Characteristics of Treatment Completers and Non-Completers in a Residential Programme for Severe Conduct Disorder

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Caroline Miller
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ABSTRACT

The study centres on a long-term residential programme for the treatment of severe conduct disorder. A number of young people leave the programme before completion of treatment. The focus of the study is to examine existing data from psychometric tests to determine whether the data can provide material which delineates a completer profile and a non-completer profile. The data was originally collected as part of the assessment and diagnostic process for entry to the programme. All of the young people met criteria for a diagnosis of severe conduct disorder with early onset.

Secondary data analysis was used, to delineate a profile of each group. Differences between the two groups were found in the areas of resilience factors, internalising and externalising characteristics, and comorbidity with a range of disorders. Comorbidity with Attention Deficit Hyperactivity Disorder was particularly prevalent.

As the data samples were small the current study is exploratory and descriptive, rather than predictive or inferential. Gender and ethnicity affect both the manifestation of conduct disorder and response to treatment. However, the small sample size did not allow separate analysis along gender or ethnic lines. Both of these areas warrant further research.

Conduct disorder is a complex disorder, which affects every domain of the young person's life including family, individual development, educational achievement, peer relations, social relations, criminal history, and physical and mental health. Ecological models have explanatory utility in terms of aetiology, symptomatology, and treatment rationale covering all domains and are used as a framework for this study.

This study reviews relevant literature, gives a brief outline of the specific programme, describes the method and results of the secondary analysis of the test data, and concludes with a discussion about the implications of the findings, and some suggestions for the design of further programmes and for future research in this area.

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This is a tribute to those people who spend their days with the batto boys and girls trying to keep them away from the barbed wire. It is also a tribute to the young people themselves struggling to make their way.

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FOREWORD

Of all the boys on the beach batto was the biggest brave. best swimmer best diver best floater he was the shark of the sea-egg season and he ducked every boy he was sure he could beat any time any place without reason.

he was the shake of their cake the stone of their bush. he was the boast of the beach-boys gang

batto came from the tumbledown village of low wooden houses overlooking the bay which stood on their stilts like a crab on its claws. where they nevvah had bottles rounn their garden beds

cause they nevvah had gardens an bottles were fuh fights an they was plenty fights in de hickey. They could curse yuh mudder and ax fuh yuh faddah cause they didnt have mothers like the land-boys had an you couldnt curse they fathers who were fishermen

batto never had a mother like the land-boys had and hed never even had to go to school. but hed been to dodds and hoped one day to go to a proper prison for the man who would cross his path so the beach-boys said

dodds was the place with the high barbed wire and the cat-o-nine tails far far away in the country. but your parents were vague if you asked where it was what it meant. you were told it was the place where the bad boys went

ii
when he was he didnt know how much then, batto had burss another boy eye in a fight

it was so:

Sun Poem III, 8 i Edward Kamau Braithwaite 1982. (African/Caribbean Poet).

Conduct disorder is associated with bad boys. This overlooks a significant number of girls with conduct disorder. The bad boy epithet takes a moral stance in relation to what will be discussed here as a mental health disorder, with attempts to provide appropriate treatment for that disorder.

Like batto, many conduct disordered youth have low socioeconomic status, and the disadvantages which attend that status. Like batto, many have divided and conflicted families. Like batto, their horizons may be restricted to a future behind barbed wire where the bad boys go.

CHAPTER ONE CONDUCT DISORDER

1.0 Conduct Disorder

Conduct disorder (CD) is manifested and develops throughout childhood and adolescence (Steiner, et al., 1997). It is a behaviour disorder characterised by extreme and persistent non-compliant and aggressive behaviours which alienate the child from parents, caregivers, and the wider family system, from teachers and education personnel, and from peers. CD results in disruption and disadvantage across all domains of development associated with childhood and adolescence. There is no single cause, rather a series of correlates related to causal pathways (Frick, 1998). There is no single effective treatment and no cure. Accurate prevalence rates are difficult to ascertain. Effective treatment is difficult to obtain because it requires specific interventions across multiple domains and the necessary interagency cooperation, expertise, and resources may be difficult to arrange.

CD has a high negative impact with developmental disruption, and adverse social and emotional development and relationships with family and others (Steiner, et al., 1997). Accumulated social disabilities carry social and financial costs through loss of productivity, direct public contributions through benefits, and the cost of law enforcement, security, and incarceration (Loeber & Farrington, 2000; Steiner et al. 1997; Werry, 1997).

Criminal behaviour is a major distinguishing feature of conduct disorder and one of the indicators of severity (Loeber & Farrington, 2000). Criminality may give rise to a focus of attention on cost to the community in harm done to others and to their property. This may deflect attention from the mental health and treatable aspects of conduct disorder, as well as from the immediate disabling impact on the conduct disordered youth. In turn this may lead to conflict among agencies about responsibility for treatment provision. Historically, in New Zealand the Department of Social Welfare has received funding for providing youth justice facilities, and for providing family support or alternative placement where family relationships appeared irretrievably disrupted and damaged. Health funding agencies exclude conduct disorder from mental health categories eligible for treatment. Education is often prematurely terminated through persistent truancy or expulsion with no suitable alternative provision for the excluded student (Catalano et al., 1998).

This study describes conduct disorder, and focuses on a specific residential programme for the treatment of severe conduct disorder (SCD). The aim of the study is to describe individual differences between completers and non-completers of a programme for SCD, by comparing the completer and non-completer groups across a range of domains. The programme in focus provides residence, education, and long-term treatment. Primarily the comparison is made through the psychometric tests used in the initial stages of assessment in this programme. Other information, obtained from clinical interviews will be added, where appropriate, in order to give a fuller description.

1.1 Symptomatology or Behaviour

Kaplan and Sadock (1997) describe the symptomatology and behaviour seen in Conduct Disorder, using criteria provided in the Diagnostic and Statistical Manual, (Fourth Edition), of the American Psychiatric Association, (DSM-IV, 1994).

"A repetitive and persistent pattern of behaviour in which the basic rights of others, or major age appropriate societal norms or rules are violated…." (p.1207).

The DSM-IV is the classification system used in New Zealand to establish psychiatric diagnoses. The DSM-IV outlines four groups of characteristic behaviours of CD. They are physical harm to people or animals, destruction of property, deceitfulness or theft, and serious violations of rules. The DSM-IV further outlines fifteen behaviours within these groups. To meet DSM-IV criteria for diagnosis, three or more of these behaviours must be present for at least three months and one present for at least six months. The symptoms must be causing significant impairment in social, academic, or work settings. The three degrees of severity are mild, moderate, and severe. The programme in focus in this study is for young people with severe conduct disorder. In SCD many more criteria are met than the minimum required for diagnosis, or the problem behaviours cause serious harm to others.

McGeorge (1997) describes CD as one of the major challenges for preventive psychiatry in the 21st century. Developmental and long-term consequences are serious with poor academic achievement, out of family placement, and early criminal careers (Frick, 1998). However, early recognition and diagnosis have improved and offer the possibility of earlier intervention (McGeorge, 1997). McGeorge further states that for an estimated fifty percent of young people diagnosed with SCD, symptoms appear to resolve by their mid twenties. The remaining fifty percent have high mortality, morbidity, and imprisonment rates, with the concomitant disrupted relationships and work patterns (Frick, 1998; Werry, 1997).

Estimates of epidemiology vary from six to sixteen percent in boys, and two to nine percent in girls (Anderson et al., 1987). The ratio between incidence in boys and girls varies from 4:1 to 12:1, respectively (Steiner et al., 1997).

A single cause of conduct disorder has not been established, but there are a number of correlational factors which are well established, like low socioeconomic status, combined with family violence and child abuse, and with inconsistent parenting (Frick, 1998). Most aetiological theories and treatment protocols are based on models using these correlational factors statistically associated with the disorder which increase the risk of a child developing the disorder. There appear to be a number of causal pathways, which may be the result of combinations of risk factors interacting with each other (Borduin, 1999).

Young people who meet criteria for conduct disorder display a high degree of comorbidity with other mental health and general health problems, which also warrant treatment. There is generally involvement in criminal behaviour, but this is not the only, or most significant, marker because criminality needs to be related to other factors and to other symptoms in the presentation. For example, Hinshaw et al. (1993) found that conduct disorder had more effect on the incidence of antisocial and aggressive behaviour when combined with other disorders especially Attention Deficit Hyperactivity Disorder (ADHD).

Given the complexity of the disorder, and its impact across several domains, an ecological model is used in this study as the framework for exploring aetiological and treatment issues (Bronfenbrenner, 1999).

1.2 Diagnosis

DSM-IV criteria are used throughout this study. During the development of various editions of the DSM there have been increasing attempts to refine the criteria for CD and to distinguish it as a syndrome distinct from other behaviour disorders, particularly ADHD and Oppositional Defiant Disorder (ODD). To facilitate this process extensive field trials were carried out by Lahey et al. (1994). Subsequent field trials have been carried out by Lahey et al. (1998) to assist in confirming the validity of the subtypes outlined in DSM-IV. Classification and diagnostic accuracy is important to develop an accurate description of a disorder, to distinguish a disorder from others which may have similar manifestations, to target treatment more accurately, to make predictions about development and outcomes, to look at prevention possibilities, and to focus research (Lahey et al., 1998). There is an emphasis on ensuring that descriptions and distinctions are reliable and valid to facilitate differential diagnosis. Since CD, ADHD, and ODD have been established as distinct disorders, greater emphasis has been placed on differentiating between subtypes of CD. Diagnostic difficulties remain. Diagnosis of CD can be complicated by the high level of comorbidity with other psychiatric problems, even though each has a distinct syndrome. Werry (1997) summarises the difficulties in making a diagnosis

"....unreliability of diagnostic methods, especially single informant bias; threshold for diagnosis; boundaries between conduct disorder and adolescent delinquency found in 25% to 95% of teenagers depending on social environment; distinctiveness from other disruptive disorders; and the validity of the dichotomous medical versus the continuous dimensional personality view..." (p.577).

Assessment is via clinical interview which may or may not follow standardised formats like the Diagnostic Interview Schedule for Children Version IV (Haffer et al., 1996) or the Diagnostic Interview for Children and Adolescents (Reich, 2000). Other standardised tests may be used to screen for, or to assist in the diagnosis of, other disorders like ADHD, depression, or anxiety disorders. Family and child history are important, and information is sought across a range of situations. Generally the range of informants includes the child or adolescent, parents or caregivers, and teachers.

A range of assessment methods and informants from a number of social situations are crucial in establishing an accurate diagnosis of CD.

1.3 Aetiology

Conduct disorder arises from multiple factors. These include biological, temperamental, genetic, and social factors associated with a range of problems in a number of domains. There are gender differences in the development and manifestation of the disorder. It appears to occur more frequently in urban than in rural locations (Lahey et al., 1999). There are a number of well documented risk factors for the development of conduct disorder, but such development is not inevitable, and there are recognised protective or resilience factors which appear to play a role in reducing the inevitability of such development (Steiner & Wilson, 1999). Conduct disorder has a high associated incidence with a number of other childhood disorders, primarily ADHD, and with depression and learning disorders.

Ecological approaches see conduct disorder as a heterogeneous disorder, with multiple determinants. There are different manifestations at different ages, and in different individuals depending on developmental and biological factors, as well as the presence of certain risk and resiliency factors.

A number of writers support the case for multiple determinants of conduct disorder, with causal pathways or trajectories, framed within an ecological model. For example, Lahey et al. (1999) proposed an integrative causal model which places demographic factors, like age, race, gender, ethnicity, socio-economic status (SES), and family structure, in association with CD. They suggested that demographic factors might be seen as distal variables that work indirectly through a variety of proximal variables. The proximal variables would be biological maturation, acculturation, and parental supervision, for example. Lahey et al., also point to the need to distinguish between risk factors for onset and those for persistence. Furthermore, Lahey and colleagues suggest that the integrative causal model may be applicable only to boys, as it is based on data from boys. They acknowledge that more studies of girls are needed to clarify gender differences. Lahey sees age of onset as the key variable, with the strength of each of the multiple correlational factors having a different impact on the form and degree of antisocial behaviour along the developmental continuum of age. Moffitt et al. (1993) similarly use an ecological approach by combining neuropsychological findings with both early onset and later developmental trajectories, and with social factors.

Ecological approaches relate to models developed by Uri Bronfenbrenner from 1979 to 1999, who outlined a model of nested ecological structures of four types. These are microsystems (like the family and the peer group), mesosystems (like home-school or home-neighbourhood interfaces), exossystems (settings children are not directly involved in but which affect their lives, like the parent's workplace), macrosystems (societal institutions and cultural patterns which include values, ethics, and beliefs). More recently Bronfenbrenner has added a fifth system, chronosystem, which includes socio-historical events which affect the environment of the family, for example, the increase in working mothers (Bronfenbrenner, 1999).

Within an ecological model, behaviours or symptoms of conduct disorder are seen as products of the interaction of multiple factors within these ecological levels. The young person can be seen as interacting in a malfunctioning system, and unable to use resources which could be available to assist positively. Because this is a psychological study psychological factors are added to this sociological/ecological model.

Using an ecological model Borduin (1999) groups the correlates of antisocial behaviour in adolescence as illustrated in Table 1.

Table 1. Correlates of antisocial behaviour in adolescence (Borduin, 1999)

Individual adolescent characteristics	**Family characteristics**	**Peer relations**	**School factors**	**Neighbourhood and community characteristics**
Low verbal IQ Immature moral reasoning Cognitive bias to attribute hostile intentions to others Favourable attitudes towards antisocial behaviour	Low affection and cohesion High conflict and hostility Lax and ineffective parental discipline Poor parental monitoring of child's activities Parental difficulties, such as substance abuse, psychiatric conditions, and criminality	High involvement with deviant peers Poor social skills Low involvement with prosocial peers	Poor academic performance Dropout Low commitment to education Poor academic quality and weak structure of school	Criminal subculture (e.g. drug dealing, prostitution) Low organisational participation among residents Low social support available from church, neighbours, and other social groups High mobility

These correlates have their antecedents in childhood, particularly in the early onset of behaviour problems.

Factors implicated in the development of SCD

1.3.1 Biological factors

Past classifications have emphasised the hypothesised role of genetic factors and neurobiological features. Genetic factors are hypothesised from twin studies, and family history studies. A meta-analysis of twin and adoption studies (Mason &

Frick, 1994, cited in Frick 1998) found 50% variance in measures of antisocial and aggressive behaviour attributable to genetic factors. Exactly how genetic factors operate is unclear at this stage, though links have been made to neurobiological features. Current neurobiological information describes a possible decrease in noradrenergic functioning. An increase in blood serotonin correlates negatively with levels of 5HT metabolite, which correlates with aggression and violence (Kaplan & Sadock, 1997). There are a number of indicators that central nervous system dysfunction or damage plays a role. These may include low reactivity on a number of parameters related to the functioning of the autonomic nervous system (Lahey et al., 1993); or abnormalities in neurotransmitters (Pliska, 1999). These nervous system effects are reflected in typical CD behaviours like hyperactivity, impulsivity, inattention, and poor judgement and planning. Speltz et al. (1999) found young people with conduct disorder scored poorly on a range of neuropsychological tests, further establishing neurobiological links. While neuro-biological factors appear to play a role in CD, Steiner and Wilson (1999) point out that there is a high incidence of all forms of child abuse in the history of young people with conduct disorder. They therefore suggest that autonomic nervous system responses may be symptomatic of Post Traumatic Stress Disorder (PTSD) rather than genetically derived in conduct disorder.

The exact role and biological nature of neuro-biological factors is still to be determined.

1.3.2 Social Learning Factors

The characteristic behaviours of conduct disorder are seen as partly the result of maladaptive learning. This would follow from consequences and reinforcers in the environment failing to reinforce more normative behaviours and instead reinforcing antisocial behaviours. This pattern may occur in families and neighbourhoods where levels of criminal activity are high and such activity is condoned or valued. Inadequate, inconsistent, and ineffectual parenting skills and styles are also attributed with producing conduct disordered behaviour which has resulted in parenting, social skills, and communication skills all being targeted for intervention (Frick, 1999; Kazdin, 1997; Molgaard et al., 2000). Peer rejection sets the scene for contact with antisocial peers (Coie et al., 1990 cited in Frick, 1998), which further reinforces antisocial behaviour patterns. Poverty and high crime neighbourhoods offer more risk if social services are in poor supply, families have limited social interactions and limited participation in local organisations, and if there are weak intergenerational ties within families, easy accessibility to guns, and high rates of drug use and trafficking, (Coie et al., 1990).

Adverse social factors appear to exist in clusters and to interact with each, and with personal factors, to increase risk.

1.3.3 Developmental Factors

In lifespan developmental models as in Santrock (1999) adolescence is marked by rapid physical and sexual maturation, cognitive development which allows abstract, idealistic and logical thought, and changes in social cognition. Socio-emotional development is marked by increasing independence from parents, and increasing responsiveness to peer group culture. Important social relationships and styles of relating are established at this time. Educational foundations are being established which will allow, or inhibit, access to areas of career choice and the ability to enter employment. Disruption to any of these areas of development sets an adolescent apart from well socialised peers and makes access to future satisfying lifestyles more difficult to obtain. It makes it more likely that such adolescents will associate with antisocial peers and thus increase their own risk of participating in antisocial or aggressive behaviours.

Steiner and Wilson (1994) and Lahey et al. (1994) consider the differences between early and late onset to be significant. This is the model adopted by the DSM-IV. Early onset is characterised by the appearance of at least one symptom before the age of ten; late onset by the first appearance of symptoms in adolescence. These are described more fully under subtypes of CD.

Risk-resilience models look at developmental trajectories (Steiner & Wilson, 1999) and include protective factors which may be fostered as part of a treatment plan to reduce risk. Risk factors include the antecedents for antisocial behaviour shown in Table 2. The higher the number of risk factors the greater the chance of offending. Research studies (Frick, 1999; Steiner et al., 1997) indicate that while risk factors cannot be considered to be directly causal, they have strong correlations with the development of conduct disorder.

Table 2. Risk and resilience factors considered to be influential in the development of CD (Steiner & Wilson, 1999)

Resilience factors include	Risk factors include
positive role models	negative view of identity
close trusting bond with parents or another adult	family discord and inconsistent and inappropriate discipline
supportive relationships with teachers and peers; good work habits at school	low expectations for education, and little commitment (by youth and family)
development of self esteem and self efficacy	low degree of self control
strong social skills	early age of difficult behaviour
ability to take refuge in hobbies, work or creative pursuits	lack of positive hobbies or activities
sense of control over one's life	low socioeconomic status
parental factors such as, authoritative style, non drug using	parental role- lack of monitoring, low support, ineffective discipline, not having effective problem solving skills, not supporting development of pro-social skills
neighbourhood offering positive support	urban neighbourhood with high crime rates and high mobility
good peer relationships with some pro-social peers	antisocial peer influence
early childhood education programmes	low achievement in school grades
high IQ	low IQ; learning difficulties
easy temperament	difficult temperament
female gender	male gender
islands of competence outside of school	gang membership
	living with a single parent

Steiner and Wilson state that

"empirical research has demonstrated that protective factors attenuate risk factors and mediate outcomes (and vice versa)." (p.67).

A number of other writers such as Papalia, Olds, Feldman, and Collins (2001); and Tremblay, Le Marquand, and Vitaro (1999) support the hypothesis that such factors are helpful or harmful in child and adolescent development. Calvert and Lightfoot (2001) use a developmental psychopathology model (from Sroufe & Rutter, 1984) which combines key features of the above models and includes underlying concepts of risk, resilience, and developmental pathways. Resilience may assist in avoiding psychopathology or in changing the course of such pathology. The developmental psychopathology model emphasises transitional periods as having both key risk and resilience aspects.

1.4 Epidemiology

Most studies find prevalence rates of around three to seven percent, varying in different age groups; and a gender ratio of 4:1 to 12:1, male to female respectively (Steiner et al., 1997). New Zealand prevalence figures from the Dunedin Multidisciplinary Health and Development Study (Silva, 1990) give similar rates. However, prevalence figures are variable because different criteria are used in different situations, and because incidence rates in urban and rural locations may differ (Rutter et al., 1975 cited in McGeorge, 1997). Prevalence estimates vary depending on the age at which data is collected (Loeber et al., 2000), and depending on whether clinic or community samples are used. In clinic samples behaviour problems account for thirty to fifty percent of all referrals (Kazdin, 1985).

The major agencies working with children and young people, education, health, social welfare, and youth justice classify difficult behaviours in different ways. Attributions associated with difficult behaviours often differ between agencies. This means that prevalence figures are kept differently, and in different sites, without cross reference; and that a number of young people who would meet criteria for treatment are never referred or treated (Lahey et al., 1999). For example, figures from child mental health agencies may be obtained following comprehensive assessment using DSM-IV criteria, a number of informants, and screening or testing for other conditions. Those from youth justice may be based loosely on type of offence. Those from child protection agencies may have more emphasis on particular kinds of behaviours related to that situation, for example, absconding, or breakdown of placement. Steiner et al. (1997) noted that school and youth justice systems tend to delay bringing young people to treatment facilities. The high association with delinquent (law breaking) behaviour means that many young people with serious behaviour problems are never referred to child mental health facilities for assessment or treatment. They either escape any intervention, or have their behaviour addressed solely through the youth justice system. There is also a relatively high acceptance of norm breaking/criminal behaviour in adolescence when young men without significant behaviour problems have been found to engage in illegal behaviour throughout adolescence (Silva, et al. 1990). This further affects referral rates. Most of these young men do not have SCD, but those who do are obscured within the age cohort.

Other factors which affect the accuracy of prevalence figures are the age at which data is collected, and different criteria and collection methods being used at different historical points which make it difficult to compare past and current prevalence figures because of changes in definition and in the way data is collected (Lahey et al., 1999). The difficulties in obtaining accurate figures are illustrated in a number of studies. Fagot (1984) found that aggressive behaviour elicited a differential response from teachers and peers, with boys' behaviour being responded to at a much higher rate. This indicates one possible basis for the discrepancy between numbers of boys and girls. Lahey et al. (1999) found that CD was more prevalent among families with low socio-economic status, and in locations characterised by high crime rates and high social disorganisation. Rates vary at different ages even in the same population, as maturation increases the range of possible behaviours, both positive and negative.

The variation in definition of CD and in data collection means that available prevalence figures are likely to be under-representative of total incidence, and that considerable numbers of young people with behaviour problems are not referred for treatment. Closer liaison between mental health services, schools, and youth justice services are indicated to improve referral rates and access to treatment.

1.4.1 Persistence

Moffitt et al. (1996) using data from the Dunedin study found that individuals may have a high level of conduct problems during childhood, but these may cease in adolescence. However, Lahey et al. (1995) found that after one year, fifty percent of boys met criteria for CD again, and eighty-eight percent met criteria again over next three years. Lahey and colleagues suggest that more than fifty percent may have persistent symptoms beyond their mid twenties. Findings from the Christchurch study (Lynsskey & Horwood, 1996) indicated that detailed analysis, carried out at different ages, and with long-term follow-up is essential for drawing any firm conclusions about persistence of symptoms in young people with CD.

1.5 Subtypes of Conduct Disorder

There have been a number of attempts to classify CD according to subtypes. This arises from a perception of differences in the manifestation of the disorder, and a perceived need to differentiate between those who are likely to persist in disruptive behaviour and to escalate to more serious forms of anti-social behaviour. Hinshaw et al. (1993) give three reasons for the value of subtyping, that it allows greater accuracy in the prediction of the development of serious antisocial behaviour, provides a match between interventions and subtypes, and has importance in increasing the knowledge base. Hinshaw and colleagues described at least two developmental pathways which are different in age of onset, the type of antisocial behaviour, the persistence of the behavioural problems, and possibly aetiology.

Attempts at classification have focussed on amount and type of aggression, age of onset of serious behaviour problems, potential connection to a trajectory leading to the development of antisocial personality disorder (APD) in adulthood, and gender, as the basis of subtypes. Quay (1986) describes under-socialised aggressive CD with aggressive, disruptive, noncompliant, hyperactive, and restless behaviour, and socialised CD as more covert antisocial and rule breaking behaviour, but with a personal capacity for social bonding and for remorse. Lahey et al. (1998) state that although the level of aggression may be easy to define, it varies over time. This means that the amount of aggression considered significant is not clear or consistent. Lahey et al. consider age of onset to be useful because it makes people take account of developmental issues. They see age of onset as related to aggression, and increasing age to be related to more serious aggression or violence. Dodge (1991) wrote of proactive rather than reactive aggression. Other writers have looked at overt or covert disruptive behaviour patterns. Overt patterns include confrontation and fighting, while covert behaviours include theft (Fergusson et al., 1994; Frick et al., 1993; Loeber et al., 2000).

The DSM-III outlined four types of CD based on aggression from Quay (1986). These were undersocialised aggressive, undersocialised non-aggressive, socialised aggressive, and socialised non-aggressive. In the DSM-IV the subtypes are based on age of onset which relies on the appearance of at least one symptom before or after the age of ten. The age of onset subtypes are discussed below.

There is considerable support for two developmental types determined by early or late onset. Loeber & Farrington (2002) found that the risk of becoming serious, violent, chronic offenders was increased three times in early compared with late onset.

1.5.1 Early Onset

A number of writers (Moffitt 1993; Lahey et al., 1998) found the extreme and aggressive behaviours of conduct disorder occurring before the age of ten to twelve, often with an existing diagnosis of oppositional defiant disorder or with a diagnosis of attention deficit hyperactivity disorder, differentiated an early onset group from an adolescent onset group. Frick et al. (1994) looked at extreme behaviours, and identified incidences of cruelty, running away, or breaking into buildings occurring below the age of thirteen as most predictive of the development of conduct disorder. Cohen and Flory (1998) found instances of cruelty to other people and weapon use as strong predictors. Campbell (1991) found that early onset was often preceded by ODD, with sixty-seven percent of children whose behaviour problems continued from pre-school qualifying for a diagnosis of

ADHD, ODD, or CD by age nine. All of these writers look at the most extreme CD behaviours occurring before adolescence, not just the emergence of a single symptom or ODD symptoms.

Early onset is more often accompanied by neuropsychological problems, lower IQ, ADHD, higher levels of aggression, and a family history of disruptive behaviours (Moffitt et al., 1996; Loeber & Farrington, 2000). Other writers find that conditions adding to the risk for development and persistence of behaviour disorders are child characteristics of a difficult temperament, infant non-compliance, and later social rejection by peers, in the context of a family situation with low parental attachment, and low parental warmth (Lahey et al., 1999). Other features are maladaptive family interaction and communication patterns, and a high level of family stressors often associated with membership of a low socio-economic group (Lahey et al., 1999).

Loeber et al. (1994) saw a developmental continuum in boys, where early onset was characterised by a negative pattern of argumentative, and oppositional behaviour between ages three to seven; to which lying, aggression and cruelty to others was added. By the ages of eleven to thirteen further behaviours of stealing, truancy, and breaking and entering were added. Loeber and colleagues saw the behaviours as potentially additive, and as changing with maturation as physical ability and social opportunities developed. They further found that those with difficulties in adulthood had shown high rates and multiple varieties of antisocial behaviour across multiple settings even in childhood, where family relationships were disrupted and rejecting. Problems in adulthood included poor employment history, unemployment, and poor interpersonal relationships.

1.5.2 Later or adolescent onset

The behaviours of early and late onset groups are similar in adolescence, but those with late onset do not have the preceding history of serious behaviour problems. The later onset is associated with less aggression and violence, and less impulsivity (Hinshaw et. al., 1993; Moffitt et al. 1994). It is associated less with dysfunctional families, and with fewer cognitive and neuropsychological deficits

(Moffitt et. al., 1993; Moffitt et. al., 1994). Young people with later onset tend to have more adaptive social abilities which may reduce their overall risk (Moffitt, 1996). They are also less likely to carry conduct problems through to adulthood (Frick & Loney, 1999). Moffitt coined the term adolescent-limited to describe the group who began offending in adolescence, were noticeably less aggressive, and who ceased offending after adolescence; the term life-course persistent describes those with earlier emerging symptoms and persistence of antisocial, aggressive, and criminal behaviour into adulthood.

Steiner and Wilson (1994); and Lahey et al. (1994) describe adolescent onset as being accompanied by higher IQ, lower incidence of neuropsychiatric disturbance, less comorbidity, lower aggression, and lower likelihood of family aggressive history. The late-onset group was not characterised by the same sympathetic and neuroendocrine functioning as the early onset group (Lahey et al., 1992). With late onset there are similar levels of crime and antisocial behaviour, although the types of crime differed. There was less persistence of the disorder, and less likelihood of development of APD (Moffitt, 1997).

It is these two models, early onset and late-onset which have been adopted in the DSM-IV. Earlier models are to a degree subsumed in the early or late onset model. These are the authority conflicted, covert, and overt subtypes of Loeber (1993); the socialised and under-socialised aggression based model of Quay (1986); and the model describing over-restrained and under-restrained behaviour of Steiner, et al. (1989; 1997). However, Steiner et al. (1997) suggest these previous models may still be useful diagnostically in dealing with a variety of clinical presentations.

1.5.3 Anti-social Personality Disorder Trajectory

An important question which arises is whether and how CD might be related to the development of antisocial personality disorder (APD) in adulthood (Myers et al., 1993). In the ten year review of ODD and CD (Loeber et al., 2000) found indications that CD may foreshadow the later development of APD, although this cannot be diagnosed before age eighteen. Frick (1998) considers how psychopathic personality and antisocial personality traits might be manifested in childhood in the presence of callous-unemotional traits evidenced by under-socialised aggression and low anxiety characteristic of young people with severe CD. Frick (1998) defined callous-unemotional behaviour as lack of empathy, lack of guilt, and a superficial display of emotions, which is similar to adult manifestations of psychopathy. However, he questioned whether the interpersonal and affective features of APD could be measured accurately in children and whether they could be distinguished from the currently accepted behavioural definitions of CD.

Significant relationships between higher psychopathy scores and delinquent behaviours, conduct disorder, and narcissistic personality disorder were found in a study by Myers et al. (1993) using the Revised Psychopathy Checklist (PCL-R), Diagnostic Interview for Children and Adolescents (DICA-R), and Structured Interview for DSM-III-R Personality Disorders (SIDP-R) with 30 adolescent inpatients. Myers et al. found that CD and adult psychopathological disorders were indicated in childhood, but that most antisocial children did not develop APD.

Forth and Burke (1998) reported tentative findings of a continuum of psychopathy from adolescence to adulthood particularly in the association with violent behaviours. However, any APD trajectory which is hypothesised cannot be linked directly from childhood through to adulthood, as CD is diagnosed in six to sixteen percent of males and two to nine percent of females, while APD is diagnosed in three percent of adult males and one percent of females (McBurnett & Pfiffner 1998). Steiner (1999) found that APD occurs in nearly three percent of the general population of adults, but forty percent of children and adolescents with CD develop APD. In a study of an adult prison population (Hare, Hare, & Harpur, 1991, cited in Frick, 1998) most prisoners exhibited chronic antisocial behaviour, but there was only a minority with psychopathic personality traits. This minority group may be identifiable in youth with CD with callous-unemotional and poor impulse control traits.

Links between the development of APD, early onset of CD, comorbidity with ADHD, and neurological deficits have been found (Dery et al. 1999; Morgan &

Lilienfield, 2000). Barkley (1990) found that APD was associated with ADHD and CD together, rather than with CD alone. The arousal deficits associated with CD, and executive neuro-physiological deficits associated with ADHD, are both found with APD. These are similar to biological factors indicating that those with APD may have neurological deficits which have negative effects on self-monitoring, self evaluation, and self control abilities (Newman 1998). These factors affect the ability to link immediate actions with past experiences, and to decode the cognitive and affective significance of contextual cues.

Quay (1987) raised concerns about labelling children as currently or potentially psychopathic. Quay considered this ignored the potential of children to change with growth and development, and implied a strong biological imperative with inevitably negative outcomes.

At present an APD trajectory is not included in the DSM-IV subtypes. Forth and Burke (1998) emphasised the need for further research to explore the validity of an APD trajectory, and to determine whether adolescents manifest the same traits and the same physiological, cognitive, and affective deficits as adults with APD. Reluctance to provide children with an APD label could continue to present diagnostic difficulties.

1.5.4 Gender as a subtype.

Although gender ratio estimates vary depending on age range, in all groups studied the numbers of males have dominated with some studies having only male participants. This means that girls have been assessed by criteria developed from largely male groups. More recently it has become apparent that different criteria and different treatment may be appropriate; so girls could be seen as representing a significant subtype within conduct disorder (Steiner et al., 1997).

Some of the gender differences indicate that boys may be more aggressive, but comparisons are difficult because girls' aggression is more typically indirect, verbal, and relational. Crick et al. (1995) studied relational aggression and found that girls were significantly more aggressive than boys in this respect. Crick et al.

found that relationally aggressive children were more rejected, had higher levels of loneliness, depression, and isolation relative to less aggressive peers and were, therefore, at risk of developing serious adjustment problems. Frick et al. (cited by Steiner, 1997) state that although fighting and cruel behaviour are atypical in general in girls, they are highly predictive of CD where they do occur.

Silverthorn and Frick (1999) hypothesised a delayed-onset pathway in girls, in which the problems are not clear until adolescence. Adolescence coincides with less parental supervision, and with higher acceptance by peers of antisocial behaviour. Girls with conduct disorder come from similarly dysfunctional families as boys and have similar rates of cognitive and neuropsychological dysfunction. Lahey et al. (1998) found more girls with adolescent onset than with childhood onset.

Caspi and Moffitt (1991) looked at menarche as a pivotal transition time involving stress, which accentuated behavioural problems among girls who had manifested behavioural problems earlier in childhood. They suggest that the most crucial aspect may be the timing of menarche, with early maturing girls being particularly vulnerable to adjustment difficulties. The vulnerability of the girls may be increased by spending time with older peers. A range of norm breaking behaviours associated with girls who associate with older peers is reported (Magnusson, 1988; Magnusson, Stattin & Allen, 1986). Information from girls in the Dunedin longitudinal study (Silva, 1990) compared age at menarche with data from four measures: Revised Behaviour Problem Checklist, Rutter Child Scale A, Self-Reported Early Delinquency Inventory (SRED specifically for New Zealand), and the Diagnostic Interview Schedule for Children-Child version structured diagnostic interview for child reports, based on DSM-III criteria for childhood disorders. The findings were that girls who menstruated early were rated by parents as having more behaviour problems at age fifteen than at age thirteen. Early developing girls reported more symptoms of internalising disorders during the age thirteen review. They had also engaged in more delinquent activities. Early maturing girls with a history of behavioural problems in childhood experienced more adjustment difficulties than the others. Caspi and Moffitt (1991) concluded that early menarche accentuates behavioural problems which existed before menarche, rather than that it produced behaviour problems.

Other gender differences have been found. ADHD is less frequently comorbid in girls, but girls with a diagnosis of ADHD have a higher frequency than boys of qualifying for a diagnosis of CD (Loeber & Keenan, 1994). Loeber et al. (2000) found that high somatisation scores in adolescence were associated with a high delinquency score in females, but not in males. Girls were more likely than boys to have comorbid mood and anxiety disorders. Boys were more likely to have comorbid substance abuse disorders. Girls had higher rates of attempted suicide.

Calhoun et al. (1993) noted both a marked increase in female delinquency and a change in the types of criminal behaviour committed by females. Although running away still constituted a major delinquent behaviour (often young women ran away from sexual abuse and then engaged in prostitution), young women were found to be engaging in other criminal behaviours previously considered more typical of males. These behaviours included possession of weapons and aggravated assault. Wells and Faragher (1993) reported that girls complete treatment less frequently than boys especially when they have a history of social service placement, running away, and aggressive and impulsive behaviour. There are some indications (Loeber & Keenan, 1994) that fewer girls than boys may have CD, but that greater impairment is experienced by girls.

In general the research indicates that girls may have a different path to conduct disorder than boys, may have different symptomatology, and may therefore require a different treatment approach. This also suggests reasons for under-diagnosis in girls. All writers consider that CD in girls requires further research to establish the characteristics of this subtype.

1.6 Comorbidity

Conduct Disorder is frequently accompanied by other mental health disorders. Those conditions most commonly found to be comorbid with conduct disorder are attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder

(ODD), tobacco, drug, and alcohol abuse, post traumatic stress disorder (PTSD), depression and anxiety; some relationship with schizophrenia and bipolar disorder has been found (Steiner et al., 1997; Loeber et al., 2000). It is unclear exactly how the comorbid conditions relate. Loeber et al. (2000) suggest that ODD may be a precursor, ADHD a risk factor, and drug abuse a consequence of conduct disorder. Suicidality remains a risk, even in the absence of depression, due to the high incidence of impulsive behaviour. Yeager and Lewis (1990) cited in McGeorge (1997), found that the rate of death by all causes was fifty-eight times higher than the expected rate. Attention deficits, learning problems, and developmental disorders also play a role in poor academic achievement correlated with CD (Hinshaw, 1993). Anderson et al. (1987) found that forty-nine percent of a New Zealand sample of eleven year olds with diagnoses of ODD or CD had another psychiatric diagnosis as well, mostly of ADHD and anxiety disorders. McGee et al. (1990) found that among fifteen year olds in the same group twenty-six percent had depression, dysthymia, or anxiety disorders as well as CD. Findings from the Dunedin and Christchurch studies (Silva, 1990; Fergusson et al.,1995) indicate a high correlation with other health problems like poor health care and nutrition, sexually transmitted diseases, drug and alcohol abuse, hepatitis, motor vehicle accidents, gunshot wounds, and self inflicted injuries.

1.6.1 Comorbidity with ADHD

Comorbidity with ADHD increases the likelihood of earlier onset, greater severity, increased aggressive behaviour, and greater persistence of CD (Anderson et al., 1989; Hinshaw et al., 1993). This finding was supported by Abikoff and Klein (1992) who found that children diagnosed with both CD and ADHD had more severe symptoms, were at an increased risk for later antisocial disorders, experienced a greater degree of parental psychopathology and family adversity, had higher rates of peer rejection, and had greater deficits in social information processing compared with children with only CD. Biederman et al. (1996) found ninety-two percent of boys referred for ADHD, who also developed CD, had developed the CD symptoms before the age of twelve. These writers suggested that age of onset of CD was influenced by the presence or absence of ADHD.

In studies of school failure, ADHD was found to have an independent association with reading underachievement which was not found with CD alone (Hinshaw, 1992). Frick et al. (1991) and Hinshaw (1992) considered comorbidity with ADHD to be largely responsible for school failure.

In tracking the risk of developing psychopathology and the development of adult antisocial behaviour McBurnett and Pfiffner (1998) found that comorbidity of ADHD with CD provided similarities with psychopathy greater than those indicated by either CD or ADHD in isolation. This indicated that ADHD adds a greater risk of developing psychopathy with adult antisocial behaviour. Pelham et al. (1996) found that children with ADHD comorbid with ODD or CD held grudges longer and tended to ruminate and to have a desire for revenge. He argued for the importance of an emotional component. Studies by Farrington, Loeber, and Van Kammen (1990) indicated an association between greater aggression and poorer prognosis in those with co-morbid ADHD and CD.

There are some complex findings about the role of medication with Hinshaw (1992) reporting that medication for ADHD reduced the rate and severity of CD in children with both CD and ADHD; while Wodrich (1999) reported that where hyperactivity was comorbid with anxiety or depression, a positive response to stimulant medication might be reduced.

ADHD appears to have an exponential effect on the severity of CD, indicating a need for early diagnosis and treatment of ADHD, as a precondition for treatment of CD.

1.6.2 Anxiety disorders

Zoccolillo (1992) and Loeber and Keenan (1994) found that anxiety disorders occurred with CD at much higher than chance levels. Studies of the effects of the interaction of CD and anxiety have had contradictory results. In some children anxiety seems to modify the effects of CD, in others to make it more severe. Pliska et al. (1998) found fewer symptoms of aggression in pre-pubertal boys with both CD and an anxiety disorder. They found no group differences in the non-aggressive symptoms. A ten year review of ODD and CD (Loeber et al., 2000) quotes Lahey and McBurnett (1992) with similar findings for younger boys, but with more aggression reported in boys 11.5-12.5 years of age. The effect of comorbid anxiety disorders with CD may vary according to age, gender, and type of anxiety disorder (Wright, 2001).

1.6.3 Mood Disorders

An investigation by Capaldi (1991) found depression to be fifteen to thirty-one percent higher in CD samples than in community samples. Boys with depression and CD had higher levels of suicidal ideation than boys with only depressive symptoms, they abused substances from an earlier age, had an arrest record, and had poor academic achievement. This result was confirmed by Hinshaw and Lahey (2000) with the finding that depression occurred with CD at higher than chance levels in clinic samples. Hinshaw and Lahey suggested that CD was a precursor to depression in adolescence and young adulthood, with some adolescents behaving antisocially specifically during periods of depression. However, Loeber et al. (2000) found that mood disorders seemed to occur alongside CD rather than precede CD. The Maudsley long-term study of depression found that those with depression and conduct disorder in childhood had a higher adult use of inpatient and criminal justice services than the wider adult population (Knapp et al., 2002). Knapp et al. found that this involved significant costs, and considered that this added to reasons for seeking early and effective intervention. From the same study, a twenty year follow-up demonstrated no difference in the incidence of depression between the group with major depression only and the group with CD and depression.

1.6.4 Substance Abuse

Comorbidity with depression increases the risk for substance abuse (Capaldi, 1992). Using data from the Dunedin study Arsenault et al. (2000) found that young people who met criteria for alcohol dependence were 1.9 times more likely than controls to be violent, and that those meeting criteria for marijuana dependence were 3.8 times more likely to be violent.

1.6.5 Learning Disorders

ADHD and learning disorders co-exist in a high number of instances (Hinshaw, 1992). The antecedents for academic failure were seen as already apparent in early childhood in neuro-developmental delay, early language deficits, poor verbal skills, and family interaction patterns, in a context of low socio-economic status (Hinshaw, 1993). Moffitt (1993) linked antisocial behaviour with verbal deficits in adolescence. Magnusson (1988) found about twenty-five percent of young people with CD achieved at a lower level than their intellectual level would suggest. A circular pattern can be found in disruptive behaviour leading to interrupted learning leading to inability to maintain pace with peers, achieving at a lower level, and then engaging in further disruptive behaviour.

1.6.6 Neurological Deficits

Morgan and Lilienfield (2000) found a statistically significant relationship between antisocial behaviour and executive function deficits. However, the deficits were not specific to antisocial behaviour, and the effects were not always specific to executive function. Only one study checked for ADHD. Morgan and Lilienfield saw a need to locate brain function deficits more specifically.

Dery et al. (1999) studied neuropsychological deficits in young people with CD to see if they could distinguish between deficits related to aggression and non-aggression. Compared with controls, youths with CD had significantly lower verbal skills but did not differ on executive function measures. The deficits were associated with CD rather than with aggression or non-aggression. Moffitt and Silva (1988) found that participants with both ADHD and CD demonstrated poorer performance on neuropsychological measures relating to verbal, visual-spatial, and visuomotor integration compared with a group with only CD. Other studies have supported the findings of deficits associated with CD plus ADHD (Seidman et al., 1997; Lueger & Gill, 1990; Morgan & Lilienfield, 2000). These deficits seem to persist through developmental stages, and to detrimentally affect organisation, complex problem solving, and verbal learning. They lead to conceptual perseveration, poorly sustained attention, and impaired sequencing on memory and motor tasks. Lueger and Gill (1990) consider that this indicates that conduct disorders are a product of cerebral inhibition. Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) indicate abnormalities, but these are not specific to ADHD or to CD. These findings resonate with Quay (1993) who posits a psychobiological theory of under-socialised aggressive CD. In Quay's model youth are at high risk of aggressive CD if their behavioural activation system is dominant over their behavioural inhibitions. The behavioural inhibition system mediates anxiety and inhibits behaviour in the presence of novel stimuli or cues of likely punishment.

1.6.7 Findings from examination of selected psychometric tests

Ledingham (1999) found several studies indicating that simultaneous externalising (anti-social behaviour) and internalising (anxiety and mood) problems were more predictive of subsequent antisocial behaviour than externalising problems alone. For example, boys described by teachers as shy and aggressive in early school were more likely to have criminal records as adolescents or adults than those described only as shy or only as aggressive (McCord, 1987, cited in Ledingham, 1999). Similar findings were reported with boys and girls described as anxious and aggressive found to be more likely to remain aggressive over time than children who were only aggressive (Ialongo et al., 1996). Ialongo and colleagues concluded that the stability of aggression in children was strengthened by the presence of comorbid anxiety. From another perspective Paris (1999) wrote that borderline pathology in children had the characteristics of a combination of externalising and internalising symptoms accompanied by cognitive deficits. Long-term studies indicate that this pattern is a precursor for anti-social personality disorder (Lofgren et al., 1991 cited in Paris, 1999).

Conduct disorder was associated with a pattern of low Intelligence Quotient (IQ) (Moffit & Silva, 1988; Culberton et al., 1989); and a higher performance IQ (PIQ) than verbal IQ (VIQ) was found in this group (Hodges & Plow, 1990; & Zimet et al., 1988). Some studies also found a relationship between depression and anxiety in children and underachievement on the WISC. Greenberg and Speltz (1988, cited in Speltz et al, 1999) stated that children with poor verbal skills are likely to have poor skills in resolving interpersonal conflicts through negotiation and verbal strategies. Speltz et al. (1999) found that preschoolers, school age children, and adolescents with conduct problems had deficits in verbal IQ, language abilities, and executive functions. Boys with ODD and ADHD had lower verbal and executive function scores than other boys in a clinic sample with only ADHD. They had poorer vocabularies for affective states. Both groups were distinct from controls. On IQ tests delinquents score between 0.5 and one SD below non-delinquent peers (Moffitt, 1990). Moffitt and Lynam (1994) found that performance IQ was usually higher than verbal IQ in delinquent populations, and that members of such populations score poorly on tasks associated with frontal lobe integrity (Lezak, 1983; Pennington & Ozonoff, 1996; Seguin, Pihl, Harden, Tremblay & Boulerice, 1995, quoted by Moffitt & Lynam, 1994). These are tasks involving the monitoring and control of memory, holding information in working memory, making plans and setting goals, and modifying ideas on the basis of experience.

The relationship between poor academic achievement, learning problems, and IQ scores appears to be complex. Low IQ scores have been found in clinic populations. This may reflect lower IQ, or other factors like distractibility. VIQ-PIQ differences which are expected in these populations may invalidate the full IQ score. Riordan's (1999) study of an Irish clinic population (sample size 77) found a mean FSIQ of 83.9 (sd.15.56), which statistically indicated a highly significant ($p>0.001$) difference between the sample and the population means. In addition, Riordan's (2001) study of PIQ and VIQ discrepancies in an Irish clinic population found a statistically significant correlation ($p<0.02$) between a discrepancy towards higher verbal scores in association with hyperactivity sub-scores, but not with emotional (depression) or conduct disorder problems. Riordan concluded, however, that more research is needed to check the relationship between a ratio in favour of performance in young people with emotional and behavioural difficulties.

Gianarris, Golden, & Greene (2001) surveyed the documented uses to which the Conners' Rating Scales had been put since 1970, and compared these with the stated purposes for which the rating scales were designed. They found that the rating scales were frequently used as if they have diagnostic power in a range of disorders. The review concluded that the use of the CRS was valid for the stated purposes of assisting in the diagnosis of ADHD and other behaviour problems, and in acting as a general screen for a wider range of problems. It was not effective however, in discriminating between the various clinical populations.

The impairments and disruptions to adolescent development associated with CD, are increased by the presence of additional mental health disorders, particularly ADHD, mood and anxiety disorders, and learning disorders. Impairment in some functioning may be compounded by neurological problems. Substance abuse increases the likelihood of violent and aggressive behaviour. Most research has focussed on male participants, so the profile for females with CD has some significant differences of which only a few have been explored at this time. It seems likely that young women with CD have more severe problems, manifested in slightly different behaviours. However, criminal statistics indicate an increase in female lawbreaking behaviour which is increasingly similar to that of males.

Psychometric tests have been found to provide information about internalising and externalising characteristics (Paris, 1999); information about low FSIQ scores and VIQ-PIQ discrepancies (Riordan, 2001); and about diagnosis of ADHD (Gianarris et al., 2001). All of this assists in identification of young people with the most extreme manifestation of SCD (Moffitt & Silva, 1994; Lofgren et al., 1991).

1.7 Treatment

There is no single established treatment and no cure for conduct disorder. The treatment protocols with the most evidence supporting effectiveness are those which take an ecological approach and intervene in all aspects of the young person's environment within a framework of strengths and vulnerabilities. This section looks at a number of treatment principles and treatment models.

1.7.1 Treatment Principles

Petrila, Foster-Johnson, and Greenbaum (1996) outline the following as necessary for the treatment of adolescents: the need for consideration to be given to developmental stage, a focus that examines and involves all social and family networks, diagnosis and treatment of comorbid conditions, and the need for co-ordinated service provision across agencies. This is consistent with the practice parameters of the American Academy of Child and Adolescent Psychiatry, in which the fundamentals for treatment of CD are based on two main principles: that conduct disorder is a complex and serious form of psychopathology, and that interventions need to be long term, well co-ordinated, and to cover all of the domains of functioning (Steiner et al., 1997). The practice parameters provide the following as important interventions: that comorbid conditions should be treated appropriately, including psychopharmacology; family interventions include treatment of parental psychopathology; behavioural and explorative individual and group psychotherapy is available for the adolescent or child; and specific psychosocial skill building is undertaken. Other important interventions which are outlined are: discouragement of deviant peer contact, checking for appropriate school placement, use of community resources including family access to benefit entitlements, job and independent skills training available as appropriate, and level of care decision making which may involve out of home placement of the young person.

Similarly, in the integrated model which Calvert and Lightfoot (2001) outline, treatment should be multi-systemic, based on working across all developmental pathways to repair developmental breaks, foster resilience, and create opportunities for further growth and development. Treatment is based on understanding that the child's current presentation provides information about past tasks and their impact and thus the opportunity for developmentally appropriate interventions some of which provide experiences which have been missed in the past. Special attention is given to the need to provide security and containment, the development of new models of interpersonal behaviour, and opportunities to make developmental gains.

In a survey of treatment models available Brunk (2000) found that family based interventions, particularly the parent management training of Patterson et al. (1979; 1982) was more effective in reducing behaviour problems in younger children than in older children. Furthermore the Multi Systemic Therapy (MST) of Henggeler & Borduin (1990) had the most empirical support for adolescents. Brunk (2000) found that individually focussed interventions, usually addressing social skills and problem solving skills, led to significant reductions in aggressive and antisocial behaviour.

Meta-analyses, by Kazdin and Weisz (1998) indicate that treatment is more effective than the mere passage of time. They found support for the following as effective treatments: parent management training, problem solving skill training, early intervention programmes for young children, and a continuum of care in which multiple services are delivered. Short-term interventions had little success (Henggeler & Schoenwald, 1994; Henggeler et al., 1990). Kazdin (1995) found support for programmes which targeted problem solving skills with child, family and school. Support for prosocial skills training was also found (Kazdin, 1992). Support for the effectiveness of parenting skills training for parents of school age children; and for training in improved peer relationships, academic skills, and compliance with authority figures across the age range were also found (McCord et al., 1994).

Treatment based on neurobiological features has led to the use of SSRIs and antipsychotics in an attempt to modify impulsivity and aggression. These appear to be effective in only a small number of cases. Psychopharmacology can assist with crisis management, the treatment of some manifestations of aggression, and the treatment of comorbid symptoms, in particular the treatment of ADHD (Barkley, 1998).

Behaviour modification programmes and techniques have featured prominently in the treatment of CD. More recently cognitive behavioural approaches have been added. The goal is to replace maladaptive behaviour with adaptive behaviour and thinking. Most attempts to treat conduct disorder utilise a component of behaviour therapy, targeting specific behaviours and setting up schedules of reinforcement to strengthen desired behaviour and decrease the frequency of undesirable behaviours, as these have proven efficacy in modifying behaviour. There is evidence that treatment in specific domains is successful for those domains, for example, social problem solving skills training, behavioural parent training, and functional family therapy. However, the emphasis on problems and symptoms rather than total personality and total environment, means that new habits may not generalise to new situations (Bergin & Garfield, 1994). This means that these programmes may not be effective in changing behaviour in the longer term.

Ecological models analyse the systems, environments, interactions, and social structures in which the person is engaged. Interventions are designed to reorganise the system or environment, with consultations for resource development for the young person and the family. Ecological models involve all systems and incorporate the treatments that research indicates is most effective. This benefits the whole system not just the single client. MST is an example of an ecological model (Borduin, 1999; Henggeler, 1996).

1.7.2 Community-Based Treatments

Treatment models have evolved through family therapy and family preservation models, into Multi Systemic Therapy developed by Henggeler and Borduin (1990). Henggeler & Borduin argue that the multi-causal nature of the problems requires flexible, multi-faceted, yet carefully targeted treatment approaches. They produce impressive outcome studies in the areas of chronic juvenile offending, adolescent sexual offending, child abuse and neglect, drug and alcohol abuse, and adolescent psychiatric emergencies (Borduin, 1999; Henggeler et al., 1994; Schoenwald & Henggeler, 1999). MST has high ecological validity because it encompasses interventions in home, school, and neighbourhood settings. MST is currently the preferred evidence-based treatment in community settings. It is the most researched treatment in a number of settings. It is a system of treatment and a model for treatment rather than a specific treatment programme. MST is based on nine principles which promote investigation of and involvement in the wider system of which the young person is part. It considers strengths as a basis for supporting change, with interventions focused on present action targeting specific and well-defined problems. The model includes developmental appropriateness, and allows for continuous evaluation of intervention efficacy from multiple perspectives with a view to promoting generalisation to a number of situations as well as long-term maintenance of therapeutic change. MST aims at equipping parents with the skills needed to address adolescent transitions and problems; and equipping adolescents with the skills to cope in all domains. It aims at designing individual programmes consistent with evidence based practice.

1.7.3 Residential Treatments

There have been a number of reviews of residential treatment programmes for CD from Quay (1986) to Chamberlain (1999). All of the studies reported some methodological problems in evaluating programmes and evaluating outcomes. Programmes varied in whether the setting was a correctional, mental health or educational environment which made comparisons difficult. Most residential programmes were run within group homes with small clusters of young people. There was no consistency in treatment philosophy, and programme approaches included psychodynamic, behavioural, or peer consensus orientation. Some key principles emerged however. For example, a structured regime of treatment with programmes which emphasised social learning across the whole of the person's social world, addressing interventions to the individual and the system at same time produced better outcomes than others. The kinds of changes which occurred were academic improvement, better family relations, reduced rates of re-offending, and better self-regard. However, Quay cautioned that no programme produced normal children from very disturbed children, and that outcomes need to be measured in terms of change and not of cure. Chamberlain stressed a need for further research, especially on longer-term outcomes, to determine the value of residential care.

1.7.4 Treatment Foster Care

With residential programmes or foster care, containment alone is insufficient in providing for treatment gains. There is a need to work with families and to include learning which is transferable to the outside environment. Chamberlain and Moore

(1998) stated that good outcomes were enhanced by post-care which continued to offer close supervision, good adult mentors, and isolation from delinquent peers.

1.7.5 Early Intervention/Prevention

Early indicators for the likely development of CD are readily identifiable, which raises the possibility of early intervention. Early diagnosis and treatment of ADHD are possible and can be effective (MOH, 2001). Early intervention could reduce the potency and number of risk factors, and strengthen resilience against further development and increased severity of CD. Early intervention requires interventions across all systems which are developmentally appropriate. It requires multi-agency cooperation (Tremblay et al., 1999; Wassermann & Miller, 1999). Prevention programmes have targeted different age groups, and have followed public health patterns of primary, secondary, and tertiary levels of intervention. Universal programmes are similar to primary intervention in that they target all of an age group rather than identified groups; selected programmes are like secondary prevention in that early detection is aimed at curing or reducing progression by targeting high risk children; tertiary prevention includes programmes which aim to limit disability, or to work on rehabilitation (Wassermann & Miller, 1999).

In each case the focus of intervention needs to be developmentally appropriate. Preschool programmes generally focus on the parents, with parent management training (Patterson 1979; 1982) and functional family therapy (Alexander, Barton, Schiavo, & Parsons, 1976; Klein et al., 1977). Family preservation models have all had good outcomes based on targets which include parents becoming less punitive in discipline, and on lowered rates of out of home placement (Wassermann, & Miller 1999). Child focussed programmes at school age involve social competence training, interpersonal cognitive problem solving curricula, and violence prevention (Huesmann et. al., 1992); (Shure & Spivack, 1989); (Hammond & Yung, 1991; 1992; 1993). Other programmes are aimed at academic skills (Denno, 1990; Farrington, 1987). Classroom interventions are used with children and adolescents of school age (Hawkins, Doueck & Lishner, 1988). Specific behaviours are targeted in anti-violence programmes, and peer mediation and conflict resolution programmes. There is little evidence supporting anti-violence and conflict resolution programmes, because there is a lack of systematic study of them. A survey carried out in the USA in 2001, and published as the Surgeon General's Report, found that a number of youth anti-violence programmes were in use in schools and communities across the USA, but that there had been no comprehensive survey of their effectiveness. Some programmes which had been surveyed and found to be ineffective, or to have negative effects, were still in use.

Abikoff & Klein (1992) found hundreds of studies supporting the effectiveness of medication in behaviour management with ADHD in particular, with many (but not all) indicating that medication is more effective when combined with behavioural management training for both the parents and the young people.

Single focus interventions have limited effectiveness. Findings from studies on boys are not necessarily suitable to be generalised to girls. Wassermann & Miller (1998) point to the need for multi-agency cooperation, with developmentally appropriate programmes across all domains, targeting risk and resilience areas. There is a need for clearly focussed outcome measures and the need for long term follow-up of those involved in preschool, school age, and adolescent targeted programmes. In general, better results are likely with comprehensive, early interventions which are individualised, family-based, and delivered in the community.

1.8 General factors influencing early termination of treatment for children with behaviour problems

In clinic samples of children referred for antisocial behaviour early terminators were characterized by severity and breadth of antisocial behaviour, maternal stress, maternal psychopathology, and socio-economic disadvantage (Kazdin, 1990). Kazdin also points out the difficulty of defining attrition, particularly in order to include the children who never arrive for a first appointment. Routh et al. (1995) found that outcome, reduced drop-out, and a reduction in non-maintenance of treatment gains were all improved by interventions directed at recognized risk factors for poor outcome. These were maternal depression, marital discord, and child and parent cognitions. They found that parental attachment was also significant. The above factors would apply to both groups in this study. In a study of inpatient treatment, Wells and Faragher (1993) found that making an agreement about change prior to or on admission helped improve attendance and outcome. Girls completed less frequently as reported earlier. Wells and Faragher found that therapy could not always be provided at an appropriate developmental stage, and that this made non-completion more likely.

Race as a factor in early termination of treatment

Maori appear to be more vulnerable to the range of risk factors outlined earlier, and therefore to increased risk of serious pathology (Horwood & Fergusson, 1998). There is some suggestion that Maori do not seek help until a number of other resources like support from the extended family have been exhausted (Heperi, 1996). This suggests that more intractable behaviours or severe pathology may have been established by the time mainstream services are approached (Te Puni Kokiri, 1996).

1.9 The Severe Conduct Disorder Programme

Historically, in New Zealand, services for conduct disordered youth have been provided by the Department of Social Welfare. This has been primarily through Youth Justice in cases where the conduct disorder was predominantly manifested in activities which brought youths into conflict with the law. The remaining group of young people whose manifestation of conduct disorder falls more clearly within the care and protection area, have received care through Child, Youth and Family Services via community social workers and/or residential placement in foster homes or group family homes. In 1997 the Department of Social Welfare made a request for a programme to be designed to meet the needs of a group of young people with extreme behaviours and with a need for consistent residential placement. These young people had problems which had been resistant to all of the possible interventions available at the time. A Trust was set up to design and to run such a programme for young people with a diagnosis of conduct disorder (Guild,1996).

1.9.1 Programme Design

Conduct disordered youth form a difficult group with which to work, a group with high needs and demanding and dangerous behaviours. The young people occupy multiple significant environments, which makes it difficult to implement consistent behavioural contingencies (Werry,1997). In addition there is a high incidence of coexisting mental health disorders, and a number of accompanying physical health problems which further complicate treatment plans (McGeorge, 1997).

The Trust designed a programme according to multi-systemic and ecological principles covering residential, educational, family, health, and individual domains. The programme designers examined and incorporated the best evidence based practice of the time. National and local leaders and providers of family services were consulted. Iwi groups were consulted. An attenuated programme was implemented briefly as a pilot, followed by commencement of the current programme (Guild, 1996).

1.9.2 Target Group

The core conduct disorder programme is for young people between 10-16 years of age who are resident in the Auckland region, and who have a diagnosis of severe conduct disorder. This diagnosis is made by a child psychiatrist taking into account a wide range of assessment material gathered as part of the admission process. Additional criteria are a tested IQ score of above 80, ability to speak English, and a number of previous interventions (Guild, 1996). The aim is not to cure, but rather to treat current symptoms so as to reduce secondary disabilities and to produce conditions for rehabilitation. This programme, therefore, fits the model of a specially targeted tertiary prevention programme (McGeorge, 1997).

1.9.3 Residential Needs

The programme is residential in order to meet the habilitation needs of the young people. Those admitted have generally not lived with their family for some time, and have often been through a range of foster home placements. For example, a fourteen year old with twelve previous placements is not unique. Some of the young people have been living on the street, while others enter the programme from secure custodial placements. A safe and ordered environment is provided as a basic foundation upon which other interventions can be built. The residential nature of the programme allows greater control over the various areas of the young person's life which need to be monitored and supported to allow greater chances of altering a potentially destructive life path and enhancing the possibility of more positive outcomes (Guild, 1996). This is in accordance with more recent literature focussing on strengthening resilience (Steiner & Wilson, 1999).

Young people stay in the programme for up to three years. It is a three stage programme with progress through the stages being related largely to the move from dependence on external control of behaviour, to establishing an increased degree of internal control and personal understanding of their own behaviour. Young people enter the programme at stage two as there has not, so far, been funding for stage one. This complicates the pre-entry assessment because it is difficult to gauge the level of containment needed, and the ability of the young person to settle into the programme, without the additional containment envisaged for stage one. A proxy stage one is provided by the Northern Residential Centre which operates as a semi-secure facility for young people in the care of Child, Youth and Family Services. When there is a periodic need for a semi-secure environment young people move from stage two to the Northern Residential Centre for a fixed period and with specific aims.

There are three stage two houses which each have the capacity to house up to five young people. They are staffed by a senior practitioner and specialist youth workers who work eight hour shifts to provide twenty-four hour cover. There are always at least two staff on each shift, including at night. The houses are located throughout the greater Auckland area. Most young people at stage two attend school each day at the learning centre run by the Trust.

The stage three houses are staffed by live-in house parents, supported by specialist youth workers. The environment is less restrictive in these houses. Young people living in these houses may continue to attend school at the Trust, or may be attending mainstream school, a tertiary course, or may be in employment. Two houses have Maori houseparents, and the young people living there are predominantly Maori.

The Trust runs three other programmes. One of these has a similar SCD target group with a group home. Another provides specialist foster care for young people with SCD. Outside of Auckland there is a programme, using the MST model, for young people with high and complex needs who are resident in the community. It is the Auckland residential SCD programme which is the focus of this study.

1.9.4 Exit from the Programme

There is an independence project for transition out of the programme, and there is a three month follow-up after leaving the programme. Transition out of the programme and return to the community is coordinated by the Care Co-ordinators who are social workers seconded from Child, Youth and Family Services. The Care Co-ordinator has contact with the young person and the family throughout the duration of the young person's residence in the programme.

1.9.5 Demographics

When appointing staff there is an attempt to match the demographics of the Auckland area, and to consider the ethnic grouping of the young people in the programme. The 1996 census gave a total Auckland population of 1,081,644 of whom 10.5% were Maori, and 9.6% Pacific Island. In the programme in 2001, twenty percent of the young people were Maori, and twenty percent of the staff Maori. At the same time six percent of the young people were from Pacific Island backgrounds, and eighteen percent of the staff from Pacific Island backgrounds. Both of these vary from time to time.

1.9.6 Gender

A balance in gender is maintained, as far as possible, in staffing. Working with young women in this programme has thrown up significant challenges which are not yet fully met. At present the young women are housed separately or with very young males, and meet with the male group for education and for some parts of the activity programme.

1.9.7 Education

Many of the young people admitted to the programme have had many changes of school, and often one or more school suspensions or exclusions. Most are lagging in educational achievement because of their disrupted attendance or because of the prior existence of learning disabilities. Education, within regular school terms, from 9 am to 2:30 pm, forms a core part of the programme. The aim is to provide appropriate learning materials and an appropriate environment to make learning attractive, raise basic skill levels, and develop confidence and competence in school learning processes and outcomes. Data collected by the school indicates significant gains in the levels of achievement in basic skill areas (Learning Centre report 2001). Young people are placed in education or training outside of the programme where this is appropriate.

1.9.8 Leisure

Where possible young people are engaged in constructive leisure activities in the community. All residents of one house have been members of a rugby team at a local club. Other young people have been involved in other activities like fishing, ice skating, or swimming. There is an after-school activities programme in each house, and homework is supervised in each house.

1.9.9 Mentors

In the original programme a system of mentoring was planned (Guild, 1996). Implementation of this began in 2002 in liaison with a church/community group which provides the mentors. The Trust provides the training for the mentors. Mentors provide opportunities for prosocial activities and relationships as recommended to strengthen resilience factors (Steiner & Wilson, 1999).

1.9.10 Family

Although young people admitted to the YHT programme are all in the care of Child, Youth and Family Services, consultation with family members who are available and appropriate is part of the assessment and admission process. The case worker from Child, Youth and Family Services is involved at the same time. While the young person is in the programme and immediately following discharge, contact with the family is maintained through the Care Co-ordinator. Young people have regular home leave to help maintain and develop family links. Care Co-ordinators are increasingly using family therapy models to develop family members' understanding of conduct disorder and to enhance parenting and problem solving skills as recommended in MST principles (Borduin, 1999).

1.9.11 Other Components of the Programme

Behaviour Management

Young people in the programme are closely supervised at all times. Target behaviours are recorded every two hours using a system of points. There are predictable rewards and consequences for behaviour using a token economy (Martin & Pear, 1999). Charts are used to plot progress, giving a visual record. There is a three card system representing a reward, a warning, or a consequence. Blue cards recognise good behaviour and can be exchanged for specified rewards, yellow gives a warning about unacceptable behaviour, and red cards carry a consequence for unacceptable behaviour (Guild, 1997).

Additional Therapeutic Support

A number of the young people have co-existing treatable mental health conditions. Individual needs in these areas are met through the services of a visiting psychiatrist, and by individual therapy as required. Many young people have an individual counsellor, particularly to address abuse and trauma issues (Steiner & Wilson, 1999).

Prosocial Skill Development

There is a programme of moral and social education (Goldstein, 1988). This is run through group sessions by the assistant psychologist attached to the school. This includes group co-operative skills within a curriculum for youth lacking prosocial skills. Many behavioural approaches aim at decreasing antisocial behaviour, but do not specifically target the learning of prosocial skills. The

Goldstein programme is based on modelling, behavioural rehearsal, and social reinforcement as in Social Learning Theory (Bandura, 1982;1986). The training plan includes interpersonal skills, problem solving, situation perception, anger control, moral reasoning, stress management, empathy, recruiting supportive models, co-operation, and understanding and using groups. There is a focus on skill acquisition and transfer.

Skills of Daily Living

Within the houses young people participate in supervised cooking and cleaning and care of their own rooms and clothing to enhance self-care skills.

1.9.12 Monitoring of the Programme: Funding and Reporting

The programme is funded by Child, Youth and Family Services. Detailed reports are provided each quarter to this organisation. An external consultant was contracted to carry out a review of the programme for the Trust Board, in 2000. Child, Youth and Family Services have contracted with an external agency to carry out an extensive review and evaluation over the next two years, (2002-3).

1.10 Summary and reasons for this study

Behaviour problems account for fifty percent of referrals to child and adolescent mental health services. Adolescent delinquent behaviour is harmful and costly to individual adolescents and their families, and to the wider society. Conduct disorder is a collection of symptoms with extreme antisocial behaviours. It has a heterogeneous manifestation and aetiology, which requires a multi-faceted or ecological approach to treat and modify its detrimental effects. All literature reviewed for this study suggests a need for further research into causality, subtypes, and effective treatments to match the diversity of the disorder.

This study aims to add useful information to the current body of knowledge about treatment and premature termination of treatment by focussing on one residential programme for young people with conduct disorder. It poses two main questions: do the psychometric tests used in assessment distinguish between treatment completer and non-completer groups, and is it possible to formulate a profile of completer and non-completer groups using the assessment information?

CHAPTER TWO METHOD

2.0 Method

Data was originally collected as part of the initial assessment for entry to the programme. This data was then re-analysed to compare those who completed the programme with those who did not. The aim was to establish whether there were early indications of distinguishable profiles differentiating each group. The Trust programme is unique and has been in existence for only five years, so there is not a comparable study to this one. However, the introduction indicates a large body of research which is relevant to the programme and to the current study, and which offers a framework for considering the relevance of potential profiles.

2.1 Ethics Approvals

Three approvals were required for this research to take place. Applications were made to the Massey University Human Ethics Committee (MUHEC), to the Research Access Committee (RAC) of Child, Youth and Family Services (CYF), and to the Trust which runs the programme. Approvals were obtained in all instances. In addition, support was solicited and obtained from the kaumatua and kuia and cultural advisor of the Trust. Cultural issues around severity of SCD and attrition have been discussed with the cultural advisor.

2.2 Profiling

The profiling method is commonly used in criminal cases (Jackson & Beckerian, 1997), in occupational psychology (BarOn, 1998), and in personality profiling (Briggs-Myers, 1985). In clinical psychology and psychiatry the practice of identifying symptoms and matching them against symptom lists, as in the DSM-IV for diagnostic purposes, is similar to a process of profiling. In this study the idea is being used in an exploratory and preliminary way to seek to identify potential factors indicating the likelihood of completing or dropping out of the programme.

2.3 Defining the Groups

Criteria for membership of each group (completers and non-completers) were determined in discussion with the Clinical Director and Assistant Psychologist to the programme.

These definitions are-

1. Completers: those discharged due to age (17+), or reached the maximum allowable time in the programme (three years), or reached the maximum point of progress and transferred to another programme, or re-integrated back home.
2. Non-completers: those who were in the programme for longer than six months, but left under conditions other than formal discharge or transfer. (Generally this meant absconding and not returning, or moving to a more contained environment).
3. Non-starters: those who were in the programme less than six months. Often this was a matter of a few days or weeks because a stage one placement was required but was not available. In these cases very little of the assessment process had been completed so insufficient data was available for them to be included in the non-completer group.

The completer and non-completer groups are those included in this study.

2.4 Data

2.4.1 Data Selection

In late 1999 a new assessment schedule for the programme was implemented. The data used in this study focuses on the eight psychometric tests used in the programme up to 1999, which were included in the new schedule. This selection was intended to give the study current relevance, rather than only retrospective relevance, by reflecting the tests still in use. The eight tests, described later in this section, were still in use in 2002, forming part of an assessment battery of a total of fifteen standardised psychometric assessments. Data was also collected from the clinical interview. As the two groups were compared on each of the subscales of each assessment, details of the tests and subscales are given here with additional information provided in Appendix A.

Unless otherwise stated, the groups were compared on the basis of T-scores rather than on the basis of percentiles. Percentiles indicate relationship to the normal population. In general, the young people in the programme score well outside the normal range on a number of subscales. The T-scores provide more subtle information. It is in the subtle differences within the range outside the normal range that group differences can be sought and found.

2.4.2 Psychometric Test Information

The standardised assessments used were: **Conners' Rating Scales (CRS)** with three separate scales, the **Wechsler Intelligence Scale for Children (WISC-III), Children's Depression Inventory (CDI), Suicidal Ideation Questionnaire (SIQ), State-Trait Anxiety Inventory (STAI),** and **Piers-Harris Children's Self-Concept Inventory (PH).** Details of those tests with norms, standardisation, validity and reliability measures are given in Appendix A. All of the above need to be supported by additional clinical material to be diagnostically reliable.

2.4.3 Data from other sources

Clinical data was available from psychiatric assessments and reports in the archived files. These covered family history, physical and psychological health history, previous interventions, abuse history, and some education history.

2.4.4 Accessing the Data

Data collected related to young people who left the programme between 1997 and early 2002. Some of the data was available from a database being developed within the programme. As this was incomplete it was necessary to search manually through archived material to complete data sets for the participants who are the focus of this study, namely those who had already left the programme. This material was then added to the database.

2.4.5 Missing or incomplete data

There were very few past participants for whom there were full sets of data from the eight selected assessment tests. The data used for any one assessment is, therefore, taken from a group of a slightly different composition to that used from another assessment. In some cases the numbers involved are also different, with sixteen sets on some of the Conners' Rating Scales and eight for the SIQ, for example. Within data sets for a specific assessment there were also some missing elements, for example, for the WISC some assessors gave only summary scores, while others provided the results of all the subscales. Among the non-completers there were more incomplete data sets which may indicate a greater degree of non-compliance even at the assessment stage.

Table 3.

Sets of data available for completers and non-completers for each assessment

Assessment	WISC-III	CPRS	CTRS	CASR	Piers-Harris	CDI	SIQ	State-Trait
Completers	12	16	13	16	17	12	8	14
Non-completers	6	8	6	6	7	6	4	6

2.4.6 Quality of Data

Data had been collected by a variety of people and the standard of collection was likely to have varied. Leavitt (1991) pointed out disadvantages of secondary analysis, which are that quality may have been compromised initially and that there is no redress for this in terms of being able to go back to the sources to recheck; and that there may be no record of the quality, or level of experience or qualifications, of those who collected the original data.

2.4.7 Data Analysis

In order to compare the completer group with the non-completer group this study used a secondary analysis of data collected originally for the initial assessment of young people who were referred for a place on the programme.

Leavitt defines secondary analysis of data as

"...A group of techniques for analysing existing records and public and private documents...." (p.107)

"...Existing data are reanalysed for a different reason than the one for which they were originally gathered..."(p. 99).

The assessments were originally used to help determine whether the young person met the criteria for the programme in terms of the diagnostic criteria for Severe Conduct Disorder and the minimal I.Q. level of 80 on the Wechsler Intelligence Scale for children. In addition to these, the assessment process included screening for other conditions commonly associated with severe conduct disorder, such as depression, anxiety, or ADHD, a medical examination, and a psychiatric interview covering individual and family history. The data which had been collected for the purpose of assessment, was then reanalysed in order to compare those young people who completed the programme, with those whose involvement in the programme was terminated before completion. The purpose of this secondary analysis was to explore the possibility of the data yielding clearly distinct profiles differentiating the completers from the non-completers. There are a number of factors which enter into treatment compliance, attrition, and responsiveness. Establishing any predictive accuracy around this has potential utility in assisting with more efficient use of scarce resources, and more accurately defining and providing for specific needs of subgroups. In this case it would be particularly useful if profiles could be constructed and if they could be correlated with the subtypes of CD so that treatment could be more precisely targeted. Once the data had been gathered lists were made of individual scores on all of the subscales and total scores of all of the relevant assessments. T-scores were selected as allowing the most detailed comparison of the groups. The mean, standard deviation, median, and mode were calculated for each subtest of each assessment. This was done separately for completers and non-completers.

The mean and SD appeared to offer the most descriptive and comparative information so comparative means were then reorganised into the tables which appear in the results section. Line graphs were used to compare group means on individual subscales. Where appropriate a more specific comparison was made in clusters of subscales. The means and SDs provide information about representative information about potentially problematic characteristics of the data set including non-normality and outliers. This is reported where relevant in the results.

2.4.8 Limitations of data sets

In this study data had not been collected consistently across all participants in the programme as indicated above and in Table 3. The small amount of available data, meant that it was impracticable to separate data relating to girls from that relating to boys. Similarly the data sets are not analysed according to race or ethnicity. The sample is limited by two further factors. It is an entirely urban sample, and no information is available about the nature of those who were referred where the referral was not followed through because alternative placements were arranged. Both of these factors mean that the sample may not be fully representative of the population of young people with SCD. In turn, this highlights a difficulty in research projects based on treatment programmes where programmes are set up to provide service. Unless similar treatment programmes are simultaneously funded to set up of databases to collect material for the evaluation of programme effectiveness and programme outcomes, then research cohorts are likely to be small and data sets partial. The lack of agreed, clinically consistent parameters, appears to be a major source of the difficulty found by those conducting meta-analyses of programmes and treatment in the ability to make meaningful comparisons (Surgeon General's report, 2001; Brunk, 2000; Loeber et al., 2000).

CHAPTER THREE RESULTS

3.0 Results

In this chapter completers' and non-completers' scores on all subscales of each of the eight assessments are examined to ascertain whether they provide information which distinguishes the two groups, and whether two clear group profiles can be delineated. Means and Standard Deviations of T-scores are compared. All participants had been diagnosed with SCD on the basis of a range of assessments, including the clinical interview. The relevant CRS scores which relate to this diagnosis are reported first.

3.1 Results comparing groups on the level of severity of symptoms

3.1.1 Conners' Rating Scales: CPRS : Atypical Type G and Type P profiles

The CRS outlines two profiles of scores in the atypical range (above 70). These are classified as atypical profiles. Type G profile indicates global problematic functioning, and type P indicates some problem areas alongside some scores in the normal range.

Table 4.
Comparison of completers and non-completers who match Type G and Type P elevated profiles on Conners' Parent Rating Scale (CPRS)

	Completers Number	(n=16) %		Non-completers Number	(n=8) %
Type G	11	68.7	Type G	7	87.5
Type P	5	31.3	Type P	1	12.5

All of the young people had T-scores on the CPRS indicating elevated profiles. The majority had scores matching the Type G elevated profile indicating Global Problematic Functioning, that is, problems in a number of other areas as well as behaviour problems. Six of the young people had Type P profiles, indicating that some subscores were elevated and some in the normal range. A high percentage of non-completers (87.5%) had scores indicating problems in most areas assessed in the subscales.

Table 5.

CPRS-Individual T-scores above 70: number and percentage of each group falling in the markedly atypical range

Conners' Subscales	Completers (n =16) Number	%	Non-completers (n=8) Number	%
Oppositional	10	62.25	8	100.00
Cognitive Problems	6	37.50	3	37.50
Hyperactivity	10	62.50	6	75.00
Anxious/Shy	10	62.50	3	37.50
Perfectionism	1	6.25	2	25.00
Social Problems	9	56.25	5	62.25
Psychosomatic	7	43.75	2	25.00
ADHD Index	7	43.75	6	75.00
Global Index-Restless/Impulsive	9	56.25	8	100.00
Global Index-Emotional	9	56.25	8	100.00
Global Index	10	62.25	8	100.00
DSM-IV Inattentive	7	43.75	5	62.25
DSM-IV Hyperactive-Impulsive	10	62.25	6	75.00
DSM-IV Total	10	62.25	6	75.00

Table 5. confirms the presence of severe behaviour problems in both groups. However, non-completers had a higher percentage of scores above 70 on all subscales indicating higher levels of psychopathology across the range of measures.

3.2 Results comparing groups on means and SDs for CPRS, CDI, STAI, SIQ, and Piers-Harris.

3.2.1 Conners' Rating Scales

The first comparisons are of those between the two groups on the CPRS.

Table 6.
CPRS Subscales: Summary Scores Comparing Completers and Non-Completers on Median, Mean, and SD

CPRS Subscales		Completers (n=16)	Non-completers (n=8)
Oppositional	Median	76.00	87.50
	Mean	73.37	84.25
	SD	13.81	7.28
Hyperactivity	Median	83.00	90.00
	Mean	74.43	82.42
	SD	17.82	11.88
Anxious	Median	72.00	64.00
	Mean	72.43	66.12
	SD	14.01	14.09
Psychosomatic	Median	60.50	53.50
	Mean	64.50	61.00
	SD	15.32	16.45
Social	Median	72.50	74.00
	Mean	69.90	74.25
	SD	16.58	13.65
Perfectionism	Median	53.50	59.50
	Mean	54.93	61.37
	SD	11.54	12.37
ADHD Index	Median	65.00	81.00
	Mean	66.50	79.25
	SD	14.60	9.91
Global Index Total	Median	77.00	90.00
	Mean	73.43	86.57
	SD	15.93	5.70
GlobalIndex Restless/Impulsive	Median	76.00	89.00
	Mean	72.25	85.00
	SD	16.37	8.12
Emotional lability	Median	74.00	83.50
	Mean	71.31	82.87
	SD	15.69	3.48
DSM IV Total	Median	71.00	83.00
	Mean	70.62	81.12
	SD	14.57	8.98
Inattentive	Median	64.00	68.00
	Mean	65.31	69.87
	SD	13.69	9.61
Hyperactive/Impulsive	Median	81.00	88.00
	Mean	75.18	82.87
	SD	16.50	10.14
Cognitive/Inattentive	Median	63.00	67.00
	Mean	62.93	67.25
	SD	14.13	8.31

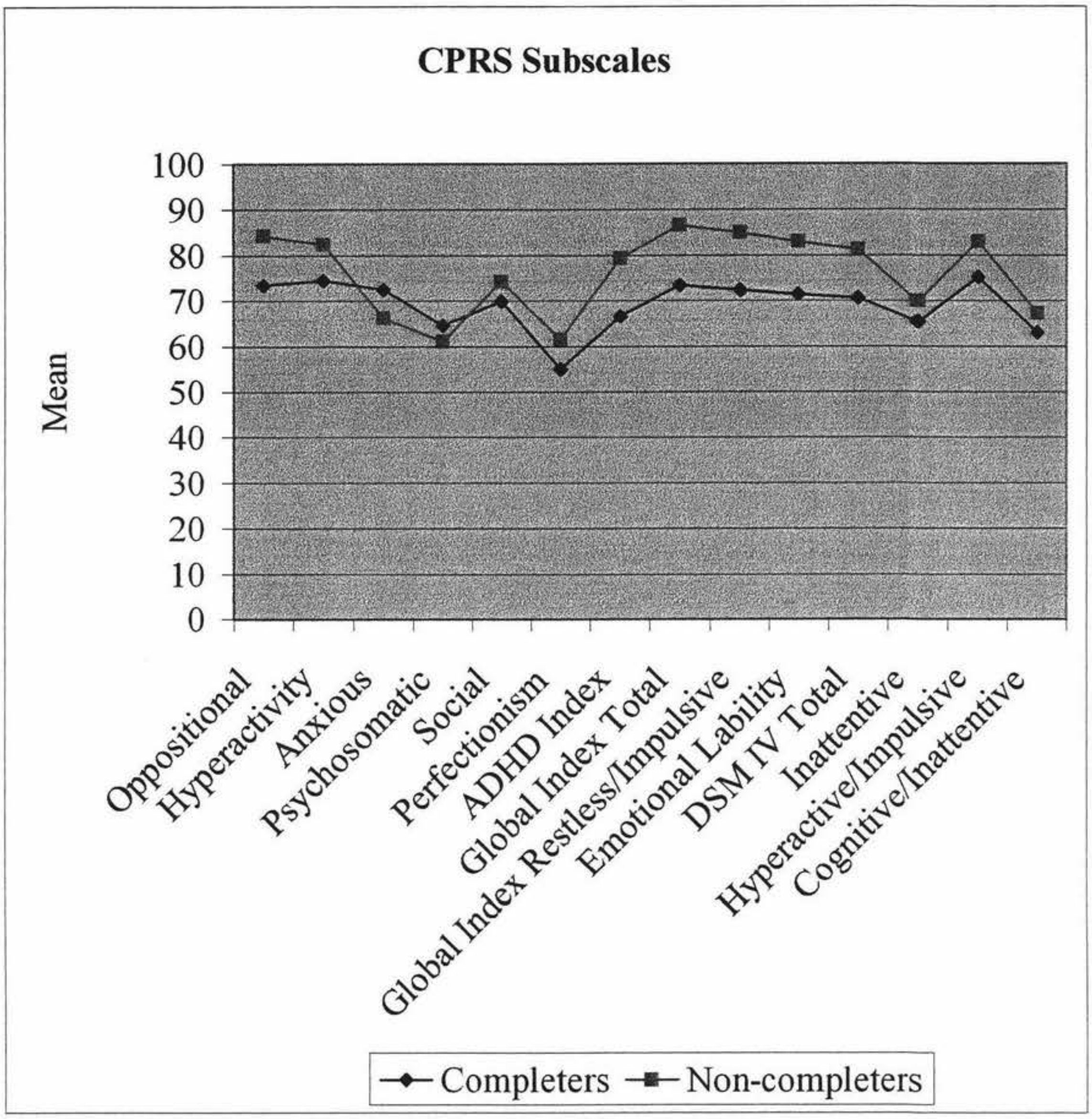

Fig.1. Graph of CPRS Subscales comparing completers' and non-completers' group means as in Table 6.

Across the total range of scores individual completers totalled average scores of 69.08, and non-completers totalled average scores of 76.01, indicating differences in severity of symptoms between the groups. Scores on individual subscales indicated consistent differences between the groups.

3.2.2 Children's Depression Inventory (CDI)

The utility of having a screen lies partly in its ability to indicate areas where more specific testing would be indicated. The Conners' profile indicated the presence of internalising problems which were further assessed using the Child Depression Inventory and the State-Trait Anxiety Inventory. The results for the

CDI are presented in T-scores which have a mean of 50 and a standard deviation of 10. T-scores greater than 65 are generally seen as clinically significant.

Table 7.
Comparison of group mean scores and SDs on subtests of CDI

	Completers	(n=12)	Non-completers	(n=5)
Subscales	M	SD	M	SD
Total Scores	57.27	10.30	60.6	16.96
Negative Mood	54.09	11.75	57.2	13.66
Interpersonal problems	52.72	10.15	72.4	25.31
Ineffectiveness	56.36	5.05	51.6	5.68
Anhedonia	57.18	6.52	52.8	9.41
Negative Self-esteem	55.09	15.12	58.8	13.48

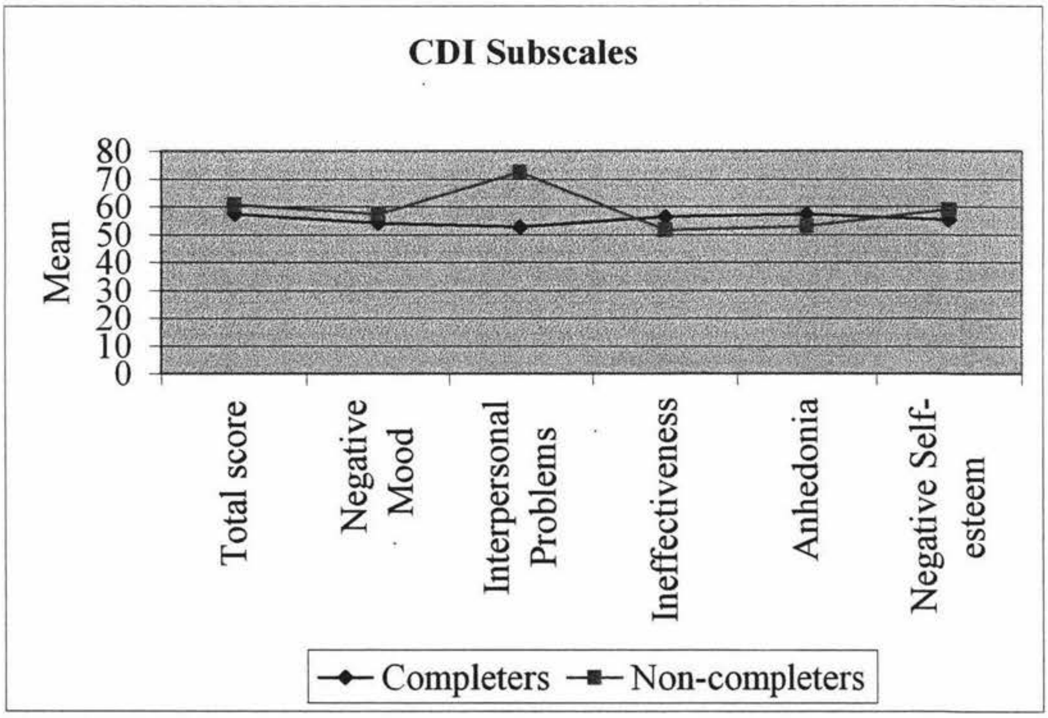

Fig.2. Graph of the comparative means for completers and non-completers for CDI subscales as in Table 7.

Non-completers had higher scores on negative mood, interpersonal problems, negative self-esteem, and on the total T-Scores. Completers had higher mean scores on ineffectiveness and anhedonia.

Table 8.
Above average scores on each subtest of the CDI. Groups compared.

	Completers	(n=12)	Non-completers	(n=5)
Subscales	Number	% of group	Number	% of group
Total T Scores	2	16.6	2	40
Negative Mood	1	8.0	2	40
Interpersonal Problems	2	16.6	2	40
Ineffectiveness	1	8.0	0	0
Anhedonia	4	33.3	1	20
Negative self-esteem	2	16.6	1	20

Some of the non-completers' mean scores fall within the above average (61 to 65), and very much above average (above 70) ranges. The non-completers' mean is very much above average on Interpersonal Problems. All of the completers' means and most of the non-completers' means fall in the average range indicating a low incidence of depression. There is a higher percentage of non-completers scoring above average on all the subtests, except anhedonia and ineffectiveness.

3.2.3 State Trait Anxiety Inventory (STAI)

The two aspects of anxiety measured by the STAI are the trait component, which is a general tendency towards anxiety, which includes increased likelihood of perceiving situations as threatening and therefore responding in an anxious way; and state which measures transient anxiety states.

Table 9.
STAI Comparison of Group Means and SDs on STAI

Subscales	Completers M	(n=14) SD	Non-completers M	(n=6) SD
State	44.9	11.09	47.80	16.84
Trait	46.14	10.65	51.00	11.08

Normalised T-scores have a mean of 50, and a standard deviation of 10. Only two individuals scored above 60 on Trait, and only two on State. On both scales, non-completers scored higher than completers.

3.2.4 Suicidal Ideation Questionnaire (SIQ)

The SIQ provides early indications of the potential for suicide in young people through measuring suicidal ideation. In the current sample this test was given only to those young people who had indicated depressive or suicidal thoughts or behaviours.

Table 10.
Comparison of group Means and SDs on SIQ

	Completers	(n=8)	Non-completers	(n=4)
	M	SD	M	SD
Scores	29.12	36.31	70.5	75.21

Data for both groups contain extreme outlying scores which considerably skew the mean results. Non-completers mean scores were higher than completers.

3.2.5 Piers-Harris Children's Self-Concept Scale

This scale measures self-concept defined as attitudes towards oneself which reflect a description and an evaluation of one's own behaviour and attributes. A high total score reflects a higher positive evaluation, and a lower score a negative evaluation of the self. The T-scores have a mean of 50 and a standard deviation of 10. Typical scores will fall between 40T and 60T.

Table 11.

Piers-Harris Children's Self-Concept Scale- Comparative group Means and SDs on Piers-Harris Subscales

	Completers	(n=17)	Non-completers	(n=7)
Subscales	M	SD	M	SD
Total Score	47.94	9.58	45.28	14.13
Physical Appearance	48.52	10.74	45.00	16.31
Popularity	45.58	11.70	48.00	13.30
Intellectual/School Status	47.41	7.36	43.71	11.54
Behaviour	46.00	11.07	38.85	12.08
Anxiety	49.94	12.94	50.00	11.84
Happiness	46.88	11.30	39.28	16.60
Response Bias	54.82	10.18	50.71	8.70
Inconsistency	57.82	6.34	59.00	6.08

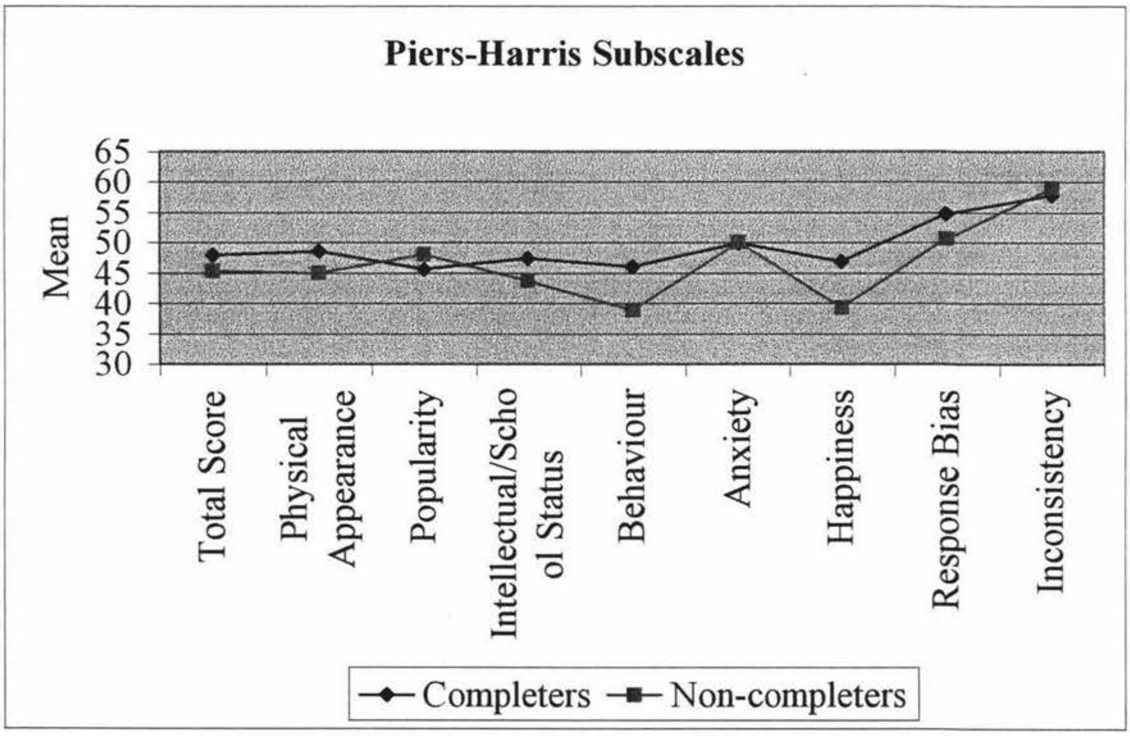

Fig. 3. Graph of comparative means on Piers-Harris Subscales

Completers have higher scores on all subscales except Popularity and Inconsistency, where non-completers' scores were higher, and Anxiety where both groups scores were the same. Completers' average total score is 47.94, and non-completers' 42.28. These scores are within the typical range, but neither group shows high self concept. In the completers' group 40.6% scored below 50, and in the non-completers' group 71.42% scored below 50. Scores for both groups on Response Bias and Inconsistency indicated reliability of answers in both groups. Scores on all scales consistently identified differences between the two groups.

3.3 Results comparing group means and SDs on clusters of subscales providing specific information from Conners' Rating Scales.

3.3.1 Conners' Rating Scales

The subscales are not identical across the three rating scales. The Conners' Parent Rating Scale (CPRS) and the Conners' Teacher Rating Scale (CTRS), differ in that the CTRS does not contain the perfectionism subscale. The Conners-Wells' Adolescent Self-Report Scale (CASS) is a shorter version than CTRS or CPRS.

Table 12.

Conners' Rating Scales
Comparison across rating scales on common subscales (excluding DSM-IV Total) of completers' and non-completers' group means using T-scores

CPRS		CTRS		CASS	
Subscales	**Higher Group Means**	Subscales	**Higher Group Means**	Subscales	**Higher Group Means**
Oppositional	N/C*	Oppositional	N/C	Conduct problems	N/C
Hyperactivity	N/C	Hyperactivity	N/C	Hyperactivity	N/C
Anxious	C*	Anxious	C	Emotional problems	N/C
ADHD	N/C	ADHD	N/C	ADHD	N/C
Cognitive Problems	N/C	Cognitive Problems	C	Cognitive Problems	N/C

*C = completers *N/C = non-completers

Both groups were compared on categories which were related across CPRS, CTRS, and CASS. Completers' means were not consistently higher on any of the five subscales.

Completers' means were consistently lower on oppositional, hyperactivity, and ADHD. There were inconsistent results on anxious/emotional problems with parents and teachers rating completers higher, and non-completers rating themselves higher on this subscale. On the subscale for cognitive problems teachers rated completers higher than non-completers; the reverse was the case on the CPRS and CASS. Mean scores for DSM-IV Total, DSM-IV Inattentive, and DSM-IV Hyperactive/Impulsive for the CASS are not reported as there were only three informants in each group. Overall, non-completers' means were consistently higher than completers' means when all three rating scales are considered. Higher scores indicate greater problems on each index.

3.3.2 CPRS Internalising Subscales

Table 13.
Comparison of completers and non-completers mean T-scores on internalising subscales of CPRS

CPRS subscale	Completers Mean T-scores	Non-completers Mean T-scores
Anxious	72.43	66.12
Psychosomatic	64.50	61.00
Social	69.90	74.25
Perfectionism	54.93	61.37
Emotional Lability	71.31	82.87

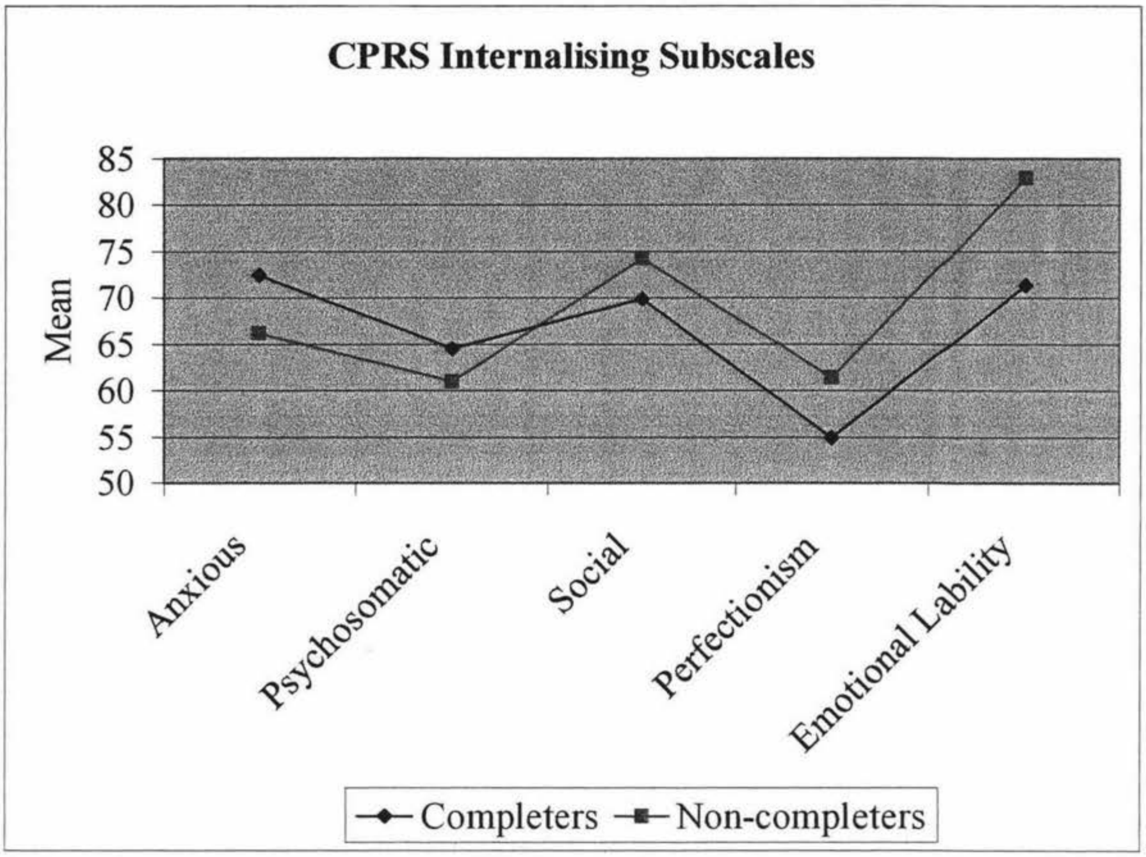

Fig. 4. Graph of comparative group means on CPRS internalising items as in Table 13.

Completers' means are consistently higher on the subscales loading onto the internalising factors of anxious/shy, and psychosomatic but not on social problems and perfectionism which are the other internalising subscales. Emotional lability includes extreme mood changes as well as anger and may be acted out as well as internalised.

3.3.3 CPRS Externalising subscales

Table 14.
Comparison of completers and non-completers mean T-scores on externalising subscales of CPRS.

CPRS Subscales	Completers(n=16) Mean T-scores	Non-completers(n=8) Mean T-scores
Oppositional	73.37	84.25
Hyperactivity	74.43	82.42
ADHD Index	66.50	79.25
Inattentive	65.31	69.87
GlobalIndex Restless-Impulsive	72.25	85.00
Hyperactive-impulsive	75.18	82.87
Cognitive-Inattentive	62.93	67.25

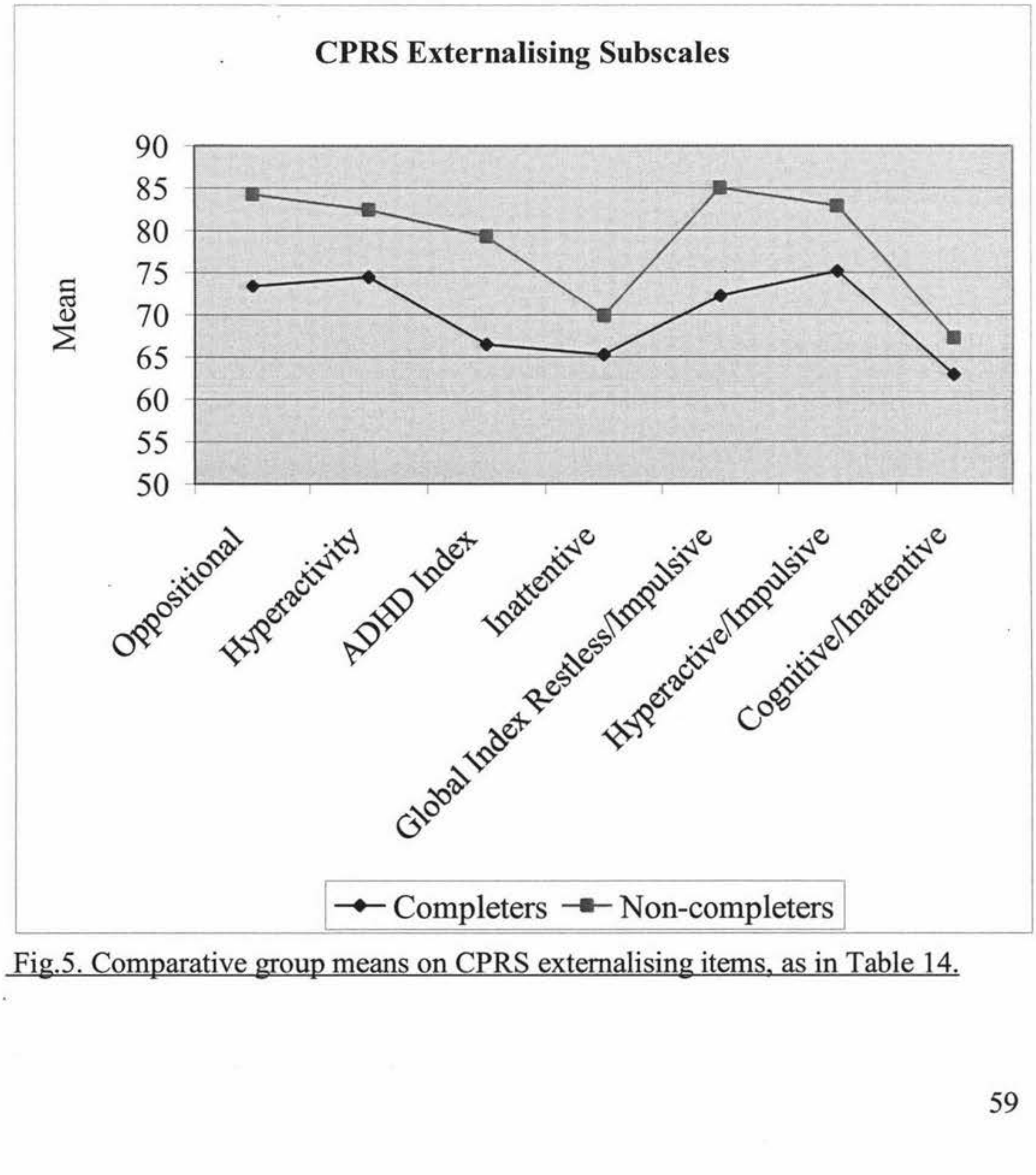

Fig.5. Comparative group means on CPRS externalising items, as in Table 14.

Completers have lower mean ratings on all of the items which reflect the externalising factors which are oppositional, hyperactive, inattentive, restless-impulsive, and hyperactive-impulsive. Completers have lower group means on ADHD, cognitive-attentive, global index, perfectionism, emotional lability, and DSM-IV total scores.

3.3.4 CPRS Global Index

Table 15.
CPRS Comparison of group mean T-scores and SDs on Conners' Global Index

Global Index Subscales	Completers		Non-completers	
	M	SD	M	SD
Global Index Restless Impulsive	72.75	16.37	85.00	8.12
Global Index Emotional Lability	71.31	15.69	82.87	3.48
Total	73.43	15.93	86.57	5.70

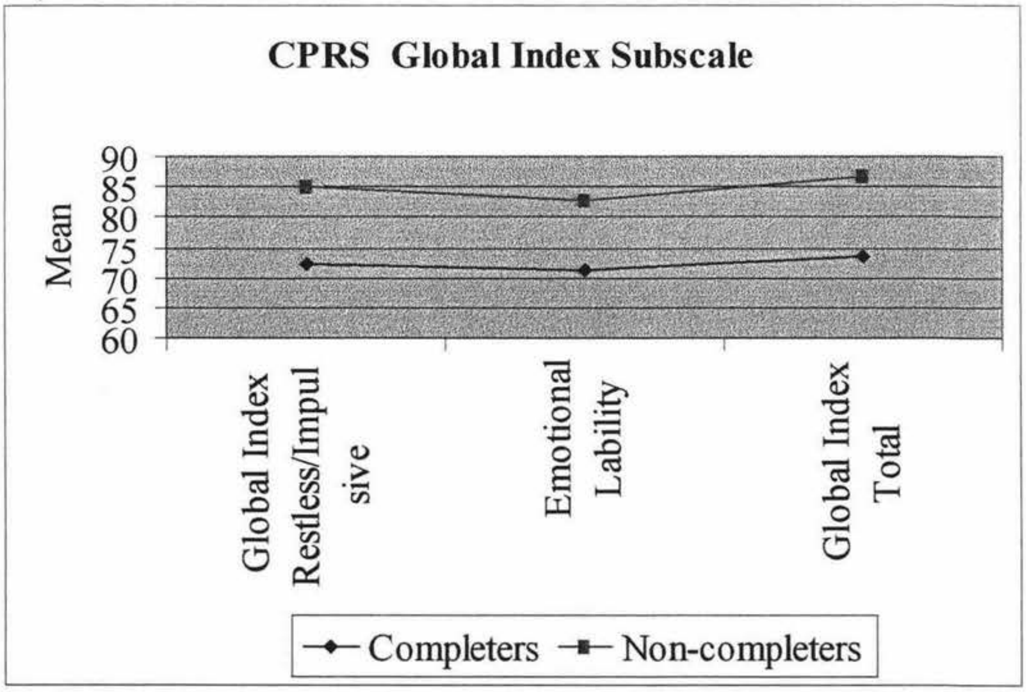

Fig.6. Graph of comparative group means on CPRS Global index as in Table 15.

Scores are all in the high ranges (above 70) in both groups. Completers' mean scores are lower than non-completers' scores, indicating lower levels of psychopathology than in the non-completer group.

3.3.5 CPRS DSM-IV Index

Table 16.
CPRS Comparison of group mean T-Scores and SDs on DSM-IV Index

	Completers		Non-completers	
DSM-IV Index subscales	M	SD	M	SD
DSM IV Hyperactive/Impulsive (ADD with hyperactivity)	75.18	16.50	82.87	10.14
DSM IV Inattentive	65.31	13.69	69.87	9.61
ADHD Index	66.50	14.60	79.25	9.91
DSM-IV Total	70.62	14.50	81.12	8.98

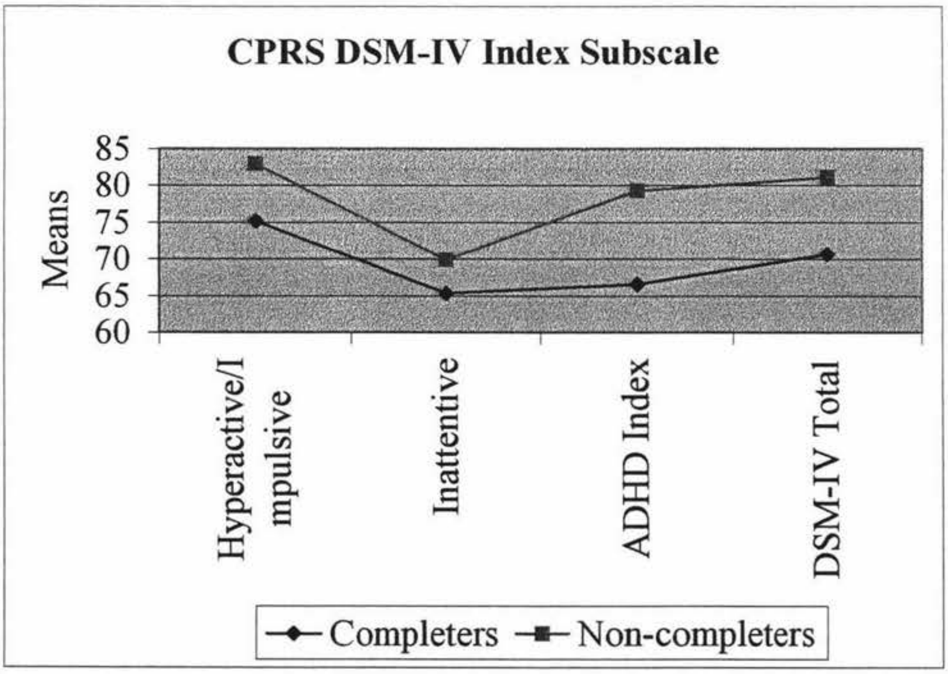

Fig. 7. Graph of comparative group means on CPRS DSM-IV Index as in table 16.

Completers scored below 70 on two subscales. All non-completers' scores were in the high range. The hyperactivity scales are specific to the diagnosis of ADHD.

Completers have lower mean scores on these indicating less comorbidity with ADHD, and lower levels of hyperactivity and inattention. Table 16. indicates a higher number of non-completers with more high scores and higher mean scores on the ADHD Index. Non-completers had higher scores on cognitive problems indicating possible neurological or learning problems. On DSM-IV Total non-completers' higher mean scores (81.12; SD 8.9) compared with completers' scores (70.62; SD 14.5) indicate a greater degree of pathology among the non-completer group.

3.4 Wechsler Intelligence Scale for Children (WISC-III) Results

The Wechsler Intelligence Scale for Children is designed as a measure of general intellectual ability represented on the Full IQ Scale (FSIQ). A number of young people had FSIQ scores below 79. On the FSIQ the completers' mean score was 81.66, and the non-completers' mean score was 79.66. The normal mean IQ is 100, with a standard deviation of 15. The means of both groups are, therefore, both in the low range as they are more than one SD below normal.

Table 17.
Summary of comparison of WISC-III results on all subscales and summary scores

Verbal Subtests	Completers (n=11) M	SD	Non-completers (n=6) M	SD
Information	6.70	2.90	5.66	2.10
Arithmetic	5.45	2.80	4.80	2.04
Vocabulary	9.50	6.09	5.00	2.60
Comprehension	9.09	3.59	9.20	4.50
Digit span	6.55	2.69	5.75	2.06
Similarities	7.00	6.75	7.10	2.40

Performance Subtests	Completers (n=9) M	SD	Non-completers (n=6) M	SD
Picture Completion	12.11	2.70	5.66	2.16
Coding	9.11	10.27	6.16	3.92

Picture Arrangement	8.44	3.80	6.33	1.96
Object Assembly	12.20	3.63	10.10	3.31
Symbol Search	10.55	3.60	8.25	21.20
Block Design	9.00	3.00	9.80	3.31
Mazes	8.62	2.44	9.00	5.35

Summary Scores	Completers (n=12) M	SD	Non-completers (n=6) M	SD
Verbal IQ	80.33	15.86	75.16	4.35
Full Scale IQ	81.66	17.30	79.66	8.75
Performance IQ	86.75	20.35	88.50	14.32

Index Scores	Completers (n=5) M	SD	Non-completers(n=2) M	SD
Verbal Comprehension	87.25	17.75	78.00	4.08
Processing Speed	88.75	7.14	87.75	14.59
Freedom from Distractibility	77.50	11.70	73.00	10.29
Perceptual organisation	102.00	14.70	90.75	12.33

In these results the completers have higher scores on all subtests except Similarities in the Verbal Subtests, and Block Design and Mazes in the Performance Subtests. In the Summary Scales, completers have higher scores on all scales except the Performance IQ Summary (PIQ). In the current study the completers' mean VIQ was 80.33, and mean PIQ 86.75. This gives a discrepancy of 6.42. For the non-completers, the mean VIQ score was 75.16, and the mean PIQ 88.5. This gives a discrepancy of 13.34, and a larger discrepancy in this group than in the completers' group.

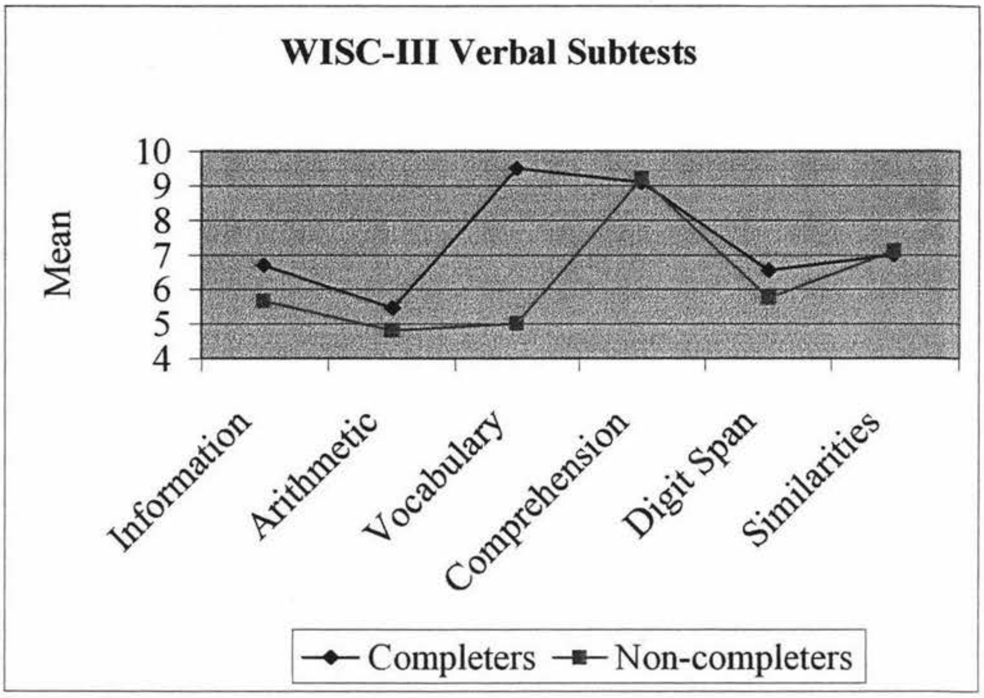

Fig. 8. WISC-III Results Verbal Subtests: Comparative group means

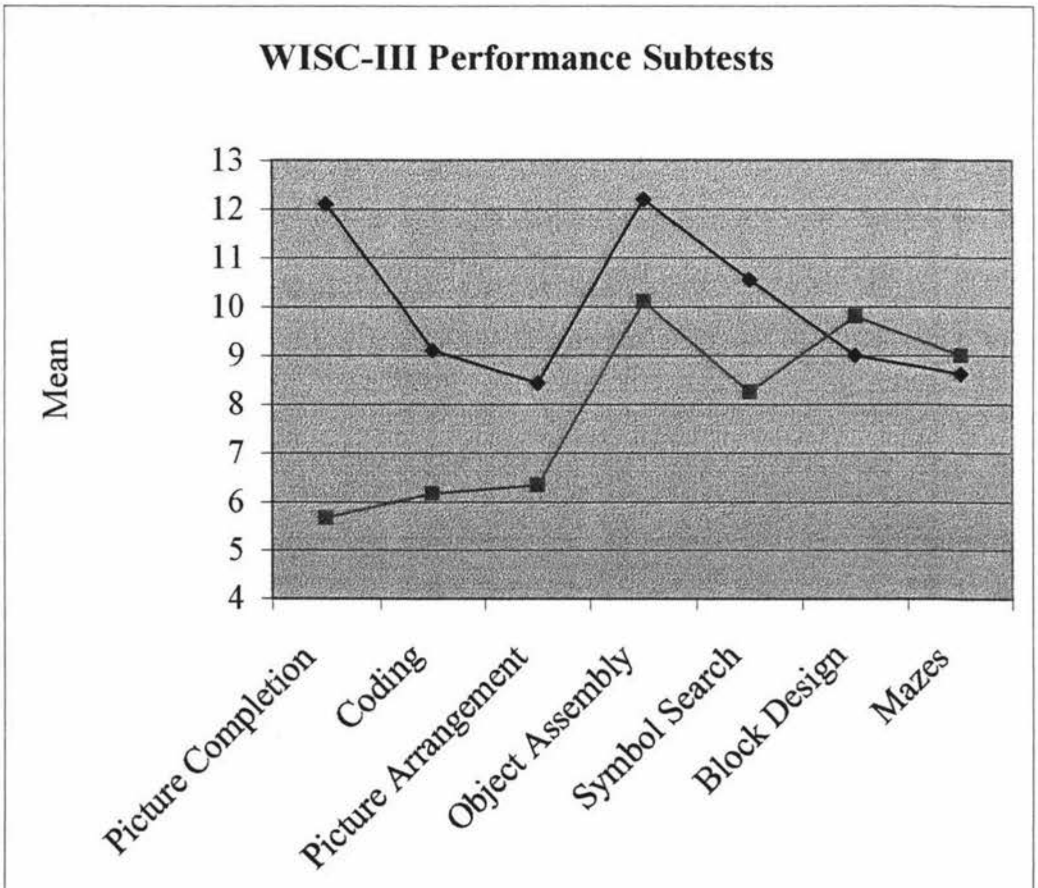

Fig.9 WISC-III Results Performance Subtests: Comparative group means

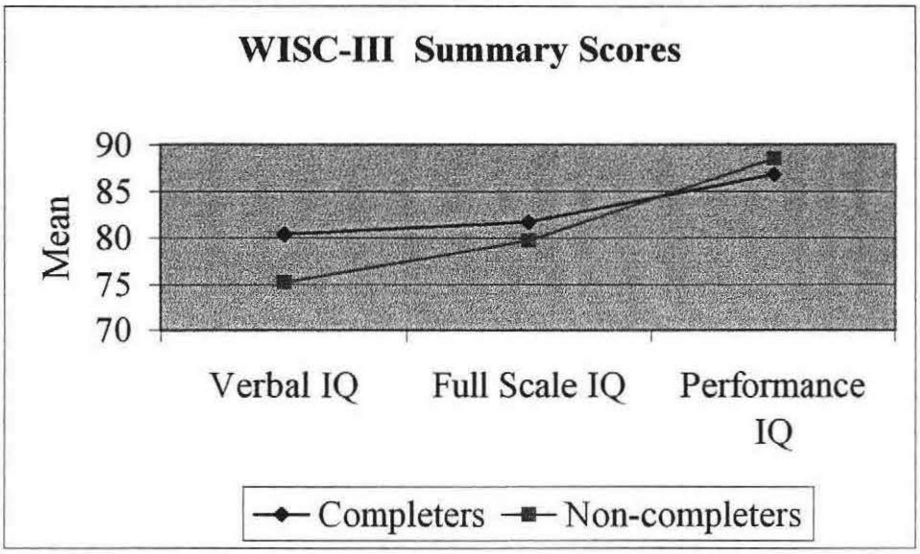

Fig. 10. WISC – III Summary Scores: Comparative group means

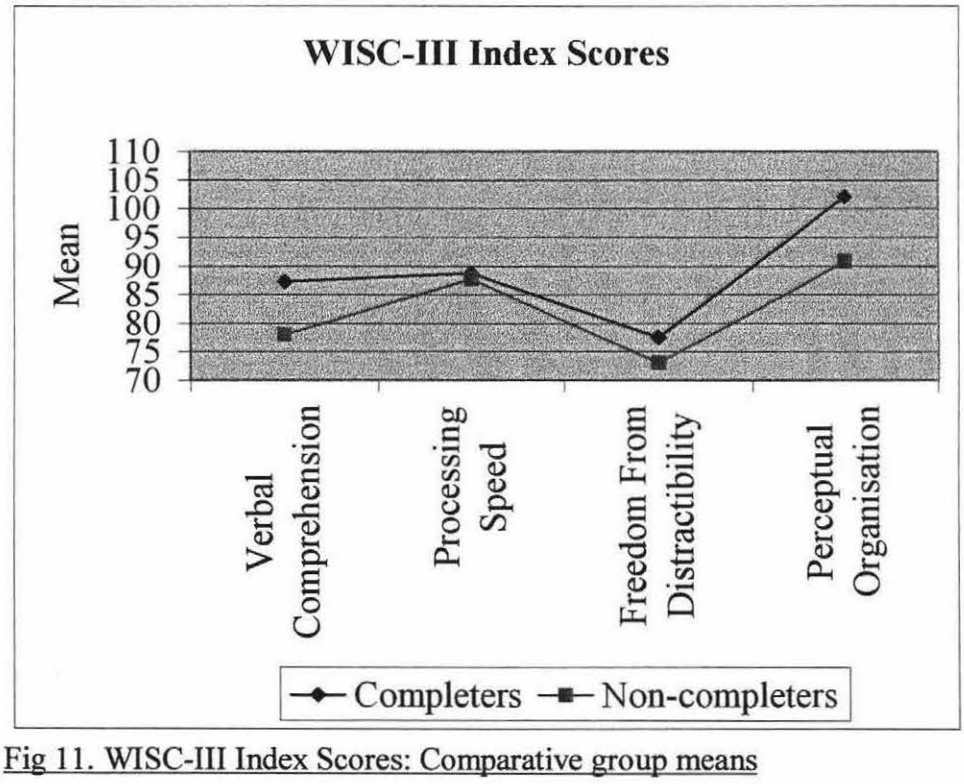

Fig 11. WISC-III Index Scores: Comparative group means

Clear differences between groups were found, as outlined above in graphs and text.

CHAPTER FOUR DISCUSSION

4.0 Discussion

The data examined in this study indicated that all of the young people were appropriately placed in the programme for which the central criterion is a diagnosis of severe conduct disorder. This was confirmed by high numbers of both groups with T-scores in the markedly atypical range of the CPRS, confirming the presence of severe behaviour problems and additional problems in each group. This indicates that the assessment process related to diagnosis is accurate in identifying the targeted group. The clear exception to meeting the admission criteria was the high number of young people (fifty percent of both groups) who had IQ scores well below the stated criterion. The meaning of the low IQ scores is less clear and warrants further examination to clarify whether the programme has continued to recruit young people with IQ scores lower than 80, or whether there are problems with the accuracy of the testing process including possible compliance problems.

Although all participants met the criteria for SCD, the results of the tests did indicate differences between the completer and non-completer groups. From these differences tentative profiles can be drawn. A discussion of the differences follows, along with a consideration of other possible sources of difference. The characteristics of this particular group of young people with SCD are then presented and a comparison made between profiles of completers and non-completers.

4.1 Conners' Rating Scales

The group scores on the CRS differentiated between the groups in a number of ways. The internalising items indicate a likely comorbidity with anxiety or depression. Both groups may have an equal tendency towards mood or anxiety disorders. However, the exact nature of the emotional component reported in the various tests is unclear. For example, there are different definitions of anxiety across the tests, and the relationship of emotional lability to anxiety and mood disorders is not defined. On the externalising items the non-completers' scores were higher, indicating a greater likelihood of comorbidity with ADHD, and a tendency to solve problems by acting out. Non-completers rated themselves higher on all items including emotional problems. This reflects a self concept in which all areas of functioning are seen to be problematic. In turn this suggests a degree of insight which is not necessarily expected with young people with severe conduct disorder. On the ADHD specific items the non-completers scored higher than completers, and more of them were in the pathological range indicating comorbid ADHD and CD. This matches the profile of the most treatment resistant group.

Support for the likely existence of pathological problems across a large number of domains comes from the Type G and Type P comparison, with a higher number of non-completers falling in the Type G category. A comparison of percentages of members of each group with very high scores on a number of subscales, shows the non-completers having higher scores indicative of more extreme problems. An examination of the range and standard deviation on each collection of scores indicates that completers are a more heterogeneous group with a wider range of scores, and with a number of group members with relatively low scores as well as some with high scores.

Differences in scores obtained on the CPRS and CTRS reflect different situations and expectations. Some discrepancy in the scores compared across the rating scales is to be expected as an inherent feature of having three different raters, and of obtaining information across different social situations. The results suggest that teachers' attributions around poor academic achievement for those like the members of the completers' group might be around poor attention and a possible learning problem. For those like the non-completers, the focus is more likely to be on the behaviour which takes teacher time, and which makes completion of learning tasks impossible for the learner. Despite these areas of potential difference there is high degree of consistency in the data examined here across the three scales, which allows the CPRS to be used as the representative measure for the CRS.

For both groups, scores indicate a considerable range of considerable problems. However, the degree and multiplicity of the problems of the non-completer group are more extreme in most instances. Overall this gives a picture of the non-completer group as having consistently high scores in all domains including cognitive problems; being higher scorers on items indicating problem behaviours, and with a greater likelihood of comorbidity with ADHD which is the most treatment resistant form of SCD. Across both groups, there are indicators of a high incidence of comorbidity with ADHD. However, Table 16. indicates that the degree (not just the presence) of hyperactivity could be a distinguishing feature between the two groups. Similarly, although the completers' scores are sometimes higher on the internalising items, the results on perfectionism and emotional lability suggest that in the non-completer group there may be more young people with ADHD with higher hyperactivity, plus anxiety and depression or other emotional problems. This supports the previously quoted literature by Ledingham (1999), McCord (1987), and Paris (1999) linking simultaneous externalising and internalising problems with subsequent antisocial behaviour and possibly with anti-social personality disorder.

On the basis of the sample used in this study, the Conners' Rating Scales distinguish between the two groups of young people who have completed or not completed the programme. This applies particularly to comorbidity with ADHD, and to differences in the severity of ADHD symptoms where these are present, as well as to CD plus ADHD plus additional comorbidities.

4.2 Wechsler Intelligence Scale for Children

Over the two groups, the WISC-III scores were much lower than expected, with a number of young people scoring below 80, which is the cut-off point for acceptance into the programme. Even so, the non-completer group scored lower than the completer group on all except four subtests. The mean FSIQ was higher in the completer group. This supports the findings indicating cognitive problems, on the cognitive item on the CRS. It also indicates that the resilience factor provided by intelligence is less robust in the non-completer group.

There is some support for questioning the validity of IQ scores with this group. The manual accompanying the test describes intelligence as the product of genetic make-up, socio-educational experiences, motivation, and personality. The manual states that low IQ scores usually reflect intellectual impairment, but that other factors like extreme cultural or linguistic difference from the test's standardisation group, disabling distractibility or anxiety, and refusal to co-operate with the examiner may lead to low scores. The WISC-III norms are not standardised for New Zealand populations. In the group under study, factors like a high degree of distractibility and refusal to co-operate with the examiner are likely to be present. However, low IQ scores have been found in clinic populations compared with sample populations by Riordan (2001), and by Moffitt and Silva (1988) in conduct disordered youth.

In the current study there were discrepancies between the Verbal and Performance Scores in both groups. The completers' mean VIQ was 80.33, and mean PIQ 86.75. This gives a difference of 6.42. For the non-completers, the mean VIQ score was 75.16, and the mean PIQ 88.5. This gives a difference of 13.34, and a larger discrepancy in this group than in the completers' group. In a normal population the discrepancy is expected to be zero. There were two people with a very large discrepancy, one of 26 points and the other of 29 points. One of these was in the completers' group and the other in the non-completers' group. In each case neurological and sensory motor deficits had been ruled out. The validity of the FSIQ in these cases, would be questionable. Rispens et al. (1997) quoted above found a number of links between large differences in VIQ and PIQ with clinical problems, as did Hodges & Plow (1990). In the present study the discrepancy is towards higher PIQ scores, but in other clinical populations it has been towards higher VIQ scores. The connection between deficits in verbal IQ, and discrepancies between VIQ and PIQ with behaviour problems and delinquency is reported in the introduction.

Although there may be questions about the accuracy of the scores there is a need for accurate measurement of intelligence when this is used as a criterion for admission. There is a cognitive element in the programme which may mean that young people are less likely to benefit from the programme if they have an intellectual impairment. The WISC has the best credentials for this purpose. (Appendix A).

The WISC scores do indicate differences between the two groups.

4.3 Children's Depression Inventory

The CDI shows the non-completer group as scoring higher than the completer group on three of the five subtests, as well as on the total score. The completer group had higher scores on the remaining two subscales. This supports the possibility that non-completers have internalising problems as well as externalising problems, although the exact nature of these is not clear. The reliability and validity of the CDI are not well established (see Appendix A).

The CDI does not distinguish clearly between the two groups.

4.4 State-Trait Anxiety Inventory

On both anxiety measures non-completers scored higher than completers, although only three members of either group scored above 60 on either test. The STAI results do not help clarify the nature of the internalising factor for the completers or non-completers. It may be that the internalising and externalising factors correspond with modes of operation which are more like Quay's (1986) covert and overt forms of CD, with non-completers showing more of both kinds of behaviours.

The STAI does distinguish between the two groups.

4.5 Suicidal Ideation Questionnaire

These results do not distinguish between the groups.

4.6 Piers-Harris

Overall non-completers rated themselves lower on items reflecting good self-esteem. Both groups recognized that they had behaviour problems, and both groups had very similar scores for anxious. Self esteem was not high in either group.

The lower scores of the non-completer group distinguish it from the completer group.

In summary, in answer to the question of whether the psychometric test results distinguish between the two groups, the finding is that clear distinctions are found in CRS, WISC-III, STAI, and Piers-Harris scores, but not in CDI or SIQ scores. An examination of the series of graphs in the results section illustrates this very clearly.

4.7 Characteristics of young people in the SCD programme

All of the young people had a diagnosis for SCD with early onset, that is, the most severe and persistent form. Information from the clinical interviews indicated that most shared a number of factors as outlined below.

4.7.1 Social and emotional factors

A high percentage of young people (around 90%) had a history of physical abuse, and most of these had also experienced sexual and emotional abuse. Many had experienced the loss of significant people in their lives. Most had experienced a number of changes of residence, often with a number of changes of caregivers, and change of school. Most were members of families in a low socio-economic group. In most cases there was a high degree of social incompetence in evidence across a number of domains. This was reflected in low IQ level, poor language development, and poor family relationships, and applied to individuals as well as their families.

4.7.2 Physical and developmental health factors

Most of the young people had met developmental milestones at a normal age, however a number experienced enuresis to an older age (in some cases still on admission to the programme). Several reported sleep disturbance over a number of years. There was a consistent history of childhood problems with a series of previous interventions which had been ineffective.

4.7.3 Psychological factors

Comorbidities were found across both groups, but with higher incidence in the non-completer group. These were psychosis (1), drug and alcohol problems (9), ADHD (9), depression (8), anxiety (8) learning problems (4), borderline traits (2), eating disorder (1). These figures would be an underestimate as not all information was available.

The presence of these factors indicates that all of the young people had histories reflecting a wide number of risk factors for the development and persistence of CD. Many also had co-existing mental health problems known to exacerbate CD and to make treatment success more difficult. The completer group appears to have a slight advantage in a greater number of resilience factors to balance these.

4.8 Profiles

The second question was whether distinct profiles could be obtained for each group. Although both groups had many characteristics in common, the results of the psychometric tests did allow for the formulation of two profiles.

4.8.1 Non-completer profile

The non-completer profile consisted of symptoms of SCD with childhood onset with an increased likelihood of comorbidity with ADHD, an anxiety disorder, a mood disorder, or high emotional lability. Non-completers were more likely (than completers) to have low self concept, low intelligence, to have a learning disorder, and to be hyperactive and impulsive. Those who did not complete the programme had multiple problems which registered at the high end of each scale, for example 75% of the non-completer group had scores above 70 on the ADHD Index. This matches descriptions of young people whom the literature already identifies as being the most resistant to treatment. It indicates a need to clearly identify and target each separate area of risk and resilience, with the setting of realistic goals to be achieved. The use of an assessment to tool designed to assess early psychopathy traits, particularly those identified as callous-unemotional, would allow this factor to be specifically targeted for intervention and could assist in meeting some of the additional needs of the non-completer group. Callous-unemotional features with high emotional lability, if clearly identified, would indicate increased risk in SCD.

4.8.2 Completer profile

The completer profile was similar, to the non-completer profile, in the type of symptoms (all the young people scored in pathological ranges on most subscales), and in the presence of comorbidities. However, in general, average scores were lower for completers, indicating lower levels of severity. In addition completers were assessed as having more resilience factors to help counter the presence of risk factors. In particular these were higher intelligence, and higher self concept.

4.9 Other factors which may have contributed to non-completion of treatment.

Other factors which were not investigated, but which may have had an influence on completion or non-completion, are the amount and quality of family contact with the young person in the programme, and individual and family previous experience of interventions which may have raised positive or negative expectations about outcomes of therapeutic interventions. Factors relating to the programme may have played a part. These include changes in personnel, change of house or stage with accompanying different expectations, length of time in the programme, length of waiting time to enter the programme, experience of staff, and the lack of a stage one facility. Although the sample was too small to separate participants in terms of race or ethnicity, it is useful to consider what such programmes might offer to Maori young people, and to young people of more varied ethnic groups. Nga Ia o te Oranga Hinengaro Maori (Te Puni Kokiri, 1996) indicates a clear path to serving Maori youth in recommending culturally appropriate early detection and support systems in schools, within the context of Maori being more likely to become seriously ill before help is sought. The report points out that Maori already constitute half the population of prisons and forensic units, and that this ratio is likely to grow unless appropriate intervention is made. The report notes the lack of culturally appropriate approaches, and recommends better funding of services with a specific Maori focus, as necessary to redress this situation. It also advocates research which clearly identifies Maori mental health needs and identifies effective treatments for these. Early identification and culturally appropriate programmes are clearly indicated in the report. Cultural and gender factors may play an important role in early termination of treatment, and these have not been possible to identify in this study.

4.10 Summary and Limitations

All participants met the criteria for severe conduct disorder matching the subtype of early onset. This is supported in the analysis of data carried out for this study. The psychometric test data examined, indicated differences between the two groups of completers and non-completers of the treatment programme. Although both groups had many features in common, the differences between the groups indicated in the data analysis allowed the formulation of two distinct profiles matching the completer group and the non-completer group. However, the results are based on group means which do not necessarily represent any individual result which might be obtained. The numbers of individuals who form each group are very small, so the results remain tentative and speculative. Discrepancies in the sizes of the groups being compared mean that although differences were found between the groups, the sample is too small to adequately test the significance of these. In addition, none of the assessment tests used is standardised to a New Zealand population. This last point may be particularly relevant for young people of Maori or Pacific Island background. These limitations highlight inherent difficulties in carrying out clinical practice-based research, where the focus is necessarily on service provision and delivery rather than data collection and outcome evaluation, and where cohorts are likely to be small because of the nature of the disorder or treatment programme. Although this particular programme has constructed a database and evaluation measures, information required for research purposes is more specific than that required for reporting. Evaluation of outcomes, and cost effectiveness could be more clearly established and aligned with practice based research if this were a defined and funded contract component.

CHAPTER FIVE CONCLUSION

5.0 Conclusion

The major implications of this study support the need for consistent interagency approaches to clarify criteria for the description of extreme behaviour problems. This includes criteria for early recognition and intervention, as well as for the collection of standardised data which includes full and comprehensive history taking. Accurate diagnosis and more accurate epidemiological figures would assist with obtaining resources, and with effective interagency cooperation, as well as accurate targeting of resources. Collection and recording of outcome and evaluation data are essential for determining the best treatment approaches. Assessment of behaviour needs to be comprehensive and specific to include the range of recognised comorbid conditions, and other physical, educational, and social problems. There is a range of interventions with some degree of effect which has already been established. Given the heterogeneous manifestation of conduct disorder, including the potential number of subtypes, there is considerable value in having a range of treatment options. However, they need to be evaluated in similar and consistent ways in order to use resources well and to offer the best options to a variety of young people and their families. There is a need to keep refining and understanding treatment for the most multiply disadvantaged and treatment resistant group, as well as to offer treatments which are useful to those in less extreme positions on the continuum of severity.

The entire cohort studied here matches the profile of young people with the highest and most complex needs in the community. These needs arise across multiple domains. While the cost of meeting their needs is high, the cost of not doing so may be even higher. The literature reviewed indicates a considerable body of research into the subtypes of CD, and the appropriate and effective treatment of CD, but all writers stress the need for further research particularly to add to knowledge about the effects of gender, and ethnicity and about the APD trajectory. Given that there are clear early indicators of serious behaviour problems, early identification and treatment has considerable potential. To be effective this requires joint approaches from education, health and social service agencies in establishing common criteria for recognition, willingness to work together with a range of interventions in a range of situations, and a focus on interventions for which there is evidence of effectiveness. Treatment should be based on realistic targets designed to strengthen resilience factors and reduce the impact of recognisable risk factors. Interventions need to be accompanied by realistic outcome measures and evaluation schedules. The systematic collection of data, with standardised outcome and evaluation measures would add to the clinical knowledge relating to CD, and would increase knowledge of what is locally effective and practicable in the New Zealand context. Enlisting young people and their families in long-term research would benefit their treatment at later developmental stages, as well as adding to this knowledge.

5.1 Implications for this programme

There are implications for age of admission, collection of comprehensive and accurate information at the assessment stage, regular review to find the most useful and accurate assessment tools, and regular review to ensure that all domains are being appropriately covered for each individual in treatment. The average age of admission in both groups was 13.7. Lowering this average age would appear to be advantageous. If people were referred and admitted at younger ages this would necessitate a degree of segregation from older boys as older boys add more developmentally advanced anti-social behaviours to their repertoire. Indications are that girls should be separated from boys as they have different treatment needs. Key comorbidities must be identified and treated. Family work and education remain as key components, as does the teaching of prosocial skills. The most treatment resistant group identified here highlights the need for accurate assessment, particularly assessment and treatment of comorbidities. Attention to incentives to increase motivation and compliance towards assessment could enhance the collection of accurate data. The addition of a suitable test for APD features could be a useful addition. Recognition that treatment resistance is high could usefully lead to additional attention to motivational factors, and to close and sustained work with families to assist with treatment compliance and with maintaining treatment gains.

5.2 Interagency cooperation

Interagency protocols and agreement about criteria should be established. This would include agreement about realistic outcome measures to be used at regular intervals. Outcome measures would include improvement in general health, improvement in educational level in basic skills, reduction in drug and alcohol abuse, reduction in criminal and violent behaviour, improvement in family and other relationships, and increase in prosocial leisure activities and with prosocial peers and adults. The focus is necessarily on change against individual baselines, rather than the illusion of cure. In New Zealand there is already a range of options for meeting the needs of this group of high risk young people. These include provision by youth justice, CYF, CYF contracted programmes to external providers, group homes, MST variants, and specialist foster care. These are founded on a variety of different philosophies. There are advantages in having a range of options to allow the matching of individual needs to the most appropriate provision. However, programme structures and philosophies should be overt and coherent and informed by the results of continuing research on all of these.

5.3 Research implications

There is a need for further exploration of the role of gender and the conceptualization of a female gender based subtype. Clarification is further required around the APD trajectory and delineated characteristics of this potential subtype. Given that conduct disorders are disorders which clearly arise in childhood and adolescence, they are particularly suited to research using longitudinal data collection to obtain further developmental and outcome information. Consistent evaluation of outcome measures would improve treatment selection. Research on the meaning and definition of the emotional component in CD, and its effect on the course of the disorder would be particularly useful. Recognition and identification of the most treatment resistant group, that is those with CD, ADHD, emotional and possibly additional comorbidities could assist in identifying tailored interventions for each problem and for each individual. The existing literature indicates that reducing risk and increasing resilience in each area could reduce the psychopathology.

For both groups, attention to, engagement in, and motivation for participating in the programme are essential. Research identifying motivational factors for young people would provide knowledge with a practical application. In all programmes, individually tailored interventions need to be designed. In general, programmes should be appropriate for developmental level, have identifiable areas of success, achievable targets, and include support for transition from the programme.

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Appendix A. Summary of Psychometric Test Properties

Conners' Parent Rating Scale (CPRS), Conners' Teacher Rating Scale (CTRS), and Conners' Wells' Adolescent Self-Report Scale (CASS).

The CRS are designed primarily to assist in the diagnosis of behaviour disorders, particularly ADHD. Each scale consists of a number of subscales which also assist in the diagnosis of other disorders characterised by behaviour problems, like ODD and CD. In addition the subscales are designed to indicate other problem areas which may need more specific assessment methods to establish psychopathology. Some of the subscales cluster on to internalising factors (indicative of anxiety or depressive problems), or externalising factors (indicative of behaviour problems or aggression). The subscales form a screen for other conditions which are frequently comorbid with ADHD. The subscales on the CPRS are oppositional, cognitive-inattentive problems, hyperactivity, anxious-shy, perfectionism, social problems, psychosomatic, Conners' global index restless-impulsive, Conners' global index emotional lability, global index total, ADHD Index, DSM-IV inattentive, DSM-IV hyperactive-impulsive, and DSM-IV total. The subscales are similar for the CPRS and the CTRS. The CASS has a smaller number of subscales. High scores on the rating scales indicate greater severity of problems.

Typical and Atypical Profiles

As well as providing a score for each subscale, and a total score, the CRS provide a framework for classifying T-scores by providing four profiles, two of which indicate a need for further assessment. Typical profiles are scores in the normal range indicating that any perceived behaviour problems are not in the range giving rise to concern. The atypical or elevated profiles are elevated profile, type G and type P. In type G, scores on many independent subscales are elevated above 60 or 65. G stands for global problematic functioning or substantial comorbidity. If the subscale elevations are conceptually related then the problem may be focussed in one diagnostic area. With the elevated profile, Type P, there are some elevated subscores, with the remainder in the normal range. This is indicative of problematic functioning focused in particular areas (Conners, 1997).

Wechsler Intelligence Scale for Children (WISC-III)

The WISC-III provides a measure of global intelligence to be used with other forms of assessment. There are several subscales which are summarised in three composite scores for verbal IQ (VIQ), performance IQ (PIQ), and full scale IQ (FSIQ). The verbal subtests are information, similarities, arithmetic, vocabulary, and comprehension, with digit span as an optional test. The performance subtests are picture completion, coding, picture arrangement, block design, and object assembly, with symbol search and mazes as an optional supplementary test. The manual states that qualitative interpretation is also important in analysing and interpreting the scores. High scores indicate high intelligence (Wechsler, 1992).

Children's Depression Inventory (CDI)

The CDI is designed to identify those with depressive symptoms and to distinguish between major depressive symptoms or dysthymic symptoms and symptoms of other disorders. There are five subscales and a total score. The subscales are negative mood, interpersonal problems, ineffectiveness, anhedonia, and negative self-esteem. High scores indicate more severe problems (Kovacs, 1992). The normative groups are small, but there is good validity with other similar tests. However, Kovacs (1992) recommends the test for use only in research environments. Forms are available in a number of languages.

Suicidal Ideation Questionnaire (SIQ)

The SIQ indicates potential for suicide. The questionnaire is designed to elicit information about the presence and frequency of suicidal ideation. It is not predictive of suicide, but when considered together with information about impulsivity or depression, for example, can add to the assessment of degree of risk. A high score indicates the frequent occurrence of numerous suicidal cognitions, and points to a need for further investigation of suicidal risk (Reynolds, 1988). It is likely to yield a high number of false positives, in the context of the high risk of false negatives.

State-Trait Anxiety Inventory (STAI)

This is a self-report inventory designed to measure two types of anxiety. The STAI includes adolescent age groups, and is the form used here (Form Y). Trait anxiety describes a relatively stable individual propensity to anxiety; State anxiety describes degrees of anxious response at a given time or in a given situation. Higher degrees of anxiety are indicated by higher scores (Spielberger, 1983). The STAI has been translated and used in a number of different countries. It has been standardised on working adults, college students, high school students, and members of the military in the United States. The norms for these groups were found to be highly correlated. Since 1964 a number of tests of validity and reliability have been carried out as well as clinical and research trials and correlational trials with other measures.

Piers-Harris Children's Self-Concept Scale

The Piers-Harris Children's Self Concept Scale is a self-report questionnaire designed to measure attitudes and behaviours which relate to self-concept. Total scores are obtained, along with subscales or cluster scores for behaviour, intellectual and school status, anxiety, popularity, and happiness and satisfaction. Two internal validity check items are included. These are response bias and inconsistency. Given that the writers indicate that this inventory is not suitable for use with hostile or non-compliant groups there would be questions about its reliability and validity with the groups involved in this study. Typical scores fall between 40 and 60, so very high scores may reflect a very positive self view, a strong need to represent oneself in a very positive way, or lack of self criticism. T-scores below 40 indicate low self concept (Piers & Harris, 1984).

Table 18. Psychometric Tests: standardisation, validity, and reliability information

Assessment	CRS	WISC-III	CDI	SIQ	STAIC	PH
Norms/standardisation	11,000	2,200	166	6500	1838 adults	1183
Population	mixed	mixed	Toronto	mixed	424 students	Pennsylvania
Ethnicity	Both	both		both	USA	USA
Gender	8states,Nth.America	matches		one site in		
Place		USA		USA		
	3-17	census	7-17	14-adult	12-18	8-18
Age		1988				
		6-16.11				
Validity			more			
Content		High	research	.70-.90	.86-.93	acceptable
Criterion		.65-.96	required			acceptable
Construct	.49-.92	high		.36-.70		acceptable
Face			adequate			
Concurrent	acceptable	satisfactory	problematic			
Factorial	.36-.92	.93-.98	inconsistent		.37-.71	
Convergent-divergent		.59-.92		.39-.69	.73-85	
			good			
Reliability			needs			
Total	.91-.93	.80-.97	further		.86-.94	
Test-retest	.47-.92	.61-.92	research	.72	.65-.75trait	.42-.93
			.84		.16-.62state	
Internal consistency	.72-.95	satisfactory		.93-.97	.59	
Inter-rater	.35-.59	.92	.71-.87		inconclusive	

Information from test manuals and from Mental Measurements Yearbook

APPENDIX B. Glossary of abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
APD	Anti-Social Personality Disorder
CD	Conduct Disorder
CASS	Conners'-Wells Adolescent Self Report Scale
CDI	Children's Depression Inventory
CPRS	Conners' Parent Rating Scale
CRS	Conners' Rating Scales
CTRS	Conners' Teacher Rating Scale
CYF	Child, Youth and Family Service
DICA-R	Diagnostic Interview Schedule for Children and Adolescents
DISC-IV	Diagnostic Interview Schedule for Children Version IV
DSM-III	Diagnostic and Statistical Manual of Mental Disorders, Third Edition
DSM-III R	Diagnostic and Statistical Manual of Mental Disorders, Third Edition. Revised
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
FSIQ	Full Scale Intelligence Quotient
IQ	Intelligence Quotient
MOH	Ministry of Health
MRI	Magnetic Resonance Imaging
MST	Multi-Systemic Therapy
ODD	Oppositional Defiant Disorder
PCL-R	Psychopathy Checklist Revised
PET	Positron Emission Tomography
PH	Piers-Harris Children's Self-concept Scale
PIQ	Performance IQ
PTSD	Post Traumatic Stress Disorder
RAC	Research Access Committee
SCD	Severe Conduct Disorder
SD	Standard Deviation
SIDP-R	Structured Interview for DSM-III R Personality Disorders
SIQ	Suicidal Ideation Questionnaire
SRED	Self-Reported Early Delinquency Inventory

STAI	State-Trait Anxiety Inventory
VIQ	Verbal IQ
WISC-III	Wechsler Intelligence Scale for Children- Third Edition

Both the full terms and the abbreviations are used in the text.

APPENDIX C. Ethical issues raised in this study

Although no direct contact with the young people was involved, questions were necessarily raised around the issues of consent and of ownership of the material. Currently the material is considered to be owned by the Trust, as part of the clinical record accumulated during time spent in the care of the Trust; and by Child Youth and Family, as the guardians of the young people during the time they spent in the programme. The young people involved also have a right to ownership of the material. It was decided that the Trust and CYF could provide necessary and sufficient consent for access in this instance. This included a decision not to directly seek the consent of the young people because the passage of time could raise other ethical issues in terms of reactivating past trauma or other problems with the young people when they were no longer in a supportive environment. There would have been additional practical difficulties in tracing people who had moved from the programme up to two years earlier. This decision did not discount the ability of young people to make decisions about consent. In 1998, the Ministry of Health published Consent in Child and Youth Health which provides useful guidelines for those working with young people in a range of settings.