <.05*, *p* <.01**, *p* <.001***

T2 Service Satisfaction

Supervisory Alliance and T2 Therapeutic Alliance: At step 2, T2 alliance and supervisory alliance made a significant contribution to T2 satisfaction, explaining 28% of the variance (R^2_{change} = .281, *p* <.0005). However, only T2 therapeutic alliance added a unique significant contribution to T2 service satisfaction (β = .569, *p* <.0005). At step 3, when the interaction terms between T2 alliance and supervisory alliance were included in the equations, there were no significant contributions made to the variance in T2 satisfaction. Data from the hierarchical multiple regression on T2 satisfaction is presented in Table 10.12.

Table 10.12
Hierarchical Multiple Regression of T2 Satisfaction, T2 Alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Satisfaction		(*n* = 50)
	Step 1	Step 2	Step 3
T1 Satisfaction	.354**	.148	.129
T2 Therapeutic Alliance		.569***	.559***
Supervisory Alliance		.051	.052
T2 Therapeutic Alliance X Supervisory Alliance			.126
R	.354	.637	.649
Total R^2	.125	.406	.422
Adjusted R^2	.108	.369	.372
R^2_{change}	.125**	.281***	.015
F	7.147**	10.946***	8.562***

p <.05*, *p* <.01**, *p* <.001***

T1 Therapist Adherence

Supervisory Alliance and T1 Therapeutic Alliance: At step 1, T1 alliance and supervisory alliance made a significant contribution to T1 therapist adherence, explaining 34% (R^2_{change} = .341, p<.0005) of the variance. At step 2, when the interaction term between T1 alliance and supervisory alliance was included in the equations, there were no significant contributions made to the variance in T1 therapist adherence. Data from the hierarchical multiple regression on T1 therapist adherence is presented in Table 11.12.

Table 11.12
Hierarchical Multiple Regression of T1 Therapist Adherence, T1 Alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Therapist Adherence (n = 50)	
	Step 1	Step 2
T1 Therapeutic Alliance	.356**	.327*
Supervisory Alliance	-.396**	-.416**
T1 Therapeutic Alliance X Supervisory Alliance		.088
R	.584	.590
Total R^2	.341	.348
Adjusted R^2	.314	.307
R^2_{change}	.341***	.007
F	12.436***	8.367***

p <.05*, p <.01**, p <.001***

T2 Therapist Adherence

Supervisory Alliance and T2 Therapeutic Alliance: At step 2, T2 alliance and supervisory alliance made a significant contribution to T2 therapist adherence, explaining 20% of the variance (R^2_{change} = .204, p <.0005). However, only T2 therapeutic alliance added a unique significant contribution to T2 therapist adherence (β = .456, p <.0005). At step 3, when the interaction terms between T2 alliance and supervisory alliance were included in the equations, there were no significant contributions made to the variance in T2 therapist adherence. Data from the hierarchical multiple regression on T2 therapist adherence is presented in Table 12.12.

Table 12.12
Hierarchical Multiple Regression of T2 Therapist Adherence, T2 Alliance, Supervisory Alliance, and the Interaction between Alliance and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Therapist Adherence		(n = 50)
	Step 1	Step 2	Step 3
T1 Therapist Adherence	.511***	.444***	.447***
T2 Therapeutic Alliance		.456***	.447***
Supervisory Alliance		.001	.005
T2 Therapeutic Alliance X Supervisory Alliance			.064
R	.511	.682	.685
Total R^2	.261	.465	.469
Adjusted R^2	.246	.431	.424
R^2_{change}	.261***	.204***	.004
F	17.678***	13.900***	10.373***

p <.05*, *p* <.01**, *p* <.001***

Summary

The supervisory alliance did not significantly predict T1 or T2 therapeutic alliance. Pre-treatment therapeutic alliance and the supervisory alliance added a significant contribution to the variance in the following variables: Positive behaviour, family adaptability, satisfaction, and therapist adherence. In terms of interactions, the supervisory alliance significantly moderated the relationship between T1 therapeutic alliance and family adaptability. Post-treatment therapeutic alliance and the supervisory alliance added a significant contribution to the variance in the following variables: Negative behaviour, positive behaviour, well-being, parent ability, family cohesion, family adaptability, satisfaction, and therapist adherence. In terms of interactions, the supervisory alliance significantly moderated the relationship between T2 therapeutic alliance and positive behaviour and well-being.

The significant interactions produced mixed results where one interaction found that high supervisory alliances predicted more favourable outcomes whereas two interactions found the opposite, where high supervisory alliances were detrimental to outcome. Under high supervisory alliance, low therapeutic alliance predicted more favourable positive behaviour levels compared to low supervisory alliance. However, there was a slight reduction in positive behaviour levels when high therapeutic alliance was paired with high supervisory alliance. In contrast, low supervisory alliances predicted more favourable well-being levels under both low and high therapeutic alliances, whereas the opposite was true for high supervisory alliances. Additionally, although high therapeutic

alliances predicted more favourable family adaptability compared to low therapeutic alliances, high supervisory alliances were detrimental to family adaptability when paired with high therapeutic alliances.

Client outcomes were largely not predicted or moderated by the supervisory and therapeutic alliances. Of the client outcomes and quality assurance indicators that were significantly predicted and moderated by the supervisory and therapeutic alliances, outcomes were not in all instances consistent, across variables or across measurement points (i.e., at T2, T3, and at T4). Related to this finding, the interactions which were significant have produced mixed findings across the outcome variables where for one outcome variable high supervisory alliances were beneficial whereas for other variables high supervisory alliances were less favourable.

The Supervisory Alliance, Therapist Adherence, and Client Outcomes

The following analyses were performed identically from the above analyses but with T1 and T2 therapist adherence replacing T1 and T2 therapeutic alliance. As both supervisory alliance measures produced comparable findings, only results involving the SWAI-T will be reported. Again, only the significant results at step 2 and/or step 3 are presented in the text in this chapter. However, for each of these significant findings, the full hierarchical regression is presented in tabular form in this chapter and includes all steps (including step 1) of the regression. Nonsignificant findings, including the full regressions, are presented in Appendix 26.

For significant interactions, schematic representations are presented. The data presented in the figures were derived by conducting a median spit on the supervisory alliance and therapist adherence measures. This classification is done only for purposes of illustration.

Nonsignificant Results

Supervisory Alliance and T1 Therapist Adherence: At step 2, the supervisory alliance and T1 therapist adherence did not make any significant contributions to the variance in

T2, T3, or T4 offending frequency, offending seriousness, days in OHP, school attendance, negative behaviour, positive behaviour, well-being, and psychopathology over and above T1 levels (all *p*'s >.05).. At step 3, the interactions between the supervisory alliance and T1 therapist adherence did not make any significant contributions to the prediction in offending frequency, offending seriousness, days in OHP, negative behaviour, positive behaviour, psychopathology, parent ability, family cohesion, service satisfaction, and therapeutic alliance (all *p*'s >.05).

Supervisory Alliance and T2 Therapist Adherence: At step 2, the supervisory alliance and T2 therapist adherence did not make any significant contributions to the variance in T2, T3, or T4 offending frequency, offending seriousness, days in OHP, school attendance, psychopathology, and family cohesion over and above T1 levels (all *p*'s >.05).. At step 3, the interactions between the supervisory alliance and T2 therapist adherence did not make any significant contributions to the prediction in offending frequency, offending seriousness, school attendance, negative behaviour, positive behaviour, well-being, psychopathology, parent ability, family cohesion, and service satisfaction (all *p*'s >.05).

Days in OHP

Supervisory Alliance and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisory alliance did not make a significant contribution to the variance in T2, T3, or T4 days in OHP over and above T1 days in OHP. At step 3, when the interaction term between T2 therapist adherence and supervisory alliance was included in the equations, there was a significant contribution made to T4 days in OHP, explaining 13% of the variance (R^2_{change} = .130, p <.011). The interaction, illustrated in Figure 4.12, shows that under low levels of supervisory alliance, low therapist adherence was associated with more days in OHP compared to high therapist adherence. However, while low therapist adherence associated with a reduction in days in OHP under high supervisory alliance, high therapist adherence associated with an increase in days in OHP. Thus, high supervisory alliance was beneficial when it was paired with low therapist adherence but was detrimental when paired with high therapist adherence. Overall, the pairing of low supervisory alliance and high therapist adherence and high supervisory alliance and low therapist adherence predicted fewer days in OHP. No significant contributions were made

to the variance in T2 and T3 days in OHP. Data from the hierarchical multiple regression on T4 days in OHP is presented in Table 13.12.

Table 13.12
Hierarchical Multiple Regressions of T4 Days in OHP, T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T4 Days in OHP (n = 45)		
	Step 1	Step 2	Step 3
T1 Days in OHP	.234	.215	.260
T2 Therapist Adherence		.293	.188
Supervisory Alliance		.156	.121
T2 Therapist Adherence X Supervisory Alliance			.376*
R	.234	.378	.522
Total R^2	.055	.143	.272
Adjusted R^2	.033	.080	.200
R^2_{change}	.055	.088	.130*
F	2.495	2.276	3.743*

p <.05*, p <.01**, p <.001***

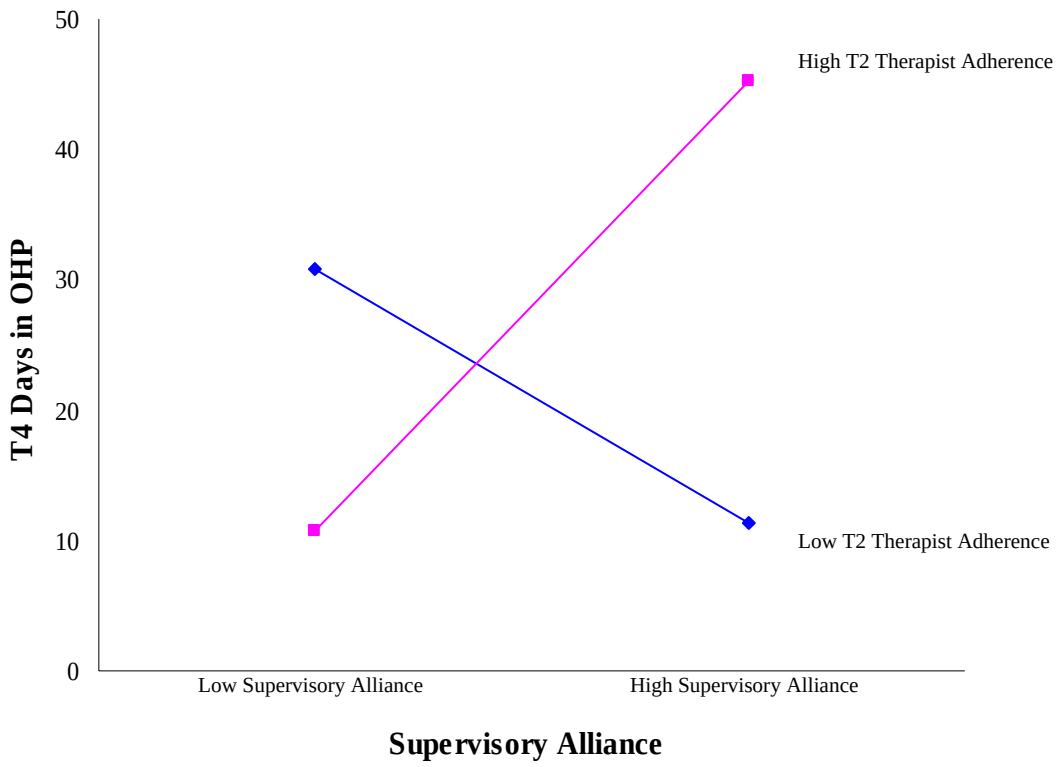

Figure 4.12. Schematic representation of the supervisory alliance X T2 therapist adherence interaction in the prediction of T4 days in OHP.

School Attendance

Supervisory Alliance and T1 Therapist Adherence: At step 2, T1 therapist adherence and supervisory alliance did not make a significant contribution to the variance in T2, T3, or T4 school attendance over and above T1 school attendance. At step 3, when the interaction term between T1 therapist adherence and supervisory alliance was included in the equations, there was a significant contribution made to T2 school attendance, explaining 4.4% of the variance (R^2_{change} = .044, p <.041). The interaction, illustrated in Figure 5.12, shows that under low levels of supervisory alliance, low therapist adherence was associated with lower school attendance compared to high therapist adherence. However, while low therapist adherence associated with an increase in school attendance under high supervisory alliance, high therapist adherence associated with a reduction in school attendance. Thus, high supervisory alliance was beneficial when it was paired with low therapist adherence but was detrimental when paired with high therapist adherence. Overall, the pairing of high supervisory alliance and low therapist adherence predicted higher school attendance. No significant contributions were made to the variance in T3 and T4 school attendance. Data from the hierarchical multiple regression on T2 school attendance is presented in Table 14.12.

Table 14.12
Hierarchical Multiple Regression of T2 School Attendance, T1 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 School Attendance		(n = 49)
	Step 1	Step 2	Step 3
T1 School Attendance	.705***	.685***	.579***
T1 Therapist Adherence		-.098	-.045
Supervisory Alliance		-.007	.072
T1 Therapist Adherence X Supervisory Alliance			-.241*
R	.705	.712	.742
Total R^2	.498	.506	.550
Adjusted R^2	.487	.474	.510
R^2_{change}	.498***	.009	.044*
F	47.545***	15.724***	13.769***

p <.05*, p <.01**, p <.001***

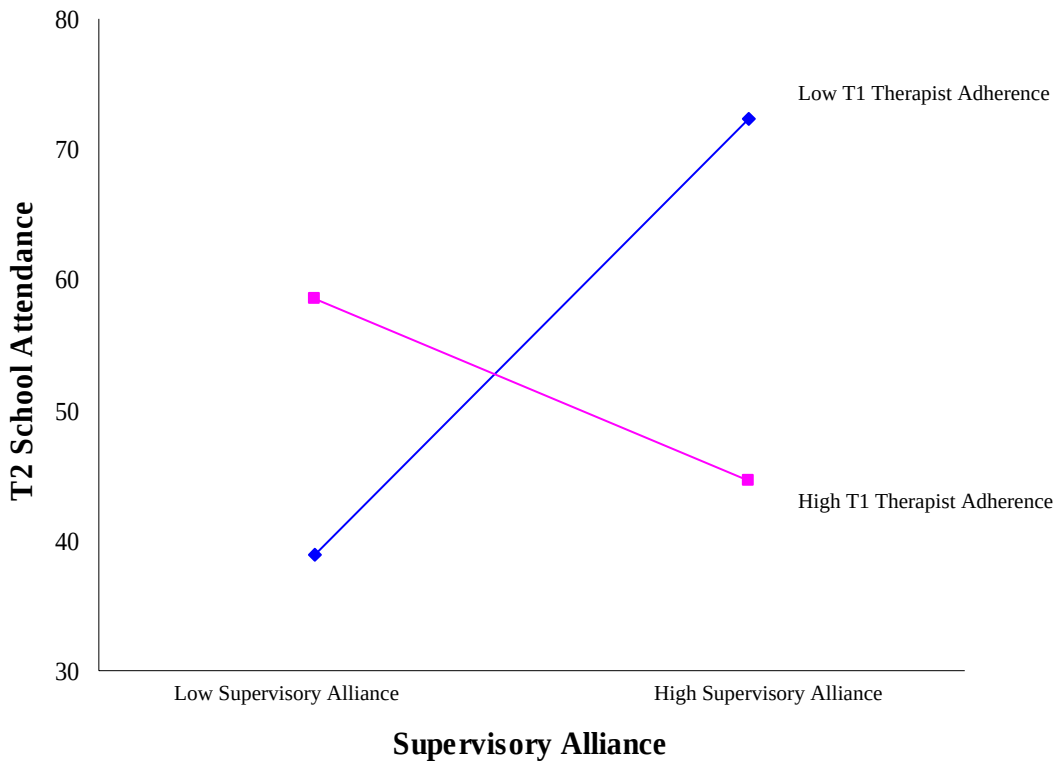

Figure 5.12. Schematic representation of the supervisory alliance X T1 therapist adherence interaction in the prediction of T2 school attendance.

Negative Behaviour

Supervisory Alliance and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisory alliance made a significant contribution to T2 negative behaviour, explaining 8.2% of the variance (R^2_{change} = .082, p <.031). However, only therapist adherence added a unique significant contribution (β = -.298, p <.025). Post-treatment therapist adherence and supervisory alliance did not make a significant contribution to the variances in T3 and T4 negative behaviour. At step 3, when the interaction term between T2 therapist adherence and supervisory alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T2 negative behaviour is presented in Table 15.12.

Table 15.12
Hierarchical Multiple Regression of T2 Negative Behaviour, T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Negative Behaviour		(n = 52)
	Step 1	Step 2	Step 3
T1 Negative Behaviour	.615***	.585***	.584***
T2 Therapist Adherence		-.298*	-.285*
Supervisory Alliance		-.061	-.062
T2 Therapist Adherence X Supervisory Alliance			-.036
R	.615	.678	.679
Total R^2	.378	.460	.461
Adjusted R^2	.366	.427	.416
R^2_{change}	.378***	.082*	.001
F	30.967***	13.906***	10.262***

p <.05*, p <.01**, p <.001***

Positive Behaviour

Supervisory Alliance and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisory alliance made a significant contribution to T2 and T3 positive behaviour, explaining 12% (R^2_{change} = .120, p <.020) and 19% (R^2_{change} = .189, p <.042) of the variances, respectively. However, only therapist adherence added a unique significant contribution to T2 positive behaviour (β = .348, p <.007) whereas only supervisory alliance added a significant contribution to T3 positive behaviour (β = -.348, p <.050). Post-treatment therapist adherence and supervisory alliance did not make a significant contribution to the variance in T4 positive behaviour. At step 3, when the interaction term between T2 therapist adherence and supervisory alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regressions on T2 and T3 positive behaviour are presented in Table 16.12.

Table 16.12
Hierarchical Multiple Regressions of T2 and T3 Positive Behaviour, T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Positive Behaviour		(n = 52)	T3 Positive Behaviour		(n = 27)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Positive Behaviour	.435***	.423***	.422***	.429*	.446*	.441*
T2 Therapist Adherence		.348**	.326*		.185	.115
Supervisory Alliance		.005	.007		-.348*	-.342*
T2 Therapist Adherence X Supervisory Alliance			.059			.186
R	.435	.557	.559	.429	.611	.635
Total R^2	.190	.310	.313	.184	.374	.403
Adjusted R^2	.174	.267	.255	.153	.295	.300
R^2_{change}	.190***	.120*	.003	.184*	.189*	.030
F	11.930***	7.329***	5.459***	5.874*	4.774**	3.887*

p <.05*, *p* <.01**, *p* <.001***

Well-being

Supervisory Alliance and T1 Therapist Adherence: At step 2, T1 therapist adherence and supervisory alliance did not make a significant contribution to the variance in T2, T3, or T4 well-being over and above T1 well-being. At step 3, when the interaction term between T1 therapist adherence and supervisory alliance was included in the equations, there was a significant contribution made to T3 well-being, explaining 24% of the variance (R^2_{change} = .240, p <.001). The interaction, illustrated in Figure 6.12, shows that under low levels of supervisory alliance, low therapist adherence was associated with lower well-being compared to high therapist adherence. However, while low therapist adherence associated with an increase in well-being under high supervisory alliance, high therapist adherence associated with a reduction in well-being. Thus, high supervisory alliance was beneficial when it was paired with low therapist adherence but was detrimental when paired with high therapist adherence. Overall, the pairing of low supervisory alliance and high therapist adherence predicted higher well-being. No significant contributions were made to the variances in T2 and T4 well-being. Data from the hierarchical multiple regression on T3 well-being is presented in Table 17.12.

Table 17.12
Hierarchical Multiple Regressions of T3 Well-being, T1 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Well-being		(*n* = 27)
	Step 1	Step 2	Step 3
T1 Well-being	.457*	.499**	.340*
T1 Therapist Adherence		-.342	-.178
Supervisory Alliance		-.355	-.219
T1 Therapist Adherence X Supervisory Alliance			-.534***
R	.457	.585	.763
Total R^2	.209	.342	.582
Adjusted R^2	.178	.259	.509
R^2_{change}	.209*	.133	.240***
F	6.850*	4.153*	7.998***

p <.05*, *p* <.01**, *p* <.001***

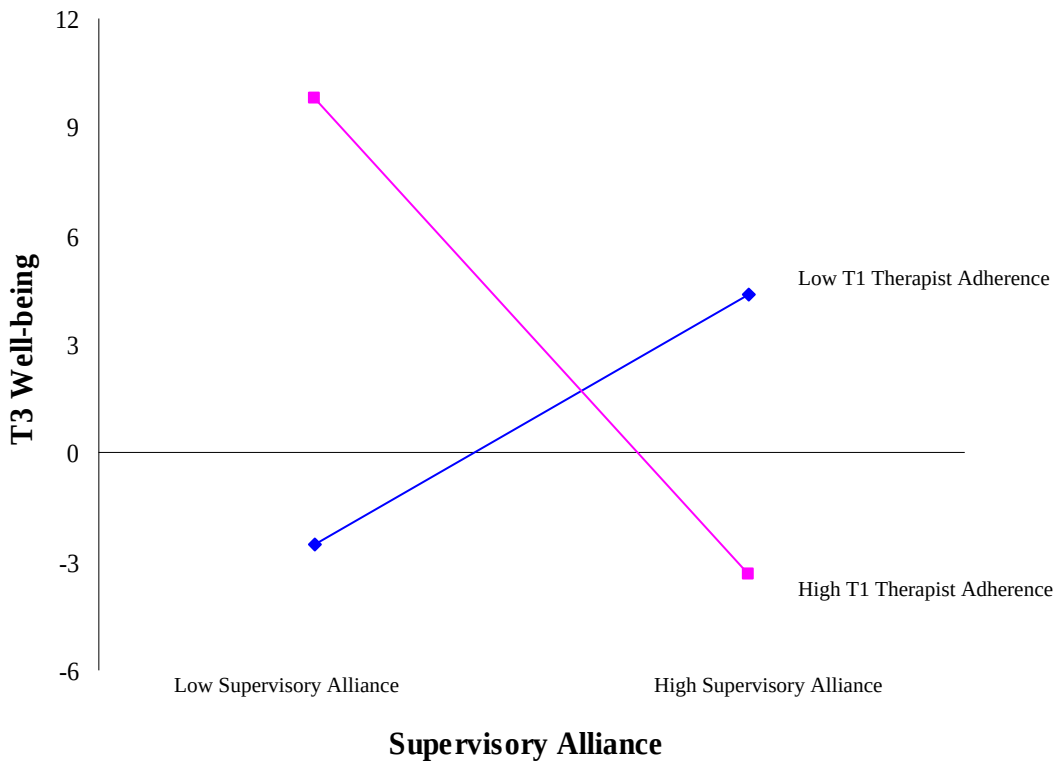

Figure 6.12. Schematic representation of the supervisory alliance X T1 therapist adherence interaction in the prediction of T3 well-being.

Supervisory Alliance and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisory alliance made a significant contribution to T2 well-being, explaining 12.8% of the variance (R^2_{change} = .128, *p* <.014). However, only therapist adherence added

a unique significant contribution (β = .360, p <.005). Post-treatment therapist adherence and supervisory alliance did not make a significant contribution to the variances in T3 and T4 well-being. At step 3, when the interaction term between T2 therapist adherence and supervisory alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T2 well-being is presented in Table 18.12.

Table 18.12
Hierarchical Multiple Regressions of T2 Well-being, T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Well-being		(n = 52)
	Step 1	Step 2	Step 3
T1 Well-being	.450***	.453***	.415***
T2 Therapist Adherence		.360**	.448***
Supervisory Alliance		.188	.183
T2 Therapist Adherence X Supervisory Alliance			-.236
R	.450	.575	.614
Total R^2	.202	.330	.376
Adjusted R^2	.187	.289	.324
R^2_{change}	.202***	.128*	.046
F	12.933***	8.062***	7.245***

p <.05*, p <.01**, p <.001***

Parent Ability

Supervisory Alliance and T1 Therapist Adherence: At step 2, T1 therapist adherence and supervisory alliance made a significant contribution to T3 parent ability, explaining 18.3% of the variance (R^2_{change} = .183, p <.032). However, only supervisory alliance added a unique significant contribution (β = -.457, p <.013). No significant contributions were made to the variances in T2 and T4 parent ability. At step 3, when the interaction term between T1 therapist adherence and supervisory alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T3 parent ability is presented in Table 19.12.

Table 19.12
Hierarchical Multiple Regressions of T3 Parent Ability, T1 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Parent Ability		(n = 27)
	Step 1	Step 2	Step 3
T1 Parent Ability	.520**	.581***	.560**
T1 Therapist Adherence		-.066	-.028
Supervisory Alliance		-.457*	-.425*
T1 Therapist Adherence X Supervisory Alliance			-.125
R	.520	.673	.683
Total R^2	.270	.452	.467
Adjusted R^2	.242	.384	.374
R^2_{change}	.270**	.183*	.014
F	9.612**	6.611**	5.029**

p <.05*, p <.01**, p <.001***

Supervisory Alliance and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisory alliance made a significant contribution to the variances in T2 and T3 parent ability, explaining 15.7% (R^2_{change} = .157, p <.002) and 19.8% (R^2_{change} = .198, p <.023) of the variances, respectively. However, only therapist adherence added a unique significant contribution to T2 parent ability (β = .408, p <.0005) whereas only supervisory alliance added a significant contribution to T3 parent ability (β = -.384, p <.021). Post-treatment therapist adherence and supervisory alliance did not make a significant contribution to the variance in T4 parent ability. At step 3, when the interaction term between T2 therapist adherence and supervisory alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regressions on T2 and T3 parent ability are presented in Table 20.12.

Table 20.12
Hierarchical Multiple Regressions of T2 and T3 Parent Ability, T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Parent Ability		(n = 52)	T3 Parent Ability		(n = 27)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Parent Ability	.560***	.517***	.517***	.520***	.555***	.555**
T2 Therapist Adherence		.408***	.457***		.143	.121
Supervisory Alliance		.043	.039		-.386*	-.384*
T2 Therapist Adherence X Supervisory Alliance			-.130			.059
R	.560	.686	.696	.520	.684	.686
Total R^2	.313	.470	.485	.270	.468	.471
Adjusted R^2	.300	.438	.442	.242	.401	.379
R^2_{change}	.313***	.157***	.014	.270**	.198*	.003
F	23.262***	14.509***	11.296***	9.612**	7.028***	5.112**

p <.05*, *p* <.01**, *p* <.001***

Family Cohesion

Supervisory Alliance and T1 Therapist Adherence: At step 1, T1 therapist adherence and supervisory alliance made a significant contribution to the variance in T3 family cohesion, explaining 18.3% of the variance (R^2_{change} = .183, *p* <.014). No significant contributions were made to the variances in T2 and T4 family cohesion. At step 3, when the interaction term between T1 therapist adherence and supervisory alliance was included in the equations, there were no significant contributions made to the variances in outcome. Data from the hierarchical multiple regression on T3 family cohesion is presented in Table 21.12.

Table 21.12
Hierarchical Multiple Regressions of T3 Family Cohesion, T1 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Family Cohesion		(n = 27)
	Step 1	Step 2	Step 3
T1 Family Cohesion	.627***	.713***	.688***
T1 Therapist Adherence		-.403*	-.367*
Supervisory Alliance		-.423*	-.391*
T1 Therapist Adherence x Supervisory Alliance			-.122
R	.627	.758	.767
Total R^2	.393	.575	.588
Adjusted R^2	.369	.522	.517
R^2_{change}	.393***	.183*	.013
F	16.814***	10.834***	8.221***

p <.05*, *p* <.01**, *p* <.001***

Family Adaptability

Supervisory Alliance and T1 Therapist Adherence: At step 2, T1 therapist adherence and supervisory alliance and T2 therapist adherence and supervisory alliance made a significant contribution to T4 family adaptability, explaining 33.3% (R^2_{change} = .333, p <.010) and 30.4% (R^2_{change} = .304, p <.017) of the variance, respectively. However, only supervisory alliance added a unique significant contribution to T4 family adaptability (β = -.671, p <.004 and β = -.436, p <.028). Pre-treatment and T2 therapist adherence and supervisory alliance added no significant contribution to the variances in T2 and T3 family adaptability. At step 3, when the interaction terms between T1 therapist adherence and supervisory alliance and between T2 therapist adherence and supervisory alliance were included in the equations, there were significant contributions made to the variance in T3 family adaptability, explaining 12.3% (R^2_{change} = .123, p <.038) and 15.3% (R^2_{change} = .153, p <.024) of the variances, respectively. The interactions, illustrated in Figure 7.12 and 8.12, show that under low levels of supervisory alliance, low therapist adherence was associated with lower family adaptability compared to high therapist adherence. However, while low therapist adherence associated with an increase in family adaptability under high supervisory alliance, high therapist adherence associated with a reduction in family adaptability. Thus, high supervisory alliance was beneficial when it was paired with low therapist adherence but was detrimental when paired with high therapist adherence. Overall, the pairing of low supervisory alliance and high therapist adherence predicted higher family adaptability. The interaction terms made no significant contributions to the variances in T2 and T4 family adaptability. Data from the hierarchical multiple regressions on T3 and T4 family adaptability are presented in Table 22.12.

Table 22.12

Hierarchical Multiple Regressions of T3 and T4 Family Adaptability, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Family Adaptability (*n* = 27)			T4 Family Adaptability (*n* = 20)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Adaptability	.491**	.556**	.467*	.447*	.618**	.605**
T1 Therapist Adherence		-.262	-.128		-.331	-.310
Supervisory Alliance		-.071	.038		-.671**	-.654**
T1 Therapist Adherence X Supervisory Alliance			-.374*			-.057
R	.491	.543	.646	.447	.730	.732
Total R^2	.241	.294	.417	.200	.533	.536
Adjusted R^2	.212	.206	.316	.158	.450	.420
R^2_{change}	.241**	.053	.123*	.200*	.333**	.003
F	8.275**	3.338*	4.115*	4.745*	6.462**	4.615*
T1 Family Adaptability	.491**	.472*	.448*	.447*	.469*	.466*
T2 Therapist Adherence		.045	.211		.240	.261
Supervisory Alliance		.071	.063		-.436*	-.437*
T2 Therapist Adherence X Supervisory Alliance			-.425*			-.053
R	.491	.496	.632	.447	.710	.712
Total R^2	.241	.246	.400	.200	.504	.506
Adjusted R^2	.212	.152	.295	.158	.417	.383
R^2_{change}	.241**	.005	.153*	.200*	.304*	.002
F	8.275**	2.615	3.828*	4.745*	5.759**	4.104*

p <.05*, *p* <.01**, *p* <.001***

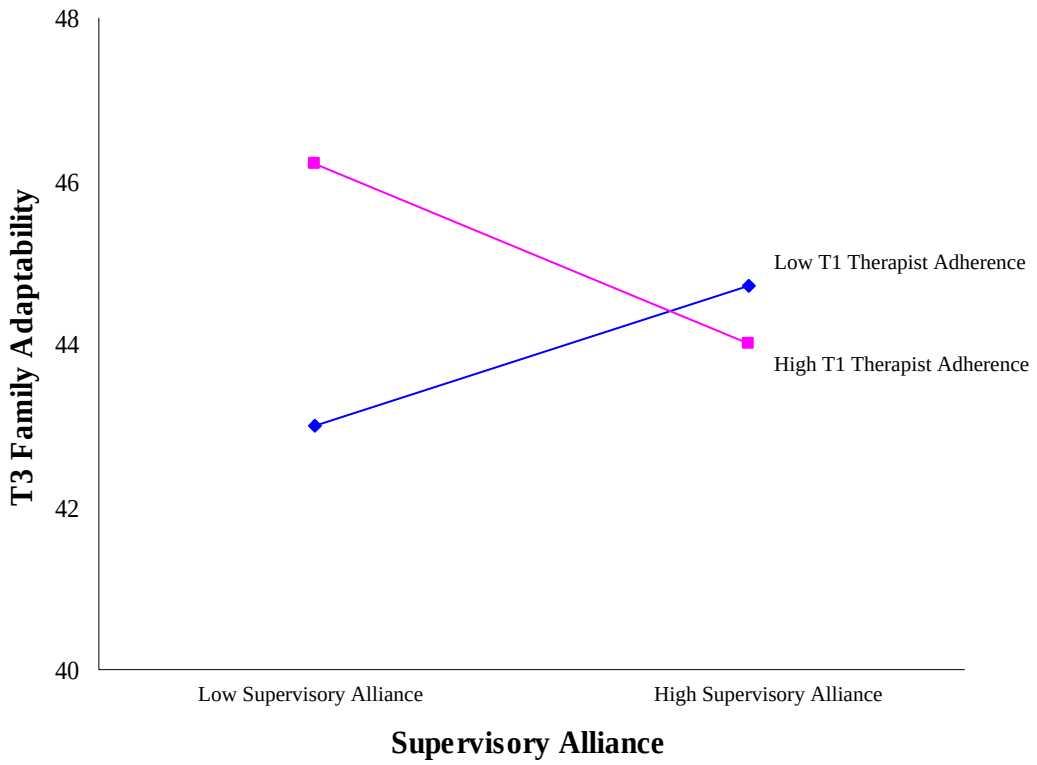

Figure 7.12. Schematic representation of the supervisory alliance X T1 therapist adherence interaction in the prediction of T3 family adaptability.

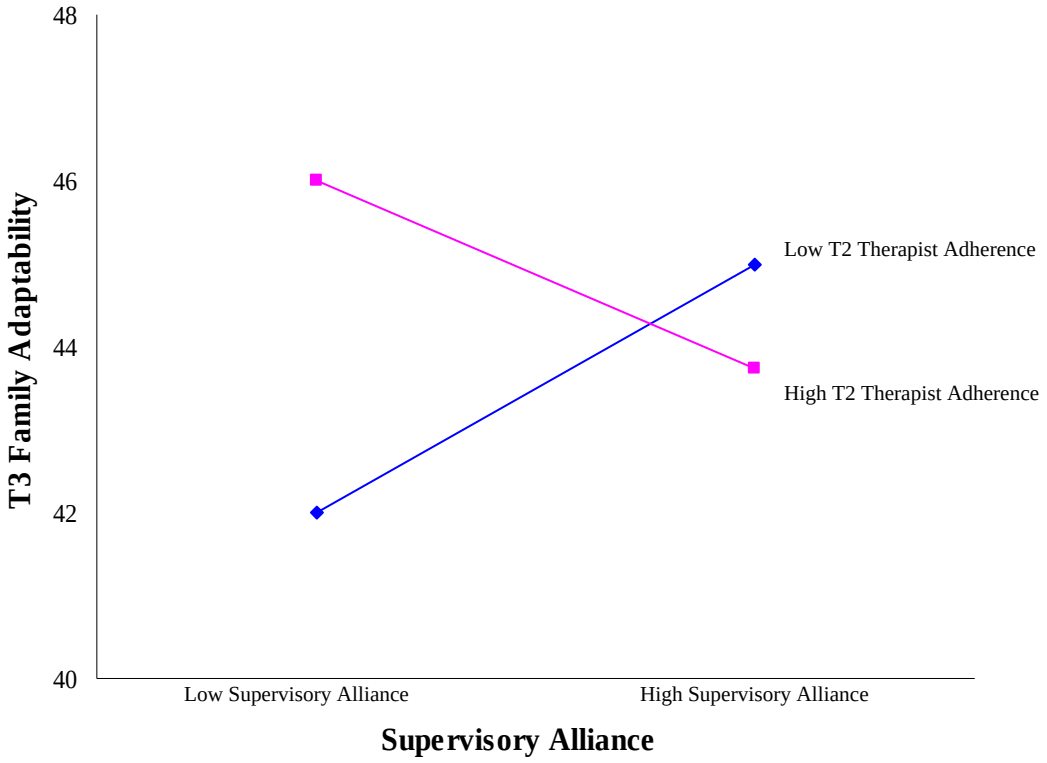

Figure 8.12. Schematic representation of the supervisory alliance X T2 therapist adherence interaction in the prediction of T3 family adaptability.

The Supervisory Alliance, Therapist Adherence, and Quality Assurance Indicators

The hierarchical regression analyses involving quality assurance indicators (service satisfaction and therapeutic alliance) were conducted identically to the previous regressions in this chapter but with quality assurance indicators replacing client outcome variables. As analyses on T1 quality assurance indicators involved no control variable, the hierarchical multiple regressions only involved two steps. Regression analyses on T2 quality assurance indicators involved three steps as T1 measurement levels were entered as control variables.

T1 Service Satisfaction

Supervisory Alliance and T1 Therapist Adherence: At step 1, T1 therapist adherence and supervisory alliance made a significant contribution to T1 satisfaction, explaining 35% (R^2_{change} = .348, p <.0005) of the variance. However, only therapist adherence added a unique significant contribution to T1 satisfaction (β = .549, p <.0005). At step 2, when the interaction term between T1 therapist adherence and supervisory alliance were entered in the equations, there were no significant contributions made to the variance in T1 satisfaction. Data from the hierarchical multiple regression on T1 satisfaction is presented in Table 23.12.

Table 23.12
Hierarchical Multiple Regression of T1 Satisfaction, T1 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Satisfaction (n = 52)	
	Step 1	Step 2
T1 Therapist Adherence	.549***	.495***
Supervisory Alliance	-.082	-.125
T1 Therapist Adherence X Supervisory Alliance		.193
R	.590	.619
Total R^2	.348	.383
Adjusted R^2	.322	.345
R^2_{change}	.348**	.035
F	13.344***	10.129***

p <.05*, p <.01**, p <.001***

T2 Service Satisfaction

Supervisory Alliance and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisory alliance made a significant contribution to T2 satisfaction, explaining 31.6% (R^2_{change} = .316, p <.0005) of the variance. However, only therapist adherence added a unique significant contribution to T2 satisfaction (β = .617, p <.0005). At step 3, when the interaction term was included in the equation, there was no significant contribution made to T2 satisfaction. Data from the hierarchical multiple regression on T2 satisfaction is presented in Table 24.12.

Table 24.12
Hierarchical Multiple Regression of T2 Satisfaction, T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Satisfaction		(*n* = 52)
	Step 1	Step 2	Step 3
T1 Satisfaction	.283*	.071	.052
T2 Therapist Adherence		.617***	.601***
Supervisory Alliance		.076	.051
T2 Therapist Adherence X Supervisory Alliance			.103
R	.283	.629	.653
Total R^2	.080	.396	.427
Adjusted R^2	.062	.359	.379
R^2_{change}	.080*	.316***	.031
F	4.440*	10.700***	8.931***

p <.05*, *p* <.01**, *p* <.001***

T1 Therapeutic Alliance

Supervisory Alliance and T1 Therapist Adherence: At step 1, T1 therapist adherence and supervisory alliance made a significant contribution to T1 therapeutic alliance, explaining 28.4% of the variance (R^2_{change} = .284, *p* <.0005). However, only therapist adherence added a unique significant contribution to T1 therapist adherence (β = .570, *p* <.0005). At step 2, when the interaction term between T1 therapist adherence and supervisory alliance were entered in the equations, there were no significant contributions made to the variance in T1 therapeutic alliance. Data from the hierarchical multiple regression on T1 therapist adherence is presented in Table 25.12.

Table 25.12
Hierarchical Multiple Regression of T1 Therapeutic Alliance, T1 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Therapeutic Alliance (*n* = 52)	
	Step 1	Step 2
T1 Therapist Adherence	.570***	.559***
Supervisory Alliance	.100	.091
T1 Therapist Adherence X Supervisory Alliance		.040
R	.533	.534
Total R^2	.284	.285
Adjusted R^2	.255	.242
R^2_{change}	.284***	.100
F	9.912***	6.522***

p <.05*, *p* <.01**, *p* <.001***

T2 Therapeutic Alliance

Supervisory Alliance and T2 Therapist Adherence: At step 2, T2 therapist adherence and supervisory alliance made a significant contribution to T2 therapeutic alliance, explaining 38.1% of the variance (R^2_{change} = .381, p <.0005). However, only therapist adherence added a unique significant contribution (β = .654, p <.0005). At step 3, when the interaction terms were included in the equations, T2 therapist adherence and supervisory alliance made a significant contribution to T2 therapeutic alliance, explaining 4.6% of the variance (R^2_{change} = .046, p <.037). The interaction, illustrated in Figure 9.12, shows that under low and high levels of supervisory alliance, high therapist adherence was associated with higher therapeutic alliance compared to low therapist adherence. While high therapist adherence associated with an increase in therapeutic alliance under high supervisory alliance, low therapist adherence associated with a reduction in therapeutic alliance. Thus, high supervisory alliance was beneficial when it was paired with high therapist adherence but was detrimental when paired with low therapist adherence. Overall, the pairing of high supervisory alliance and high therapist adherence predicted higher therapeutic alliance. Data from the hierarchical multiple regression on T2 therapist adherence is presented in Table 26.12.

Table 26.12
Hierarchical Multiple Regression of T2 Therapeutic Alliance, T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Adherence and Supervisory Alliance Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Therapeutic Alliance (n = 52)		
	Step 1	Step 2	Step 3
T1 Therapeutic Alliance	.304*	.122	.112
T2 Therapist Adherence		.654***	.569***
Supervisory Alliance		.040	.047
T2 Therapist Adherence X Supervisory Alliance			.233*
R	.304	.688	.721
Total R^2	.092	.474	.520
Adjusted R^2	.075	.442	.480
R^2_{change}	.092*	.381***	.046*
F	5.188*	14.706***	12.998***

p <.05*, p <.01**, p <.001***

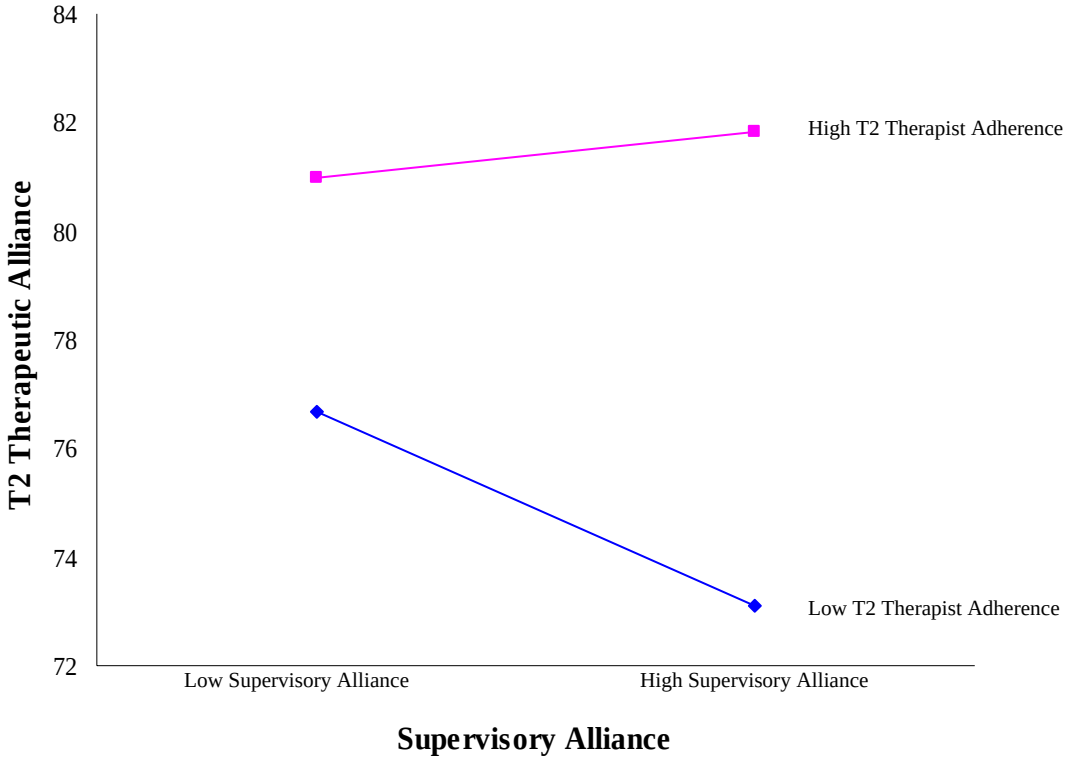

Figure 9.12. Schematic representation of the supervisory alliance X T2 therapist adherence interaction in the prediction of T2 therapeutic alliance.

Summary

The supervisory alliance significantly predicted T1 and T2 therapist adherence, explaining 19.8% and 7.3% of the variance, respectively. However, higher supervisory alliances predicted lower therapist adherence. Pre-treatment therapist adherence and supervisory alliance added a significant contribution to the variance in the following variables: Parent ability, family cohesion, family adaptability, satisfaction, and therapeutic alliance. In terms of interactions, the supervisory alliance significantly moderated the relationship between T1 therapist adherence and school attendance, well-being, and family adaptability. Post-treatment therapist adherence and supervisory alliance added a significant contribution to the variance in the following variables: Negative behaviour, positive behaviour, well-being, parent ability, family adaptability, satisfaction, and therapeutic alliance. In terms of interactions, the supervisory alliance significantly moderated the relationship between T2 therapist adherence and days in OHP, family adaptability, and therapeutic alliance.

The interactions between supervisory alliance and therapist adherence illustrated that under conditions of low supervisory alliance, low therapist adherence was associated with more days in OHP and lower school attendance, well-being, and family adaptability compared to high therapist adherence. However, while low therapist adherence was associated with a reduction in days in OHP and an increase in school attendance, well-being, and family adaptability, under high supervisory alliance, high therapist adherence was associated with an increase in days in OHP and a reduction in school attendance, well-being, and family adaptability. Thus, high supervisory alliance was beneficial when it was paired with low therapist adherence but detrimental when paired with high therapist adherence. Overall, the pairing of high supervisory alliance and low therapist adherence and low supervisory alliance and high therapist adherence predicted fewer days in OHP and higher school attendance, well-being, and family adaptability.

The opposite was true when predicting the therapeutic alliance. While high therapist adherence was associated with an increase in therapeutic alliance under high supervisory alliance, low therapist adherence was associated with a reduction in therapeutic alliance. Thus, high supervisory alliance was beneficial when it was paired with high therapist adherence but is detrimental when paired with low therapist adherence.

Despite these interactions, overall, client outcomes were largely not predicted or moderated by the supervisory alliance and therapist adherence. Of the client outcomes and quality assurance indicators that were significantly predicted and moderated by the supervisory alliance and therapist adherence, outcomes were not in all instances consistent, across variables or across measurement points (i.e., at T2, T3, and at T4). Related to this finding, the interactions which were significant have produced mixed findings across the outcome variables where for some outcome variables high supervisory alliances are beneficial whereas for other variables high supervisory alliances are less favourable. However, while these interactions have not produced a consistent pattern of findings, one bivariate relationship that does appear to be fairly clear and important, supplemented by hierarchical regression findings, is the inverse relationship between the supervisory alliance and therapist adherence.

Chapter Summary

Overall, the supervisory and therapeutic alliance and the supervisory alliance and therapist adherence predicted and moderated a number of instrumental outcomes. Prediction of ultimate outcomes was limited. However, of the significant predictions and interactions, results were not consistent across all measurement points. Additionally, interactions were mixed and some were contrary to expectations. In general, the interactions between the supervisory alliance and therapeutic alliance indicated that a high supervisory alliance was detrimental to outcome, particularly when paired with high therapeutic alliances. However, when high supervisory alliances were paired with low therapist adherences, better outcomes were predicted. Contrary to these results, but in support of expectations, high supervisory alliance and high therapist adherence interacted to predict more favourable therapeutic alliances.

Chapter Thirteen

Discussion

The current research had two overall objectives. The first objective was to examine the effectiveness of MST in New Zealand; the second was to explore possible predictors and moderators of outcome.

The present chapter will report the major findings from Section 1 to 5 and compare these findings with existing literature. The observed strengths and limitations of the current study will be discussed, as will future research implications of the overall findings.

Section 1: Effectiveness of MST in New Zealand

The primary objective of Section 1 was to evaluate the effectiveness of the MST programme in the Aotearoa / New Zealand context with respect to the following outcomes: (1) Reducing offending behaviour (frequency and seriousness of offending); (2) reducing days spent in formal OHP; (3) increasing school attendance; (4) improving youth behaviour; (5) improving parental well-being and reducing psychopathology; (6) improving parent ability; and (7) improving family functioning.

Ninety-one percent of the families (n = 78) in this study successfully completed the MST treatment program. This completion rate is comparable with the average MST completion rate of 86% reported by Curtis et al. (2004).

Overall, the present research results indicate that youth and their families experienced improvements in behaviour, well-being, and family functioning following MST treatment. Most of these gains were maintained up to 12 months following treatment. These results are consistent with New Zealand findings (Curtis et al., 2008) and findings from previous research on MST with antisocial youth and their families in the United States (Borduin et

al., 1995; Henggeler, Melton, et al., 1997; Henggeler et al., 1992; Henggeler et al., 1993; Henggeler et al., 1986; Schaffer, 2000; Scherer et al., 1994). The overall within group effect size of d = 0.45 for T1 to T2 change is also comparable with the effect sizes ranging from d = 0.31 to d = 0.45 obtained from MST studies involving juvenile offenders in the United States and in New Zealand (Curtis et al., 2008). Effect sizes for T1 to T3 change (d = 0.35) and T1 to T4 change (d = 0.47) were also comparable with effect sizes reported for T1 to T2 change, further reinforcing that a number of gains from treatment were maintained up to 12-months post-treatment.

Ultimate Outcomes

The effectiveness of MST in reducing ultimate or primary outcomes was mixed. Offending behaviour (frequency and seriousness) progressively reduced over time, where T3 and T4 levels were significantly lower than T1 levels. Offending seriousness at T3 and T4 and offending frequency at T4 were also significantly lower than offending at T2, indicating that seriousness and frequency continued to reduce significantly after treatment completion. Days in OHP significantly reduced between T1 and T2, and were maintained at similar levels at T3 and T4. There were no significant changes in school attendance over the course of treatment or the follow-up period. The combined ultimate outcome effect sizes for T1 to T2 change, T1 to T3 change, and T1 to T4 change were d = 0.18, d = 0.38, and d = 0.24, respectively. Overall, no ultimate outcomes at post-treatment were significantly poorer than pre-treatment levels and no follow-up levels were significantly poorer than pre- and post-treatment levels.

Nevertheless, while offending frequency and seriousness continued to decline at follow-up, school attendance and days spent in OHP did not see such favourable changes. There are at least three possible reasons for the limited change in school attendance: (1) For some families, there was a greater concern on reducing offending behaviour and other behavioural difficulties, which took precedence over school related difficulties including attendance; (2) some youth were referred to MST following school exclusion despite having had good to excellent attendance. As they were excluded from school when commencing the MST program, their T2 school attendance was possibly lower than their T1 attendance, reducing the overall T2 school attendance mean; and (3) at T4, the average age of the youth was 14.5 years. The reduction in school attendance across

follow-up may be a reflection of the difficulties this age group has transitioning from school to training programs or employment. Youth who were unable to find a training program or employment were classified as absent from school. Indeed, youth 13 years of age and younger had significantly higher school attendance at follow-up compared to youth 14 years of age and older.

Instrumental Outcomes

There were consistent improvements following treatment in all instrumental or secondary outcomes, and these gains were generally maintained up to 12-months post-treatment. Youth negative behaviour at T2, T3, and T4 was significantly improved compared to negative behaviour at T1. Youth positive behaviour was significantly improved at T2 compared to at T1, and these improvements were maintained at follow-up. Parent well-being was significantly improved at T2 and T4 compared to at T1. Parent psychopathology at T2, T3, and T4 was significantly improved compared to at T1. Post-treatment parent ability, family cohesion, and family adaptability were significantly improved compared to T1 levels. Although T3 levels were significantly less improved than T2 levels (i.e., returned to T1 levels), T4 parent ability, family cohesion, and family adaptability improved back to levels comparable with T2. Analyses of monthly measurement of available instrumental outcomes demonstrated that most improvements were evident from the second and third month of MST treatment. The overall combined instrumental outcome effect sizes for T1 to T2 change, T1 to T3 change, and T1 to T4 change were $d = 0.55$, $d = 0.32$, and $d = 0.54$, respectively. Overall, all T2 instrumental outcomes were significantly improved compared to T1 levels. With the exceptions of T3 parent ability, T3 family cohesion, and T3 family adaptability, instrumental outcomes at T3 and T4 were maintained at T2 levels indicating that gains were maintained up to 12-months following treatment.

Although the instrumental gains were maintained up to 12-months following treatment, there were reductions in parent ability and family functioning 6-months post-treatment. This may indicate that parents and families find the first 6-months post-treatment to be the most challenging, especially after the frequent and highly intensive therapist contact is removed. Importantly, however, families may have then adapted and possibly consolidated new skills resulting in some of the improved outcomes seen at 12-month

follow-up. This is further reinforced by the instrumental effect size between T1 and T4 (*d* = 0.54) being higher than that found between T1 and T3 (*d* = 0.32) and being comparable to the T1 to T2 effect size (*d* = 0.55).

‘Hard to Treat’ Youth and Their Families

The outcomes highlighted that a small selection of youth experienced little if any change over the course of treatment and follow-up. This group consisted of 10 youths, all of whom offended at each of the four measurement periods. This group of ‘hard to treat’ youth experienced significantly higher offending frequency and offending seriousness at each measurement interval and significantly higher levels of negative behaviour at T3 and T4 compared to the remaining 63 youth. Parents of these hard to treat youth experienced significantly lower levels of parent well-being at T3 and significantly greater levels of psychopathology compared to parents of the remaining 63 youth. Families of these youth also demonstrated significantly lower levels of family cohesion at T1, T2, and T3 compared to the remaining 63 families. Furthermore, this hard to treat sample experienced no significant changes over time on measures, with the exception of satisfaction with services. This contrasts with the remaining sample that, with the exception of school attendance, experienced significant improvements.

There were no significant differences between this hard to treat sample and the remaining sample in youth age, youth gender, youth ethnicity, number and type of youth psychiatric diagnoses, youth psychiatric medication use, family composition (one or two parent family), youth custody status, history of previous involvement with other agencies, and treatment length. The families in this sub-sample were from different MST teams and were seen by different therapists.

Thus, overall it appears that almost 14% of the client sample received little benefit from MST treatment. This finding may indicate that MST in New Zealand may be less effective for a sub-sample of consistent and serious offenders. However, although no significant improvements were evident for this group of frequent and serious offenders, MST may have helped break the typical cycle of antisocial behaviour escalation thereby reducing the negative trajectory of antisocial behaviour. The conduct disorder trajectory, particularly child onset conduct disorder, typically, without treatment intervention, results

in an increase in severity, aggressiveness, and persistency of offending behaviour as the youth gets older (see Chapter One). Thus, if these youth did not receive MST treatment, they may have been in a significantly worse position at follow-up. As there were no significant increases in offending frequency and seriousness for these youth, this suggestion is supported, but with time limited data. The idea that MST reduced the negative trajectory and escalation of antisocial behaviour among these youth may account for the significant increase in parent reported service satisfaction at T2 despite no significant outcome improvements. Furthermore, at least for some families, the limited benefits may have in part been due to extraneous variables. For example, anecdotal evidence suggests that a number of families experienced parental separation and death of a family member. These events may have disrupted the family system, altered roles of individual members, and increased the overall stress in the family. As a result, these youths and families may not have obtained the same outcomes as a function of these events. Findings overall highlight the need for a randomised controlled study consisting of MST treatment and a no treatment and/or alternative intervention comparison. This would help to reduce the impact of extraneous variables, help to understand the pattern of naturally occurring outcome/symptom change, and enable exploration into who, or what client characteristics, benefit the most from MST treatment.

Comparisons with New Zealand MST Research

The current study's findings are generally consistent with the initial (and only) New Zealand based study on MST (i.e., Curtis et al., 2008).

Offending Frequency

As in the current study, Curtis et al. (2008) found a significant decline in offending frequency from T1 to T2. Frequency at follow-up was maintained at T2 levels. Overall offending frequency ranged from 2.25 at T1 to 0.95 at T4. The present study also had a declining trend in offending frequency over time where the frequency reduced from 2.98 at T1 to 0.95 at T4. Although offending frequency at T3 and T4 was significantly lower than frequency at T1, the present study did not find a significant difference between T1 and T2 offending frequency. Overall, offending frequency in the current study reduced by 68% compared to 58% in the study by Curtis et al. The present study had slightly higher

mean offending frequency at T1 (2.98) than the study by Curtis et al (2.25). Nevertheless, T4 frequency (0.95) was the same.

Offending Seriousness

As in the current study, Curtis et al. (2008) found a declining trend in offending severity ratings over time, ranging from 3.37 at T1 to 1.92 at T4. The only significant difference was between T1 and T4 severity. The current study also had a declining trend in offending severity, ranging from 4.73 at T1 to 2.54 at T4. Offending severity at T3 and T4 was significantly lower than severity levels at T1 and T2. Overall, offending severity reduced by 46% in the current study compared to 43% in the study by Curtis et al. Offending severity at each measurement interval in the current study was higher than levels reported by Curtis et al. This may perhaps be a reflection of the national increase in youth violent offences (see Chapter One). However, it may also simply reflect sampling differences.

Days in OHP

The current study obtained similar results as Curtis et al. (2008) in days in OHP. Results in the research by Curtis et al. indicated a significant reduction in days in OHP between T1 and T2, where mean number of days reduced from 38 days to 13 days. This improvement was not maintained at T3 or T4. The present study also found that days in OHP between T1 and T2 significantly reduced, from 14 days to 5 days but that the improvement was not maintained at T3 and T4 where days in OHP increased (though not significantly) to 11.5 and 23 days. Given the similar pattern across these two studies, more focus on reducing OHP appears warranted

School Attendance

Results in the research by Curtis et al. (2008) indicated a significant increase in school attendance between T1 to T2, where attendance increased from 53% to 67%. However, T3 and T4 school attendance rates were significantly lower than T2 rates, returning to T1 levels (both 55%). In the current study, although there was a very slight increase in school attendance at T2 and T3, there were no significant changes in school attendance over time (51%, 54%, 53%, and 45%, respectively). As the present study had more youth offending at T1 (70% vs. 51%), a higher offending frequency, and higher seriousness of

offences, there may have been a greater focus on reducing youth offending and consequently, less focus on increasing school attendance for the present sample. Whatever the reason, combined with Curtis et al. findings, more focus on increasing school attendance appears warranted.

Negative Behaviour

Findings in the research by Curtis et al. (2008) indicated no significant difference in negative behaviour between T1 and T2. In comparison, the current study found a significant decline (21%) in negative behaviour from T1 to T2. This improvement was maintained at T3 and T4.

Positive Behaviour

Although different measurement procedures were employed, results in the research by Curtis et al. (2008) implied that youth had higher levels of positive behaviour at T2 compared to T1. The current research found a significant increase (20%) in positive behaviour between T1 and T2. The gain was maintained at T3 and T4.

Effect Sizes

Overall, the current study had a comparable overall effect size (d = 0.45) compared to that reported by Curtis et al. (2008) (d = 0.47). Like the research by Curtis et al., the current study found higher effect sizes for instrumental outcomes than measures of ultimate outcomes. The combined ultimate outcome and combined instrumental outcome effect sizes for the current study were d = 0.18 and d = 0.55 compared to d = 0.37 and d = 0.57 in the research by Curtis et al. Larger effect sizes for instrumental outcomes are consistent with the emphasis MST places on family interventions and parent empowerment (Henggeler & Borduin, 1990; Henggeler et al., 1995). However, for ultimate outcomes, improvement in some ultimate outcomes was less than desirable (i.e., school attendance and days in OHP).

Although the research by Curtis et al. (2008) found no significant differences in outcome based on a variety of participant demographics, the current research did find differences on some selected indicators. Older youth and youth in one parent households had lower school attendance at T3 than younger youth and youth in two parent households; males

committed more serious offences at T2 than females; parents reported higher levels of psychopathology at T3 when they had been experiencing the difficulties with their youth for three years or more; and parents who were on the treatment program for longer had lower well-being at T3. These findings indicate that there is continuing value in exploring the impact of client variables on outcome.

Section 2: Quality Assurance Indicators and Client Outcomes

The primary objective of Section 2 was to assess whether the therapeutic alliance, service satisfaction, and/or therapist adherence significantly predicted client outcomes. These variables were described as 'quality assurance' as they assessed direct client-therapist contact and the associated measures were completed by the primary parent/caregiver.

Therapeutic Alliance

Therapeutic alliance (relationship between therapist and client) at T2 explained a significant contribution of the variance in the following variables: Negative behaviour, positive behaviour, well-being, parent ability, family cohesion, and family adaptability. Overall, T2 therapeutic alliance predicted most instrumental outcomes, mainly at T2, and explained between 6.8% and 20.9% of the variances. While T2 alliance predicted T3 positive behaviour and T4 family adaptability, it did not predict any other T3 or T4 outcomes. Partial correlations ranged from -.457 to .262. Therapeutic alliance at T1 did not predict any ultimate outcomes.

The current results regarding therapeutic alliance are consistent with previous studies among both adult and adolescent populations which have demonstrated that higher levels of alliance are related to better or more improved treatment outcomes (Florsheim et al., 2000; Horvath & Bedi, 2002; Horvath & Symonds, 1991; Krupnick et al., 1996; Martin et al., 2000; Shirk & Karver, 2003). The level of prediction (up to 20.9% of variance explained) in the present study was higher than the 7% reported in previous adolescent and adult alliance outcome research (Horvath & Bedi, 2002; Horvath & Symonds, 1991; Krupnick et al., 1996; Martin et al., 2000; Shirk & Karver, 2003). The limited predictive ability of T1 alliance compared with T2 alliance is consistent with existing research in

adolescent and family therapy which has generally found that therapeutic alliance measured at post-intervention predicts outcome more convincingly (r = .27) than alliance measured early in therapy (r = .12) (Shirk & Karver, 2003). This finding differs from research with adults, which has largely found that alliance measured earlier in therapy is a better predictor of outcome than alliance measured later in therapy (Horvath & Symonds, 1991). Two possible reasons for the observed difference in the predictive validity of therapeutic alliance between adolescents and adults may be that: (1) Relationship formation evolves more slowly in therapy with adolescents and families; and/or (2) antisocial youth and their families may know how to 'look good' in the early phase of therapy but may be less inclined or equipped to sustain positive relationships or make treatment progress as therapeutic demands increase over time (Houge et al., 2006). As T2 alliance scores were not significantly different from alliance measured at T1 or throughout treatment, the alliance measured later in therapy does not seem to have been confounded with treatment outcome.

In the current research, the alliance significantly predicted overall behaviour, well-being, and family functioning but did not predict most ultimate outcomes. This finding is similar to the meta-analytic results by Shirk and Karver (2003) who found that measures of global functioning associated more strongly with relationship variables than measures of specific symptoms. In the present study, youth offending frequency and seriousness, days in OHP, and school attendance could be viewed as specific symptoms or variables whereas measures of family functioning, general behaviour, and general well-being/psychopathology could be viewed as global functioning.

The therapeutic alliance variable in the current research was completed only by the primary parent/caregiver. Although youth did not rate their alliance with the therapist, alliance formation with parent(s), especially parents of antisocial youth, is paramount as parents are the ones who bring adolescents into therapy, who are interested in change, and who have the most influence to create change in their youth (Pinsof & Catherall, 1986). Furthermore, previous research that has assessed adolescent therapeutic alliance has found that adolescents tend to rate alliance highly, creating ceiling effects and thus, reducing the predictive validity of the alliance (Shirk & Karver, 2003). However, future research should assess youth alliance with MST therapists as youth trust, commitment,

and belief that their therapist understands them and their goals may very well influence treatment success. Research has also found that youth and parent alliances interact to produce outcome (Shelef, Diamond, Diamond, & Liddle, 2005). Additionally, another study has reported that parent alliances with the therapist predict whether families engage in therapy, but once engaged, it is youth alliance with the therapist that appears to determine change in antisocial behaviour such as drug use (Shelef et al., 2005).

Satisfaction

Satisfaction measured at T2 explained a significant contribution of the variance in the following variables: Offending frequency, school attendance, negative behaviour, positive behaviour, well-being, parent ability, family cohesion, and family adaptability. Overall, T2 satisfaction predicted most instrumental outcomes, generally at each measurement period (i.e., T2, T3, and T4) and explained between 9.3% and 22.3% of the variances. Partial correlations ranged from .319 to .504. Post-treatment satisfaction also made a significant contribution to the variance in T2 offending frequency and T3 and T4 school attendance. Ultimate outcome partial correlations ranged from .262 to .305. Pre-treatment satisfaction did not predict any client outcomes.

The current results support previous research which has demonstrated that high satisfaction with services is related to client improvement whereas low client satisfaction is related to little or no change (Ankuta & Abeles, 1997; Attkisson & Zwick, 1982; Chan, Sorensen, Guydish, Tajima, & Acampora, 1997; Deane, 1993; Garland, Haine, & Boxmeyer, 2007; Holcomb, Parker, & Leong, 1997; Holcomb, Parker, Leong, Thiele, & Higdon, 1998). As T2 satisfaction (M = 47.92) was significantly higher than T1 satisfaction (M = 39.52), the relationship between high satisfaction and treatment outcome is further reinforced. However, there is concern that satisfaction measured at the end of treatment is more likely to be influenced by treatment progress. As satisfaction at T2 was significantly higher than satisfaction measured at T1 and satisfaction measured monthly throughout treatment, T2 satisfaction in this study was likely influenced by perceived progress at the conclusion of treatment.

Therapist Adherence

Therapist adherence to MST protocol at T2 explained a significant contribution of the variance in the following variables: Days in OHP, negative behaviour, positive behaviour, well-being, parent ability, family cohesion, and family adaptability. Overall, T2 therapist adherence predicted most instrumental outcomes in the direction expected, at T2 and less so at T4, and explained between 12% and 22.7% of the variances. Partial correlations ranged between .297 and .476. Of the ultimate outcomes, therapist adherence only predicted T4 days in OHP. This singular finding was contrary to expectations where higher therapist adherence associated with more days in OHP. Pre-treatment therapist adherence did not predict any client outcomes.

These results support the hypothesis that therapist adherence would predict adolescent, parent, and family instrumental outcomes. These outcomes are therefore consistent with the majority of MST research which has found a positive relationship between therapist adherence and client outcomes (Henggeler, Pickrel, et al., 1999; Henggeler, Rowland, et al., 1997; Henggeler et al., 2002; Huey et al., 2000; Schoenwald, Henggeler, et al., 2000). However, with the exception of days in OHP, adherence did not predict ultimate outcomes. This research indicates that adherence here was more predictive of instrumental outcomes. Furthermore, T1 therapist adherence did not predict any treatment outcomes. As T1 therapist adherence (M = 104.69) was significantly lower than T2 therapist adherence (M = 108.73), these findings further reinforce the argument that it is higher adherence that predicts outcome. Although the present results found that adherence did not predict T3 outcomes, it did predict the majority of T4 instrumental outcomes. This suggests that high therapist adherence is related to improved instrumental outcomes up to 12-months after treatment.

The results from the present study are contrary to those of Curtis et al. (2008) who found no association between adherence and treatment outcome even when adherence increased over time. Curtis et al. suggested that the difference in results from their study and studies that support the predictive validity of adherence was related to the collection of adherence data. While the first author collected adherence data in the Curtis et al. research, research that has found a consistent link between adherence and treatment outcome employed MST therapists and supervisors to collect the data. As adherence data

in the present study was also collected independently from MST therapists and supervisors (i.e., by the author) and positive associations between adherence and treatment outcomes were found, the current research does not support the assumption made by Curtis and her colleagues.

Overall, the present study provides support for the predictive validity of the adherence measure in a community setting, that is independent of MST developers and experts, and that is outside the United States. The inconsistency in predictive validity of therapist adherence in MST research, even within the New Zealand based research, indicates that there is need for ongoing research to improve the therapist adherence measure for use in community settings and different countries.

Section 3: Supervisor and Therapist Adherence and Client Outcomes

The primary objective of Section 3 was to assess whether supervisor adherence predicted therapist adherence and whether supervisor adherence moderated the relationship between therapist adherence and client outcomes.

Supervisor adherence significantly predicted T1 therapist adherence, explaining 13.4% of the variance. However, the finding was contrary to expectations as high supervisory adherence predicted lower therapist adherence. This finding partially supported the findings by Henggeler et al. (2002) who found that high supervisor adherence in certain areas was associated with low therapist adherence. Henggeler et al. found that supervisor adherence on expertise in MST and the use of empirically supported treatments was positively correlated with family-therapist collaboration, follow-up on treatment progress, and attempts to change family interactions. However, supervisor adherence on analytic process (i.e., emphasising the conceptual foundation of MST) and promoting clinician competencies was negatively associated with therapist adherence to family collaboration and follow-up on treatment progress. As Henggeler et al. only examined subscales, and did not examine total scale scores, it is unknown as to whether they would have found an overall negative relationship between therapist and supervisor adherence if they

employed the full-scale scores[15]. The present study's findings, combined with findings by Henggeler et al., raise concern over supervisor adherence and its negative impact on therapist adherence and possibly, client outcome.

The present study extended the research by Henggeler et al. (2002) by examining how supervisor adherence interacts with therapist adherence to predict client outcomes. The current study found that therapist adherence and supervisor adherence added significant contributions to the variance in the following variables: School attendance, positive behaviour, well-being, parent ability, therapeutic alliance, and service satisfaction, explaining between 9.1% and 36.3% of the variances. However, in all of these cases, only therapist adherence, not supervisor adherence, made the significant contributions to outcomes. Nevertheless, supervisor and therapist adherence interacted to predict a limited number of outcomes: Negative behaviour, family adaptability, and therapeutic alliance, explaining between 5.3% and 22.5% of the variances. Regardless of the level of supervisor adherence, high therapist adherence predicted lower negative behaviour compared to low therapist adherence. This was expected. However, while negative behaviour reduced when high therapist adherence was paired with high supervisor adherence (as expected), there was an increase in negative behaviour when low therapist adherence was paired with high supervisor adherence (contrary to expectations). Thus, while high supervisor adherence was beneficial for therapists who adhered more closely to MST protocol, high supervisor adherence was detrimental to client outcome for therapists who displayed low adherence to MST protocol. This pattern was also tentatively found for therapeutic alliance. However, the opposite was true for family adaptability. More favourable family adaptability outcomes occurred when high therapist adherence was paired with low supervisor adherence or when low therapist adherence was paired with high supervisor adherence. Overall, the interaction findings were mixed, where one finding (and one tentative finding) supported expectations and one did not. The expectations were that under high levels of supervisor adherence there would be higher outcomes compared to when supervisor adherence was low, particularly for therapists with low adherence. It was also expected that the combination of high

[15] As discussed in the Method Section (Chapter Seven), owing to restrictions from MST in the United States, it was not possible to use subscale scores in this study (see page 102).

supervisor and therapist adherence would predict significantly improved outcomes compared to any other therapist/supervisor high/low adherence combination.

Although there has been no other research exploring the relationship between supervisor adherence and client outcomes, a body of literature suggests that therapist adherence to protocol can in fact produce counterproductive results (Castonguay et al., 1996; Henry, Schacht, et al., 1993; Shaw et al., 1999). Although this previous research was examining therapist, rather than supervisor adherence, such findings could be applicable to supervision where supervisor adherence, ideas, and suggestions may affect therapist competence, conflict with therapist ideas and practice, and impair therapist rapport building thereby compromising client outcomes. Supervisors rated as having higher levels of adherence to MST protocol may help to strengthen and develop therapist skills, but these skills may not automatically translate to improved client outcome. Rather, it may be common variables such as relationship and process factors between therapists and clients that translate to enhanced outcome. These factors may not be adequately addressed or examined with supervisors who adhere closely to MST protocol. Consequently, high supervisor adherence may translate to lower client outcomes.

One possible reason for the mixed results could relate to Type I error: That is, finding significant results when in fact there are none. Type I error in this research may be inflated due to the number of analyses conducted on the data set. However, owing to the limited research on these variables, Type II error (finding no significant result when in fact there is one) was viewed as more problematic in the current research. The focus was to explore the data set and note relationships, or patterns of relationships, that are worthy of further exploration. On the other hand, if these findings are reflecting something other than Type I error, they could be related to the MST Supervisor Adherence Measure employed in the current research. As the researcher was unable to access individual results to each question, reliability and validity analyses were unable to be conducted. Although this measure has demonstrated adequate reliability in previous research ranging from .86 to .98 (Henggeler et al., 2002), these results may not be reflected in New Zealand where clinical and community realities are distinctly different to America. It is also possible that mean supervisor adherence scores in the present study were lower than mean supervisor adherence scores in the American-based research. The supervisors in the

current research were not MST developers, nor were they trained by developers of the model and thus, may not adhere as closely to protocol as expected. However, as mean scores have not been reported, this idea cannot be examined. It is also possible that the adherence measure quantifies something other than adherence such as supervisor competence and/or supervisor style (e.g., directive vs. not directive style). Finally, the inability to use SAM subscale scores precluded a more fine-grained analysis.

The research reported here has been the first study exploring how MST supervisor adherence interacts with therapist adherence to predict client outcomes. As the present results have provided tentative support for some relationships and contrary findings for other relationships, there is need for further examination and clarification. As supervisor adherence has been demonstrated to be potentially detrimental to therapist adherence (e.g., negative correlations between these variables) and some client outcomes, assessing how supervisor actions and adherence enhances or hinders therapist adherence and client outcomes does appear to be an important future direction based on current findings. Re-evaluation and refinement of both adherence measures may also be necessary.

Section 4: Allegiance, Accountability, and Client Outcomes

The primary objectives of Section 4 were to assess (1a) whether supervisor allegiance predicted therapist allegiance; (1b) whether supervisor allegiance moderated the relationship between therapist allegiance and client outcomes; (2a) whether supervisor accountability predicted therapist accountability; and (2b) whether supervisor accountability moderated the relationship between therapist accountability and client outcomes.

Allegiance and Client Outcomes

The assumption that supervisor allegiance would predict therapist allegiance was not supported by the current research. Furthermore, therapist and supervisor allegiance only predicted one variable, T1 therapist adherence explaining 13.4% of the variance. As the present research found no associations between allegiance and client outcomes, the

current findings are inconsistent with previous research which has found significant associations (Berman et al., 1985; Dush et al., 1983; Luborsky et al., 1999; Robinson et al., 1990; Smith et al., 1980; Wampold, 2001).

Three main differences between the current research and existing research that has found positive associations between therapist allegiance and treatment outcome may help to explain the present study's contrary results (Berman et al., 1985; Dush et al., 1983; Luborsky et al., 1999; Robinson et al., 1990; Smith et al., 1980; Wampold, 2001): (1) The current research was based on adolescent and family therapy whereas research in the literature has only involved adults; (2) the current research asked therapists to rate their allegiance to the MST model whereas the research in the literature generally assessed allegiance through calculating how many publications the researcher had produced on the therapy model, or combining self-ratings of allegiance, colleague ratings, and allegiance levels inferred from prior publications; and (3) the current research assessed therapist allegiance whereas allegiance research in the literature has largely focused on researcher allegiance. In addition to the non-existent research on allegiance in the child, adolescent, and family literature, there has been no research examining the relationships between supervisor allegiance, therapist allegiance, and client outcomes.

In terms of interaction effects, the current research found that supervisor allegiance interacted with therapist allegiance to predict the following outcomes: Days in OHP, negative behaviour, positive behaviour, and parent ability, explaining between 6.1% and 48% of the variances. However, owing to suppression effects, interpretation of the interactions was limited. Nevertheless, tentative interpretation indicated that the most favourable client outcomes were obtained when both supervisor and therapist allegiances were low. High supervisor allegiance appeared detrimental to outcomes when paired with low therapist allegiance and only appeared beneficial when paired with high therapist allegiance. These tentative interpretations are contrary to expectations which were that high allegiances would predict higher outcomes.

Overall, outcomes here were more favourable when therapists and supervisors were matched on their level of allegiance to the MST model. This is consistent with research on therapist and supervisor theoretical orientations where Steinhelber et al. (1984) found

that to maximise client outcome, it is important that supervisors and supervisees have congruent orientations. Steinhelber et al. found that clients whose therapist had a congruent orientation with their supervisor experienced a higher mean change on the Global Assessment Scale (pre-treatment M = 62.5 and post-treatment M = 68.6) compared to clients whose therapist had a non-congruent orientation with their supervisor (pre-treatment M = 59.4 and post-treatment M = 61.1). The present research demonstrates that even within the same theoretical orientation, different levels of belief in, and allegiance to the model produces different outcomes. Combined, the current findings and the findings by Steinhelber et al. indicate that more favourable client outcomes may be obtained when therapists and supervisors have similar allegiance to the therapy model employed.

Overall, the pattern of results indicated that the majority of outcomes were not predicted by allegiance, either alone or in combination. Nevertheless, owing to the limited ability to interpret the significant interactions, these results highlight need for further research in the area of allegiance, especially research focusing on how therapist and supervisor allegiances impact on client outcome. Furthermore, as the researcher was unable to locate a published allegiance measure, the measure employed to assess allegiance in the current study may not adequately assess allegiance. This highlights the need for a generic measure of allegiance that can be modified without altering reliability and validity to represent the specific therapy model being assessed.

Accountability and Client Outcomes

Supervisor accountability significantly predicted therapist accountability, explaining 33.1% of the variance. Therapist and supervisor accountability added a significant contribution to the variances in the following variables: Parent ability, family cohesion, and satisfaction, explaining between 17.4% and 52% of the variances. As expected, higher accountability was related to better outcomes. Supervisor accountability also moderated the relationship between therapist accountability and the following variables: Offending seriousness, parent ability, family adaptability, and therapist adherence, explaining between 8.1% and 22.7% of the variances. However, owing to suppression effects, interpretation of all but one of the significant interactions (e.g., offending seriousness) was limited. When looking at offending seriousness, high supervisor

accountability was beneficial when paired with low therapist accountability (as expected) but detrimental when paired with high therapist accountability (contrary to expectations). Similar patterns were also demonstrated with family adaptability and therapist adherence, where the pairing of high supervisor accountability and low therapist accountability predicted more favourable outcomes. However, the opposite appeared evident for parent ability. Overall, the interactions all indicated that more favourable outcomes were predicted by supervisor-therapist non-congruent perceived accountability levels.

There is limited research on accountability and client outcome. It has largely been assumed that the higher the practitioners perceived accountability, the higher the client outcomes. Although the current research has supported this common perception to a limited degree, where therapist and supervisor accountability predict some client outcomes, the interaction between supervisor and therapist accountability has produced mixed findings. The interactions demonstrated that low therapist accountability can predict more favourable outcomes and that high supervisor accountability appears only beneficial when paired with low therapist accountability. These tentative results indicate that therapist and supervisor perceived accountability may be important to client outcomes and requires further exploration in future client outcome research. The development of an accountability measure would also be of value as the measure used in the present study may not have adequately captured the concept of accountability.

Section 5: Supervisory Alliance, Therapeutic Alliance, Therapist Adherence, and Client Outcome

The primary objectives of Section 5 were to assess (1a) whether the supervisory alliance predicted the therapeutic alliance; 1b) whether the supervisory alliance moderated the relationship between therapeutic alliance and client outcomes; (2a) whether the supervisory alliance predicted therapist adherence; and (2b) whether the supervisory alliance moderated the relationship between therapist adherence and client outcome.

Supervisory Alliance, Therapeutic Alliance, and Client Outcome

The supervisory alliance did not significantly predict T1 or T2 therapeutic alliance. However, T1 alliance and supervisory alliance and T2 alliance and supervisory alliance predicted significant contributions to the variance in outcome variables. Overall, the therapeutic alliance and supervisory alliance predicted the following outcomes: Negative behaviour, positive behaviour, well-being, parent ability, family cohesion, family adaptability, satisfaction, and therapist adherence, explaining between 6.8% and 41.6% of the variances. However, in all analyses except family adaptability, only the therapeutic alliance significantly contributed to client outcomes. The one exception here was family adaptability. In this case, only the supervisory alliance contributed to outcome, predicting significantly lower levels of adaptability. Thus, the expectation that higher supervisory alliances would predict higher outcomes was not supported. The only significant finding was contrary to expectations where higher supervisory alliances were expected to predict better outcomes. The current results are contrary to the findings by Patton and Kivlighan (1997) who found that the supervisory alliance significantly predicted the therapeutic alliance, explaining 44% of the variance and that the higher the supervisory alliance, the better the client outcomes.

The disparity in predictive validity and direction of the association between the current study and the research by Patton and Kivlighan (1997) may be due to participant characteristics. The Patton and Kivlighan study involved graduate students as therapists (for all this was their first counselling experience), doctoral students as supervisors, and undergraduate students as clients. Thus, the associations between supervisory alliance, therapeutic alliance, and client outcome may only be evident among novice therapists and inexperienced supervisors working with adult clients with mild psychological or personal difficulties (i.e., higher functioning adults presenting with common adult life stressors). The associations observed in the Patton and Kivlighan study may not be evident among experienced practitioners working with adolescences and families, or in work with clients experiencing moderate to severe psychopathology such as those involved in the current research.

In a limited number of cases, the supervisory alliance in the present study moderated the relationship between the therapeutic alliance and outcome. The supervisory alliance

interacted with the therapeutic alliance to significantly predict the following variables: Positive behaviour, well-being, and family adaptability, explaining between 4.4% and 24% of the variances. However, the results were mixed and largely did not support the expectation that under conditions of high supervisory alliance, therapeutic alliance would predict higher outcomes. In support of previous findings, literature-based expectations were partially supported for positive behaviour where low therapeutic alliance predicted significantly higher levels of positive behaviour when paired with high supervisory alliance. However, there was a slight decline in positive behaviour outcomes when high therapeutic alliance was paired with high supervisory alliance, this being contrary to expectations. The literature-based expectations were not supported with well-being and family adaptability. High supervisory alliances predicted lower well-being than low supervisory alliances. Overall, better outcomes were achieved in the present research when high therapeutic alliance was paired with low supervisory alliance. As mentioned previously in this chapter, the large number of analyses conducted may have inflated Type I error, producing significant results when in fact there are none. This may account for the mixed and contrary findings.

As indicated by supervisory alliance scores, therapists reported strong relationships with their supervisors in general. This is not surprising, as they have typically undertaken close and intense supervision, often for years. However, this therapist-supervisor bond does not appear to translate in improved client outcomes and/or therapeutic alliances, but actually in some cases may be detrimental. It is possible that this close bond does not lead to higher skill development and improved process skills that translate to improved client outcomes. It is also possible that this relationship has become more informal and lacks the evaluative nature of supervision that functions to improve practitioner competence and produce client outcomes. These ideas may account for the differences in outcome between studies that have involved MST developers as supervisors and studies that have not included MST developers or experts. The former studies investigating MST efficacy have been found to have significantly better outcomes (d = 0.81) than the later effectiveness studies (d = 0.26) (Curtis et al., 2004). It is possible that when the developers of the MST program are more involved in the treatment process, supervision is more formal and evaluative, and consequently leads to better client outcomes. Such an

idea might also underpin the negative relationship found in the current study between supervisor adherence and therapist adherence.

Further research is required to better understand how the relationship between supervisors and therapists influences the therapeutic alliance, client outcomes, and therapist practice of MST. Research involving experienced practitioners with youth and their families as clients will also be beneficial. Furthermore, it is also important to explore what aspects of the supervisory alliance positively or negatively affect the therapeutic alliance and client outcome.

Supervisory Alliance, Therapist Adherence, and Client Outcomes

In the present study the supervisory alliance significantly predicted T1 and T2 therapist adherence, explaining 19.9% and 7.3% of the variances, respectively. However, the findings are contrary to expectations as the higher the supervisory alliance, the lower the therapist adherence. Pre-treatment therapist adherence and supervisory alliance and T2 therapist adherence and supervisory alliance predicted significant contributions to the variance in the following outcome variables: Negative behaviour, positive behaviour, well-being, parent ability, family cohesion, family adaptability, and satisfaction, explaining between 8.2% and 34.8% of the variances. However, when the supervisory alliance significantly contributed to client outcomes, the correlation was negative. That is higher levels of supervisory alliance predicted significantly lower levels of positive behaviour, parent ability, family cohesion, and family adaptability.

The results in the present study are contrary to findings by Patton and Kivlighan (1997) who previously found that the supervisory alliance significantly predicted therapist adherence to protocol. Although the supervisory alliance predicted therapist adherence in the current study, explaining 7.3% to 19.9% of the variance, the higher the supervisory alliance, the lower the therapist adherence. This is contrary to the research by Patton and Kivlighan who found that the higher the supervisory alliance, the higher the therapist adherence. The different findings may be due to differences in participant characteristics and clinical experience as the research by Patton and Kivlighan involved novice practitioners and volunteer undergraduate students.

However, the current research findings are similar to those found in research examining the relationship between MST therapists and MST consultants. For example, prior research by Schoenwald, Sheidow, and Letourneau (2004) found that a positive relationship between MST therapists and MST consultants (reported by the therapist) negatively correlated with therapist adherence (reported by the caregiver). These researchers found that consultant behaviour designed to convey support and maintain a positive bond with the therapist weakened therapist adherence to MST protocol. The current findings may indicate that a strong supervisory alliance may contribute to attendance, active participation in, commitment to, and enjoyment of supervision, but that this positive relationship does not necessarily translate into the acquisition of expertise, skills, or strategies needed to adhere to the treatment model and that have been found to relate to client outcome in both current and previous studies. There is the concern again that the close relationship between MST therapists and supervisors, which has developed often over several years of close working contact, may have become informal and lacking the objective and evaluative nature of supervision that functions to improve practitioner adherence and competence and produce higher client outcomes. Once more, the current findings may help explain some of the difference in outcome between MST efficacy and effectiveness studies (Curtis et al., 2008). The efficacy studies have been highly controlled studies where supervision has been more frequent and provided by MST developers and therapists have been postgraduate university students. In contrast, the effectiveness studies have included community based supervisors and therapists trained in MST.

The supervisory alliance in the present study also moderated the relationship between therapist adherence and the following outcomes: Days in OHP, school attendance, well-being, family adaptability, and therapeutic alliance, explaining between 4.4% to 24% of the variances. With the exception of the therapeutic alliance, high supervisory alliance was only beneficial when paired with low therapist adherence. High supervisory alliance and high therapist adherence produced lower outcomes. With respects to the therapeutic alliance, high therapist adherence predicted significantly higher therapeutic alliance under both low and high supervisory alliance compared to low therapist adherence. Under high levels of the supervisory alliance there was little change in the therapeutic alliance for high therapist adherence. However, there was a reduction in the therapeutic alliance for

the high supervisory alliance and low therapist adherence pairing. Thus, high supervisory alliance was detrimental to therapeutic alliance when paired with low therapist adherence. However again, results may have been affected by Type I error.

When examined separately, high therapist adherence predicted higher client outcomes in the current research. However, when supervisor adherence and the supervisory alliance were included in the analyses, the relationships between high therapist adherence combined with high supervisor adherence or supervisory alliance were linked to reduced outcomes on a limited number of variables. Further research is necessary to better understand how the relationship between supervisors and therapists affects therapist adherence and client outcome. Again, it is important to explore what aspects of the supervisory alliance positively or negatively affect therapist adherence to MST protocol.

Study Strengths

The overall participant completion rate in the current study was 91%. This is similar to completion rates of MST benchmark studies reported in the meta-analysis by Curtis et al. (2004). This completion rate far exceeds the 40% to 60% treatment completion rate in other interventions for antisocial youth (Armbruster & Kazdin, 1994; Kazdin, Mazurick, & Bass, 1993; Nock & Kazdin, 2005). The 9% dropout rate is also far less than the 28% to 85% youth dropout rate from real-world mental health settings (Armbruster & Kazdin, 1994; Garcia & Weisz, 2002; Nock & Ferriter, 2005; Nock & Kazdin, 2005).

The current study included multiple ultimate and instrumental outcome indicators including measures of youth behaviour, parent well-being, and family functioning. These measures were administered at pre-treatment (T1), throughout treatment, at post-treatment (T2), and at 6- and 12-month follow-up (T3 and T4). This information provided a wide range of youth and family outcomes as well as helping to identify where and when MST treatment begins to demonstrate significant improvements. For example, instrumental outcomes were evident as early as the second and third month of MST treatment commencing. The independent collection of ultimate outcome and adherence data by the author, rather than by MST therapists and supervisors is also an improvement

from most previous MST studies[16], as it could be argued that independent evaluation was conducted without any conflict of interest or subjective distortion in data collection, analysis, or interpretation of the current findings.

As four teams throughout New Zealand (North and South Islands) were included in the current research, the ability to generalise the findings to the wider national community is enhanced. Furthermore, as MST was delivered in the homes of families, the ecological validity of the present findings is strengthened. Finally, given that outcome findings are comparable to previous MST benchmark studies, including findings similar to the first New Zealand MST study (Curtis et al., 2008), confidence in the use of MST in the New Zealand setting is increased.

The current study explored variables such as supervision, accountability, and allegiance which have rarely been assessed in psychotherapy research. In addition to these variables, the present study further included variables that have not been formerly included in MST research such as the therapeutic alliance and assessed relationships that have not been previously explored such as the associations between supervisor adherence, therapist adherence, and client outcomes. Although most interactions involving allegiance and accountability could not be interpreted, the findings from other interactions have hinted at potential concerns such as the negative impact of supervisor adherence and supervisory alliance on therapist adherence, the therapeutic alliance, and, potentially, client outcomes.

Study Limitations

The use of a one group within subjects design limits the ability to compare the results found with other interventions for youth with antisocial behaviour or see whether the MST program was more effective than no treatment. However, in comparing the current results with MST benchmarks (Curtis et al., 2008), MST in the current research was equally as effective both in respect to completion rates and overall effect sizes. The effect sizes in the current study were also higher than effect sizes reported for alternative

[16] The exception is Curtis et al. (2008) who also used an independent evaluation.

treatments used in previous MST studies. Similarities with benchmark studies indicate that the effectiveness of MST in New Zealand is comparable with MST effectiveness in the United States of America. Similarities also suggest that it is the MST program, rather than time effects, maturation, and placebo effects, that is responsible for change. As two New Zealand studies have found that MST is effective in the New Zealand context, the next line of enquiry ideally needs to compare the effectiveness of MST and other interventions for antisocial youth using randomly controlled trials to reduce concerns about internal validity.

Owing to the number of analyses conducted on the data set, the possibility of Type I error was increased. This may mean that significant results may not actually reflect true differences in the population. However, owing to the limited research on many of the variables (i.e., accountability and allegiance) and relationships (i.e., supervisor adherence, therapist adherence, and client outcomes) explored in this study, Type II error was viewed as more problematic. As the current study focused on exploring the data set and noting relationships, and relationship patterns, that are worthy of further exploration, the balance between controlling for Type I and Type II error favoured Type II error.

Although this study explored the impact of therapist and supervisor allegiance and accountability on client outcome, two variables that have rarely been examined in psychotherapy outcome research, interpreting the significant interactions was limited owing to suppression effects. Nevertheless, the majority of outcomes were not moderated by these variables.

Although data was collected independently from MST therapists and supervisors, and considerable effort was made to collect ultimate outcome data systematically and directly from the appropriate agencies, concerns over the reliability and accuracy of some of the ultimate outcome data remain. The data collected for the present study is only as reliable as the data collected by the relevant agencies. It is possible that these agencies did not have all offences or OHP recorded in their files, as data for a proportion of youth indicated discrepancies between information collected by Police Youth Aid and that collected by CYFS. Furthermore, it is well known that such agencies are frequently overworked and short-staffed in New Zealand (i.e., CYFS) and as a result, relevant

informing agencies may not have had sufficient resources to provide valid or reliable data for the purposes of the present study. In essence, informing government agency staff may not have had the time, commitment, or energy to accurately review the case files to report the required information reliably. These concerns are particularly relevant to the pre-treatment period before commencing the MST program. Once becoming involved with MST, MST therapists attempt to have contact with agencies with whom the youth and family are involved. This may reinforce the need for agency staff (e.g., Police Youth Aid and CYFS) to accurately record all information, and thus, the data collected at post-treatment and follow-up from these agencies may be more reliable and accurate. On the other hand, given similarities in some indicators across this study and the previous New Zealand MST study (Curtis et al., 2008), this concern may be reduced somewhat. However, if there are problems in data collection in these agencies, the similarities in the magnitude of some of the indicators across studies (e.g., post-test offending frequency was identical) may be the result of systematic biases in agency data collection and reporting.

There were no differences in T1 and T2 ultimate outcomes for the 73 youth who completed the MST program and the 8 youth who dropped out of treatment in the present study. There were no significant changes in ultimate outcomes for youth who dropped out of treatment from T1 to T2 and with the exception of days in OHP, there were no changes in ultimate outcomes from T1 to T2 for treatment completers. Thus, from pre-treatment to post-treatment there is little indication that treatment completers were better off or clinically improved compared to treatment dropouts. However, as the present findings indicated that there were more changes in ultimate outcomes at 6- and 12-month follow-up (d = 0.35 and d = 0.24), particularly in offending indices, the impact of MST treatment may be more evident during the follow-up period. As follow-up data for treatment dropouts were not collected, it is not clear whether this group of youth would have experienced similar declines in offending behaviours. It would be valuable for future research to assess this possibility. This would further help to clarify whether changes were due to treatment, time effects, and/or maturation. Additionally, youth and their families who dropped out of MST treatment did not differ on T1 instrumental outcomes from treatment completers. However, as treatment dropouts did not complete T2, T3, or T4 measurement administrations, instrumental outcome comparisons could not be made

between treatment dropouts and treatment completers. As the current findings and previous research (Curtis et al., 2008) indicate that more change occurs across instrumental outcomes than ultimate outcomes following MST treatment, the author hypotheses that treatment dropouts would have experienced little, if any, improvement in instrumental outcomes at T2, T3, and T4. However, again it would be valuable for future research to assess and clarify this possibility.

The variables were only measured from one perspective (e.g., supervisor adherence from therapist perspectives, supervisory relationship from therapist perspectives, and therapist adherence from caregiver perspectives). Thus, it is unclear whether the same results would have been found if another respondent completed the measure such as supervisors completing the supervisory alliance measure and therapists completing the therapist adherence measure. Further research would benefit from having multiple respondents to enable comparisons between relevant informants. In particular, the present study did not collect information from the youth directly. This information was not collected due to the already high demands on the youth (i.e., from school, the youth justice system, parents and family, and MST). Furthermore, this was previously attempted in the study by Curtis et al. (2008), and was not successful as the majority of youth did not consent and of those who did consent, most did not complete measures. However, since there have been two studies demonstrating the effectiveness of MST in New Zealand, it may now be an opportune time to include youth responsiveness to the program. Creative ideas and incentives to increase the genuine desire for antisocial youth to complete the required measures and contribute in a meaningful way to our knowledge base will be essential.

Therapist and supervisor sample sizes in the current study were small (n = 8 and n = 4, respectively). However, as only one therapist and one supervisor declined to participate, the sample included in the study represented the MST teams that were operating over the research period. Over the course of time MST has become more widely recognised as an effective program and there have been increasing demands for the service nationally. This has resulted in the employment of additional staff in already established teams as well as the development of further teams throughout New Zealand. Currently there are five established MST teams and two teams under development in New Zealand.

Future Research Directions

Although gains were successfully maintained up to 12-months post-treatment in the present study, and with the notable exception of offending indicators, there were few outcomes that continued to improve throughout follow-up, suggesting that continued progress across outcome variables was difficult to sustain in the community setting. Additionally, at T3 there was a reduction in some instrumental effect sizes. These outcomes highlight the potential value of booster sessions following program completion. Over the average of 162 days on the MST therapy program, families had intensive contact with their therapist. However, once therapy was completed this contact stopped, sometimes, as reported by caregivers, abruptly. Continued significant improvements may be obtained if there are booster sessions, and based on the data, perhaps particularly within the first 6-months of program completion. Such booster sessions could be conducted in either individual or group format for interested families or family members; be held monthly or bimonthly; and session topics could consist of a review of the main MST treatment principles and activities. Conducting booster sessions in a group format might enable parents/caregivers who are experiencing similar difficulties to meet and learn from others as well as providing families with a support base.

Post-treatment and T3 offending behaviour and OHP experience explained significant variance in follow-up offending behaviour and OHP experience. Thirty percent of the offending behaviour at T3, and 33% at T4, was explained by offending behaviour at T2. Additionally, 50% of the variance in T4 offending behaviour was explained by T3 offending behaviour. Furthermore, 32% of the variance in T3 OHP experience was explained by T2 OHP experience and 73% of the variance in T4 OHP experience was explained by T3 OHP experience. These results provide important information and suggest that therapists need to be cautious if the youth offends or if they are placed out of the home environment throughout the treatment period. These findings also reinforce the potential value of booster sessions after treatment completion, especially for families whose youth offended or were placed out of the home in the 6-month follow-up interval. Booster sessions may help reduce the pattern of T3 youth offenders continuing to offend at T4 and may help to prevent youth who are placed out of the home at T3 from being

placed out of the home at T4. Such booster sessions may be particularly valuable for hard to treat youth and families. On the other hand, given MST's policy of supporting parents to function independently following treatment, such contact could be contraindicated in some situations (e.g., overly dependent clients). Research exploring the potential of booster sessions is recommended to assess various possibilities.

It is recommended that future research on MST in New Zealand incorporate a randomly controlled trial comparing MST with alternative interventions and a control group. This will provide information on whether MST in New Zealand society is more effective than alternative interventions in New Zealand for youth with antisocial behaviours; will reduce the impact of extraneous variables; will help to increase understanding of patterns of naturally occurring outcome/symptom change; and enable exploration into who, or which client characteristics, benefit the most from MST treatment. Including multiple respondents to multiple measures is further recommended. Similarly, applying measures that reflect other typical behavioural and cognitive/emotional problems of antisocial youth such as antisocial peer association, poor school grades, and attributional styles or biases would be potentially beneficial.

Future research is required to explore how supervisor adherence and the relationship between therapists and supervisors enhance or hinder therapist variables and client outcomes. This is particularly relevant given that findings in the present study indicated that supervisor adherence and the supervisory relationship were negatively associated with therapist adherence, therapeutic alliance, and some client outcomes. Assessing the process of supervision, ensuring that sessions run in accordance with supervision functions (see Chapter Five), and assessing whether therapists find supervision useful, is further recommended. The current findings also highlight potential value in continuing supervisor training and monitoring.

With regard to measures used in the present study, the need remains for further examination and exploration of the TAM and SAM, especially for use in the New Zealand context. A revised version of the TAM (TAM-R; Schoenwald, in press) has recently been employed by MST teams overseas. It will be beneficial for future research to evaluate the reliability and predictive validity of the TAM-R within New Zealand.

Finally, there needs to be more inter-agency consultation and service coordination between MST staff and relevant government and community youth justice, social service, and mental health agencies. This may help orient other agencies to the MST approach and help agency staff to comprehend and appreciate the need for collecting and documenting accurate data regarding ultimate outcomes for evaluative and policy development purposes.

Chapter Fourteen

Conclusions

The purpose of the present research was to assess the effectiveness of MST for working with antisocial youth in New Zealand and to explore possible predictors and moderators of MST treatment effectiveness.

This research has demonstrated that MST is an effective treatment for youth with antisocial behaviours in New Zealand. Results indicate that up to 12-months following MST treatment, youth and their families were functioning better than they were before treatment. Treatment gains were evident across ultimate (offending frequency, offending seriousness, and days in OHP) and instrumental outcomes (youth positive and negative behaviour, parent well-being and psychopathology, parent ability, and family functioning). Families also had high satisfaction with the MST services provided and reported high alliances with therapists. The completion rate and effect sizes for this study were also comparable with those found in the only other study on MST in New Zealand as well as MST studies conducted in the United States. However, as there were no improvements in school attendance across measurement intervals and as follow-up days in OHP returned to pre-treatment levels, a greater focus on increasing school attendance and reducing OHP is warranted. Furthermore, as a sub-sample of more frequent and serious offenders experienced no improvements in any outcome measures, the effectiveness of MST for more serious youth offenders is questioned.

Post-treatment therapist adherence, service satisfaction, and therapeutic alliance significantly predicted more favourable client outcomes particularly for instrumental outcomes. On the other hand, supervisor adherence, therapist and supervisor accountability and allegiance, and the supervisory alliance did not predict the majority of outcome variables. Of the few significant relationships and interactions between these predictor variables and outcomes the findings were mixed and not consistent across variables or measurement periods (i.e., at T2, T3, and at T4). The most favourable client outcomes generally occurred when both therapist and supervisor adherence was high;

when therapist accountability was low and supervisor accountability was high and/or when therapist accountability was high and supervisor accountability was low; when therapeutic alliance was high and supervisory alliance low; and when therapist adherence was low and supervisory alliance was high and/or when therapist adherence was high and supervisory alliance was low. However, interpretation of the four significant interactions involving allegiance and three of the four significant interactions involving accountability was limited owing to suppression effects. Tentative interpretations indicated that more beneficial client outcomes were seen when both supervisor and therapist allegiances were low and when supervisors and therapists had non-congruent perceived accountability levels. Although some findings were mixed, many of the interaction results were not consistent with some commonly held assumptions. That is, an increased sense of accountability around engaging families and achieving positive outcomes and more positive working relationships between supervisors and therapists were not always associated with better client outcomes and in some cases were detrimental. Owing to the lack of a consistent pattern of interactions, and to the fact that the majority were not significant, this may indicate issues related to Type I error or, alternatively, may hint at some issues worth exploring in future research. However, a more consistent set of findings, also consistent with some previous research, were that higher levels of supervisor adherence and the supervisory alliance predicted lower levels of therapist adherence and some reduced client outcomes, contrary to expectations. Future research on the relationship between supervisor alliance and adherence and its relationship to therapist and client variables is necessary to replicate and clarify these relationships.

As MST has been demonstrated to be an effective treatment for youth offenders in New Zealand, widespread implementation and ongoing evaluation of MST in New Zealand is strongly recommended. Evaluation is required to ensure that structural and policy decisions are facilitative of positive dissemination, implementation, and outcomes. Evaluation will also help to ensure that MST implementation and practice is reflective of New Zealand's unique social, cultural, and ethnic makeup. Owing to some contrary findings involving supervisor adherence and the supervisory alliance, assessing the process of supervision, ensuring that sessions run in accordance with supervision functions (see Chapter Five), and assessing whether therapists find supervision useful is

further recommended. The current findings also highlight potential value in continuing supervisor training and monitoring.

The call now is for (1) a randomly controlled trial comparing MST with alternative interventions and a control group and perhaps combining this with continuing work on evaluating predictors of outcome; (2) trialing and evaluating the employment of booster sessions to assess their merit in improving long term effectiveness and sustainability of MST in New Zealand; and (3) inclusion of youth responses to the MST program.

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Appendixes 1 to 26

Appendix 1: Parent Information Sheet and Consent Form

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Information Sheet for Parents/ Caregivers/ Whanau

Hi / Kia Ora. I am Claire Russell, a graduate student at Massey University. I am inviting you to take part in a study that I am conducting as part of my PhD. The aim of the study is to find out how effective Multisystemic Therapy (MST) is in Aotearoa New Zealand. Participation is voluntary so you can choose whether to take part or not. You can take as long as you please to decide.

What is the study about?
The purpose of this study is to find out how helpful MST is for helping young people to stay out of trouble at home, at school and in the community. Through this study I hope to find out how well MST works for your young person and family.

Who is being asked to take part?
Throughout 2004 and 2005 a number of families in similar circumstances as your own will be taking part in a MST program in Christchurch, Wellington, Waikato-Bay of Plenty, and Manawatu-Whanganui. I will be inviting all these families to participate in this study. By getting information from as many different people as possible we will have a better chance of finding out whether or not MST is an effective treatment program for youth with behaviour problems in New Zealand.

What will I be asked to do?
When you began the MST program your MST therapist talked to you about collecting information from yourself and other organisations (e.g., school, Child Youth and Family worker, Youth Aid) about how your young person is doing at home, whether or not they have missed any days at school, and whether or not they had been placed in out of home care or committed any offences. You have also been asked to answer some questions each month about how your MST therapist is doing. With your permission I would like to use this information to help me answer questions about how helpful MST is for youth and families in New Zealand. In addition I would like to ask you some questions on a monthly basis while receiving MST and 6 and 12 months after therapy has finished about your family and your young person's behaviour. If you agree to take part, I will ring you at your home and ask you these questions over the phone. This process should take about 30-45 minutes for the first call and then 20 minutes every other month.

What will happen to the information?
At the end of the research process, a report will be written. Your name will **NOT** be used in any research publication and no one will ever be able to tell that you or your family took part in MST. If you would like a summary of the results of the research, these can be sent to you at the end of the study. The research findings may also be presented at conferences and published in professional journals so that others can learn from our findings.

Will there be any benefits or risks from taking part in this study?
There are no expected risks from taking part in this study, except for a small amount of time and energy on your part to help answer some of the questions mentioned above. There may be some

benefit in having the opportunity to discuss your experiences of the MST program with the research.

What can participants expect from the researcher?

Your participation in this research is voluntary, you can choose whether to participate or not. If you choose not to take part you and your family will still receive MST treatment. If you do choose to participate you have the right to withdraw at anytime and the right to refuse to answer any questions. You also have the right to an interpreter and/or support person to ensure that you fully understand all relevant procedures and requests. You also have the right to ask any questions about the study at any time.

If you choose to participate in this study your information will be kept confidential (private) **EXCEPT** where you or anyone else in your family is at risk of harming themselves or someone else. In these circumstances, you will be notified (when possible) before anyone else is informed. Your information will be kept securely for at least 5 years, after which the information will be destroyed or if you wish, returned to you.

Where can I get further information?

This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 03/126. If you have any concerns about the conduct of this project, please contact Professor Sylvia V. Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone (06) 350 5249, email humanethicspn@massey.ac.nz. This study has been given ethical approval by the Canterbury Ethics Committee on behalf of the Waikato and Wellington Ethics Committees. If you have any questions about the project in general, please feel free to contact Claire Russell or Dr. Kevin Ronan.

Claire Russell
PhD Student
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: clairejrussell@hotmail.com

Dr. Kevin Ronan
Associate Professor
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: K.R.Ronan@massey.ac.nz

If you have read this information and have decided to take part in this study, please sign the attached consent form.

Your time is much appreciated,

Kind regards,

Claire Russell

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Consent Form for Parents/Caregivers/Whanau

Request for an Interpreter

English	I wish to have an interpreter	Yes __	No __
Māori	E hiahia ana ahau ki tetahi kaiwhakamaori/kaiwhaka pakeha korero	Ae __	Kao __
Samoan	Ou te mana'o ia i ai se fa'amatala upu	Ioe __	Leai __
Tongan	Oku ou fiema'u ha fakatonulea	Ae __	Ikai __
Cook Island	Ka inangaro au i tetai tangata uri reo	Ae __	Kare __
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu	E __	Nakai __

I have read and understood the information sheet / the information sheet has been explained to me. All my questions have been answered to my satisfaction.

I also understand that:
*Taking part in this study is voluntary
*My consent is necessary to participate in MST research
*I may ask further question at any time
*I have the right to withdraw from the research at any time
*I may refuse to answer any particular questions with no penalty or loss of MST treatment services
*Everything I share will remain confidential except in the situations noted in the information sheet
*My name will not be used in any reports without my permission
*I agree to an approved auditor appointed by the ethics committee reviewing my records to make sure that this *project has been carried out properly Yes / No
*I wish to receive a summary of the research of the study Yes / No
*I agree to take part in this study on the effectiveness of MST as explained in the Information Sheet

Name of youth _____
Name _____ Mother / Father / Guardian / Caregiver
Signature _____ Date _____

Name _____ Mother / Father / Guardian / Caregiver
Signature _____ Date _____

Project explained by _____
Project role _____
Signature _____ Date _____

If I have any questions I can contact:

Claire Russell
PhD Student
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: clairejrussell@hotmail.com

Dr. Kevin Ronan
Associate Professor
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: K.R.Ronan@massey.ac.nz

Appendix 2: Youth Information Sheet and Consent Form

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Information Sheet for Youth

Hi / Kia Ora. I am Claire Russell, a graduate student at Massey University. I am inviting you to take part in a study that I am conducting as part of my PhD. The aim of the study is to find out how effective Multisystemic Therapy (MST) is in Aotearoa New Zealand. Participation is voluntary so you can choose whether to take part or not. You can take as long as you please to decide.

What is the study about?
The purpose of this study is to find out how well MST works to help young people to stay out of trouble at home, at school and in the community. Through this study I hope to find out how helpful MST is for you and your family.

Who is being asked to take part?
Throughout 2004 and 2005 a number of young people such as your self will be taking part in a MST program in Christchurch, Wellington, Waikato-Bay of Plenty, and Manawatu-Whanganui. I will be inviting all these families to participate in this study. By getting information from as many different people as possible I will have a better chance of finding out whether or not MST is working in New Zealand.

What will I be asked to do?
When you began the MST programme your MST therapist talked to you about collecting information from yourself your parents/caregiver and other organisations (e.g., school, Child Youth and Family worker, Youth Aid) about how you are doing at home, whether or not you have missed any days at school, and whether or not you have been placed in out of home care or committed any offences. If you agree I would like to use this information that has already been collected about your progress to help me answer questions about MST.

What will happen to the information?
At the end of the research process, a report will be written so that others can learn from our findings. Your name and your family members' names will **NOT** be used in any research publication and no one will ever be able to tell that you or your family took part in MST. If you would like a summary of the results of the research, these can be sent to you at the end of the study.

Will there be any benefits or risks from taking part in this study?
There are no expected risks from taking part in this study.

What can participants expect from the researcher?
Your participation in this research is voluntary, you can choose whether to participate or not. If you choose not to take part you and your family will still receive MST treatment. If you do choose to participate you have the right to withdraw at anytime and the right to refuse to answer any questions and still continue to receive MST. You also have the right to an interpreter and/or some one who will make sure that you fully understand what is happening in the MST program.

If you choose to participate in this study your information will be kept confidential (private) **EXCEPT** where you or anyone else in your family is at risk of harming themselves or someone else. In these circumstances, you and your family will be told (when possible) before anyone else is informed. Your information will be kept safely for at least 5 years, after which the information will be destroyed or if you wish, returned to you.

Where can I get further information?
This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 03/126. If you have any concerns about the conduct of this project, please contact Professor Sylvia V. Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone (06) 350 5249, email humanethicspn@massey.ac.nz. This study has been given ethical approval by the Canterbury Ethics Committee on behalf of the Waikato and Wellington Ethics Committees. If you have any questions about the study in general, please feel free to contact Claire Russell or Dr. Kevin Ronan.

Claire Russell
PhD Student
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: clairejrussell@hotmail.com

Dr. Kevin Ronan
Associate Professor
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: K.R.Ronan@massey.ac.nz

If you have read this information and have decided to take part in this study, please sign the attached consent form.

Your time is much appreciated,

Kind regards,

Claire Russell

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Consent Form for Youth (under 16)

Request for an Interpreter

English	I wish to have an interpreter	Yes __	No __
Maori	E hiahia ana ahau ki tetahi kaiwhakamaori/kaiwhaka pakeha korero	Ae __	Kao __
Samoan	Ou te mana'o ia i ai se fa'amatala upu	Ioe __	Leai __
Tongan	Oku ou fiema'u ha fakatonulea	Ae __	Ikai __
Cook Island	Ka inangaro au I tetai tangata uri reo	Ae __	Kare __
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu	E __	Nakai __

I have read and understood the information sheet / the information sheet has been explained to me. All my questions have been answered to my satisfaction.

I also know that:
* taking part in this study is my choice
* I can stop taking part in this study at any time I want to
* I don't have to answer any questions I don't want to
* If I don't want to take part in this research or answer any questions, I can still take part in the MST program
* Everything I say will be kept private except in the situations noted in the information sheet
* My name will not be used in any research reports
* I wish to receive a summary of the results of the study Yes / No
* I agree to an approved auditor appointed by the ethics committee reviewing my records to make sure that this project has been carried out properly Yes / No
* I agree to participate in this research on the effectiveness of MST as explained in the Information Sheet

Name _____
Signature _____ Date _____

Parent/Caregiver _____
Signature _____ Date _____

Project explained by _____
Project role _____
Signature _____ Date _____

If I have any questions I can contact:

Claire Russell
PhD Student
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: clairejrussell@hotmail.com

Dr. Kevin Ronan
Associate Professor
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: K.R.Ronan@massey.ac.nz

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Consent Form for Youth (over 16)

Request for an Interpreter

English	I wish to have an interpreter	Yes __	No __
Maori	E hiahia ana ahau ki tetahi kaiwhakamaori/kaiwhaka pakeha korero	Ae __	Kao __
Samoan	Ou te mana'o ia i ai se fa'amatala upu	Ioe __	Leai __
Tongan	Oku ou fiema'u ha fakatonulea	Ae __	Ikai __
Cook Island	Ka inangaro au I tetai tangata uri reo	Ae __	Kare __
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu	E __	Nakai __

I have read and understood the information sheet / the information sheet has been explained to me. All my questions have been answered to my satisfaction.

I also know that:
* taking part in this study is my choice
* I can stop taking part in this study at any time I want to
* I don't have to answer any questions I don't want to
* If I don't want to take part in this research or answer any questions, I can still take part in the MST program
* Everything I say will be kept private except in the situations noted in the information sheet
* My name will not be used in any research reports
* I wish to receive a summary of the results of the study Yes / No
* I agree to an approved auditor appointed by the ethics committee reviewing my records to make sure that this project has been carried out properly Yes / No
* I agree to participate in this research on the effectiveness of MST as explained in the Information Sheet

Name _____
Signature _____ Date _____

Parent/Caregiver _____
Signature _____ Date _____

Project explained by _____
Project role _____
Signature _____ Date _____

If I have any questions I can contact:

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School of Psychology
Massey University
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Palmerston North
E-mail: K.R.Ronan@massey.ac.nz

Appendix 3: Therapist Information Sheet and Consent Form

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Therapist Information Sheet

Hello / Kia Ora

I am Claire Russell, a graduate student at Massey University. I am inviting you to take part in a study that I am conducting as part of my doctoral work at Massey University under the supervision of Dr Kevin Ronan, Associate Professor and a Clinical Psychologist at Massey University. The aim of the study is to find out how effective Multisystemic Therapy (MST) is in Aotearoa New Zealand. I will be asking MST therapists from Christchurch, Wellington, Waikato-Bay of Plenty, and Manawatu-Whanganui to partake in this research. Participation is voluntary so you can choose whether to take part or not. You can take as long as you please to decide.

Adherence to the 9 MST principles
Therapist and supervisor adherence to the 9 MST protocols is a critical component of the success of MST. Extensive research has demonstrated that high adherence predicts positive client outcomes (e.g., reduced rates of offending and out-of-home placements and improved school performance). Furthermore, failure to maintain adherence has been demonstrated to compromise treatment outcomes. Although there is information on therapist adherence, information regarding supervisor adherence is sparse. This research intends to determine how supervisor adherence influences therapist adherence and client outcomes. If you agree to take part in this research I would like your permission to use the information already collected by MST New Zealand regarding your perception of your supervisors' adherence.

Questions regarding allegiance, accountability, and supervision
In addition to accessing information on adherence and client contacts, I would like to ask you some questions. I would like to ask you some demographic questions, some questions on how and why you came to be a MST therapist, some questions on how accountable you feel for engaging families and achieving positive outcomes, and I would like to ask you some questions regarding your perceptions on supervision and the relationship you have with your supervisor. The reason for asking these questions is to determine how the quality assurance mechanisms which MST employs (e.g., supervision, accountability) actually impact on client outcomes.

If you agree to participate I will send you a copy of these questions approximately one month after the commencement of your participation and then every two months throughout the length of this research (approximately two years) or your employment with MST. Additionally, if you would prefer to answer the questions over the phone, this can also be done. The duration needed to complete these questions is approximately 15 minutes every two months.

If you agree to take part in this study I will ask you to sign a consent form. However before you agree to participate there are some things that you need to know:

- Participation in this study is voluntary. If you choose not to participate, this will not impact on your employment in anyway. If you do choose to participate you can decline to answer particular questions and you can terminate your participation at any time.
- My supervisor and I will be available to answer your questions at any time
- You can ask for some things not to be written down
- You can withdraw any piece of information you have volunteered
- The information you give will be kept securely for at least 5 years after the end of this research

It is also important to know that all the information provided in this study is confidential. All case records will be stored in secure storage and will not be shown to anyone other than my supervisor.

It is anticipated that data collection for this study will run until the beginning of 2006. At the end of this data collection period a report will be written. The results of this study will be presented in summary form and thus no one would ever be able to identify your responses or the identity of participants. The research findings may also be presented at conferences and published in professional journals so that others can learn from our findings. If you would like a summary of the results of the research, these can be sent to you at the end of the study.

Finally, I am hoping that what is learned from this study will facilitate our understanding of the specific processes within MST that contribute to positive treatment outcomes.

Where can I get further information?
This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 03/126. If you have any concerns about the conduct of this research, please contact Professor Sylvia V. Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone (06) 350 5249, email humanethicspn@massey.ac.nz. This study has been given ethical approval by the Canterbury Ethics Committee on behalf of the Waikato and Wellington Ethics Committees. If you have any questions about the study in general, please feel free to contact Claire Russell or Dr. Kevin Ronan.

Claire Russell
PhD Student
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: clairejrussell@hotmail.com

Dr. Kevin Ronan
Associate Professor
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: K.R.Ronan@massey.ac.nz

If you have read this information and have decided to take part in this study, please sign the attached consent form.

We know that your time is valuable. It is much appreciated,

Kind Regards

Claire Russell

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Therapist Consent Form

I have read the information sheet and had the details of the study explained to me. My questions have been answered to my satisfaction. I understand that I may ask further questions at any time

I understand that I have the right to withdraw from the study at any time. I also understand that I may decline to answer any particular questions.

I agree to provide information on the understanding that my name will not be used without my permission. The information will be used only for this research and publications arising from this research project.

I would like the researcher to send me the questionnaires Yes / No

If yes, I agree to the researcher having my contact address for the purpose of sending me the questionnaires to complete.

Address

_____

I would like the researcher to phone me to ask the research questions Yes / No

If yes, I agree to the researcher having my contact phone number for the purpose of asking me the research questions.

Phone number _____

I agree to participate in this study under the conditions set out in the information sheet.

Signed _____

Name _____

Date _____

MST team _____

If I have any questions or concerns I can contact:

Claire Russell
PhD Student
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
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Dr. Kevin Ronan
Associate Professor
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: K.R.Ronan@massey.ac.nz

Appendix 4: Supervisor Information Sheet and Consent Form

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Supervisor Information Sheet

Hello / Kia Ora

I am Claire Russell, a graduate student at Massey University. I am inviting you to take part in a study that I am conducting as part of my doctoral work at Massey University under the supervision of Dr Kevin Ronan, Associate Professor and a Clinical Psychologist at Massey University. The aim of the study is to find out how effective Multisystemic Therapy (MST) is in Aotearoa New Zealand. I will be asking MST supervisors from Christchurch, Wellington, Waikato-Bay of Plenty, and Manawatu-Whanganui teams to participate in this research. Participation is voluntary so you can choose whether to take part or not. You can take as long as you please to decide.

Supervision
Supervision is an important component of MST. Indeed a lot of time, resources and energy are directed towards supervision. However, surprisingly there is no research on whether supervision in MST relates to therapist adherence and client outcomes. I would like to examine this relationship. To do this, if you participate I will ask you a few questions regarding your thoughts on the importance of supervision.

Allegiance
Research has demonstrated that the belief treatment providers have in the efficacy of the treatment they deliver relates to client outcomes. I intend to examine whether supervisor and therapist belief in the effectives of MST relates to client outcomes and adherence. To do this, if you agree to participate I will ask you a few questions relating to how you came to be an MST therapist / supervisor and how effective you think MST is in reducing youth offending behaviour and out of home placements and increasing youth school attendance.

Accountability
A major facet of MST therapy is the notion that therapists and supervisors are held accountable for engaging families in therapy and achieving favourable outcomes for families. However, there is no research on the impact accountability has on client outcomes. I would like to examine this relationship by asking you a few questions regarding your perceptions of accountability and how accountable you think therapists under your supervision feel for producing successful outcomes.

If you agree to participate I will send you a copy of these questions approximately one month after the commencement of your participation and then every six months throughout the length of this research (approximately two years) or your employment with MST. Additionally, if you would prefer to answer the questions over the phone, this can also be done. The duration needed to complete these questions is approximately 5-10 minutes.

If you agree to take part in this study I will ask you to sign a consent form. However before you agree to participate there are some things that you need to know:

- Participation in this study is voluntary. If you choose not to participate, this will not impact on your employment in anyway. If you do choose to participate you can decline to answer particular questions and you can terminate your participation at any time.
- My supervisor and I will be available to answer your questions at any time
- You can ask for some things not to be written down
- You can withdraw any piece of information you have volunteered
- The information you give will be kept securely for at least 5 years after the end of this research

It is also important to know that all the information provided in this study is confidential. All case records will be stored in secure storage and will not be shown to anyone other than my supervisor.

It is anticipated that data collection for this study will run until the beginning of 2006. At the end of this data collection period a report will be written. The results of this study will be presented in summary form and thus no one would ever be able to identify your responses or the identity of participants. The research findings may also be presented at conferences and published in professional journals so that others can learn from our findings. If you would like a summary of the results of the research, these can be sent to you at the end of the study.

Finally, I am hoping that what is learned from this study will facilitate our understanding of the specific processes within MST that contribute to positive treatment outcomes.

Where can I get further information?
This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 03/126. If you have any concerns about the conduct of this research, please contact Professor Sylvia V. Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone (06) 350 5249, email humanethicspn@massey.ac.nz. This study has been given ethical approval by the Canterbury Ethics Committee on behalf of the Waikato and Wellington Ethics Committees. If you have any questions about the study in general, please feel free to contact Claire Russell or Dr. Kevin Ronan.

Claire Russell
PhD Student
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
E-mail: clairejrussell@hotmail.com

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Associate Professor
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If you have read this information and have decided to take part in this study, please sign the attached consent form.

We know that your time is valuable. It is much appreciated,

Kind Regards

Claire Russell

The Effectiveness of Multisystemic Therapy in Aotearoa New Zealand

Supervisor Consent Form

I have read the information sheet and had the details of the study explained to me. My questions have been answered to my satisfaction. I understand that I may ask further questions at any time

I understand that I have the right to withdraw from the study at any time. I also understand that I may decline to answer any particular questions.

I agree to provide information on the understanding that my name will not be used without my permission. The information will be used only for this research and publications arising from this research project.

I would like the researcher to send me the questionnaires Yes / No

If yes, I agree to the researcher having my contact address for the purpose of sending me the questionnaires to complete.

Address

_____

I would like the researcher to phone me to ask the research questions Yes / No

If yes, I agree to the researcher having my contact phone number for the purpose of asking me the research questions.

Phone number _____

I agree to participate in this study under the conditions set out in the information sheet.

Signed _____

Name _____

Date _____

MST team _____

If I have any questions or concerns I can contact:

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PhD Student
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Associate Professor
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Appendix 5: Offence Severity Rating Scale

1
IT: Habitual Absenteeism/Truancy
2
D300: Speeding (driving at a dangerous speed)
D100: Reckless driving
L100: No driver's licence (drivers licence offences)
3
3530: Disorderly behaviour
1J-BC: Breaking Curfew
1J-OPC: Out of parental control
3540: Making obscene phone calls
4
3940: Public drunkenness (minors purchasing/consuming alcohol)
1J-3900-AA: Alcohol abuse/breaking age limit
5
3400: Gaming
2200: Sexual affronts (indecent performance)
1J-2M: runaway/abscond
6
3260: Consume/smoke/use cannabis
3150: Possession/procurement of controlled substances (not cannabis)
7
4320: Shoplifting (no drugs)
4500: Forging/fraud
4550: Credit fraud
4410: Possession/concealing/receiving stolen goods (no drugs)
2910: Soliciting/prostitution
7130: Runaway from institution/violation of probation
6100: trespass offences
1J-1730-TB: threatening behaviour
8
1640: Common assault/battery
1J-1640-AF: assault on family member
1J-1610-AP: Assault on police
5120: Vandalism (wilful property damage)
1J-5120-WD: Wilful damage
3510: Obstructing/hindering/resisting police action
3230: Sell/give/supply cannabis
3270: Cultivation of cannabis
1750: Carrying a dangerous weapon
5220: Possession of fire bomb (miscellaneous endangering)
4130: Breaking/entering (burglary offences)
4373: property theft under $500
5110: Arson
9
4210: Burglarising/theft of auto
8100: Driving under the influence of alcohol/drugs
10
3130: Sell/give/supply controlled drugs (not cannabis)
11
4370: General thefts over $5,000
4310: Theft of drugs
12
4100: Burglary (drugs, other property, associated offences)
13
1320: Unarmed robbery, strong arm robbery
14
1510: Aggravated assault, assault/weapon
1400: Grievous assaults (wounding/injuring with intent)
15
1310: Armed robbery
16
2600: Criminal sexual conduct in 1st, 2nd, or 3rd degree (sexual attacks)
17
1100: Murder/attempted/murder/manslaughter

Appendix 6: Youth Negative Behaviour

Youth Negative Behaviour Scale (Henggeler & Borduin, 1992)

During the past month has *(name of youth)*:

1	Been sad or depressed	Never	Occasionally	Some Times	Often	Almost Always
2	Been in any physical fights	Never	Occasionally	Some Times	Often	Almost Always
3	Been arguing with family members	Never	Occasionally	Some Times	Often	Almost Always
4	Been anxious or nervous	Never	Occasionally	Some Times	Often	Almost Always
5	Been disliked by others	Never	Occasionally	Some Times	Often	Almost Always
6	Intentionally harmed him/her self or attempted suicide	Never	Occasionally	Some Times	Often	Almost Always
7	Been using alcohol and/or drugs	Never	Occasionally	Some Times	Often	Almost Always
8	Withdrawn from others and preferred being alone	Never	Occasionally	Some Times	Often	Almost Always
9	Hung out with others who get into trouble	Never	Occasionally	Some Times	Often	Almost Always

Appendix 7: Youth Positive Behaviour Scale

During the past month how well has your youth been (1 = Unable to, 10 = Very much able to):

Able to stay out of trouble
1 2 3 4 5 6 7 8 9 10

Able to stay at school/work
1 2 3 4 5 6 7 8 9 10

Able to stay at home
1 2 3 4 5 6 7 8 9 10

Able to get along with his/her peers
1 2 3 4 5 6 7 8 9 10

Able to function independently and responsibly
1 2 3 4 5 6 7 8 9 10

Able to get along with and contribute to your family
1 2 3 4 5 6 7 8 9 10

Able to communicate with you
1 2 3 4 5 6 7 8 9 10

Able to manage his/her anger
1 2 3 4 5 6 7 8 9 10

Appendix 8: Parent Well-being

Affectometer 2 (Kammann & Flett, 1983)

Over the last few weeks how often have you thought/experienced the following?
(1 = Not at all, 2 = Occasionally, 3 = Some of the time, 4 = Often, 5 = All the time)

1*	I feel like a failure	1	2	3	4	5
2*	Nothing seems very much fun anymore	1	2	3	4	5
3	I like myself	1	2	3	4	5
4	My future looks good	1	2	3	4	5
5	I have energy to spare	1	2	3	4	5
6	I can handle any problems that come up	1	2	3	4	5
7*	My life feels stuck in a rut	1	2	3	4	5
8*	I feel that there must be something wrong with me	1	2	3	4	5
9	Satisfied	1	2	3	4	5
10*	Hopeless	1	2	3	4	5

* Reverse scoring

Appendix 9: Parent Psychopathology

Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995)

Please read each statement and circle a number 0, 1, 2, 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

0	**Did not apply to me at all**
1	**Applied to me to some degree, or some of the time**
2	**Applied to me to considerable degree, or a good part of the time**
3	**Applied to me very much, or most of the time**

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do thing	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (e.g., in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt that I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Appendix 10: Parent Ability

Over the last week how able have you been to (1 = Not able to, 10 = Very much able to):

Monitor the behaviour and whereabouts of your young person
1 2 3 4 5 6 7 8 9 10

Get along as a family
1 2 3 4 5 6 7 8 9 10

Communicate with your young person
1 2 3 4 5 6 7 8 9 10

Appendix 11: Family Functioning

Family Adaptability and Cohesion Evaluation Scale II (FACE-II; Olson, Portner, & Bell, 1982)

(1 = Almost never, 2 = Once in a while, 3 = Sometimes, 4 = Frequently, 5 = Almost always)

1	Family members are supportive of each other during difficult times	1	2	3	4	5
2*	In our family, it is easy for everyone to express his/her opinion	1	2	3	4	5
3	It is easier to discuss problems with people outside the family than with other family members	1	2	3	4	5
4*	Each family members has input in major family decisions	1	2	3	4	5
5	Our family gathers together in the same room	1	2	3	4	5
6*	Children have a say in their discipline	1	2	3	4	5
7	Our family does things together	1	2	3	4	5
8*	Family members discuss problems and feel good about the solutions	1	2	3	4	5
9	In our family, everyone goes his/her own way	1	2	3	4	5
10*	We shift household responsibilities from person to person	1	2	3	4	5
11	Family members know each other's close friends	1	2	3	4	5
12*	Its hard to know what the rules are in our family	1	2	3	4	5
13	Family members consult other family members on their decisions	1	2	3	4	5
14*	Family members say what they want	1	2	3	4	5
15	We have difficulty thinking of things to do as a family	1	2	3	4	5
16*	In solving problems, the children's suggestions are followed	1	2	3	4	5
17	Family members feel very close to each other	1	2	3	4	5
18*	Discipline is fair in our family	1	2	3	4	5
19	Family members feel closer to people outside the family than to other family members	1	2	3	4	5
20*	Our family tries new ways of dealing with problems	1	2	3	4	5
21	Family members go along with what the family decides to do	1	2	3	4	5
22*	In our family, everyone shares responsibilities	1	2	3	4	5
23	Family members like to spend their free time with each other	1	2	3	4	5
24*	It is difficult to get a rule changed in our family	1	2	3	4	5
25	Family members avoid each other at home	1	2	3	4	5
26*	When problems arise, we compromise	1	2	3	4	5
27	We approve of each other's friends	1	2	3	4	5
28*	Family members are afraid to say what is on their minds	1	2	3	4	5
29	Family members pair up rather than do things as a total family	1	2	3	4	5
30	Family members share interests and hobbies with each other	1	2	3	4	5

* These items formed the adaptability subscale

Appendix 12: Service Satisfaction

Rate the following based on your experience over the last month:

1	How satisfied are you with the quality of the services you have received?	Very satisfied	Mostly satisfied	Indifferent or mildly satisfied	Quite dissatisfied
2	Did you get the kind of service you wanted?	No, definitely not	No, not really	Yes, generally	Yes, definitely
3	Have the services you have received helped you to deal more effectively with your problems?	Yes, they helped a great deal	Yes, they helped somewhat	No, they really didn't help	No, they seemed to make things worse
4	In an overall, general sense, how satisfied are you with the services that you have received?	Very satisfied	Mostly satisfied	Indifferent or mildly satisfied	Quite dissatisfied
5	How would you rate the quality of the services you have received?	Excellent	Good	Fair	Poor
6	If a friend were in need of similar help, would you recommend our program to him or her?	Definitely not	No I don't think so	Yes, I think so	Yes, definitely
7	To what extent has our program met your needs?	Almost all my needs have been met	Most of my needs have been met	Only a few of my needs have been met	None of my needs have been met
8	Were you seen as promptly as you felt necessary?	Yes, very promptly	Yes, promptly	No, there was some delay	No, it seemed to take for ever
9	How satisfied are you with the amount of help and support that you have received while trying to change?	Quite dissatisfied	Indifferent or mildly satisfied	Mostly satisfied	Very satisfied
10	Were all areas of concern to you focused on and targeted?	No, definitely not	No, not really	Yes, some	Yes, definitely
11	Has the service you have been provided with so far met your expectations and standards?	No, definitely not	No, not really	Yes, some	Yes, definitely
12	Are you satisfied with the competence of the therapist?	Very satisfied	Mostly satisfied	Indifferent or mildly satisfied	Quite dissatisfied

Appendix 13: Therapeutic Alliance

Working Alliance Inventory – Short Form (WAI-S; Tracey & Kokotovic, 1989)

(1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Sometimes, 5 = Often, 6 = Very often, 7 = Always)

1	*(Therapist Name)* and I agree about the things I will need to do in therapy to help improve my situation.	1	2	3	4	5	6	7
2	What I am doing in therapy gives me new ways of looking at my problem.	1	2	3	4	5	6	7
3	I believe _____ likes me.	1	2	3	4	5	6	7
4*	_____ does not understand what I am trying to accomplish in therapy.	1	2	3	4	5	6	7
5	_____ perceives accurately what my goals are.	1	2	3	4	5	6	7
6	I am confident in _____'s ability to help me.	1	2	3	4	5	6	7
7	I feel that _____ appreciates me.	1	2	3	4	5	6	7
8	We agree on what is important for me to work on.	1	2	3	4	5	6	7
9	_____ and I trust one another.	1	2	3	4	5	6	7
10*	_____ and I have different ideas on what my problems are.	1	2	3	4	5	6	7
11	We have established a good understanding of the kind of changes that would be good for me.	1	2	3	4	5	6	7
12	I believe the way we are working with my problem is correct.	1	2	3	4	5	6	7

* Reverse scoring

Appendix 14: Therapist Adherence

Therapist Adherence Measure (TAM; Henggeler & Borduin, 1992)

(1 = Not at all, 2 = A little, 3 = Sometimes, 4 = Quite a bit, 5 = Very much)

1	The sessions were lively and energetic	1	2	3	4	5
2	The therapist tried to understand how my family's problems all fit together.	1	2	3	4	5
3	My family and the therapist worked together effectively (well).	1	2	3	4	5
4	My family knew exactly which problems we were working on.	1	2	3	4	5
5	The therapist recommended that family members do certain things to solve our problems.	1	2	3	4	5
6	The therapist's recommendations required family members to work on our problems almost every day.	1	2	3	4	5
7	My family and the therapist had similar ideas about ways to solve problems.	1	2	3	4	5
8	The therapist tried to change some ways that family members interact with each other.	1	2	3	4	5
9	The therapist tried to change some ways that family members interact with people outside the family.	1	2	3	4	5
10	My family and the therapist were honest and straightforward with each other.	1	2	3	4	5
11	The therapist's recommendations should help the children to mature.	1	2	3	4	5
12	Family members and the therapist agreed upon the goals of the sessions.	1	2	3	4	5
13	My family talked with the therapist about how well we followed her/his recommendations from the previous session.	1	2	3	4	5
14	My family talked with the therapist about the success (or lack of success) of his/her recommendations from the previous session.	1	2	3	4	5
15	The therapy session included a lot of irrelevant small talk.	1	2	3	4	5
16	NOT much was accomplished (achieved) during the therapy sessions	1	2	3	4	5
17	Family members were engaged in power struggles with the therapist.	1	2	3	4	5
18	The therapist's recommendations required us to do almost all the work.	1	2	3	4	5
19	The therapy sessions were boring.	1	2	3	4	5
20	The family was NOT sure about the direction of treatment.	1	2	3	4	5
21	The therapist understood what is good about our family.	1	2	3	4	5
22	The therapist's recommendations made good use of our family's strengths.	1	2	3	4	5
23	My family accepted that part of the therapist's job is to help us change certain things about our family.	1	2	3	4	5
24	During the session, we talked about some experiences that occurred in previous sessions.	1	2	3	4	5
25	The therapist's recommendations should help family members to become more responsible.	1	2	3	4	5
26	There were awkward silences and pauses during the session.	1	2	3	4	5

Appendix 15: Supervisor Adherence

Supervisor Adherence Measure (SAM; Schoenwald, Henggeler, & Edwards, 1998)

(1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Very much)

1	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.	1	2	3	4	5
2	You could tell that the supervisor was in charge of the sessions.	1	2	3	4	5
3	Team members took a long time to describe the details of cases before the supervisor spoke.	1	2	3	4	5
4	The supervisor asked clinicians for evidence to support their hypotheses about the causes of problems targeted for change or of barriers to intervention success.	1	2	3	4	5
5	The supervisor asked clinicians how descriptions of this week's case developments pertained to identification of barriers to success.	1	2	3	4	5
6	When clinicians talked about events in the distant past, the supervisor recommended that current interactions within the family and between family members and others be examined first.	1	2	3	4	5
7	When clinicians reported on a variety of interventions tried during the week, the supervisor asked for clarification regarding which intermediary goals the interventions aimed to address.	1	2	3	4	5
8	The supervisor followed up on recommendations made in previous supervision sessions.	1	2	3	4	5
9	When interventions were not successful, discussion focused on identifying the barriers to success and actions the clinician should take to overcome them.	1	2	3	4	5
10	I have the skills to implement all of the recommendations made in supervision.	1	2	3	4	5
11	Interventions that were discussed targeted sequences of interaction between family members.	1	2	3	4	5
12	Clinicians received positive feedback during the sessions.	1	2	3	4	5
13	When interventions were not successful, the supervisor asked clinicians to describe the details of the intervention and steps clinicians took to assure implementation and monitoring of results.	1	2	3	4	5
14	The supervisor asked clinicians how descriptions and questions about case developments pertained to "fit" assessment.	1	2	3	4	5
15	It was easy for team members to acknowledge frustrations, mistakes, and failures.	1	2	3	4	5
16	When a clinician presented information about events that transpired during the week, the supervisor asked the clinician and team to clarify the relevance of the information to one or more steps of the analytical process.	1	2	3	4	5
17	Weekly case summaries were referred to during the discussion of cases.	1	2	3	4	5
18	Interventions that were discussed targeted sequences of interaction between family members and individuals at school, in the child's peer group, or in the neighbourhood.	1	2	3	4	5
19	When an intervention was only partially successful, the supervisor asked questions to determine whether the clinician had adequately and completely implemented the intervention.	1	2	3	4	5
20	We spent more time discussing cases in which progress was limited.	1	2	3	4	5
21	When an intervention was only partially successful, the supervisor asked questions to determine whether the clinician had provided participants with the understanding, skills, and practice needed to implement the intervention.	1	2	3	4	5

22	The supervisor referred to specific MST principles while discussing cases.	1	2	3	4	5
23	The supervisor made a note of case-specific recommendations.	1	2	3	4	5
24	When new areas were targeted for intervention, the supervisor encouraged the clinician to articulate new intermediary goals accordingly.	1	2	3	4	5
25	Outcomes were described in observable and measurable terms.	1	2	3	4	5
26	When clinicians reported plans to meet with teachers, neighbours, or officials from other agencies, the supervisor asked what it would take for a caregiver to hold the meeting.	1	2	3	4	5
27	When clinicians reported that things were going well in a case, the supervisor focused discussion on factors in the natural ecology that were sustaining progress.	1	2	3	4	5
28	When clinicians reported doing things for family members, the supervisor asked what it would take for family members to do these things for themselves.	1	2	3	4	5
29	When clinicians reported that they discussed a particular problem with a family, the supervisor asked what plans were put in place to address the problem this week.	1	2	3	4	5
30	When clinicians described their ideas about the causes of problems, "fit circles" were developed and discussed in session.	1	2	3	4	5
31	When clinicians talked about events in the distant past, the supervisor asked for evidence that these events are contributing to a current problem.	1	2	3	4	5
32	The supervisor had difficulty managing team discussion.	1	2	3	4	5
33	In the past two months, the supervisor and I have discussed the extent to which my case summaries and in-session presentations are consistent with the MST principles and analytic process.	1	2	3	4	5
34	In the past two months, the supervisor and I have set goals for development of my specific competencies in MST.	1	2	3	4	5
35	In the past two months, my supervisor has accompanied me to therapy sessions (i.e., field supervision) OR reviewed audiotapes of my therapy sessions.	1	2	3	4	5
36	In the past two months, the supervisor and I have discussed my strengths and needs with respect to adherence to the 9 MST principles.	1	2	3	4	5
37	In the past two months, I left supervision knowing how to carry out recommended actions.	1	2	3	4	5
38	How knowledgeable do you think your supervisor is in the theory of MST?	1	2	3	4	5
39	How skilled do you think your supervisor is in treatment modalities used in MST such as behaviour therapy?	1	2	3	4	5
40	How skilled do you think your supervisor is in implementing MST interventions?	1	2	3	4	5
41	How skilled do you think your supervisor is in the treatment modalities used in MST such as cognitive-behavioural therapy?	1	2	3	4	5
42	How often does team (group) supervision occur?	1	2	3	4	5
43	How often have you and your supervisor met to develop and monitor a plan to help you increase your knowledge and skill in MST?	1	2	3	4	5

Appendix 16: Therapist Allegiance

How much do you believe in your ability to carry out MST and facilitate positive change in your clients?
Not well at all ___ a little ___ some ___ quite well ___ very well ___

How confident are you that MST will achieve successful outcomes in New Zealand conditions?
Not confident ___ a little confident ___ quite confident ___ very confident ___

How true do you rate this statement: "MST is the treatment of choice (most likely treatment to produce positive outcomes) for my clients?"
Very true____ quite a bit true ___ indifferent ___ not really true ___ definitely not true ___

Appendix 17: Supervisor Allegiance

How strongly do you believe that MST works?
Not well at all ___ a little ___ some ___ quite well ___ very well ___

How much do you believe in your ability to carry out MST effectively?
Not at all ___ a little ___ some ___ quite a lot ___ very much ___

As a supervisor, how much do you believe in your ability to facilitate positive change in your supervisees?
Not at all ___ a little ___ some ___ quite a lot ___ very much ___

How confident are you that MST will achieve successful outcomes in New Zealand conditions?
Not confident ___ a little confident ___ quite confident ___ very confident ___

How true do you rate this statement: "MST is the treatment of choice (mostly likely treatment to produce positive outcomes) for my clients?"
Very true____ quite a bit true ___indifferent ___ not really true ___ definitely not true ___

Appendix 18: Therapist Accountability

How responsible do you think you are (as opposed to others e.g., clients, co workers, supervisor) for ensuring that you clients are engaged in therapy?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How responsible do you think you are for ensuring that you clients are achieving positive outcomes?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How responsible do you think you are for your team members cases (engagement and outcome)?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How much extra effort would you put in if your clients were not engaged in therapy or were not experiencing successful outcomes?
None ___ a little more ___ some what more ___ quite a bit more ___ a significant amount of extra effort/time ____

How much extra effort would you put in if it were your colleagues cases?
None ___ a little more ___ some what more ___ quite a bit more ___ a significant amount of extra effort/time ____

Do you personally do "what ever it takes" to achieve favourable outcomes for your clients?
Yes, definitely ___ yes, generally ___ sometimes ____ not really ____ no, at all _____

How much do you think being held accountable impacts positively on your performance as a therapist?
Significantly impacts ___ impacts quite a bit ____ impacts some what ___ impacts very little ____ does not impact positively ___

Appendix 19: Supervisor Accountability

How responsible do you think you are (as opposed to others e.g., clients, co workers, supervisor) for ensuring that your clients are engaged in therapy?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How responsible do you think you are for ensuring that your clients are achieving positive outcomes?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How responsible do you think you are for ensuring that your supervisees have the skills to carry MST therapy successfully?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How responsible do you think you are for ensuring that your supervisees are adhering to MST principles?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How responsible do you think you are for ensuring that your supervisees are engaging families in therapy?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How responsible do you think you are for ensuring that your supervisees are achieving positive outcomes?
Not at all responsible ___ slightly _____ somewhat ____ quite a bit ___ extremely responsible ___

How much extra effort would you put in if your clients where not engaged in therapy or were not experiencing successful outcomes?
None ___ a little more ___ some what more ___ quite a bit more ___ a significant amount of extra effort/time ____

How much extra effort would you put in if it were your supervisees cases?
None ___ a little more ___ some what more ___ quite a bit more ___ a significant amount of extra effort/time ____

Do you personally do "what ever it takes" to achieve favourable outcomes for your clients?
Yes, definitely ___ yes, generally ___ sometimes ____ not really ____ no, at all _____

How much do you think being held accountable impacts positively on your performance as a therapist?
Significantly impacts ___ impacts quite a bit ____ impacts some what ___ impacts very little ____ does not impact positively ___

Appendix 20: Supervisory Alliance 1

Supervisory Working Alliance Inventory - Trainee Version (SWAI-T; Efstation, Patton, & Kardash, 1990)

(1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Sometimes, 5 = Often, 6= Very often, 7 = Always)

1	I feel comfortable working with my supervisor	1	2	3	4	5	6	7
2	My supervisor welcomes my explanation about the client's behaviour	1	2	3	4	5	6	7
3	My supervisor makes the effort to understand me.	1	2	3	4	5	6	7
4	My supervisor encourages me to talk about my work with clients in ways that are comfortable for me.	1	2	3	4	5	6	7
5	My supervisor is tactful when commenting about my performance.	1	2	3	4	5	6	7
6	My supervisor encourages me to formulate my own interventions with the client.	1	2	3	4	5	6	7
7	My supervisor helps me talk freely in our sessions.	1	2	3	4	5	6	7
8	My supervisor stays in tune with me during supervision.	1	2	3	4	5	6	7
9	I understand client behaviour and treatment technique similar to the way my supervisor does.	1	2	3	4	5	6	7
10	I feel free to mention to my supervisor any troublesome feelings I might have about him/her.	1	2	3	4	5	6	7
11	My supervisor treats me like a colleague in our supervisory sessions.	1	2	3	4	5	6	7
12	In supervision, I am more curious than anxious when discussing my difficulties with clients.	1	2	3	4	5	6	7
13	In supervision, my supervisor places a high priority on our understanding the client's perspective.	1	2	3	4	5	6	7
14	My supervisor encourages me to take time to understand what the client is saying and doing.	1	2	3	4	5	6	7
15	My supervisor's style is to carefully and systematically consider the material I bring to supervision.	1	2	3	4	5	6	7
16	When correcting my errors with a client, my supervisor offers alternative ways of intervening with that client.	1	2	3	4	5	6	7
17	My supervisor helps me work within a specific treatment plan with my clients.	1	2	3	4	5	6	7
18	My supervisor helps me stay on track during our meetings.	1	2	3	4	5	6	7
19	I work with my supervisor on specific goals in the supervisory session.	1	2	3	4	5	6	7

Appendix 21: Supervisory Alliance 2

Working Alliance Inventory - Trainee (WAI-T; Bahrick, 1990)

(1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Sometimes, 5 = Often, 6= Very often, 7 = Always)

1	I feel comfortable working with my supervisor	1	2	3	4	5	6	7
2	*(Therapist Name)* and I agree about the things I will need to do in supervision.	1	2	3	4	5	6	7
3*	I am worried about the outcome of our supervision sessions.	1	2	3	4	5	6	7
4	What I am doing in supervision gives me a new way of looking at myself as a therapist.	1	2	3	4	5	6	7
5	_____ and I understand each other.	1	2	3	4	5	6	7
6	_____ perceives accurately what my goals are.	1	2	3	4	5	6	7
7*	I find what I am doing in supervision confusing.	1	2	3	4	5	6	7
8	I believe _____ likes me.	1	2	3	4	5	6	7
9*	I wish _____ and I could clarify the purpose of our sessions.	1	2	3	4	5	6	7
10*	I disagree with _____ about what I ought to get out of supervision.	1	2	3	4	5	6	7
11*	I believe the time _____ and I are spending together is not spent efficiently.	1	2	3	4	5	6	7
12*	_____ does not understand what I want to accomplish in supervision.	1	2	3	4	5	6	7
13	I am clear on what my responsibilities are in supervision.	1	2	3	4	5	6	7
14	The goals of these sessions are important to me.	1	2	3	4	5	6	7
15*	I find what _____ and I are doing in supervision is unrelated to my concerns.	1	2	3	4	5	6	7
16	I feel that what _____ and I are doing in supervision will help me to accomplish the changes that I want in order to be a more effective therapist.	1	2	3	4	5	6	7
17	I believe _____ is genuinely concerned for my welfare.	1	2	3	4	5	6	7
18	I am clear as to what _____ wants me to do in our supervision sessions.	1	2	3	4	5	6	7
19	_____ and I respect each other.	1	2	3	4	5	6	7
20*	I feel that _____ is not totally honest about his/her feelings toward me.	1	2	3	4	5	6	7
21	I am confident in _____'s ability to supervise me.	1	2	3	4	5	6	7
22	_____ and I are working towards mutually agreed upon goals.	1	2	3	4	5	6	7
23	I feel that _____ appreciates me.	1	2	3	4	5	6	7
24	We agree in what is important for me to work on.	1	2	3	4	5	6	7
25	As a result of our supervision sessions, I am clearer as to how I might improve my therapist skills.	1	2	3	4	5	6	7
26	_____ and I trust one another.	1	2	3	4	5	6	7
27*	_____ and I have different ideas on what I need to work on.	1	2	3	4	5	6	7
28	My relationship with _____ is very important to me.	1	2	3	4	5	6	7
29*	I have the feeling that it is important that I say or do the "right" things in supervision with _____.	1	2	3	4	5	6	7
30	_____ and I collaborate on setting goals for my	1	2	3	4	5	6	7

	supervision.							
31*	I am frustrated by the things we are doing in supervision.	1	2	3	4	5	6	7
32	We have established a good understanding of the kinds of things I need to work on.	1	2	3	4	5	6	7
33*	The things that _____ is asking me to do don't make sense.	1	2	3	4	5	6	7
34*	I don't know what to expect as a result of my supervision.	1	2	3	4	5	6	7
35	I believe the way we are working with my issues is correct.	1	2	3	4	5	6	7
36	I believe _____ cares about me even when I do things that he/she doesn't approve of.	1	2	3	4	5	6	7

* Reverse scoring

Appendix 22: Section 1 Results

Table A22.1

Means and Standard Deviations of Outcome and Quality Assurance Indicators for Treatment Completers, Treatment Dropouts, and Those Unable to be Contacted

		Treatment Completers ***M* (*SD*)**	**Treatment Dropouts** ***M* (*SD*)**	**Unable to be Contacted** ***M* (*SD*)**
Offending Frequency	T1	2.80 (3.16)	3.00 (1.69)	3.00 (1.73)
	T2	2.37 (3.16)	2.50 (1.51)	1.80 (2.17)
Offending Seriousness	T1	4.40 (3.24)	5.69 (1.86)	5.90 (2.13)
	T2	4.65 (3.67)	6.39 (1.41)	3.80 (3.56)
Days in OHP	T1	12.93 (28.92)	17.75 (50.20)	2.80 (6.26)
	T2	4.66 (13.94)	0.00 (0.00)	2.80 (6.26)
School Attendance	T1	50.54 (33.64)	37.12 (25.36)	57.72 (42.74)
	T2	54.94 (34.91)	42.00 (31.94)	38.83 (34.99)
Negative Behaviour	T1	21.04 (6.09)	20.25 (4.56)	19.20 (1.92)
Positive Behaviour	T1	44.29 (13.09)	41.00 (15.46)	39.80 (11.50)
Well-being	T1	-0.71 (8.32)	2.50 (9.18)	-3.20 (6.46)
Psychopathology	T1	20.40 (12.45)	14.38 (6.65)	23.60 (13.01)
Parent Ability	T1	18.03 (6.50)	17.00 (8.16)	13.40 (7.20)
Family Cohesion	T1	52.15 (10.24)	53.38 (7.17)	50.80 (6.69)
Family Adaptability	T1	44.19 (8.13)	44.50 (8.02)	42.60 (7.44)
Satisfaction	T1	39.52 (4.16)	36.88 (4.52)	38.20 (2.49)
Therapeutic Alliance	T1	77.14 (7.93)	76.38 (4.57)	76.20 (6.87)
Therapist Adherence	T1	104.69 (13.52)	97.25 (14.93)	106.20 (10.57)

Table A22.2

Means and Standard Deviations of Outcome and Quality Assurance Indicators for Youth Living at Home, Not Living at Home, and Those Unable to be Located at T3

		At Home at T3 *M* (*SD*)	**Not Living with Family at T3** *M* (*SD*)	**Unable to Locate at T3** *M* (*SD*)
Offending Frequency	T1	2.64 (3.00)	4.20 (4.11)	1.25 (1.82)
	T2	1.67 (1.98)	5.33 (4.89)	1.08 (1.73)
	T3	1.21 (1.95)	1.67 (2.64)	0.33 (1.00)
	T4	1.05 (1.80)	1.42 (2.31)	0.13 (0.35)
Offending Seriousness	T1	4.33 (3.09)	5.23 (3.28)	2.70 (3.47)
	T2	4.21 (3.51)	6.53 (3.06)	3.44 (4.27)
	T3	2.94 (3.53)	3.39 (3.63)	0.52 (1.56)
	T4	2.84 (3.52)	3.17 (3.94)	1.00 (2.83)
Days in OHP	T1	9.33 (27.55)	29.33 (39.60)	5.58 (10.00)
	T2	3.83 (11.75)	9.53 (22.95)	3.00 (6.37)
	T3	2.24 (5.78)	46.14 (64.19)	0.67 (1.41)
	T4	8.65 (31.27)	78.71 (86.82)	2.63 (5.21)
School Attendance	T1	54.79 (32.43)	31.711 (29.54)	49.08 (37.83)
	T2	61.16 (30.20)	26.39 (32.48)	56.73 (40.00)
	T3	58.25 (38.90)	30.17 (33.87)	62.93 (40.13)
	T4	54.50 (38.14)	10.92 (20.42)	54.70 (39.84)
Negative Behaviour	T1	20.60 (6.19)	23.93 (5.18)	18.58 (5.28)
	T2	16.41 (5.22)	20.73 (7.74)	14.75 (4.18)
Positive Behaviour	T1	45.38 (14.06)	38.40 (11.70)	46.83 (10.54)
	T2	57.21 (15.45)	41.73 (14.59)	65.42 (10.01)
Well-being	T1	-0.6667 (8.19)	-2.20 (9.56)	1.00 (7.77)
	T2	6.38 (7.24)	-2.13 (11.65)	8.00 (7.72)
Psychopathology	T1	20.24 (12.29)	24.00 (16.14)	18.00 (8.80)
	T2	14.38 (11.03)	22.20 (16.98)	10.67 (5.84)
Parent Ability	T1	17.95 (6.38)	16.20 (7.16)	19.83 (6.63)
	T2	22.64 (5.79)	17.33 (7.44)	22.50 (6.57)
Family Cohesion	T1	51.69 (10.20)	51.80 (10.44)	54.25 (10.78)
	T2	56.69 (11.39)	50.40 (9.37)	59.58 (8.02)
Family Adaptability	T1	43.67 (7.94)	43.73 (9.61)	45.58 (7.69)
	T2	47.57 (7.36)	42.40 (7.60)	49.58 (6.17)
Satisfaction	T1	39.43 (4.26)	40.40 (3.76)	40.58 (1.68)
	T2	47.91 (5.37)	46.20 (6.10)	49.83 (1.90)
Therapeutic Alliance	T1	77.19 (6.67)	77.47 (5.69)	81.00 (2.80)
	T2	77.41 (8.00)	75.60 (6.75)	82.08 (1.78)
Therapist Adherence	T1	104.05 (13.23)	107.20 (11.19)	111.08 (9.15)
	T2	109.74 (12.10)	106.53 (12.55)	111.00 (7.68)

Table A22.3

Crosstabulation of the Number of Youth Who Offended and did not Offend at T1, T2, T3 and T4

		T2 Offending Behaviour			**T3 Offending Behaviour**			**T4 Offending Behaviour**		
		No Offending N (%)	Offended N (%)	Row Totals	No Offending N (%)	Offended N (%)	Row Totals	No Offending N (%)	Offended N (%)	Row Totals
T1 Offending Behaviour	No Offending	10 (45.5)	12 (54.5)	**22**	15 (78.9)	4 (21.1)	**19**	12 (70.6)	5 (29.4)	**17**
	Offended	16 (31.4)	35 (68.6)	**51**	25 (53.2)	22 (42.8)	**47**	28 (60.9)	18 (39.1)	**46**
Column Totals		**26**	**47**	**73**	**40**	**26**	**66**	**40**	**23**	**63**
T2 Offending Behaviour	No Offending				21 (80.8)	5 (19.2)	**26**	21 (80.8)	5 (19.2)	**26**
	Offended				19 (47.5)	21 (52.5)	**40**	19 (51.4)	18 (48.6)	**37**
Column Totals					**40**	**26**	**66**	**40**	**23**	**63**
T3 Offending Behaviour	No Offending							31 (77.5)	6 (16.2)	**37**
	Offended							9 (34.6)	17 (65.4)	**26**
Column Totals								**40**	**23**	**63**

Table A22.4

Crosstabulation of the Number and Percent of Youth Who Had, and Did Not Have, an OHP at T1, T2, T3, and T4

		T2 Days in OHP			**T3 Days in OHP**			**T4 Days in OHP**		
		No OHP *N* (%)	OHP *N* (%)	Row Totals	No OHP *N* (%)	OHP *N* (%)	Row Totals	No OHP *N* (%)	OHP *N* (%)	Row Totals
T1 Days in OHP	No OHP	45 (88.2)	6 (11.8)	**51**	38 (80.9)	9 (19.1)	**47**	32 (72.7)	12 (27.3)	**44**
	OHP	14 (63.6)	8 (36.4)	**22**	13 (61.9)	8 (38.1)	**21**	15 (71.4)	6 (28.6)	**21**
Column Totals		**59**	**14**	**73**	**51**	**17**	**68**	**47**	**18**	**65**
T2 Days in OHP	No OHP				45 (81.8)	10 (14.7)	**55**	40 (76.9)	12 (23.1)	**52**
	OHP				6 (46.2)	7 (53.8)	**13**	7 (53.8)	6 (46.2)	**13**
Column Totals					**51**	**17**	**68**	**47**	**18**	**65**
T3 Days in OHP	No OHP							44 (91.7)	4 (8.3)	**48**
	OHP							3 (17.6)	14 (82.4)	**17**
Column Totals								**47**	**18**	**65**

Table A22.5

Correlations between Ultimate Outcome Indicators

	Offending Frequency				Offending Seriousness				Days in OHP				School Attendance		
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3
Offending Frequency															
T1	-														
T2	.505***	-													
T3	.420***	.216	-												
T4	.359**	.327*	.435***	-											
Offending Seriousness															
T1	.581***	.216	.147	.150	-										
T2	.258	.537**	.354**	.305*	.210	-									
T3	.310*	.250	.694***	.467***	.267*	.410**	-								
T4	.233	.152	.314*	.669***	.098	.200	.440***	-							
Days in OHP															
T1	.515***	.199	.356**	.389**	.374**	.149	.358**	.243	-						
T2	.307*	.410**	.158	.251	.219	.210	.304*	.150	.474***	-					
T3	.539***	.720***	.244	.298*	.260	.250	.151	.130	.414***	.465***	-				
T4	.490***	.558***	.478***	.282*	.194	.312*	.258	.155	.373**	.476***	.804***	-			
School Attendance															
T1	-.282*	-.149	-.115	-.157	-.161	-.028	-.068	-.093	-.241	.066	-.134	-.144	-		
T2	-.403**	-.253	-.065	-.206	-.195	-.129	-.083	-.118	-.296*	-.017	-.201	-.183	.696***	-	
T3	-.356**	-.325*	-.182	-.112	-.155	-.262	-.078	.054	-.117	.051	-.212	-.121	.558***	.581***	-
T4	-.177	-.261	-.150	-.291*	.033	-.182	-.041	-.128	-.256	-.124	-.344**	-.281*	.376**	.353**	.552***

p <.05*, p <.01**, p <.001***

Table A22.6

Correlations between Instrumental Outcome Indicators

		Negative Behaviour				Positive Behaviour				Well-being			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
Negative Behaviour													
	T1	-											
	T2	.615***	-										
	T3	.582***	.549***	-									
	T4	.313	.378*	.392*	-								
Positive Behaviour													
	T1	-.61***	-.400***	-.338*	-.064	-							
	T2	-.580***	-.761***	-.371*	-.229	.435***	-						
	T3	-.549***	-.556***	-.788***	-.340	.429**	.542***	-					
	T4	-.194	-.272	-.217	-.757***	-.194	.221	.232	-				
Well-being													
	T1	-.474***	-.283*	-.262	-.042	.558***	.336**	.298	-.037	-			
	T2	-.404***	-.514***	-.372*	-.370*	.286*	.604***	.303	.271	.450***	-		
	T3	-.347*	-.273	-.544***	-.070	.171	.207	.503***	.165	.457**	.453**	-	
	T4	.048	-.105	-.020	-.597***	-.361*	-.068	-.076	.547**	.097	.329	.131	-
Psychopathology													
	T1	.423****	.329**	.195	.307	-.524***	-.282*	-.121	-.172	-.826***	-.503***	-.354*	-.319
	T2	.392***	.448***	.294	.224	-.339**	-.439***	-.084	-.014	-.389***	-.716***	-.312*	-.122
	T3	.400**	.327*	.471**	.238	-.183	-.189	-.302	-.081	-.360*	-.441**	-.647***	-.330
	T4	-.002	.125	.132	.546**	.223	.071	.011	-.480**	-.151	-.365*	-.213	-.866***
Parent Ability													
	T1	-.594***	-.369***	-.371*	-.069	.695***	.403***	.407**	.011	.624***	.412***	.365*	-.259
	T2	-.508***	-.689***	-.432**	-.274	.382***	.774***	.580***	.285	.335**	.565***	.378*	-.059
	T3	-.560***	-.501***	-.759***	-.274	.422**	.490***	.781***	.312	.358*	.248	.557***	-.174
	T4	.014	-.013	.011	-.669***	-.128	-.070	.035	.788***	-.175	.034	-.115	.463**
Family Cohesion													
	T1	-.431***	-.265*	-.332*	-.339	.487***	.348**	.385*	.353	.452***	.303**	.402**	.226
	T2	-.500***	-.561***	-.440**	-.372*	.415***	.506***	.391**	.395*	.368***	.530***	.478**	.198
	T3	-.461**	-.419**	-.533***	-.324	.306*	.296	.431**	.329	.311*	.291	.605***	.173
	T4	-.193	-.224	-.153	-.590***	.015	.046	.003	.739***	-.082	.125	.173	.416*
Family Adaptability													
	T1	-.178	-.131	-.186	-.131	.409***	.249*	.216	.186	.444***	.275*	.353*	-.033
	T2	-.356**	-.497***	-.366*	-.176	.351**	.507***	.337*	.305	.238*	.460***	.339*	-.055
	T3	-.337*	-.316*	-.398*	-.124	.254	.279	.275	.040	.279	.194	.464**	-.032
	T4	-.111	-.234	-.075	-.404*	-.130	.190	.121	.650	-.031	.152	.316	.380*

p <.05*, p <.01**, p <.001***

Table A22.6 (Continued)

Correlations between Instrumental Outcome Indicators

	Psychopathology				Parent Ability				Family Cohesion				Family Adaptability		
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3
Negative Behaviour															
T1															
T2															
T3															
T4															
Positive Behaviour															
T1															
T2															
T3															
T4															
Well-being															
T1															
T2															
T3															
T4															
Psycho- pathology															
T1	-														
T2	.594***	-													
T3	.544***	.610***	-												
T4	.482**	.290	.544**	-											
Parent Ability															
T1	-.578***	-.325**	-.289	.164	-										
T2	-.278*	-.378***	-.305*	.047	.560***	-									
T3	-.213	-.159	-.376*	.147	.520***	.624***	-								
T4	-.083	.177	.034	-.422*	-.036	.039	.126								
Family Cohesion															
T1	-.390***	-.193	-.287	-.136	.508***	.434***	.409**	.062	-						
T2	-.329**	-.375***	-.380*	-.145	.432***	.638***	.461**	.075	.755***	-					
T3	-.287	-.230	-.463**	-.165	.376*	.437**	.638***	.058	.627***	.700***	-				
T4	-.065	.053	-.174	-.353	.073	.171	.242	.657***	.498**	.525**	.568***				
Family Adaptability															
T1	-.378***	-.192	-.244	-.024	.413***	.308**	.230	-.083	.589***	.443***	.440**	.237	-		
T2	-.152	-.311**	-.176	.059	.342**	.582***	.333*	.333*	.459***	.673***	.463**	.313	.520***	-	
T3	-.169	-.075	-.285	.22	.336*	.375*	.366*	-.179	.453**	.516***	.626***	.232	.491***	.615***	-
T4	-.082	.104	-.196	-.285	-.051	.251	.215	.438*	.489**	.415*	.407*	.700***	.447*	.568***	.411*

p <.05*, p <.01**, p <.001***

Table A22.7

Correlations between Ultimate and Instrumental Outcome Indicators

	Offending Frequency				Offending Seriousness				Days in OHP				School Attendance			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
Negative Behaviour																
T1	.242*	.510***	.197	.159	.095	.417***	.302*	.191	-.065	.118	.230	.144	-.162	-.196	-.336**	-.157
T2	.361**	.551***	.202	.187	.062	.220	.178	.095	.088	.262*	.228	.221	-.060	-.210	-.276*	-.328*
T3	.540***	.515***	.614***	.485**	.107	.468**	.320*	.420**	-.120	-.097	.276	.069	-.029	-.358*	-.381*	-.201
T4	.125	.349	.084	.510*	.350	.272	.017	.430*	.051	.030	.114	-.060	-.099	-.158	-.122	-.344
Positive Behaviour																
T1	-.226	-.308**	-.161	-.118	-.148	-.239*	-.177	-.207	-.032	-.024	-.318**	-.199	.321**	.325**	.351**	.163
T2	-.246*	-.436***	-.131	-.099	-.051	-.229	-.143	-.037	-.037	-.100	-.196	-.128	.123	.330**	.379**	.336**
T3	-.344*	-.376*	-.550***	-.373*	-.029	-.347*	-.262	-.213	-.004	-.011	-.221	-.069	.112	.349*	.542***	.311
T4	-.100	-.270	.002	-.590**	-.217	-.242	-.013	-.424*	.086	-.140	-.146	.244	.021	-.032	.017	.444*
Well-being																
T1	-.199	-.148	-.053	.004	-.189	-.072	-.163	-.048	-.039	.049	-.199	-.104	.176	.280*	.254*	.015
T2	-.151	-.352**	-.103	-.124	-.019	-.218	-.130	-.139	.047	-.003	-.060	-.075	.132	.320**	.423***	.392**
T3	-.360*	-.180	-.453**	-.312	-.017	-.153	-.390*	-.195	.107	.194	-.137	-.150	-.048	.270	.121	.074
T4	.056	-.020	.091	-.403*	-.209	-.117	.072	-.208	.083	.190	.103	.241	.021	.042	.115	.316
Psychopathology																
T1	.301**	.315**	.039	.097	.219	.129	.181	.174	.094	.051	.206	.155	-.170	-.322**	-.247*	-.093
T2	.130	.528***	.118	.233	.008	.223	.272*	.272*	-.139	.060	.192	.183	-.038	-.211	-.188	-.101
T3	.228	.356*	.311*	.337*	-.052	.400**	.393**	.321*	-.146	-.147	.060	-.030	.183	-.088	-.087	-.005
T4	.048	.023	-.029	.354	.166	.243	.068	.220	-.044	-.109	-.121	-.186	.054	-.113	-.067	-.269
Parent Ability																
T1	-.332**	-.300**	-.138	-.108	-.284*	-.154	-.178	-.128	-.116	-.037	-.129	-.058	.191	.276*	.300*	-.004
T2	-.263*	-.414***	-.114	-.164	-.140	-.205	-.141	.028	-.147	-.204	-.145	-.082	.213	.309**	.352***	.322*
T3	-.414**	-.461**	-.489***	-.449**	-.072	-.437**	-.324*	-.401**	.089	.004	-.243	-.025	.069	.298	.287	.194
T4	.003	-.183	.151	-.519**	-.003	-.170	.188	-.327	.095	-.005	-.085	.305	.087	-.040	-.007	.383*
Family Cohesion																
T1	-.138	-.096	.000	-.176	-.172	-.174	-.156	-.099	-.034	.175	.115	.244*	.333**	.319**	.296*	-.014
T2	-.264*	-.328**	-.093	-.356**	-.145	-.326**	-.265*	-.163	-.070	-.057	-.092	.012	.265*	.302*	.286*	.249
T3	-.350*	-.344*	-.287	-.400*	-.131	-.235	-.211	-.265	.219	.047	-.140	.065	.282	.351*	.083	.057
T4	-.094	-.218	-.060	-.563***	-.138	-.153	-.093	-.281	.153	-.053	-.051	.290	.267	.060	-.109	.313
Family Adaptability																
T1	-.005	.117	-.029	.042	-.028	.105	-.018	.070	.021	.140	.068	.194	.122	.146	.080	.098
T2	-.175	-.321**	-.081	-.210	.050	-.148	-.110	.033	-.072	-.119	-.269*	-.107	.033	.116	.116	.270*
T3	-.205	-.035	-.088	-.135	.083	.043	.059	-.021	.173	.164	-.124	.121	.132	.170	.088	.267
T4	.046	-.059	.122	-.322	.098	-.058	.127	.016	.199	-.050	.115	.429*	-.030	-.201	-.096	.379*

p <.05*, p <.01**, p <.001***

Appendix 23: Correlation Analyses

Table A23.1

Correlations between Satisfaction, Therapeutic Alliance, Adherence, Allegiance, Accountability, and Supervisory Alliance

		Satisfaction		**Therapeutic Alliance**		**Therapist Adherence**		**Supervisor Adherence**	**Therapist Allegiance**	**Supervisor Allegiance**	**Therapist Accountability**	**Supervisor Accountability**
		T1	T2	T1	T2	T1	T2					
Satisfaction	T1	**-**										
	T2	.283*	-									
Alliance	T1	.658 ***	.158	-								
	T2	.337**	.720***	.304**	-							
Therapist Adherence	T1	.585***	.077	.560***	.233*	-						
	T2	.384***	.623***	.287*	.678***	.389***	-					
Supervisor Adherence		-.259	-.146	-.122	-.199	-.365**	-.229	-				
Therapist Allegiance		-.015	.104	-.052	.037	-.175	.160	.408**	**-**			
Supervisor Allegiance		-.138	-.085	-.180	-.180	-.334**	-.254*	.452**	.075	**-**		
Therapist Accountability		.274*	.280*	.004	.190	.028	.249	-.051	.546***	.272	**-**	
Supervisor Accountability		-.100	-.064	-.219	-.109	-.235	-.095	-.135	.246	.690***	.575***	**-**
Supervisory Alliance		-.326*	-.114	-.154	-.155	-.445***	-.271*	.820***	.210	.436**	-.286*	-.108

p <.05*, p <.01**, p <.001***

Table A23.2

Partial Correlations between Quality Assurance Indicators and Ultimate and Instrumental Outcomes While Controlling for T1 Outcome

		Satisfaction		**Alliance**		**Therapist Adherence**	
		T1	T2	T1	T2	T1	T2
Offending Frequency	T2	.058		.023	-.162	.093	-.039
	T3	.133	.042	.098	.050	-.052	.186
	T4	.102	-.233	.165	-.031	.105	-.057
Offending Seriousness	T2	-.095	-.229	.009	-.174	.050	.021
	T3	.211	.047	.233	.073	.005	.206
	T4	.175	-.043	.161	.019	.106	.097
Days in OHP	T2	.014	-.224	.030	-.063	-.191	-.132
	T3	.147	-.114	.080	.037	.151	.128
	T4	.194	-.004	.081	.119	.080	
School Attendance	T2	-.111		-.105	.144	-.131	.141
	T3	.153		.003	.134	.172	.124
	T4	.047		.024	.220	.188	.236
Negative Behaviour	T2	-.048		-.135		-.099	
	T3	.054	-.252	.261	-.133	.106	-.117
	T4	-.148	-.362	-.162	-.140	.021	-.354
Positive Behaviour	T2	.019		.058		.112	
	T3	.184		-.093		.176	
	T4	.099		.181	.322	.078	
Well-being	T2	-.152		-.099		-.126	
	T3	-.277	.194	-.195	.045	-.204	.089
	T4	.043	.075	.028	.027	-.210	.131
Psychopathology	T2	.101	-.189	.119	-.121	.080	-.114
	T3	-.152	-.244	.065	-.087	-.045	-.133
	T4	-.184	-.063	-.045	-.036	.072	-.141
Parent Ability	T2	.037		.037		.079	
	T3	.049		-.004	.268	.166	.294
	T4	.265		.241	.205	.175	.
Family Cohesion	T2	-.076		-.118		-.141	
	T3	-.059		-.165	.148	-.238	.178
	T4	.121		.113	.244	.028	
Family Adaptability	T2	.016		.071		-.049	
	T3	.088	.109	.142	-.006	-.223	.027
	T4	.118		.396		.029	

(correlations not listed here are significant and are reported in Chapter Nine, Table 1.9)

Table A23.3

Correlations between Satisfaction, Alliance, Adherence, Allegiance, Accountability, and Supervisory Alliance with Ultimate Outcomes

	Service Satisfaction		**Therapeutic Alliance**		**Therapist Adherence**		**Supervisor Adherence**	**Therapist Allegiance**	**Supervisor Allegiance**	**Therapist Accountability**	**Supervisor Accountability**	**Supervisory Alliance**
	T1	T2	T1	T2	T1	T2						
Offending Frequency												
T1	.177	-.109	-.036	.003	.016	-.168	.149	.022	-.205	.111	-.219	.055
T2	.058	-.319**	.023	-.162	.093	.017	.081	.147	-.096	-.039	-.067	-.034
T3	.133	.042	.098	.050	-.052	-.255	-.260	-.177	.075	.186	-.036	-.073
T4	.102	-.233	.165	-.031	.105	-.017	-.187	.051	.025	-.057	-.160	-.201
Offending Seriousness												
T1	.118	.030	-.047	.176	.061	-.207	.159	-.078	-.262	.138	-.357**	.111
T2	-.084	-.226	.005	-.155	.055	.031	-.112	.127	.009	.033	-.211	-.133
T3	.235	.054	.210	.119	.022	-.223	-.093	-.099	-.113	.235	-.181	-.012
T4	.180	-.042	.158	.029	.110	-.080	-.140	-.010	-.066	.104	-.144	-.018
Days in OHP												
T1	.218	.090	.080	.042	-.015	-.066	.090	-.119	-.062	.053	.013	.019
T2	.120	-.149	.066	-.034	-.173	.033	-.004	-.071	.111	-.088	.091	-.099
T3	.181	-.095	.093	.044	.146	.124	.122	.155	.038	.135	.024	.113
T4	.232	.016	.096	.125	.075	-.040	-.011	.014	.102	.257*	.039	.073
School Attendance												
T1	-.121	-.027	-.027	.010	-.232	.202	-.097	-.024	.303*	-.091	.204	-.035
T2	-.163	.136	-.093	.109	-.254*	.262*	-.088	.070	.244	.035	.142	-.059
T3	.056	.200	-.013	.116	.006	.265*	-.058	.107	.159	.050	.098	-.159
T4	-.002	.242	.012	.208	.082	.070	.077	-.016	-.002	.184	-.026	-.052

p <.05*, *p* <.01**, *p* <.001***

Table A23.4

Correlations between Satisfaction, Alliance, Adherence, Allegiance, Accountability, and Supervisory Alliance with Instrumental Outcomes

		Service Satisfaction		Therapeutic Alliance		Therapist Adherence		Supervisor Adherence	Therapist Allegiance	Supervisor Allegiance	Therapist Accountability	Supervisor Accountability	Supervisory Alliance
		T1	T2	T1	T2	T1	T2						
Negative Behaviour													
	T1	-.244*	-.339**	-.275*	-.228	-.162	-.106	.047	.187	-.014	.036	.208	.038
	T2	-.187	-.492***	-.271*	-.491***	-.177	-.344**	.119	.042	.018	.006	.160	.042
	T3	-.100	-.390*	.045	-.238	-.009	-.156	-.072	-.029	-.198	-.238	-.030	.140
	T4	-.212	-.430*	-.234	-.201	-.031	-.367*	.081	.093	-.054	-.310	-.010	.231
Positive Behaviour													
	T1	.220	.265*	.281*	.202	.089	.034	.044	-.220	.023	-.075	-.241	.067
	T2	.112	.448***	.172	.463***	.139	.361**	-.154	-.143	-.028	-.019	-.156	-.061
	T3	.256	.485***	.040	.365*	.196	.294	-.240	-.122	.071	.235	-.074	-.368
	T4	.096	.486**	.173	.315	.078	.434*	-.268	-.130	-.258	.173	-.181	-.342
Well-being													
	T1	.098	-.018	.226	.016	.051	-.046	.086	-.284*	.038	-.286*	-.179	.070
	T2	-.091	.332**	.015	.299**	-.089	.288*	-.004	-.114	.217	-.079	.115	.122
	T3	-.200	.164	-.066	.048	-.158	.058	-.111	-.264	.145	.026	-.046	-.168
	T4	.052	.073	.049	.029	-.204	.126	.044	-.061	.031	.036	.123	-.002
Psychopathology													
	T1	.009	-.052	-.168	-.062	.061	.107	-.084	.313*	-.169	.353**	.057	-.166
	T2	.087	-.182	-.005	-.134	.101	-.027	.019	.129	-.129	.170	-.048	-.129
	T3	-.122	-.232	-.037	-.107	-.005	-.053	.226	.255	-.094	-.097	-.057	.241
	T4	-.157	-.080	-.120	-.062	.092	-.072	.026	.373	-.106	.276	-.084	-.140
Parent Ability													
	T1	.175	.286*	.162	.183	.062	.090	.122	-.216	.173	-.050	-.085	.126
	T2	.128	.504***	.121	.395***	.100	.443***	-.081	.005	-.005	.027	-.108	-.002
	T3	.133	.501***	.080	.320*	.173	.297	-.101	.027	-.114	.261	-.239	-.355
	T4	.254	.425*	.232	.195	.173	.434*	-.162	.085	-.212	.199	-.223	-.287
Family Cohesion													
	T1	.163	.190	.253*	.179	-.059	.162	.266	.050	.142	.015	-.101	.214
	T2	.074	.415***	.116	.305**	-.137	.315**	.226	.164	.171	.133	-.037	.172
	T3	.057	.363*	.034	.226	-.222	.238	.123	.058	.152	.325	-.080	-.091
	T4	.184	.463**	.221	.297	-.006	.466**	-.009	.232	-.127	.551**	-.122	-.238
Family Adaptability													
	T1	.132	.110	.217	.200	.156	.187	.086	-.163	.074	-.099	-.160	.154
	T2	.083	.458***	.172	.347**	.040	.373***	-.001	.050	-.068	.104	-.107	.040
	T3	.141	.149	.228	.093	-.116	.114	.216	-.062	.296	.149	-.012	.131
	T4	.164	.464**	.443*	.484**	.095	.446*	-.331	.108	-.249	.402	-.046	-.429

p <.05*, *p* <.01**, *p* <.001***

Appendix 24: Section 3 Results

All step 1 results from the hierarchical multiple regressions and all nonsignificant findings for Chapter Ten are presented in Appendix 24.

Offending Frequency

T1 offending frequency significantly predicted T2 offending frequency, explaining 20% (19% adjusted R^2, p <.001) of the variance.

T1 offending frequency did not significantly predict T3 or T4 offending frequency.

Table A24.1

Hierarchical Multiple Regression of T2, T3, and T4 Offending Frequency, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Offending Frequency (n = 52)			T3 Offending Frequency (n = 46)			T4 Offending Frequency (n = 45)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Offending Frequency	.450***	.471***	.470***	.205	.199	.164	.199	.181	.171
T1 Therapist Adherence		.137	.134		-.084	-.143		.083	.067
Supervisor Adherence		.087	.083		-.023	-.105		-.090	-.112
T1 Therapist Adherence X Supervisor Adherence			.009			.202			.053
R	.450	.469	.469	.205	.220	.287	.199	.244	.249
Total R^2	.203	.220	.220	.042	.048	.082	.040	.060	.062
Adjusted R^2	.187	.172	.155	.021	-.018	-.005	.018	-.008	-.030
R^2 change	.203 ***	.017	.000	.042	.006	.034	.040	.020	.002
F	12.954***	4.600**	3.381*	1.981	.727	.943	1.815	.888	.677
T1 Offending Frequency	.450***	.460***	.460***	.205	.217	.216	.199	.213	.212
T2 Therapist Adherence		-.073	-.074		.171	.163		-.268	-.296
Supervisor Adherence		-.040	-.040		.170	.167		.024	.013
T2 Therapist Adherence X Supervisor Adherence			.003			.031			.117
R	.450	.468	.468	.205	.290	.291	.199	.333	.352
Total R^2	.203	.219	.219	.042	.084	.085	.040	.111	.124
Adjusted R^2	.187	.171	.153	.021	.019	-.004	.018	.046	.036
R^2 change	.203 ***	.006	.000	.042	.045	.001	.040	.075	.013
F	12.954***	4.499**	3.304*	1.981	1.284	.952	1.815	1.707	1.415

p <.05*, p <.01**, p <.001***

Offending Seriousness

T1 offending seriousness did not significantly predict T2, T3, or T4 offending seriousness.

Table A24.2

Hierarchical Multiple Regression of T2, T3, and T4 Offending Seriousness, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Offending Seriousness (*n* = 51)			T3 Offending Seriousness (*n* = 45)			T4 Offending Seriousness (*n* = 44)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Offending Seriousness	.018	-.062	-.048	.207	.167	.134	-.007	-.059	-.067
T1 Therapist Adherence		-.130	-.106		-.076	-.130		.069	.056
Supervisor Adherence		-.244	-.183		-.124	-.263		-.123	-.156
T1 Therapist Adherence X Supervisor Adherence			-.118			.269			.064
R	.018	.223	.246	.207	.237	.337	.007	.151	.161
Total R^2	.000	.050	.061	.043	.056	.113	.000	.023	.026
Adjusted R^2	-.020	-.010	-.019	.021	-.011	.027	-.023	-.049	-.071
R^2 change	.000	.049	.011	.043	.013	.057	.000	.023	.003
F	.017	.834	.757	1.978	.837	1.312	.002	.318	.267
T1 Offending Seriousness	.033	.009	-.002	.186	.143	.156	-.033	-.044	-.025
T2 Therapist Adherence		.133	.163		.178	.142		-.014	-.070
Supervisor Adherence		.018	.027		-.023	-.034		-.060	-.076
T2 Therapist Adherence X Supervisor Adherence			-.121			.144			.219
R	.033	.132	.177	.186	.259	.294	.033	.066	.222
Total R^2	.001	.017	.031	.035	.067	.086	.001	.004	.049
Adjusted R^2	-.019	-.044	-.051	.013	.000	-.003	-.022	-.068	-.046
R^2 change	.001	.016	.014	.035	.032	.019	.001	.003	.045
F	.053	.284	.378	1.583	1.004	.969	.048	.060	.517

p <.05*, p <.01**, p <.001***

Days in OHP

T1 days in OHP significantly predicted T2 days in OHP, explaining 36% (35% adjusted R^2, p <.0005) of the variance. T1 days in OHP did not significantly predict T3 or T4 days in OHP.

Table A24.3

Hierarchical Multiple Regression of T2, T3, and T4 Days in OHP, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Days in OHP		(n = 50)	T3 Days in OHP (n = 46)			T4 Days in OHP		(n = 45)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Days in OHP	.602***	.611***	.622***	.181	.213	.202	.259	.289	.272
T1 Therapist Adherence		-.020	-.001		.251	.233		.158	.129
Supervisor Adherence		.056	.104		.157	.113		.157	.087
T1 Therapist Adherence X Supervisor Adherence			-.098			.089			.144
R	.602	.605	.611	.181	.305	.315	.259	.315	.340
Total R^2	.362	.366	.374	.033	.093	.099	.067	.099	.116
Adjusted R^2	.349	.326	.319	.011	.030	.014	.046	.035	.030
R^2 change	.362***	.004	.008	.033	.060	.006	.067	.032	.016
F	27.816***	9.056***	6.867***	1.530	1.470	1.158	3.175	1.547	1.344
T1 Days in OHP	.602***	.635***	.615***	.181	.194	.160	.259	.286	.239
T2 Therapist Adherence		.067	.054		.131	.110		.294 *	.265*
Supervisor Adherence		.096	.083		.115	.091		.232	.200
T2 Therapist Adherence X Supervisor Adherence			.065			.110			.153
R	.602	.630	.632	.181	.238	.259	.259	.424	.448
Total R^2	.362	.396	.400	.033	.057	.067	.067	.180	.200
Adjusted R^2	.349	.357	.347	.011	-.011	-.024	.046	.120	.120
R^2 change	.362***	.011	.004	.033	.025	.010	.067	.115	.020
F	27.816***	10.066***	7.500***	1.530	.839	.735	3.175	3.002 *	2.505

p <.05*, p <.01**, p <.001***

School Attendance

T1 school attendance accounted for 66% (66% adjusted R^2, p <.0005) of the variance in T2 school attendance, 22% (20% adjusted R^2, p <.001) of the variance in T3 school attendance, and 15% (13% adjusted R^2, p <.012) of the variance in T4 school attendance.

Table A24.4

Hierarchical Multiple Regression of T2, T3, and T4 School Attendance, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 School Attendance		(n = 48)	T3 School Attendance		(n = 43)	T4 School Attendance (n = 40)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 School Attendance	.814***	.828***	.801***	.468***	.545***	.492**	.389*	.494**	.438**
T1 Therapist Adherence		.021	.035		.249	.278		.289	.318
Supervisor Adherence		-.034	.003		.046	.120		-.030	.047
T1 Therapist Adherence X Supervisor Adherence			-.090			-.179			-.188
R	.814	.815	.819	.468	.520	.543	.389	.480	.507
Total R^2	.663	.665	.671	.219	.270	.295	.152	.230	.257
Adjusted R^2	.656	.642	.641	.200	.216	.223	.130	.168	.175
R^2 change	.663***	.002	.006	.219 ***	.051	.025	.152*	.079	.027
F	92.412***	29.743***	22.425***	11.777***	4.944**	4.083**	6.974*	3.689	3.118*
T1 School Attendance	.815***	.816***	.771***	.468***	.468**	.456**			
T2 Therapist Adherence		.011	.062		.099	.113			
Supervisor Adherence		.002	.004		.013	.014			
T2 Therapist Adherence X Supervisor Adherence			-.169			-.046			
R	.815	.815	.829	.468	.467	.469			
Total R^2	.663	.664	.687	.219	.218	.220			
Adjusted R^2	.656	.641	.658	.200	.160	.140			
R^2 change	.663***	.000	.023	.219***	.009	.002			
F	92.638***	29.580***	24.125***	11.777***	3.723*	2.751*			

p <.05*, p <.01**, p <.001***

Negative Behaviour

T1 negative behaviour significantly predicted T2 negative behaviour and T3 negative behaviour, explaining 40% (39% adjusted R^2, p <.0005) and 32% (30% adjusted R^2, p <.002) of the variance, respectively. T1 negative behaviour did not significantly predict T4 negative behaviour.

Table A24.5

Hierarchical Multiple Regression of T2, T3, and T4 Negative Behaviour, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Negative Behaviour		(n = 51)	T3 Negative Behaviour		(n = 26)	T4 Negative Behaviour		(n = 20)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Negative Behaviour				.568**	.546**	.535**	.403	.391	.411
T1 Therapist Adherence					-.152	-.166		-.044	-.018
Supervisor Adherence					-.111	-.138		.027	.078
T1 Therapist Adherence X Supervisor Adherence						.060			-.110
R				.568	.589	.591	.403	.407	.418
Total R^2				.323	.347	.350	.162	.166	.175
Adjusted R^2				.296	.262	.231	.118	.019	-.031
R^2 change				.323**	.024	.003	.162	.003	.009
F				11.934**	4.073*	2.957*	3.686	1.126	.849
T1 Negative Behaviour	.631***	.598***	.600***	.568**	.574**	.575**	.313	.276	.274
T2 Therapist Adherence		-.253*	-.235*		-.091	-.085		-.300	-.319
Supervisor Adherence		-.078	-.071		.111	.114		.140	.140
T2 Therapist Adherence X Supervisor Adherence			-.076			-.028			.039
R	.631	.678	.682	.568	.612	.613	.313	.478	.480
Total R^2	.399	.459	.465	.323	.375	.376	.098	.229	.230
Adjusted R^2	.387	.426	.419	.296	.294	.262	.051	.093	.038
R^2 change	.399***	.061	.005	.323**	.025	.001	.098	.131	.001
F	33.143***	13.594***	10.204***	11.934**	4.601*	3.311*	2.064	1.683	1.195

p <.05*, p <.01**, p <.001***

Positive behaviour

T1 positive behaviour significantly predicted T2 positive behaviour and T3 positive behaviour, explaining 29% (28% adjusted R^2, p <.0005) and 28% (25% adjusted R^2, p <.007) of the variance, respectively. T1 positive behaviour did not significantly predict T4 positive behaviour.

Table A24.6

Hierarchical Multiple Regression of T3 and T4 Positive Behaviour, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T3 Positive Behaviour (*n* = 26)			T4 Positive Behaviour (*n* = 20)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Positive Behaviour				.010	.001	.004
T1 Therapist Adherence					.039	.018
Supervisor Adherence					-.256	-.304
T1 Therapist Adherence X Supervisor Adherence						.104
R				.010	.271	.286
Total R^2				.000	.073	.082
Adjusted R^2				-.053	-.090	-.147
R^2 change				.000	.073	.009
F				.002	.449	.357
T1 Positive Behaviour	.525**	.552**	.544**	-.009	.004	-.022
T1 Therapist Adherence		.114	.122		.394	.419
Supervisor Adherence		-.346*	-.342*		-.209	-.197
T1 Therapist Adherence X Supervisor Adherence			-.033			-.103
R	.525	.651	.652	.009	.483	.493
Total R^2	.276	.424	.425	.000	.233	.243
Adjusted R^2	.247	.349	.321	-.055	.090	.041
R^2 change	.276**	.148	.001	.000	.233	.009
F	9.519**	5.648**	4.068*	.002	1.623	1.202

p <.05*, p <.01**, p <.001***

Well-Being

T1 well-being significantly predicted T2 well-being and T3 well-being, explaining 19% (17.5% adjusted R^2, p <.001) and 16% (13% adjusted R^2, p <.013) of the variance, respectively. T1 well-being did not significantly predict T4 well-being.

Table A24.7

Hierarchical Multiple Regression of T2, T3, and T4 Well-being, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Well-being		(*n* = 51)	T3 Well-being		(*n* = 26)	T4 Well-being		(*n* = 20)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Well-being	.437***	.437**	.410**	.400*	.423*	.331	-.146	-.103	-.100
T1 Therapist Adherence		.009	.036		-.113	-.022		-.328	-.330
Supervisor Adherence		-.051	.006		-.309	-.117		-.061	-.067
T1 Therapist Adherence X Supervisor Adherence			-.117			-.394			.013
R	.437	.440	.452	.400	.494	.601	.146	.343	.343
Total R^2	.191	.194	.204	.160	.244	.361	.021	.117	.117
Adjusted R^2	.175	.143	.136	.126	.146	.245	-.030	-.038	-.103
R^2 change	.191***	.003	.010	.160	.085	.117	.021	.096	.000
F	11.781***	3.842*	3.011*	4.754*	2.480	3.110*	.414	.754	.533
T1 Well-being				.400*	.484*	.402*	-.232	-.225	-.221
T2 Therapist Adherence					.020	.095		.130	.125
Supervisor Adherence					-.227	-.194		-.043	-.045
T2 Therapist Adherence X Supervisor Adherence						-.326			.018
R				.400	.527	.609	.232	.273	.274
Total R^2				.160	.278	.371	.054	.075	.075
Adjusted R^2				.126	.184	.257	.001	-.099	-.172
R^2 change				.160	.054	.094	.054	.021	.000
F				4.754*	2.949	3.250*	1.020	.430	.304

p <.05*, p <.01**, p <.001***

Psychopathology

T1 psychopathology significantly predicted T2 psychopathology, explaining 35% (34% adjusted R^2, p <.0005) of the variance. T1 psychopathology did not significantly predict T3 or T4 psychopathology.

Table A24.8

Hierarchical Multiple Regression of T2, T3, and T4 Psychopathology, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Psychopathology (*n* = 52)			T3 Psychopathology (*n* = 27)			T4 Psychopathology (*n* = 26)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Psychopathology	.594***	.598***	.614***	.368	.390*	.310	.107	.106	.098
T1 Therapist Adherence		.081	.097		-.054	-.135		.168	.160
Supervisor Adherence		.098	.121		.239	.123		.097	.085
T1 Therapist Adherence X Supervisor Adherence			-.060			.304			.030
R	.594	.603	.605	.368	.452	.527	.107	.193	.194
Total R^2	.353	.363	.366	.135	.204	.278	.011	.037	.038
Adjusted R^2	.340	.324	.314	.102	.105	.152	-.041	-.133	-.203
R^2 change	.353***	.010	.003	.135	.069	.074	.011	.026	.001
F	27.836***	9.326***	6.938***	4.060	2.052	2.211	.219	.218	.157
T1 Psychopathology	.595***	.612***	.618***	.359	.424*	.388	.069	.063	.052
T2 Therapist Adherence		-.214	-.208		-.132	-.168		-.058	-.070
Supervisor Adherence		-.079	-.076		.312	.292		-.091	-.098
T2 Therapist Adherence X Supervisor Adherence			-.028			.165			.052
R	.595	.631	.631	.359	.507	.530	.069	.119	.129
Total R^2	.354	.398	.399	.129	.257	.281	.005	.014	.017
Adjusted R^2	.341	.360	.348	.094	.160	.150	-.051	-.171	-.246
R^2 change	.354***	.044	.001	.129	.128	.024	.005	.009	.002
F	27.358***	10.580***	7.793***	3.694	2.647	2.150	.086	.077	.064

p <.05*, p <.01**, p <.001***

Parent Ability

T1 parent ability significantly predicted T2 parent ability and T3 parent ability, explaining 23% (22% adjusted R^2, p <.0005) and 17.5% (14% adjusted R^2, p <.027) of the variance, respectively. T1 parent ability did not significantly predict T4 parent ability.

Table A24.9

Hierarchical Multiple Regression of T2, T3, and T4 Parent Ability, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Parent Ability		(n = 52)	T3 Parent Ability		(n = 27)	T4 Parent Ability (n = 20)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Parent Ability	.483***	.485***	.492***	.418*	.416*	.385	-.056	-.057	-.048
T1 Therapist Adherence		.185	.177		.256	.292		.231	.221
Supervisor Adherence		-.073	-.084		-.058	-.009		-.070	-.084
T1 Therapist Adherence X Supervisor Adherence			.027			-.122			.035
R	.483	.532	.532	.418	.504	.516	.056	.271	.273
Total R^2	.233	.283	.283	.175	.254	.267	.003	.073	.074
Adjusted R^2	.218	.239	.224	.143	.161	.139	-.049	-.090	-.157
R^2 change	.233***	.050	.001	.175*	.080	.012	.003	.070	.001
F	15.525***	6.443***	4.748**	5.511*	2.730	2.089	.061	.449	.321
T1 Parent Ability				.418*	.485 **	.469*	-.031	-.023	-.048
T2 Therapist Adherence					.098	.124		.383	.422
Supervisor Adherence					-.351	-.339		-.149	-.131
T2 Therapist Adherence X Supervisor Adherence						-.105			-.156
R				.418	.586	.595	.031	.440	.465
Total R^2				.175	.343	.353	.001	.194	.216
Adjusted R^2				.143	.258	.236	-.055	.043	.008
R^2 change				.175 *	.146	.010	.001	.193	.022
F				5.511*	4.007*	3.007*	.017	1.284	1.036

p <.05*, p <.01**, p <.001***

Family Cohesion

T1 family cohesion accounted for 57% (56% adjusted R^2, p <.0005) of the variance in T2 family cohesion, 39% (37% adjusted R^2, p <.0005) of the variance in T3 family cohesion, and 25% (21% adjusted R^2, p <.022) of the variance in T4 family cohesion.

Table A24.10

Hierarchical Multiple Regression of T2, T3, and T4 Family Cohesion, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Cohesion		(n = 52)	T3 Family Cohesion		(n = 27)	T4 Family Cohesion		(n = 20)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Cohesion	.755***	.761***	.767***	.627***	.665***	.646**	.498*	.544*	.569*
T1 Therapist Adherence		-.139	-.148		-.272	-.245		-.065	-.100
Supervisor Adherence		-.027	-.040		-.153	-.115		-.178	-.229
T1 Therapist Adherence X Supervisor Adherence			.029			-.091			.120
R	.755	.766	.767	.627	.677	.682	.498	.522	.534
Total R^2	.570	.587	.588	.393	.458	.465	.248	.273	.285
Adjusted R^2	.561	.562	.553	.369	.390	.372	.208	.144	.106
R^2 change	.570***	.017	.001	.393***	.065	.007	.248*	.025	.012
F	67.499***	23.211***	17.103***	16.814***	6.764***	4.997**	6.251*	2.126	1.592
T1 Family Cohesion	.755***	.694***	.669***	.627***	.606***	.590**	.498*	.446*	.422
T2 Therapist Adherence		.223*	.277*		.138	.172		.385	.435
Supervisor Adherence		.093	.101		-.007	-.001		-.040	-.032
T2 Therapist Adherence X Supervisor Adherence			-.101			-.064			-.096
R	.755	.784	.789	.627	.642	.644	.498	.633	.639
Total R^2	.570	.615	.622	.393	.412	.415	.248	.401	.408
Adjusted R^2	.561	.591	.591	.369	.338	.313	.208	.296	.260
R^2 change	.570***	.045	.007	.393***	.019	.003	.248*	.154	.007
F	67.499***	26.082***	19.768***	16.814***	5.603**	4.077*	6.251*	3.799*	2.756

p <.05*, p <.01**, p <.001***

Family Adaptability

T1 family adaptability accounted for 27% (26% adjusted R^2, p <.0005) of the variance in T2 family adaptability, 24% (21% adjusted R^2, p <.008) of the variance in T3 family adaptability, and 20% (16% adjusted R^2, p <.042) of the variance in T4 family adaptability.

Table A24.11

Hierarchical Multiple Regression of T2 and T4 Family Adaptability, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Adaptability		(n = 52)	T4 Family Adaptability		(n = 20)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Adaptability	.520***	.549***	.562***	.447*	.520*	.530*
T1 Therapist Adherence		-.105	-.134		-.172	-.194
Supervisor Adherence		-.087	-.123		-.439	-.466
T1 Therapist Adherence X Supervisor Adherence			.093			.071
R	.520	.531	.538	.447	.601	.605
Total R^2	.271	.282	.289	.200	.361	.366
Adjusted R^2	.256	.238	.230	.158	.249	.207
R^2 change	.271***	.011	.007	.200*	.162	.004
F	18.921***	6.405**	4.880**	4.745*	3.206*	2.306
T1 Family Adaptability	.520***	.463***	.455**	.447*	.417*	.412
T2 Therapist Adherence		.293*	.343*		.300	.332
Supervisor Adherence		.026	.028		-.298	-.297
T2 Therapist Adherence X Supervisor Adherence			-.102			-.064
R	.520	.592	.599	.447	.647	.650
Total R^2	.271	.350	.358	.200	.419	.422
Adjusted R^2	.256	.310	.305	.158	.316	.277
R^2 change	.271***	.080	.008	.200*	.219	.003
F	18.921***	8.801***	6.698***	4.745*	4.081*	2.919

p <.05*, p <.01**, p <.001***

Service Satisfaction

T1 satisfaction significantly predicted T2 satisfaction, explaining 10% (8% adjusted R^2, p <.021) of the variance.

Table A24.12

Hierarchical Multiple Regression of T2 Service Satisfaction, Therapist Adherence, Supervisor Adherence, and the Interaction between Therapist and Supervisor Adherence Showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Satisfaction		(n = 51)
	Step 1	Step 2	Step 3
T1 Satisfaction	.318*	.340	.279
T1 Therapist Adherence		-.084	-.099
Supervisor Adherence		-.104	-.229
T1 Therapist Adherence X Supervisor Adherence			.255
R	.318	.336	.404
Total R^2	.101	.113	.163
Adjusted R^2	.083	.058	.092
R^2 change	.101*	.012	.050
F	5.639*	2.039	2.288

p <.05*, p <.01**, p <.001***

Therapeutic Alliance

T1 alliance significantly predicted T2 alliance, explaining 12% (10% adjusted R^2, p <.011) of the variance.

Appendix 25: Section 4 Results

All step 1 results from the hierarchical multiple regressions and all nonsignificant findings for Chapter Eleven are presented in Appendix 25.

Offending Frequency

T1 offending frequency accounted for 21% (19% adjusted R^2, p <.002) of the variance in T2 offending frequency, 18% (16% adjusted R^2, p <.006) of the variance in T3 offending frequency, and 13% (11% adjusted R^2, p <.023) of the variance in T4 offending frequency.

Table A25.1

Hierarchical Multiple Regression of T2, T3, and T4 Offending Frequency, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Offending Frequency (n = 44)			T3 Offending Frequency (n = 39)			T4 Offending Frequency (n = 35)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Offending Frequency	.457**	.478***	.477**	.428**	.402*	.402*	.362*	.386*	.388*
Therapist Allegiance		-.068	-.148		-.081	-.105		-.227	-.091
Supervisor Allegiance		.103	.120		-.181	-.176		.065	.036
Therapist Allegiance X Supervisor Allegiance			-.100			-.029			.170
R	.457	.471	.475	.428	.473	.474	.362	.430	.441
Total R^2	.209	.222	.226	.183	.224	.224	.131	.185	.194
Adjusted R^2	.190	.165	.148	.162	.159	.136	.108	.115	.100
R^2 change	.209**	.014	.003	.183**	.041	.000	.131*	.053	.010
F	11.330**	3.907*	2.915*	8.516**	3.463 *	2.529	5.596*	2.640	2.052
T1 Offending Frequency	.457**	.468**	.508***	.428**	.478**	.471**	.362 *	.418**	.447**
Therapist Accountability		-.102	-.290		-.334	-.304		-.409*	-.547*
Supervisor Accountability		.195	.277		.005	-.008		.278	.337
Therapist Accountability X Supervisor Accountability			-.218			.035			-.159
R	.457	.484	.508	.428	.539	.539	.362	.492	.505
Total R^2	.209	.234	.258	.183	.290	.291	.131	.242	.255
Adjusted R^2	.190	.178	.184	.162	.231	.210	.108	.177	.167
R^2 change	.209**	.026	.024	.183**	.107	.001	.131*	.111	.013
F	11.330**	4.177*	3.472*	8.516**	4.909**	3.590*	5.596*	3.729*	2.907*

p <.05*, p <.01**, p <.001***

Offending Seriousness

T1 offending seriousness did not significantly predict T2, T3, and T4 offending seriousness.

Table A25.2

Hierarchical Multiple Regression of T2, T3, and T4 Offending Seriousness, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Offending Seriousness (*n* = 44)			T3 Offending Seriousness (*n* = 39)			T4 Offending Seriousness (*n* = 38)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Offending Seriousness	.086	.117	.112	.283	.252	.255	.056	.044	.051
Therapist Allegiance		-.151	-.367		-.027	.165		-.017	.357
Supervisor Allegiance		.067	.113		-.169	-.210		-.069	-.149
Therapist Allegiance X Supervisor Allegiance			-.270			.240			.467
R	.086	.179	.239	.283	.331	.359	.056	.091	.289
Total R^2	.007	.032	.057	.080	.109	.129	.003	.008	.083
Adjusted R^2	-.016	-.039	-.037	.056	.035	.030	-.024	-.077	-.024
R^2 change	.007	.025	.025	.080	.029	.020	.003	.005	.075
F	.322	.455	.607	3.321	1.472	1.297	.117	.097	.773
T1 Offending Seriousness	.086	.164	.162	.283	.308	.212			
Therapist Accountability		-.326	-.321		-.147	.150			
Supervisor Accountability		.327	.325		.010	-.130			
Therapist Accountability X Supervisor Accountability			.005			.325			
R	.086	.304	.304	.283	.316	.384			
Total R^2	.007	.092	.092	.080	.100	.147			
Adjusted R^2	-.016	.026	.001	.056	.025	.050			
R^2 change	.007	.085	.000	.080	.020	.048			
F	.322	1.387	1.015	3.321	1.332	1.513			

p <.05*, p <.01**, p <.001***

Days in OHP

T1 days in OHP significantly predicted T2 and T4 days in OHP, explaining 49% (48% adjusted R^2, p <.0005) and 17.5% (15% adjusted R^2, p <.0005) of the variance, respectively. T1 days in OHP did not significantly predict T3 days in OHP.

Table A25.3

Hierarchical Multiple Regression of T2, T3, and T4 Days in OHP, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Days in OHP		(n = 41)	T3 Days in OHP		(n = 38)	T4 Days in OHP		(n = 37)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Days in OHP				.294	.302	.298	.419**	.414*	.418*
Therapist Allegiance					.063	.149		.007	-.090
Supervisor Allegiance					.138	.114		-.046	-.020
Therapist Allegiance X Supervisor Allegiance						.108			-.123
R				.294	.333	.339	.419	.421	.427
Total R^2				.086	.111	.115	.175	.177	.183
Adjusted R^2				.062	.034	.011	.152	.105	.084
R^2 change				.086	.024	.004	.175**	.002	.005
F				3.502	1.450	1.101	7.649***	2.443	1.844
T1 Days in OHP	.702***	.711***	.731***	.294	.290	.280	.419**	.428**	.421*
Therapist Accountability		-.107	-.324		-.041	.056		-.147	-.070
Supervisor Accountability		.024	.109		.213	.175		.099	.069
Therapist Accountability X Supervisor Accountability			-.265			.119			.094
R	.702	.708	.734	.294	.351	.362	.419	.436	.441
Total R^2	.493	.501	.539	.086	.124	.131	.175	.190	.194
Adjusted R^2	.480	.462	.489	.062	.048	.029	.152	.118	.097
R^2 change	.493***	.009	.038	.086	.037	.008	.175**	.014	.005
F	38.819***	12.740***	10.814***	3.502	1.644	1.282	7.64**	2.653	1.991

p <.05*, p <.01**, p <.001***

School Attendance

T1 school attendance accounted for 50% (48.5% adjusted R^2, p <.0005) of the variance in T2 school attendance, 32% (30.5% adjusted R^2, p <.0005) of the variance in T3 school attendance, and 14% (11.5% adjusted R^2, p <.024) of the variance in T4 school attendance.

Table A25.4

Hierarchical Multiple Regression of T2, T3, and T4 School Attendance, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 School Attendance		(*n* = 42)	T3 School Attendance		(*n* = 38)	T4 School Attendance (*n* = 35)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 School Attendance	.705***	.678***	.681***	.568***	.529***	.543***	.375*	.374*	.366*
Therapist Allegiance		-.045	-.026		-.153	-.063		-.039	-.086
Supervisor Allegiance		.129	.124		.170	.147		-.002	.009
Therapist Allegiance X Supervisor Allegiance			.024			.111			-.058
R	.705	.717	.717	.568	.608	.611	.375	.377	.378
Total R^2	.498	.515	.515	.323	.370	.374	.140	.142	.143
Adjusted R^2	.485	.477	.464	.305	.316	.300	.115	.061	.032
R^2 change	.498***	.017	.000	.323***	.047	.004	.140*	.002	.001
F	40.612***	13.781***	10.078***	17.658***	6.848***	5.076**	5.551*	1.764	1.293
T1 School Attendance	.705***	.699***	.694***	.568***	.562***	.558***	.375*	.389*	.386*
Therapist Accountability		-.105	-.153		-.109	-.157		.177	.140
Supervisor Accountability		.146	.167		.183	.203		-.109	-.093
Therapist Accountability X Supervisor Accountability			-.058			-.058			-.045
R	.705	.716	.717	.568	.588	.589	.375	.401	.403
Total R^2	.498	.512	.514	.323	.345	.347	.140	.161	.162
Adjusted R^2	.485	.475	.463	.305	.289	.270	.115	.083	.054
R^2 change	.498***	.015	.002	.323***	.022	.002	.140*	.021	.001
F	40.612***	13.659***	10.051***	17.658***	6.156**	4.520**	5.551*	2.050	1.501

p <.05*, p <.01**, p <.001***

Negative Behaviour

T1 negative behaviour significantly predicted T2 and T3 negative behaviour, explaining 38% (36% adjusted R^2, p <.0005) and 34% (31% adjusted R^2, p <.004) of the variance, respectively. T1 negative behaviour did not significantly predict T4 negative behaviour.

Table A25.5

Hierarchical Multiple Regression of T2, T3, and T4 Negative Behaviour, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Negative Behaviour		(n = 44)	T3 Negative Behaviour		(n = 22)	T4 Negative Behaviour (n= 16)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Negative Behaviour	.615***	.630***	.630***				.313	.305	.305
Therapist Allegiance		-.078	-.217					.040	-.189
Supervisor Allegiance		.032	.062					-.053	-.003
Therapist Allegiance X Supervisor Allegiance			-.173						-.285
R	.615	.620	.628				.313	.319	.360
Total R^2	.378	.384	.395				.098	.102	.130
Adjusted R^2	.363	.339	.334				.038	-.105	-.160
R^2 change	.378***	.007	.010				.098	.004	.028
F	26.110***	8.532***	6.520***				1.630	.492	.448
T1 Negative Behaviour	.615***	.603***	.628***	.582**	.592**	.589**	.313	.293	.302
Therapist Accountability		-.053	-.287		-.256	-.228		-.417	-.504
Supervisor Accountability		.065	.161		-.006	-.017		.169	.204
Therapist Accountability X Supervisor Accountability			-.288			.034			-.107
R	.615	.617	.651	.582	.637	.637	.313	.468	.474
Total R^2	.378	.381	.424	.339	.406	.406	.098	.219	.225
Adjusted R^2	.363	.335	.367	.307	.312	.274	.038	.039	-.033
R^2 change	.378***	.003	.044	.339**	.067	.001	.098	.121	.006
F	26.110***	8.403***	7.371***	10.749**	4.322*	3.079*	1.630	1.216	.871

p <.05*, p <.01**, p <.001***

Positive Behaviour

T1 positive behaviour significantly predicted T2 and T3 positive behaviour, explaining 19% (17% adjusted R^2, p <.003) and 18% (14.5% adjusted R^2, p <.041) of the variance, respectively. T1 positive behaviour did not significantly predict T4 positive behaviour.

Table A25.6

Hierarchical Multiple Regression of T2, T3, and T4 Positive Behaviour, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Positive Behaviour (*n* = 44)			T3 Positive Behaviour (*n* = 22)			T4 Positive Behaviour (*n* = 16)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Positive Behaviour	.435**	.426**	.419**				-.002	-.022	.007
Therapist Allegiance		-.047	-.088					-.116	.052
Supervisor Allegiance		-.034	-.026					-.248	-.285
Therapist Allegiance X Supervisor Allegiance			-.049						.201
R	.435	.439	.440				.002	.281	.304
Total R^2	.190	.193	.194				.000	.079	.092
Adjusted R^2	.171	.134	.113				-.067	-.133	-.210
R^2 change	.190**	.004	.001				.000	.079	.013
F	10.059**	3.270*	2.405				.000	.372	.305
T1 Positive Behaviour	.435**	.418**	.439**	.429*	.412	.535*	-.002	-.077	.002
Therapist Accountability		.066	.131		.375	.757*		.421	.665
Supervisor Accountability		-.094	-.116		-.190	-.323		-.441	-.526
Therapist Accountability X Supervisor Accountability			.081			.476			.305
R	.435	.442	.445	.429	.528	.621	.002	.391	.443
Total R^2	.190	.195	.198	.184	.279	.385	.000	.153	.196
Adjusted R^2	.171	.136	.118	.145	.165	.249	-.067	-.043	-.072
R^2 change	.190**	.006	.003	.184*	.095	.106	.000	.153	.044
F	10.059**	3.316*	2.475	4.745*	2.451	2.821	.000	.781	.733

p <.05*, p <.01**, p <.001***

Well-being

T1 well-being significantly predicted T2 and T3 well-being, explaining 20% (18% adjusted R^2, p <.002) and 21% (17% adjusted R^2, p <.041) of the variance, respectively. T1 well-being did not significantly predict T4 well-being.

Table A25.7

Hierarchical Multiple Regression of T2, T3, and T4 Well-being, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Well-being		(*n* = 44)	T3 Well-being		(*n* = 22)	T4 Well-being		(*n* = 16)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Well-being	.450**	.441**	.440**	.457*	.406	.408	.097	.085	.085
Therapist Allegiance		-.003	-.164		-.159	.197		-.039	-.023
Supervisor Allegiance		.201	.236		.142	.065		.031	.027
Therapist Allegiance X Supervisor Allegiance			-.199			.443			.020
R	.450	.492	.506	.457	.498	.562	.097	.108	.108
Total R^2	.202	.243	.256	.209	.248	.316	.009	.012	.012
Adjusted R^2	.184	.187	.182	.171	.129	.164	-.057	-.217	-.318
R^2 change	.202**	.040	.014	.209*	.040	.067	.009	.002	.000
F	10.904**	4.375**	3.443*	5.533*	2.090	2.076	.143	.051	.036
T1 Well-being	.450**	.469**	.426**	.457*	.504*	.509*	.097	.119	.216
Therapist Accountability		-.087	-.233		.216	.232		-.019	.305
Supervisor Accountability		.249	.306		-.080	-.086		.155	.029
Therapist Accountability X Supervisor Accountability			-.162			.017			.361
R	.450	.496	.509	.457	.489	.490	.097	.173	.301
Total R^2	.202	.246	.259	.209	.240	.240	.009	.030	.090
Adjusted R^2	.184	.191	.185	.171	.119	.071	-.057	-.194	-.213
R^2 change	.202**	.044	.012	.209*	.031	.000	.009	.020	.061
F	10.904**	4.471**	3.490*	5.533*	1.995	1.418	.143	.134	.298

p <.05*, p <.01**, p <.001***

Psychopathology

T1 psychopathology accounted for 35% (34% adjusted R^2, p <.0005) of the variance in T2 psychopathology, 30% (26% adjusted R^2, p <.007) of the variance in T3 psychopathology, and 23% (18% adjusted R^2, p <.050) of the variance in T4 psychopathology.

Table A25.8

Hierarchical Multiple Regression of T2, T3, and T4 Psychopathology, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Psychopathology		(*n* = 44)	T3 Psychopathology		(*n* = 22)	T4 Psychopathology (*n* = 16)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Psychopathology	.594***	.610***	.606***	.544**	.512*	.506*	.482*	.393	.383
Therapist Allegiance		-.061	.095		.096	.328		.254	.654
Supervisor Allegiance		-.021	-.055		-.014	-.066		-.059	-.147
Therapist Allegiance X Supervisor Allegiance			.192			.287			.494
R	.594	.598	.608	.544	.552	.577	.482	.539	.612
Total R^2	.353	.357	.370	.296	.304	.333	.233	.290	.374
Adjusted R^2	.338	.310	.307	.263	.195	.185	.182	.127	.166
R^2 change	.353***	.004	.013	.296**	.008	.028	.233*	.058	.084
F	23.489***	7.600***	5.874**	8.844**	2.772	2.245	4.549*	1.773	1.796
T1 Psychopathology	.594***	.596***	.602***	.544**	.686**	.648**	.482*	.394	.326
Therapist Accountability		.010	-.009		-.424	-.305		.296	.511
Supervisor Accountability		-.088	-.079		.148	.096		-.276	-.370
Therapist Accountability X Supervisor Accountability			-.020			.123			.222
R	.594	.600	.600	.544	.637	.643	.482	.543	.563
Total R^2	.353	.360	.360	.296	.406	.413	.233	.295	.317
Adjusted R^2	.338	.313	.296	.263	.312	.282	.182	.132	.089
R^2 change	.353***	.007	.000	.296**	.110	.007	.233*	.062	.022
F	23.489***	7.689***	5.630***	8.844**	4.328*	3.164*	4.549*	1.811	1.392

p <.05*, p <.01**, p <.001***

Parent ability

T1 parent ability significantly predicted T2 and T3 parent ability, explaining 31% (30% adjusted R^2, p <.0005) and 27% (23.5% adjusted R^2, p <.011) of the variance, respectively. T1 parent ability did not significantly predict T4 parent ability.

Table A25.9

Hierarchical Multiple Regression of T2, T3, and T4 Parent Ability, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Parent Ability (*n* = 44)			T3 Parent Ability (*n* = 22)			T4 Parent Ability (*n* = 16)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Parent Ability	.560***	.612***	.612***	.520*	.597**	.611**	-.036	.026	.030
Therapist Allegiance		.147	.150		.173	.740 *		.108	.252
Supervisor Allegiance		-.122	-.123		-.230	-.355		-.225	-.257
Therapist Allegiance X Supervisor Allegiance			.004			.701 *			.179
R	.560	.587	.587	.520	.584	.714	.036	.236	.259
Total R^2	.313	.344	.344	.270	.341	.510	.001	.056	.067
Adjusted R^2	.297	.296	.278	.235	.237	.401	-.065	-.162	-.244
R^2 change	.313***	.031	.000	.270*	.071	.169 *	.001	.055	.011
F	19.613***	7.169***	5.246**	7.764*	3.274*	4.683**	.019	.256	.215
T1 Parent Ability	.560***	.555***	.656***	.520*	.504**	.580**	-.036	-.054	.005
Therapist Accountability		.134	.490*		.596**	.866**		.488	.698
Supervisor Accountability		-.138	-.283		-.539**	-.649 **		-.508	-.593
Therapist Accountability X Supervisor Accountability			.431*			.328			.255
R	.560	.574	.646	.520	.739	.773	.036	.460	.493
Total R^2	.313	.329	.418	.270	.546	.597	.001	.212	.243
Adjusted R^2	.297	.280	.359	.235	.474	.508	-.065	.030	-.010
R^2 change	.313***	.016	.089 *	.270*	.276*	.051	.001	.210	.031
F	19.613***	6.699***	7.173***	7.764*	7.614**	6.668**	.019	1.164	.962

p <.05*, p <.01**, p <.001***

Family Cohesion

T1 family cohesion accounted for 57% (56% adjusted R^2, p <.0005) of the variance in T2 family cohesion, 39% (36% adjusted R^2, p <.001) of the variance in T3 family cohesion, and 25% (20% adjusted R^2, p <.001) of the variance in T4 family cohesion.

Table A25.10

Hierarchical Multiple Regression of T2, T3, and T4 Family Cohesion, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Cohesion		(n = 44)	T3 Family Cohesion		(n = 22)	T4 Family Cohesion (n = 16)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Cohesion	.755***	.741***	.741***	.627**	.617**	.656**	.498*	.517*	.487
Therapist Allegiance		.123	.123		.022	.375		.222	-.055
Supervisor Allegiance		.057	.057		.063	-.020		-.217	-.152
Therapist Allegiance X Supervisor Allegiance			.000			.441			-.346
R	.755	.767	.767	.627	.630	.680	.498	.580	.614
Total R^2	.570	.589	.589	.393	.397	.463	.248	.336	.377
Adjusted R^2	.560	.559	.548	.364	.302	.343	.197	.183	.169
R^2 change	.570***	.019	.000	.393***	.005	.065	.248*	.089	.040
F	56.911***	19.566***	14.317***	13.580***	4.175*	3.876*	4.935*	2.196	1.812
T1 Family Cohesion	.755***	.748***	.754***	.627***	.589***	.586**			
Therapist Accountability		.149	.193		.490*	.467*			
Supervisor Accountability		-.047	-.065		-.302	-.292			
Therapist Accountability X Supervisor Accountability			.054			-.028			
R	.755	.765	.766	.627	.743	.744			
Total R^2	.570	.586	.587	.393	.553	.553			
Adjusted R^2	.560	.556	.546	.364	.482	.454			
R^2 change	.570***	.016	.002	.393***	.160	.000			
F	56.911***	19.333***	14.235***	13.580***	7.820***	5.566**			

p <.05*, p <.01**, p <.001***

Family Adaptability

T1 family adaptability significantly predicted T2 and T3 family adaptability, explaining 27% (25% adjusted R^2, p <.0005) and 24% (20.5% adjusted R^2, p <.017) of the variance, respectively. T1 family adaptability did not significantly predict T4 family adaptability.

Table A25.11

Hierarchical Multiple Regression of T2, T3, and T4 Family Adaptability, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Adaptability		(n = 44)	T3 Family Adaptability (n = 22)			T4 Family Adaptability(n = 16)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Adaptability	.520***	.553***	.491***	.491*	.471*	.493*	.447	.504*	.541
Therapist Allegiance		.150	-.162		-.004	.101		.213	.395
Supervisor Allegiance		-.120	-.049		.262	.238		-.302	-.343
Therapist Allegiance X Supervisor Allegiance			-.375			.127			.218
R	.520	.551	.590	.491	.556	.561	.447	.569	.582
Total R^2	.271	.304	.348	.241	.310	.315	.200	.324	.339
Adjusted R^2	.254	.253	.283	.205	.201	.162	.146	.168	.118
R^2 change	.271***	.033	.045	.241*	.068	.005	.200	.124	.015
F	15.953***	5.957**	5.341**	6.684*	2.839	2.066	3.746	2.074	1.537
T1 Family Adaptability	.520***	.518***	.530***	.491*	.504*	.498*			
Therapist Accountability		.253	.292		.238	.219			
Supervisor Accountability		-.170	-.185		-.069	-.061			
Therapist Accountability X Supervisor Accountability			.048			-.023			
R	.520	.560	.561	.491	.533	.533			
Total R^2	.271	.314	.315	.241	.284	.284			
Adjusted R^2	.254	.264	.247	.205	.171	.125			
R^2 change	.271 ***	.043	.001	.241*	.042	.000			
F	15.953***	6.254***	4.599**	6.684*	2.510	1.786			

p <.05*, p <.01**, p <.001***

Therapeutic Alliance

T1 alliance added a significant contribution to T2 alliance, explaining 9.2% (7.1% adjusted R^2, p <.042) of the variance.

Table A25.12

Hierarchical Multiple Regression of T1 and T2 Therapeutic Alliance, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Therapeutic Alliance (n = 44)		T2 Therapeutic Alliance (n = 44)		
	Step 1	Step 2	Step 1	Step 2	Step 3
T1 Therapeutic Alliance	-	-	.304 *	.283	.293
Therapist Allegiance	-.039	-.146		.062	.224
Supervisor Allegiance	-.177	-.154		-.134	-.167
Therapist Allegiance X Supervisor Allegiance		-.133			.202
R	.184	.200	.304	.335	.355
Total R^2	.034	.040	.092	.112	.126
Adjusted R^2	-.012	-.030	.071	.047	.039
R^2 change	.034	.006	.092 *	.020	.014
F	.734	.568	4.374 *	1.729	1.445
T1 Therapeutic Alliance	-	-	.304 *	.323 *	.318 *
Therapist Accountability	.194	.123		.239	.473
Supervisor Accountability	-.330	-.300		-.264	-.359
Therapist Accountability X Supervisor Accountability		-.086			.285
R	.270	.278	.304	.427	.475
Total R^2	.073	.077	.092	.182	.226
Adjusted R^2	.029	.010	.071	.121	.146
R^2 change	.073	.004	.092 *	.052	.043
F	1.657	1.141	4.374 *	2.976 *	2.843 *

p <.05*, p <.01**, p <.001***

Service Satisfaction

T1 satisfaction did not add a significant contribution to T2 alliance.

Table A25.13

Hierarchical Multiple Regression of T1 and T2 Service Satisfaction, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Satisfaction (*n* = 44)		T2 Satisfaction (*n* = 44)		
	Step 1	Step 2	Step 1	Step 2	Step 3
T1 Satisfaction	-	-	.185	.193	.189
Therapist Allegiance	-.004	.027		.175	.264
Supervisor Allegiance	-.137	-.144		-.070	-.088
Therapist Allegiance X Supervisor Allegiance		.039			.108
R	.138	.140	.185	.260	.267
Total R^2	.019	.019	.034	.067	.071
Adjusted R^2	-.028	-.052	.011	-.004	-.027
R^2 change	.019	.001	.034	.033	.004
F	.405	.271	1.450	.940	.727
T1 Satisfaction			.185	.089	.099
Therapist Accountability				.311	.520
Supervisor Accountability				-.259	-.366
Therapist Accountability X Supervisor Accountability					.240
R			.185	.296	.340
Total R^2			.034	.088	.116
Adjusted R^2			.011	.018	.023
R^2 change			.034	.066	.028
F			1.450	1.253	1.245

p <.05*, p <.01**, p <.001***

Therapist Adherence

T1 Therapist adherence added a significant contribution to T2 alliance, explaining 15.2% (13.2% adjusted R^2, p <.010) of the variance.

Table A25.14

Hierarchical Multiple Regression of T1 and T2 Therapist Adherence, Therapist and Supervisor Allegiance, and Therapist and Supervisor Accountability, and the Interaction between Therapist and Supervisor Allegiance and Therapist and Supervisor Accountability showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T1 Therapist Adherence (n = 44)		T2 Therapist Adherence (n = 44)		
	Step 1	Step 2	Step 1	Step 2	Step 3
T1 Therapist Adherence			.389**	.383*	.383*
Therapist Allegiance				.238	.233
Supervisor Allegiance				-.144	-.143
Therapist Allegiance X Supervisor Allegiance					-.006
R			.389	.473	.473
Total R^2			.152	.224	.224
Adjusted R^2			.132	.167	.146
R^2 change			.152**	.072	.000
F			7.686**	3.944*	2.886*
T1 Therapist Adherence	-	-			
Therapist Accountability	.243	.270			
Supervisor Accountability	-.374*	-.386*			
Therapist Accountability X Supervisor Accountability		.033			
R	.308	.308			
Total R^2	.095	.095			
Adjusted R^2	.051	.029			
R^2_{change}	.095	.001			
F	2.194	1.437			

p <.05*, p <.01**, p <.001***

Appendix 26: Section 5 Results

The Supervisory and Therapeutic Alliance and Client Outcomes

Offending Frequency

T1 offending frequency significantly predicted T2 offending frequency, explaining 22% (20% adjusted R^2, $p < .0005$) of the variance.

T1 offending frequency did not significantly predict T3 and T4 offending frequency.

Table A26.1

Hierarchical Multiple Regression of T2, T3, and T4 Offending Frequency, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Offending Frequency (*n* = 50)			T3 Offending Frequency (*n* = 44)			T4 Offending Frequency (*n* = 43)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Offending Frequency	.474***	.461***	.460***	.222	.255	.256	.214	.256	.258
T1 Alliance		-.092	-.088		.082	.077		.250	.205
Supervisory Alliance		-.032	-.030		.140	.137		.123	.093
T1 Therapeutic Alliance X Supervisory Alliance			-.012			.013			.140
R	.474	.482	.482	.222	.264	.265	.214	.330	.355
Total R^2	.224	.232	.233	.049	.070	.070	.046	.109	.126
Adjusted R^2	.208	.183	.166	.027	.002	-.023	.023	.042	.037
R^2 change	.224***	.008	.000	.049	.020	.000	.046	.063	.017
F	14.164****	4.743**	3.484 *	2.234	1.026	.753	2.016	1.633	1.408
T1 Offending Frequency	.474***	.507***	.526***	.222	.298	.344 *	.214	.230	.249
T2 Therapeutic Alliance		-.224	-.203		-.090	-.037		-.201	-.180
Supervisory Alliance		-.035	-.036		.135	.132		.067	.065
T2 Therapeutic Alliance X Supervisory Alliance			-.101			-.254			-.103
R	.474	.556	.565	.222	.318	.401	.214	.304	.320
Total R^2	.224	.310	.319	.049	.101	.161	.046	.092	.102
Adjusted R^2	.208	.265	.260	.027	.036	.077	.023	.024	.010
R^2 change	.224***	.050	.009	.049	.028	.059	.046	.047	.010
F	14.164***	7.024***	5.384***	2.234	1.541	1.913	2.012	1.359	1.111

p <.05*, p <.01**, p <.001***

Offending Seriousness

T1 offending seriousness did not significantly predict T2, T3 and T4 offending seriousness.

Table A26.2

Hierarchical Multiple Regression of T2, T3, and T4 Offending Seriousness, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Offending Seriousness (*n* = 47)			T3 Offending Seriousness (*n* = 43)			T4 Offending Seriousness (*n* = 40)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Offending Seriousness	.010	.005	.022	.219	.202	.227	.002	-.018	.013
T1 Therapeutic Alliance		-.100	-.124		.030	-.005		.066	.021
Supervisory Alliance		-.037	-.049		-.058	-.076		-.063	-.085
T1 Therapeutic Alliance X Supervisory Alliance			.074			.110			.137
R	.010	.100	.120	.219	.230	.251	.002	.098	.159
Total R^2	.000	.010	.015	.048	.053	.063	.000	.010	.025
Adjusted R^2	-.020	-.053	-.071	.026	-.016	-.031	-.024	-.065	-.075
R^2 change	.000	.010	.005	.048	.005	.010	.000	.010	.016
F	.005	.158	.169	2.173	.763	.671	.000	.129	.252
T1 Offending Seriousness	.033	.063	.076	.186	.190	.205	-.033	-.020	-.025
T2 Therapeutic Alliance		-.159	-.145		-.084	-.068		-.134	-.139
Supervisory Alliance		-.006	-.011		-.054	-.059		-.058	-.057
T2 Therapeutic Alliance X Supervisory Alliance			-.118			-.134			.042
R	.033	.159	.197	.186	.210	.248	.033	.146	.152
Total R^2	.001	.025	.039	.035	.044	.061	.001	.021	.023
Adjusted R^2	-.019	-.036	-.043	.013	-.024	-.030	-.022	-.050	-.075
R^2 change	.001	.024	.013	.035	.009	.017	.001	.020	.002
F	.053	.417	.474	1.583	.647	.670	.048	.300	.237

p <.05*, p <.01**, p <.001***

Days in OHP

T1 days in OHP significantly predicted T2 days in OHP, explaining 53% (52% adjusted R^2, p <.0005) of the variance. T1 days in OHP did not significantly predict T3 and T4 days in OHP.

Table A26.3

Hierarchical Multiple Regression of T2, T3, and T4 Days in OHP, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Days in OHP		(n = 49)	T3 Days in OHP		(n = 45)	T4 Days in OHP		(n = 44)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Days in OHP	.725***	.741***	.743***	.112	.095	.097	.164	.151	.154
T1 Therapeutic Alliance		-.086	-.093		.137	.131		.128	.118
Supervisory Alliance		.115	.111		.066	.062		.129	.123
T1 Therapeutic Alliance X Supervisory Alliance			.020			.016			.028
R	.725	.742	.742	.112	.177	.178	.164	.230	.232
Total R^2	.526	.551	.551	.012	.032	.032	.027	.053	.054
Adjusted R^2	.516	.521	.511	-.010	-.038	-.063	.004	-.016	-.041
R^2 change	.526***	.025	.000	.012	.019	.000	.027	.026	.001
F	53.301***	18.798***	13.811***	.555	.455	.336	1.191	.764	.567
T1 Days in OHP	.725***	.826***	.826***	.112	.163	.163	.164	.212	.212
T2 Therapeutic Alliance		-.065	-.086		-.012	-.046		.091	.049
Supervisory Alliance		.033	.033		.024	.023		.096	.094
T2 Therapeutic Alliance X Supervisory Alliance			.083			.134			.163
R	.725	.821	.825	.112	.165	.210	.164	.265	.308
Total R^2	.526	.674	.681	.012	.027	.044	.027	.070	.095
Adjusted R^2	.516	.653	.652	-.010	-.042	-.049	.004	.002	.004
R^2 change	.526***	.006	.006	.012	.001	.017	.027	.015	.025
F	53.301***	31.730***	23.981***	.555	.393	.473	1.191	1.029	1.047

p <.05*, p <.01**, p <.005***

School Attendance

T1 school attendance accounted for 67% (66% adjusted R^2, p <.0005) of the variance in T2 school attendance, 22% (20% adjusted R^2, p <.002) of the variance in T3 school attendance, and 14% (13% adjusted R^2, p <.018) of the variance in T4 school attendance.

Table A26.4

Hierarchical Multiple Regression of T2, T3, and T4 School Attendance, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 School Attendance		(n = 47)	T3 School Attendance		(n = 44)	T4 School Attendance		(n = 43)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 School Attendance	.817***	.829***	.796***	.471***	.505***	.436**	.378*	.460**	.435*
T1 Therapeutic Alliance		.045	.070		.203	.255		.180	.199
Supervisory Alliance		-.010	.015		.034	.086		-.146	-.127
T1 Therapeutic Alliance X Supervisory Alliance						-.183			-.067
R	.817	.818	.821	.471	.510	.534	.378	.447	.451
Total R^2	.667	.669	.675	.222	.261	.286	.143	.200	.203
Adjusted R^2	.660	.646	.645	.203	.204	.210	.120	.131	.110
R^2 change	.667 ***	.002	.006	.222 ***	.038	.025	.143*	.057	.003
F	92.101***	29.644***	22.306***	11.705***	4.580**	3.798*	6.171*	2.917*	2.169
T1 School Attendance	.817***	.822***	.778***	.471***	.439**	.513**	.378*	.383*	.434**
T2 Therapeutic Alliance		.097	.167		.184	.132		.334*	.298*
Supervisory Alliance		.002	.011		.023	-.004		-.107	-.125
T2 Therapeutic Alliance X Supervisory Alliance			-.130			.201			.137
R	.817	.822	.828	.471	.492	.525	.378	.519	.534
Total R^2	.667	.676	.686	.222	.242	.276	.143	.270	.285
Adjusted R^2	.660	.654	.657	.203	.186	.202	.120	.209	.204
R^2 change	.667***	.009	.010	.222***	.033	.033	.143*	.129	.015
F	92.101***	30.621***	23.499***	11.705***	4.265*	3.713*	6.171*	4.434**	3.493*

p <.05*, p <.01**, p <.001***

Negative Behaviour

T1 negative behaviour significantly predicted T2 and T3 negative behaviour, explaining 36% (34% adjusted R^2, p <.0005) and 33% (30.5% adjusted R^2, p <.005) of the variance, respectively. Negative behaviour did not significantly predict T4 negative behaviour.

Table A26.5

Hierarchical Multiple Regression of T2, T3, and T4 Negative Behaviour, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Negative Behaviour		(n = 50)	T3 Negative Behaviour		(n = 26)	T4 Negative Behaviour (n = 19)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Negative Behaviour	.598***	.500***	.505***	.576**	.576**	.573**	.426	.355	.354
T1 Therapeutic Alliance		-.255 *	-.181		.003	-.051		-.180	-.196
Supervisory Alliance		-.032	.017		.113	.077		.200	.189
T1 Therapeutic Alliance X Supervisory Alliance			-.220			.162			.046
R	.598	.641	.673	.576	.587	.606	.426	.513	.515
Total R^2	.357	.410	.453	.332	.344	.367	.181	.263	.265
Adjusted R^2	.344	.373	.405	.305	.259	.252	.136	.125	.069
R^2 change	.357***	.053	.042	.332**	.013	.023	.181	.082	.002
F	27.245***	10.904***	9.515***	12.403**	4.024*	3.192*	3.988	1.907	1.354
T1 Negative Behaviour				.576**	.505**	.481**	.414	.354	.348
T2 Therapeutic Alliance					-.242	-.228		-.151	-.148
Supervisory Alliance					.120	.111		.181	.179
T2 Therapeutic Alliance X Supervisory Alliance						-.152			-.041
R				.576	.647	.664	.414	.476	.477
Total R^2				.332	.419	.441	.171	.226	.228
Adjusted R^2				.305	.343	.339	.125	.081	.022
R^2 change				.332**	.068	.022	.171	.055	.002
F				12.403**	5.524**	4.338**	3.716	1.560	1.107

p <.05*, p <.01**, p <.001***

Positive behaviour

T1 positive behaviour significantly predicted T2 and T3 positive behaviour, explaining 29% (28% adjusted R^2, p <.0005) and 28% (25% adjusted R^2, p <.0005) of the variance, respectively. Positive behaviour did not significantly predict T4 positive behaviour.

Table A26.6

Hierarchical Multiple Regression of T4 Positive Behaviour, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T4 Positive Behaviour (n = 19)		
	Step 1	Step 2	Step 3
T1 Positive Behaviour	.029	.003	-.020
T1 Therapeutic Alliance		.190	.259
Supervisory Alliance		-.330	-.284
T1 Therapeutic Alliance X Supervisory Alliance			-.190
R	.029	.413	.449
Total R^2	.001	.170	.202
Adjusted R^2	-.055	.015	-.011
R^2 change	.001	.169	.031
F	.015	1.095	.946
T1 Positive Behaviour	-.009	-.040	-.041
T2 Therapeutic Alliance		.271	.275
Supervisory Alliance		-.273	-.275
T2 Therapeutic Alliance X Supervisory Alliance			-.027
R	.009	.394	.395
Total R^2	.000	.155	.156
Adjusted R^2	-.055	-.003	-.069
R^2 change	.000	.155	.001
F	.002	.981	.694

p <.05*, p <.01**, p <.001***

Well-being

T1 well-being significantly predicted T2 and T3 well-being, explaining 20% (18% adjusted R^2, p <.001) and 21% (18% adjusted R^2, p <.015) of the variance, respectively. Well-being did not significantly predict T4 well-being.

Table A26.7

Hierarchical Multiple Regression of T2, T3, and T4 Well-being, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Well-being		(*n* = 50)	T3 Well-being		(*n* = 26)	T4 Well-being		(*n* = 19)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Well-being	.448***	.397**	.396**	.463*	.546**	.545**	-.115	-.082	-.083
T1 Therapeutic Alliance		.167	.214		-.257	-.247		-.124	-.102
Supervisory Alliance		.121	.153		-.279	-.272		-.007	.009
T1 Therapeutic Alliance X Supervisory Alliance			-.145			-.032			-.069
R	.448	.482	.501	.463	.568	.569	.115	.165	.177
Total R^2	.201	.232	.251	.214	.322	.323	.013	.027	.031
Adjusted R^2	.184	.183	.185	.183	.234	.200	-.041	-.155	-.227
R^2 change	.201***	.032	.018	.214*	.108	.001	.013	.014	.004
F	12.292***	4.739**	3.845**	6.825*	3.648*	2.628	.243	.150	.122
T1 Well-being							-.232	-.246	-.233
T2 Therapeutic Alliance								.161	.140
Supervisory Alliance								-.061	-.053
T2 Therapeutic Alliance X Supervisory Alliance									.135
R							.232	.290	.319
Total R^2							.054	.084	.102
Adjusted R^2							.001	-.088	-.138
R^2 change							.054	.030	.018
F							1.020	.489	.424

p <.05*, p <.01**, p <.001***

Psychopathology

T1 Psychopathology accounted for 38% (37% adjusted R^2, p <.0005) of the variance in T2 psychopathology, 18% (15% adjusted R^2, p <.027) of the variance in T3 psychopathology, and 23% (19.2% adjusted R^2, p <.027) of the variance in T4 psychopathology.

Table A26.8

Hierarchical Multiple Regression of T2, T3, and T4 Psychopathology, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Psychopathology		(n = 50)	T3 Psychopathology		(n = 26)	T4 Psychopathology (n = 19)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Psychopathology	.617***	.603***	.596 ***	.426*	.481*	.458*	.482*	.461*	.409
T1 Therapeutic Alliance		-.027	-.049		.042	-.035		-.054	-.192
Supervisory Alliance		-.050	-.065		.305	.253		-.072	-.115
T1 Therapeutic Alliance X Supervisory Alliance			.062			.214			.284
R	.617	.619	.622	.426	.517	.555	.482	.489	.549
Total R^2	.381	.383	.386	.181	.268	.308	.233	.239	.301
Adjusted R^2	.368	.344	.333	.149	.172	.182	.192	.105	.126
R^2 change	.381***	.002	.003	.181*	.086	.040	.233*	.006	.062
F	30.098***	9.726***	7.241***	5.536*	2.804	2.443	5.763*	1.781	1.723
T1 Psychopathology	.617***	.553 ***	.575***	.426*	.368*	.406*	.482 *	.021	.010
T2 Therapeutic Alliance		-.237 *	-.215*		-.269	-.233		-.237	-.247
Supervisory Alliance		-.056	-.060		.316	.309		-.099	-.097
T2 Therapeutic Alliance X Supervisory Alliance			-.133			-.223			.062
R	.617	.640	.653		.558	.598	.482	.256	.263
Total R^2	.381	.410	.427	.426	.311	.358	.233	.066	.069
Adjusted R^2	.368	.373	.378	.181	.221	.241	.192	-.110	-.179
R^2 change	.381***	.056	.017	.149	.182	.047	.233*	.061	.004
F	30.098***	11.111***	8.743***	.181*	3.458*	3.066*	5.763*	.375	.279

p <.05*, p <.01**, p <.001***

Parent Ability

T1 parent ability significantly predicted T2 and T3 parent ability, explaining 24% (24% adjusted R^2, p <.0005) and 17% (13% adjusted R^2, p <.034) of the variance, respectively. Parent ability did not significantly predict T4 parent ability.

Table A26.9

Hierarchical Multiple Regression of T2, T3, and T4 Parent Ability, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Parent Ability		(n = 50)	T3 Parent Ability		(n = 26)	T4 Parent Ability		(n = 19)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Parent Ability	.488***	.435**	.435**	.409*	.457*	.457*	-.085	-.104	-.104
T1 Therapeutic Alliance		.217	.194		-.001	.012		.205	.214
Supervisory Alliance		-.006	-.021		-.433*	-.424*		-.292	-.286
T1 Therapeutic Alliance X Supervisory Alliance			.070			-.040			-.026
R	.488	.532	.536	.409	.593	.594	.085	.398	.399
Total R^2	.238	.283	.287	.167	.352	.353	.007	.159	.159
Adjusted R^2	.223	.237	.225	.134	.267	.236	-.048	.001	-.065
R^2 change	.238***	.045	.004	.167*	.185	.001	.007	.151	.001
F	15.337***	6.188***	4.638**	5.008*	4.163*	3.005*	.132	1.006	.711
T1 Parent Ability				.409*	.454*	.461*	-.085	-.007	-.008
T2 Therapeutic Alliance					.191	.155		.027	.031
Supervisory Alliance					-.357*	-.343*		-.230	-.231
T2 Therapeutic Alliance X Supervisory Alliance						.250			-.024
R				.409	.608	.656	.085	.234	.235
Total R^2				.167	.369	.430	.007	.055	.055
Adjusted R^2				.134	.287	.327	-.048	-.122	-.197
R^2 change				.167*	.171	.061	.007	.054	.001
F				5.008*	4.487*	4.151*	.132	.309	.220

p <.05*, p <.01**, p <.001***

Family Cohesion

T1 family cohesion accounted for 51% (50% adjusted R^2, p <.0005) of the variance in T2 family cohesion, 39% (37% adjusted R^2, p <.010) of the variance in T3 family cohesion, and 20% (16% adjusted R^2, p <.040) of the variance in T4 family cohesion.

Table A26.10

Hierarchical Multiple Regression of T2, T3, and T4 Family Cohesion, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Cohesion		(n = 50)	T3 Family Cohesion		(n = 26)	T4 Family Cohesion (n = 19)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Cohesion	.716***	.700***	.735***	.622***	.700***	.727***	.450*	.510*	.513*
T1 Therapeutic Alliance		.066	.004		-.109	-.157		.087	.101
Supervisory Alliance		.026	-.020		-.264	-.300		-.349	-.377
T1 Therapeutic Alliance X Supervisory Alliance			.167			.129			-.136
R	.716	.719	.735	.622	.672	.682	.450	.578	.593
Total R^2	.513	.517	.540	.387	.451	.465	.203	.334	.351
Adjusted R^2	.503	.486	.500	.369	.380	.368	.161	.216	.189
R^2 change	.513***	.004	.023	.387***	.064	.014	.203*	.131	.018
F	51.550***	16.750***	13.500***	15.808***	6.308**	4.787**	4.834*	2.836	2.165
T1 Family Cohesion				.622***	.661***	.658***	.450*	.498*	.484*
T2 Therapeutic Alliance					.073	.101		.162	.284
Supervisory Alliance					-.221	-.227		-.325	-.353
T2 Therapeutic Alliance X Supervisory Alliance						-.057			-.256
R				.622	.672	.673	.450	.592	.633
Total R^2				.387	.451	.453	.203	.351	.400
Adjusted R^2				.369	.382	.358	.161	.236	.250
R^2 change				.387***	.058	.002	.203*	.148	.049
F				15.808***	6.571**	4.769*	4.834*	3.064	2.668

p <.05*, p <.01**, p <.001***

Family Adaptability

T1 family adaptability accounted for 35% (33.5% adjusted R^2, p <.0005) of the variance in T2 family adaptability, 33% (31% adjusted R^2, p <.002) of the variance in T3 family adaptability, and 22% (17.5% adjusted R^2, p <.042) of the variance in T4 family adaptability.

Table A26.11

Hierarchical Multiple Regression of T2, T3, and T4 Family Adaptability, T1 and T2 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Adaptability		(n = 50)	T3 Family Adaptability		(n = 26)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Adaptability	.590***	.587***	.583***	.577**	.559**	.536**
T1 Therapeutic Alliance		.085	.096		.173	.257
Supervisory Alliance		-.001	.008		.076	.135
T1 Therapeutic Alliance X Supervisory Alliance			-.036			-.251
R	.590	.596	.597	.577	.602	.646
Total R^2	.348	.355	.356	.332	.363	.417
Adjusted R^2	.335	.314	.300	.306	.279	.311
R^2 change	.348***	.007	.001	.332***	.030	.055
F	26.139***	8.624***	6.361***	12.448**	4.360*	3.939*
T1 Family Adaptability	.590***	.513***	.523***	.577**	.588**	.611***
T2 Therapeutic Alliance		.350**	.428***		-.077	.098
Supervisory Alliance		.047	.027		.024	-.021
T2 Therapeutic Alliance X Supervisory Alliance			-.171			-.380
R	.590	.679	.695	.577	.583	.668
Total R^2	.348	.461	.483	.332	.339	.447
Adjusted R^2	.335	.427	.438	.306	.253	.346
R^2 change	.348***	.113*	.022	.332**	.007	.107

p <.05*, p <.01**, p <.001***

Service Satisfaction

T1 satisfaction significantly predicted T2 satisfaction, explaining 10% (8% adjusted R^2, p <.029) of the variance.

Table A26.12

Hierarchical Multiple Regression of T2 Service Satisfaction, T1 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Service Satisfaction (n = 50)		
	Step 1	Step 2	Step 3
T1 Service Satisfaction	.310 *	.349	.360
T1 Therapeutic Alliance		-.060	-.055
Supervisory Alliance		-.011	.000
T1 Therapeutic Alliance X Supervisory Alliance			-.041
R	.310	.313	.315
Total R^2	.096	.098	.099
Adjusted R^2	.077	.039	.019
R^2_{change}	.096 *	.002	.001
F	5.096 *	1.665	1.241

p <.05*, p <.01**, p <.001***

Therapist Adherence

T1 therapist adherence significantly predicted T2 therapist adherence, explaining 26% (25% adjusted R^2, p <.0005) of the variance.

Table A26.13

Hierarchical Multiple Regression of T2 Therapist Adherence, T1 Therapeutic Alliance, Supervisory Alliance, and the Interaction between Therapeutic Alliance and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Therapist Adherence		(n = 50)
	Step 1	Step 2	Step 3
T1 Therapist Adherence	.510***	.457**	.444**
T1 Therapeutic Alliance		.069	.037
Supervisory Alliance		-.048	-.078
T1 Therapeutic Alliance X Supervisory Alliance			.112
R	.510	.515	.526
Total R^2	.260	.265	.276
Adjusted R^2	.245	.218	.213
R^2_{change}	.260***	.006	.011
F	17.188 ***	5.657**	4.389**

p <.05*, p <.01**, p <.001***

The Supervisory Alliance, Therapist Adherence, and Client Outcomes

Offending Frequency

T1 offending frequency accounted for 21% (19% adjusted R^2, p <.001) of the variance in T2 offending frequency, 18% (16.5% adjusted R^2, p <.003) of the variance in T3 offending frequency, and 13% (11% adjusted R^2, p <.013) of the variance in T4 offending frequency.

Table A26.14

Hierarchical Multiple Regression of T2, T3, and T4 Offending Frequency, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Offending Frequency (*n* = 51)			T3 Offending Frequency (*n* = 46)			T4 Offending Frequency (*n* = 45)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Offending Frequency	.457***	.465***	.463***	.428**	.464**	.455**	.362*	.398**	.388*
T1 Therapist Adherence		.106	.100		.020	-.011		.182	.146
Supervisory Alliance		.047	.042		.179	.152		.188	.158
T1 Therapist Adherence X Supervisory Alliance			.019			.111			.124
R	.457	.466	.467	.428	.459	.472	.362	.410	.427
Total R^2	.209	.217	.218	.183	.211	.222	.131	.168	.182
Adjusted R^2	.193	.170	.153	.165	.156	.148	.112	.109	.102
R^2_{change}	.209***	.009	.000	.183**	.028	.011	.131*	.037	.014
F	13.437***	4.538**	3.341*	10.084**	3.834*	3.003*	6.655*	2.827*	2.283
T1 Offending Frequency	.457***	.462***	.461***	.428**	.451**	.452**	.362*	.388*	.386*
T2 Therapist Adherence		-.098	-.111		.195	.196		-.077	-.099
Supervisory Alliance		-.027	-.027		.220	.220		.084	.085
T2 Therapist Adherence X Supervisory Alliance			.034			-.002			.060
R	.457	.466	.467	.428	.496	.496	.362	.384	.388
Total R^2	.209	.217	.218	.183	.246	.246	.131	.147	.150
Adjusted R^2	.193	.170	.153	.165	.193	.174	.112	.086	.067
R^2_{change}	.209***	.009	.001	.183**	.063	.000	.131*	.016	.003
F	13.437***	4.538**	3.353*	10.084**	4.674**	3.424*	6.655*	2.416	1.812

p <.05*, p <.01**, p <.001***

Offending Seriousness

T1 offending seriousness did not significantly predict T2, T3 and T4 offending seriousness.

Table A26.15

Hierarchical Multiple Regression of T2, T3, and T4 Offending Seriousness, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Offending Seriousness (*n* = 52)			T3 Offending Seriousness (*n* = 46)			T4 Offending Seriousness (*n* = 45)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Offending Seriousness	.086	.100	.098	.283	.272	.290	.056	.048	.056
T1 Therapist Adherence		.080	.088		-.017	-.086		.103	.071
Supervisory Alliance		.071	.076		-.049	-.100		-.008	-.032
T1 Therapist Adherence X Supervisory Alliance			-.026			.255			.120
R	.086	.117	.120	.283	.287	.377	.056	.120	.167
Total R^2	.007	.014	.014	.080	.082	.142	.003	.014	.028
Adjusted R^2	-.012	-.047	-.068	.060	.018	.061	-.020	-.056	-.067
R^2_{change}	.007	.006	.001	.080	.002	.060	.003	.011	.013
F	.381	.226	.174	3.932	1.284	1.744	.139	.206	.294
T1 Offending Seriousness	.086	.093	.083	.283	.258	.270	.056	.035	.063
T2 Therapist Adherence		.031	.059		.202	.167		.090	.007
Supervisory Alliance		.041	.037		.009	.015		-.032	-.019
T2 Therapist Adherence X Supervisory Alliance			-.072			.091			.215
R	.086	.097	.117	.283	.346	.356	.056	.116	.228
Total R^2	.007	.009	.014	.080	.120	.126	.003	.013	.052
Adjusted R^2	-.012	-.051	-.068	.060	.058	.043	-.020	-.057	-.040
R^2_{change}	.007	.002	.004	.080	.039	.007	.003	.010	.039
F	.381	.155	.167	3.932	1.947	1.520	.139	.192	.564

p <.05*, p <.01**, p <.0051

Days in OHP

T1 days in OHP significantly predicted T2 days in OHP, explaining 49% (48% adjusted R^2, p <.0005) of the variance. T1 days in OHP did not significantly predict T3 and T4 days in OHP.

Table A26.16

Hierarchical Multiple Regression of T2, T3, and T4 Days in OHP, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Days in OHP		(n = 48)	T3 Days in OHP	(n = 46)		T4 Days in OHP (n = 45)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Days in OHP	.701***	.711***	.709***	.181	.225	.225	.259	.311*	.308*
T1 Therapist Adherence		.000	.007		.283	.284		.212	.197
Supervisory Alliance		.092	.098		.204	.204		.257	.239
T1 Therapist Adherence X Supervisory Alliance			-.028			-.002			.067
R	.701	.707	.707	.181	.324	.324	.259	.361	.367
Total R^2	.491	.499	.500	.033	.105	.105	.067	.131	.135
Adjusted R^2	.480	.466	.455	.011	.042	.020	.046	.069	.050
R^2_{change}	.491***	.008	.001	.033	.072	.000	.067	.063	.004
F	45.346***	14.965***	11.007***	1.530	1.679	1.230	3.175	2.103	1.597
T1 Days in OHP	.701***	.733***	.731***	.185	.182	.183			
T2 Therapist Adherence		-.034	-.085		.150	.077			
Supervisory Alliance		.045	.021		.090	.095			
T2 Therapist Adherence X Supervisory Alliance			.202			.193			
R	.701	.725	.751	.185	.239	.298			
Total R^2	.491	.526	.564	.034	.057	.089			
Adjusted R^2	.480	.495	.525	.014	-.006	.006			
R^2_{change}	.491***	.004	.038	.034	.023	.032			
F	45.346***	16.653***	14.241***	1.663	.912	1.074			

p <.05*, p <.01**, p <.001***

School Attendance

T1 school attendance accounted for 50% (49% adjusted R^2, $p < .0005$) of the variance in T2 school attendance, 32% (31% adjusted R^2, $p < .0005$) of the variance in T3 school attendance, and 14% (12% adjusted R^2, $p < .016$) of the variance in T4 school attendance.

Table A26.17

Hierarchical Multiple Regression of T2, T3, and T4 School Attendance, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 School Attendance (*n* = 49)			T3 School Attendance (*n* = 44)			T4 School Attendance (*n* = 40)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 School Attendance				.568***	.591***	.527***	.375*	.430**	.322
T1 Therapist Adherence					.167	.199		.153	.209
Supervisory Alliance					.054	.102		-.065	.017
T1 Therapist Adherence X Supervisory Alliance						-.145			-.246
R				.568	.588	.601	.375	.417	.469
Total R^2				.323	.345	.361	.140	.174	.220
Adjusted R^2				.307	.297	.297	.118	.107	.133
R^2_{change}				.323***	.022	.016	.140*	.033	.046
F				20.521***	7.209***	5.657**	6.367*	2.595	2.535
T1 School Attendance	.705***	.696***	.623***	.568***	.574***	.580***	.375*	.415*	.330
T2 Therapist Adherence		.116	.193		.106	.100		.202	.291
Supervisory Alliance		.064	.080		.013	.012		-.074	-.055
T2 Therapist Adherence X Supervisory Alliance			-.207			.016			-.239
R	.705	.715	.737	.568	.578	.578	.375	.439	.485
Total R^2	.498	.511	.543	.323	.334	.334	.140	.193	.235
Adjusted R^2	.487	.479	.502	.307	.285	.267	.118	.127	.150
R^2_{change}	.498***	.013	.032	.323***	.011	.000	.140*	.053	.042
F	47.545***	16.028***	13.354***	20.521***	6.845***	5.013**	6.367*	2.948*	2.767*

p <.05*, p <.01**, p <.001***

Negative Behaviour

T1 negative behaviour significantly predicted T2 and T3 negative behaviour, explaining 38% (37% adjusted R^2, p <.0005) and 34% (31% adjusted R^2, p <.001) of the variance, respectively. T1 negative behaviour did not significantly predict T4 negative behaviour.

Table A26.18

Hierarchical Multiple Regression of T2, T3, and T4 Negative Behaviour, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Negative Behaviour		(n = 52)	T3 Negative Behaviour (n = 27)			T4 Negative Behaviour(n = 20)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Negative Behaviour	.615***	.601***	.632***	.582***	.603***	.577**	.313	.326	.320
T1 Therapist Adherence		-.088	-.045		.175	.139		.148	.139
Supervisory Alliance		-.020	.011		.195	.169		.285	.278
T1 Therapist Adherence X Supervisory Alliance			-.135			.114			.029
R	.615	.620	.633	.582	.614	.623	.313	.404	.405
Total R^2	.378	.384	.400	.339	.376	.388	.098	.164	.164
Adjusted R^2	.366	.346	.350	.313	.299	.282	.051	.016	-.045
R^2_{change}	.378***	.006	.016	.339***	.038	.011	.098	.066	.001
F	30.967***	10.190***	8.008***	13.308***	4.831**	3.645*	2.064	1.108	.786
T1 Negative Behaviour				.582***	.571**	.572**	.313	.276	.274
T2 Therapist Adherence					-.069	-.078		-.300	-.279
Supervisory Alliance					.100	.101		.140	.138
T2 Therapist Adherence X Supervisory Alliance						.025			-.057
R				.582	.597	.598	.313	.478	.481
Total R^2				.339	.357	.357	.098	.229	.232
Adjusted R^2				.313	.276	.246	.051	.093	.040
R^2_{change}				.339***	.018	.001	.098	.131	.003
F				13.308***	4.439*	3.198*	2.064	1.683	1.206

p <.05*, p <.01**, p <.001***

Positive Behaviour

T1 positive behaviour significantly predicted T2 and T3 positive behaviour, explaining 19% (17% adjusted R^2, p <.0005) and 18% (13% adjusted R^2, p <.023) of the variance, respectively. Positive behaviour did not significantly predict T4 positive behaviour.

Table A26.19

Hierarchical Multiple Regression of T2, T3, and T4 Positive Behaviour, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Positive Behaviour		(n = 52)	T3 Positive Behaviour (n = 27)			T4 Positive Behaviour (n = 20)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Positive Behaviour	.435***	.432**	.430**	.429*	.459*	.451*	-.002	.032	.026
T1 Therapist Adherence		.076	.091		-.027	.027		-.097	-.054
Supervisory Alliance		-.056	-.044		-.411*	-.367*		-.387	-.352
T1 Therapist Adherence X Supervisory Alliance			-.052			-.192			-.154
R	.435	.450	.453	.429	.586	.614	.002	.353	.383
Total R^2	.190	.202	.205	.184	.343	.377	.000	.125	.147
Adjusted R^2	.174	.153	.139	.153	.261	.269	-.053	-.030	-.067
R^2_{change}	.190***	.013	.003	.184*	.159	.034	.000	.125	.022
F	11.930***	4.142*	3.091*	5.874*	4.174*	3.480*	.000	.806	.688
T1 Positive Behaviour							-.002	.002	.000
T2 Therapist Adherence								.368	.348
Supervisory Alliance								-.242	-.240
T2 Therapist Adherence X Supervisory Alliance									.055
R							.002	.492	.495
Total R^2							.000	.243	.245
Adjusted R^2							-.053	.109	.056
R^2_{change}							.000	.243	.003
F							.000	1.814	1.299

p <.05*, p <.01**, p <.001***

Well-being

T1 well-being significantly predicted T2 and T3 well-being, explaining 20% (19% adjusted R^2, p <.001) and 21% (18% adjusted R^2, p <.015) of the variance, respectively. Well-being did not significantly predict T4 well-being.

Table A26.20

Hierarchical Multiple Regression of T2, T3, and T4 Well-being, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Well-being		(*n* = 52)	T3 Well-being		(*n* = 27)	T4 Well-being		(*n* = 20)
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Well-being	.450***	.451***	.396**				.097	.120	.082
T1 Therapist Adherence		-.090	-.033					-.268	-.229
Supervisory Alliance		.051	.098					-.130	-.098
T1 Therapist Adherence X Supervisory Alliance			-.185						-.127
R	.450	.466	.496				.097	.258	.283
Total R^2	.202	.217	.246				.009	.067	.080
Adjusted R^2	.187	.169	.183				-.043	-.098	-.150
R^2_{change}	.202***	.015	.029				.009	.057	.014
F	12.933***	4.524**	3.910**				.181	.405	.349
T1 Well-being				.457*	.471*	.422*	.097	.102	.071
T2 Therapist Adherence					.027	.142		.138	.210
Supervisory Alliance					-.194	-.200		.028	.024
T2 Therapist Adherence X Supervisory Alliance						-.309			-.193
R				.457	.500	.573	.097	.165	.241
Total R^2				.209	.250	.328	.009	.027	.058
Adjusted R^2				.178	.156	.212	-.043	-.144	-.178
R^2_{change}				.209*	.041	.079	.009	.018	.031
F				6.850*	2.660	2.812*	.181	.159	.246

p <.05*, p <.01**, p <.001***

Psychopathology

Psychopathology accounted for 35% (34% adjusted R^2, p <.0005) of the variance in T2 psychopathology, 30% (27% adjusted R^2, p <.003) of the variance in T3 psychopathology, and 23% (19% adjusted R^2, p <.027) of the variance in T4 psychopathology.

Table A26.21

Hierarchical Multiple Regression of T2, T3, and T4 Psychopathology, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Psychopathology		(n = 52)	T3 Psychopathology		(n = 27)	T4 Psychopathology (n = 20)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Psychopathology	.594***	.590***	.585***	.544**	.603***	.551**	.482*	.473*	.437
T1 Therapist Adherence		.064	.058		.137	.085		.045	.009
Supervisory Alliance		-.002	-.007		.402*	.352*		-.042	-.076
T1 Therapist Adherence X Supervisory Alliance			.019			.187			.129
R	.594	.598	.598	.544	.652	.674	.482	.488	.502
Total R^2	.353	.357	.358	.296	.424	.454	.233	.238	.252
Adjusted R^2	.341	.318	.304	.269	.353	.359	.192	.104	.065
R^2_{change}	.353***	.004	.000	.296**	.128	.030	.233*	.005	.014
F	27.859***	9.086***	6.684***	10.950**	5.900**	4.786**	5.763*	1.770	1.349
T1 Psychopathology	.594***	.596***	.586***	.544**	.603***	.585***	.482*	.482*	.467*
T2 Therapist Adherence		-.107	-.137		-.027	-.082		-.150	-.194
Supervisory Alliance		-.058	-.057		.334	.336		-.101	-.100
T2 Therapist Adherence X Supervisory Alliance			.082			.150			.119
R	.594	.604	.609	.544	.640	.655	.482	.507	.519
Total R^2	.353	.365	.370	.296	.410	.429	.233	.257	.269
Adjusted R^2	.341	.326	.318	.269	.336	.329	.192	.126	.086
R^2_{change}	.353***	.011	.006	.296**	.114	.019	.233*	.025	.012
F	27.859***	9.377***	7.060***	10.950**	5.560**	4.316**	5.763*	1.963	1.473

p <.05*, p <.01**, p <.001***

Parent Ability

T1 parent ability significantly predicted T2 and T3 parent ability, explaining 31% (30% adjusted R^2, p <.0005) and 27% (24% adjusted R^2, p <.005) of the variance, respectively. T1 parent ability did not significantly predict T4 parent ability.

Table A26.22

Hierarchical Multiple Regression of T2 and T4 Parent Ability, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Parent Ability		(n = 52)	T4 Parent Ability (n = 20)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Parent Ability	.560***	.564***	.565***	-.036	-.006	-.011
T1 Therapist Adherence		.041	.040		.057	.066
Supervisory Alliance		-.055	-.056		-.260	-.253
T1 Therapist Adherence X Supervisory Alliance			.002			-.028
R	.560	.566	.566	.036	.291	.292
Total R^2	.313	.320	.320	.001	.085	.086
Adjusted R^2	.300	.278	.263	-.051	-.077	-.143
R^2_{change}	.313***	.007	.000	.001	.084	.001
F	23.262***	7.684***	5.645**	.024	.525	.374
T1 Parent Ability				-.036	-.049	-.049
T2 Therapist Adherence					.391	.383
Supervisory Alliance					-.175	-.174
T2 Therapist Adherence X Supervisory Alliance						.023
R				.036	.471	.471
Total R^2				.001	.222	.222
Adjusted R^2				-.051	.084	.028
R^2_{change}				.001	.220	.000
F				.024	1.614	1.142

p <.05*, p <.01**, p <.001***

Family Cohesion

T1 family cohesion accounted for 57% (56% adjusted R^2, p <.0005) of the variance in T2 family cohesion, 39% (37% adjusted R^2, p <.0005) of the variance in T3 family cohesion, and 25% (21% adjusted R^2, p <.022) of the variance in T4 family cohesion.

Table A26.23

Hierarchical Multiple Regression of T2, T3, and T4 Family Cohesion, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Cohesion		(n = 52)	T3 Family Cohesion		(n = 27)	T4 Family Cohesion (n = 20)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
T1 Family Cohesion	.755***	.766***	.765***				.498*	.593**	.615**
T1 Therapist Adherence		-.157	-.154					-.202	-.234
Supervisory Alliance		-.062	-.059					-.455*	-.484*
T1 Therapist Adherence X Supervisory Alliance			-.009						.106
R	.755	.768	.768				.498	.636	.644
Total R^2	.570	.589	.589				.248	.405	.415
Adjusted R^2	.561	.564	.555				.208	.300	.268
R^2_{change}	.570***	.020	.000				.248*	.157	.010
F	67.499***	23.434***	17.222***				6.251*	3.852*	2.833
T1 Family Cohesion	.755***	.701***	.690***	.627***	.660***	.652***	.498*	.503*	.497*
T2 Therapist Adherence		.223*	.288**		.074	.123		.314	.345
Supervisory Alliance		.082	.081		-.213	-.214		-.261	-.262
T2 Therapist Adherence X Supervisory Alliance			-.164			-.125			-.080
R	.755	.783	.798	.627	.671	.681	.498	.677	.681
Total R^2	.570	.613	.636	.393	.451	.464	.248	.458	.464
Adjusted R^2	.561	.590	.606	.369	.382	.371	.208	.363	.330
R^2_{change}	.570***	.044	.023	.393***	.058	.013	.248*	.211	.005
F	67.499***	25.917***	20.977***	16.814***	6.565**	4.979**	6.251*	4.797*	3.462*

p <.05*, p <.01**, p <.001***

Family Adaptability

T1 family adaptability accounted for 27% (26% adjusted R^2, p <.0005) of the variance in T2 family cohesion, 24% (21% adjusted R^2, p <.008) of the variance in T3 family cohesion, and 20% (16% adjusted R^2, p <.041) of the variance in T4 family cohesion.

Table A26.24

Hierarchical Multiple Regression of T2 Family Adaptability, T1 and T2 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Family Adaptability		(n = 52)
	Step 1	Step 2	Step 3
T1 Family Adaptability	.520***	.560***	.595***
T1 Therapist Adherence		-.120	-.173
Supervisory Alliance		-.099	-.143
T1 Therapist Adherence X Supervisory Alliance			.147
R	.520	.532	.549
Total R^2	.271	.283	.302
Adjusted R^2	.256	.239	.244
R^2_{change}	.271**	.012	.019
F	18.921***	6.436***	5.185***
T1 Family Adaptability	.520*****	.456***	.448***
T2 Therapist Adherence		.302*	.356**
Supervisory Alliance		.052	.049
T2 Therapist Adherence X Supervisory Alliance			-.140
R	.520	.593	.607
Total R^2	.271	.352	.368
Adjusted R^2	.256	.312	.316
R^2_{change}	.271***	.081	.017
F	18.921***	8.869***	7.000***

p <.05*, p <.01**, p <.001***

Service Satisfaction

T1 satisfaction significantly predicted T2 satisfaction, explaining 8% (6% adjusted R^2, p <.040) of the variance.

Table A26.25
Hierarchical Multiple Regression of T2 Service Satisfaction, T1 Therapist Adherence, Supervisory Alliance, and the Interaction between Therapist Adherence and Supervisory Alliance showing Standardised Regression Coefficients, R, R^2, and R^2_{change}

	T2 Satisfaction		(*n* = 52)
	Step 1	Step 2	Step 3
T1 Satisfaction	.283*	.355*	.311
T1 Therapist Adherence		-.163	-.183
Supervisory Alliance		-.071	-.109
T1 Therapist Adherence X Supervisory Alliance			.159
R	.283	.310	.344
Total R^2	.080	.096	.118
Adjusted R^2	.062	.041	.045
R^2_{change}	.080*	.016	.022
F	4.440*	1.738	1.610

p <.05*, p <.01**, p <.001***

Therapeutic Alliance

T1 alliance predicted 9.2% of the variance in T2 alliance (p <.027).