PSYCHOPATHY AND RECIDIVISM FOLLOWING TREATMENT
AMONG PREVIOUSLY VIOLENT YOUTH

by

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B.A., Simon Fraser University, 2000

Thesis Submitted in Partial Fulfilment
of the Requirements for the Degree of
Master of Arts

in the Department
of
Psychology

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ABSTRACT

The present study examined the relationship between psychopathy and treatment outcome in a cognitive-behavioural program administered to violent young offenders. In particular, this study examined the association between file-based psychopathy (Psychopathy Checklist: Youth Version; Forth, Kosson & Hare, 2003) assessments and criminal charges and convictions among 119 violent youths, half who received treatment and half who served as a comparison group. Youth were followed for an average of three and a half years following their discharge from one of three youth forensic sites in British Columbia, Canada, where violent offender treatment programs (VOTPs) had been initiated. Some literature on adult psychopaths has led to pessimistic views about their amenability to treatment (e.g., Rice, Harris, & Cormier, 1992). In adolescence, psychopathy is beginning to emerge as a useful construct in forensic settings (e.g., Catchpole & Gretton, 2003; Forth, Hart, & Hare, 1990; Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2001). However, this is one of the first known studies to examine the impact of psychopathy on response to treatment among adolescents using recidivism as an outcome measure. Cox regression analyses revealed that, while youth scoring higher on the PCL:YV were at higher risk for both violent and non-violent recidivism in the follow-up, psychopathy did not moderate treatment response. That is, both higher- and lower-scoring PCL:YV youth benefited from treatment to a similar degree. Treatment was associated a reduction in subsequent general offending and violent offending, but not non-violent offending. This study provides preliminary evidence for the treatment amenability of adolescents with many psychopathic traits. Future
research is required to examine treatment process variables in order that we may
determine the most effective program delivery format and components for adolescents
exhibiting many psychopathic traits. Implications for the construct of psychopathy in
adolescence are also discussed.
ACKNOWLEDGEMENTS

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# TABLE OF CONTENTS

Approval .......................................................................................................................... ii

Abstract ......................................................................................................................... iii

Acknowledgements ......................................................................................................... v

Table of Contents ........................................................................................................... vi

List of Tables .................................................................................................................. viii

List of Figures ................................................................................................................ ix

## INTRODUCTION ................................................................. 1

Psychopathy ................................................................................................................... 1
  Psychopathy in Adolescence ....................................................................................... 2

Treatment of Psychopathy ............................................................................................ 4
  Treatment of Juvenile Psychopathy .......................................................................... 7

Treatment of Adolescent Violence ............................................................................... 9

The Present Study .......................................................................................................... 10

## METHOD ........................................................................ 13

Participants .................................................................................................................... 13
  Site 1: Boulder Bay Youth Custody Centre (BBYSCC) ............................................ 13
  Site 2: Prince George Youth Forensic Psychiatric Services (PGYFPS) .................... 14
  Site 3: Kamloops Youth Forensic Psychiatric Services (KaYFPS) ......................... 14

Descriptive and Criminal History by Site .................................................................. 15

Treatment Program ..................................................................................................... 18
  Comparison of Treated and Untreated Participants .............................................. 19
  Predicting Differences between Treated and Untreated Youth ............................. 21

Data Sources ................................................................................................................ 22
  Background ................................................................................................................. 22
  Follow-up Information ............................................................................................. 22
  Outcome Variables ................................................................................................. 23
Instrument ........................................................................................................................................ 26
Psychopathy Checklist: Youth Version (PCL:YV) ....................................................................... 26

RESULTS........................................................................................................................................... 31
The Relationship between Psychopathy and Treatment Outcome .............................................. 32

DISCUSSION .................................................................................................................................... 37
The Predictive Ability of the PCL:YV ............................................................................................ 37
Issues Surrounding the Construct of Psychopathy in Adolescence ............................................ 38
Treatment Outcome ....................................................................................................................... 42
The Relationship between the PCL:YV and Treatment Outcome ................................................ 43

References ....................................................................................................................................... 46
Appendix A: Detailed Description of the Treatment Programs ...................................................... 51
Appendix B: Research Ethics Approval .......................................................................................... 53
**LIST OF TABLES**

Table 1: Demographic Information by Site ................................................................. 16
Table 2: Criminal History and Index Offence Information by Site ............................. 17
Table 3: Demographic Information by Treatment Status ............................................ 19
Table 4: Criminal History and Index Offence Information by Treatment Status ...... 20
Table 5: Logistic Regression Examining Predictors of Treatment Status ................. 21
Table 6: PCL:YV Scores by Site .................................................................................. 29
Table 7: PCL:YV Scores by Treatment Status ............................................................. 30
Table 8: Follow-up Offences by Site ........................................................................... 31
Table 9: Follow-up Offences by Treatment Status ...................................................... 32
Table 10: Cox Regression Examining the Interaction between PCL:YV Scores and Treatment Status in Predicting Latency to First Offence. ...................... 33
Table 11: Cox Regression Examining the Interaction between PCL:YV Scores and Treatment Status in Predicting Latency to First Violent Offence. .......... 35
Table 12: Cox Regression Examining the Interaction between PCL:YV Scores and Treatment Status in Predicting Latency to First Non-Violent Offence. ........................................................................................................... 36
LIST OF FIGURES

Figure 1: Months to First Follow-up Offence ................................................................. 24
Figure 2: Months to First Non-violent Follow-up Offence ............................................. 25
Figure 3: Months to First Violent Follow-up Offence ...................................................... 26
Figure 4: Distribution of PCL:YV Scores ...................................................................... 28
INTRODUCTION

Psychopathy

Psychopathy is a construct that includes both an affective/interpersonal dimension (e.g., glibness/superficial charm, callous/lack of empathy, conning/manipulativeness, lack of remorse, grandiose sense of self worth) and a behavioural/lifestyle dimension (e.g., need for stimulation/proneness to boredom, poor anger control, impulsivity, criminal versatility; Hare, 1991). Psychopaths are characterized as selfish, manipulative, and callous individuals who have little regard for the well being of others. Psychopathy is distinguished from antisocial personality disorder (ASPD), which is a DSM-defined personality disorder that relies largely on behavioural criteria such as criminality (Gacono, Nieberding, Owen, Rubel, & Bodholdt, 2001). As such, there is an asymmetric relationship between psychopathy and ASPD: while most psychopaths will meet criteria for ASPD, most individuals with a diagnosis of ASPD are not psychopaths. Due to its pervasive, characterological nature and its association with deviant behaviour, some have conceptualised psychopathy as a personality disorder (e.g., Walters & DiFazio, 2000; Hemphill & Hart, 2002).

In adulthood, the relationship between psychopathy and violence and antisocial behaviour is well established (e.g., Grann, Långström, Tengström, & Kullgren, 1999; Harris, Rice, & Quinsey, 1993; Hart & Hare, 1997; Hemphill, Hare, & Wong, 1998; Rice & Harris, 1995; Salekin, Rogers, & Sewell, 1996; Serin, 1991; Steadman et al., 2000). Psychopaths are disproportionately represented in the criminal justice system (e.g.,
Hare, McPherson, & Forth, 1988; Hemphill, Templeman, Wong, & Hare, 1998). Furthermore, psychopaths tend to begin their criminal careers at earlier ages than do non-psychopaths (Lynam, 1998) and continue their criminality well into adulthood (Gretton, Hare, & Catchpole, in press; Hare et al., 1988).

**Psychopathy in Adolescence**

There is currently an ongoing debate in the literature about the validity and appropriateness of applying the construct of psychopathy to adolescents. On the one hand, a growing body of literature (e.g., Forth, Hart, & Hare, 1990; Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2001) is beginning to find that psychopathy can be reliably measured in adolescence through a slightly modified version of the Psychopathy Checklist – Revised (PCL-R; Hare, 1991), the Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003). The PCL:YV is a clinical rating scale that assesses youths on 20 behavioural and personality characteristics associated with psychopathy. The PCL:YV closely resembles the adult version of the Psychopathy Checklist, the PCL-R (Hare, 1991). Some items have been slightly modified for use with adolescents, in particular to reflect the greater involvement of peers and family in the lives of adolescents, and to emphasize the importance of comparing youth to same-aged peers. Follow-up research has found that psychopathy is associated with an increased risk of criminal behaviour and violence among adolescents in a similar manner as with adults (e.g., Brandt, Kennedy, Patrick, & Curtin, 1997; Catchpole & Gretton, 2003; Forth et al., 1990; Gretton et al., 2001; Gretton et al., in press). Kosson, Cyterski, Steuerwald, Neumann, and Walker-Matthews (2002) investigated the construct validity of the PCL:YV in a sample of adolescent males who were on probation. They found that
PCL:YV scores correlated with criminal activity (both violent and non-violent), with a lack of closeness and attachment to parents, and with number of conduct disorder symptoms and other indices of externalising pathologies. Overall, they found that the construct of adolescent psychopathy paralleled that of adult psychopathy, including a similar comparative fit index for the two-factor model among adolescents as has been found among adults.

Others have made theoretical arguments that the assessment of psychopathy in adolescence may be inappropriate when one considers the changing nature of adolescent functioning and development (e.g., Edens, Skeem, Cruise, & Cauffman, 2001; Hart, Watt, & Vincent, 2002; Seagrave & Grisso, 2002). These researchers argue that some aspects of psychopathy (e.g., failure to accept responsibility) are normative in adolescence, and argue that these constructs will likely not remain stable into adulthood. Seagrave and Grisso (2002) talk specifically about the risk of false positives, or identifying adolescents as psychopaths who do not end up being psychopaths in adulthood. They fear that the negative consequences of incorrectly labelling adolescents as psychopaths are unacceptably high.

Arguments applying the construct of psychopathy to adolescents can be categorized into two broad areas. In the first are theoretical arguments about the nature of adolescent development, and in the second are concerns that relate to the state of the literature and the stage of validation research in this area as it relates to the applied clinical use of the construct. Although theoretical arguments raise important points and urge us to consider the ethical implications of what we are investigating, whether or not psychopathy among adolescents is a meaningful construct will ultimately be an empirical question that awaits further research in the area.
In light of the debates referred to above, and consistent with the recommendations in the PCL:YV manual (Forth et al., 2003), the use of the term “psychopath” as a clinical diagnosis is not yet warranted with adolescents. The term “psychopathy” may be more appropriately described as “psychopathic features” or “psychopathy-related personality characteristics” at present. For simplicity, however, the present work will refer to the construct of “psychopathy,” or “psychopathic traits” with adolescents, with the recognition that this clinical construct is in an early phase of development and is more appropriately characterized by the terms described above.

Treatment of Psychopathy

Currently the debate over whether to apply the construct of psychopathy to adolescents centres on whether the potential benefits of labelling an adolescent as psychopathic outweigh the potential negative consequences for the individual. The potential benefits include a characterization of the individual that brings with it important information about an individual’s risks and needs, and could assist in intervention planning (Andrews & Bonta, 1990). Drawbacks seem to stem largely from a single concern: that the identification of adolescents who appear to be demonstrating psychopathic traits “will be used to try to identify, weed out, and indefinitely lock up those youths who are too far along in their psychopathic development for treatment efforts to be worthwhile” (Seagrave & Grisso, 2002, p. 230).

The concern about treatment amenability is anchored in the adult psychopathy literature, and in particular to some findings suggesting that adult psychopaths appear resistant to treatment. In a ten-year quasi-experimental treatment outcome study, Rice,
Harris and Cormier (1992) found that adult psychopaths who received treatment in a therapeutic community program violently recidivated at a higher rate than matched (psychopathic) controls who did not receive treatment. The program reduced recidivism substantially in non-psychopaths. The therapeutic community consisted of intensive group therapy that aimed to create an environment where empathy and responsibility for peers could be developed. It was operated by peers (clients rarely saw professional staff), and could involve therapy of up to 80 hours per week. Little specific attention was given to altering criminal attitudes or addressing criminogenic needs, which are now seen as a crucial component of treatment programs for offenders (Andrews & Bonta, 1990). In a related vein, Seto and Barbaree (1999) found that individuals scoring high on psychopathy who received good ratings of treatment behaviour (motivated, completed homework, good behaviour in treatment) were more likely to be reconvicted than were those who received poor ratings of treatment behaviour. Moreover, Ogloff, Wong, and Greenwood (1990) found that psychopathic individuals in a therapeutic community setting dropped out of treatment sooner than non-psychopaths, and showed less improvement, effort and motivation than non-psychopaths.

Interestingly, a recent meta-analysis by Salekin (2002) counters the prevailing pessimism in the literature. In a review of 42 studies examining the relationship between treatment outcome and psychopathy, he found that cognitive-behavioural therapies had a 62% success rate in treating psychopathic individuals. He also found that therapeutic communities were the least effective in treating psychopathy, with a rate of success similar to that of control groups. However, the studies that Salekin (2002) reviewed considered many definitions of “success” and rarely used objective outcome measures, an important consideration when evaluating the progress of psychopaths given their
ability to manipulate others' perceptions of them. Moreover, only a few used Hare's (1991) conceptualization of psychopathy.

Hemphill and Hart (2002) provide a comprehensive review of the literature on treatment of psychopathic offenders. They make several key points worth mentioning here. First, they draw an important distinction between the treatment of psychopathy (aimed at removing the disorder), and treatment aimed at reducing criminality among psychopaths. In the latter, psychopathy is not the target of treatment, but rather a potentially relevant variable that may affect response to treatment (a moderator variable). Second, upon reviewing the literature in the area they point out that the vast majority of studies on psychopathy and treatment do not meet minimum standards with regard to methodological rigor. They conclude that overall, the efficacy of treatment for psychopathic adults, although commonly considered poor, is more appropriately characterized as an area for further research. They cite marked problems with past research in the area that limit the conclusions that may be drawn, including a lack of appropriate comparison groups, inappropriate outcome measures, inconsistent measurement of the construct of psychopathy, and inadequate descriptions of the nature and implementation of treatment.

One recent observational study, published since the Hemphill and Hart review, retrospectively examined the relationship between psychopathy, treatment involvement, and subsequent violence in a sample of adult civil psychiatric patients (Skeem, Monahan, & Mulvey, 2002). They found that over a 10-week period, psychopaths and “potential psychopaths,” assessed using the Psychopathy Checklist: Screening Version (PCL:SV; Hart, Cox & Hare, 1995), benefited from treatment to the same degree as non-psychopaths, even after controlling for factors related to non-random assignment. In
their study, "benefit" was defined as a reduction in subsequent violence, as measured by patient report, collateral informant report, and official records.

**Treatment of Juvenile Psychopathy**

The need to develop effective programs for adolescent offenders is an important issue. The purpose of the Youth Criminal Justice Act (Department of Justice, Canada, 2002) is not only to protect the public, but also to provide rehabilitative aid to youths involved in the criminal justice system. Moreover, adolescence is a time of increased likelihood of involvement in antisocial behaviour (e.g., Moffitt, 1993). Violence in particular is a segment of antisocial behaviour that is of particular concern. In 2000, youths aged 12 - 17 were responsible for 15.9% of all Canadian violent crimes (Statistics Canada, 2001) but represented only about 7% of the general population. When examining self-report indices of violence, reports suggest that 5% - 10% of adolescents in the general population are engaging in violent crime, and a far greater proportion (from 30%- 50%) engaging in minor violent behaviours, such as minor assaults on other teenagers (Borduin & Schaeffer, 1998). Within a forensic setting, adolescents who exhibit psychopathic traits are at particularly high risk for violent behaviour (e.g., Catchpole & Gretton, 2003; Gretton et al., 2001), and are thus an important group to study when examining treatment response and outcome.

In adolescence, when psychopathy seems to be emerging in an adult-like form, there is sparse literature examining treatment efficacy. The few studies that are reviewed suffer from methodological problems such as poor construct definition, and diverse and often subjective outcome measures. However, examining literature on the development of personality and personality disorders suggests that the personality features of
psychopathy may not be as ingrained in adolescence (here defined as a developmental period coinciding with an approximate chronological age of 12-17 years) as they appear to be in adulthood (here defined as beginning at the approximate age of 18). One expects a greater degree of plasticity of personality in adolescence.

Edens et al. (2001) examined this issue, and provided a review of literature on psychopathy among juveniles. Among other issues, they raise the concern that psychopathy among adolescents will be seen, despite a lack of data, as “untreatable.” They point to adolescence as a period of great developmental change, and argue that a greater possibility for change and successful intervention is present among adolescents than among adults. Some research gives indirect evidence for this hypothesis. Salekin, Rogers and Machin (2001) found that clinical child psychologists reported that psychopathic children and adolescents made moderate gains in psychotherapy. Unfortunately, this study did not include an objective measure of “gains,” but instead relied on therapists’ impressions. Research relying on others’ impressions of improvement is particularly suspect with psychopathic individuals, given their manipulativeness (see Seto & Barbaree, 1999, for a discussion of this issue). In his recent meta-analysis, Salekin (2002) found that a greater percentage of psychopathic youth benefited from therapy, when compared with adults (96% vs. 63%). Unfortunately, this study also did not consistently use objective outcome measures, and there are some difficulties in making direct comparisons between adults and children in his study.
Treatment of Adolescent Violence

Studies have yet to examine efficacy of treatment on recidivism among adolescent psychopaths. A general review of treatment for adolescent violent offenders is outlined below, and the relevance of the literature to the treatment of psychopaths is proposed.

Over the years, many individuals, including researchers, mental health professionals, and politicians, have devoted considerable time and effort to try to reduce violence among youth. In recent years, there has been a focus on politically driven “get tough” approaches to youth violence, such as boot camps (e.g., Cornell, 1999). Research suggests that these programs are largely ineffective, and may actually serve to increase the likelihood that the youth will engage in future violence (Lipsey, 1992). Other popular interventions, such as wilderness programs, are not very efficacious with serious juvenile offenders (Lipsey & Wilson, 1998) except when they contain a distinct therapy component (Wilson & Lipsey, 2000).

In contrast to the literature suggesting that many popular interventions are ineffective, a body of literature is emerging that supports the utility of certain treatment programs in reducing the risk of future violence (e.g., Borduin, 1999; Cornell, 1999). In a meta-analysis that examined interventions among serious juvenile offenders, Lipsey and Wilson (1998) found that the average intervention program reduces violent recidivism rates by approximately 12%, and that more effective treatment programs can reduce recidivism by up to 30-40%.

One treatment model that is amenable to both incarceration and community settings is cognitive-behavioural therapy (CBT). CBT focuses on the role that cognitions
play in regulating emotions and behaviour and attempts to modify maladaptive cognitions and contingencies that maintain aggressive behaviour (see Howells, 1998, for a review of CBT in treating anger and violence). Robertson, Grimes, and Rogers (2001) found CBT to be a more cost-effective approach to reducing recidivism in adolescent offenders than intensive supervision and monitoring. Components of CBT may include things such as an analysis of the antecedents to, and consequences of, the offence; anger control; perspective taking; social problem solving; and moral reasoning (Hollin, 1990).

Wong and Hare (in press) speculate on components of treatment programs that are likely to be effective with psychopaths. They argue that treatments that are likely to be effective with psychopaths are the same programs that have been shown to be effective with general offenders. These factors include a cognitive-behavioural format delivered in a structured environment by appropriately trained clinicians, with attention to criminogenic factors, and relapse prevention. Criminogenic factors refer to those variables which are directly linked to offending, such as impulsivity or peer criminality. Interventions that specifically target these factors, rather than focusing on general issues that a youth may be struggling with, have been shown to be more effective in reducing criminal recidivism (Hemphill & Hart, 2002).

The Present Study

There is currently little available research concerning the impact of treatment on violent psychopathic youths. Research in this area is particularly important because psychopathic adolescents are at high risk for violent recidivism (e.g., Catchpole &
Adolescent Psychopathy: Effect of Treatment on Recidivism

Gretton, 2003; Gretton et al., 2001) and thus is a very important group of adolescents to target for intervention. The purpose of the present study was to examine the criminal outcomes of violent young offenders, half of whom have participated in a cognitive-behavioural treatment program and half who did not. Specifically, the present study sought to determine whether psychopathic traits, as measured by the PCL:YV, moderated treatment response over a 3½ year follow-up period.

Because of the lack of data in this area, it is difficult to make firm, theoretically and empirically driven hypotheses about what is expected. Nonetheless, an examination of the extant literature does provide a basis for some tentative predictions.

First, it is hypothesized youths with higher PCL:YV scores will be charged and convicted of non-violent and violent offences at a higher rate than youths with lower PCL:YV scores, regardless of treatment. Research is beginning to accumulate that suggests that adolescents with more psychopathic traits engage in higher rates of violent and criminal behaviour (e.g., Kosson et al., 2002).

Second, it is hypothesized that treatment will be associated with a lower recidivism rate (both violent and non-violent) regardless of level of psychopathy; that is, fewer youths who received treatment are hypothesized to reoffend than youths who did not receive treatment.

Third, it is hypothesized that psychopathic youths who receive treatment will be charged or convicted (both non-violently and violently) at a lower rate than the comparison group of psychopathic youth who do not receive treatment. Research from the literature on criminogenic factors in treatment suggests that treatment is most effective with high-risk offenders (Andrews & Bonta, 1990). Although the PCL:YV is not a risk assessment measure per se, it has been found to correlate highly with other
measures of adolescent risk (Catchpole & Gretton, 2003). Moreover, Wong and Hare (in press) argue that effective programs for psychopaths are likely to be cognitive-behavioural in nature (see also Salekin, 2002).
METHOD

Participants

Participants were 119 adolescents who came from three sites across British Columbia where violent offender treatment programs for adolescents had been initiated. The present study used existing data that had been collected as part of a larger treatment outcome study initiated by Youth Forensic Psychiatric Services (YFPS). No treatment dropouts in the present study were included. Because of numerous practical reasons, including poor record keeping of dropouts and length of treatment, the number and nature of treatment dropouts was not quantifiable.

Site 1: Boulder Bay Youth Custody Centre (BBYSCC)

Boulder Bay Youth Secure Custody Centre (BBYSCC) was a closed custody centre located in a wilderness setting near Vancouver, British Columbia, Canada. Based on a collaborative effort between BBYSCC and YFPS, a treatment program for violent offenders was developed for youths convicted of violent offences.

Participants from Site 1 were 33 adolescent males who were incarcerated at BBYSCC between 1998 and 1999. Seventeen of these youths attended the violent offender treatment program (VOTP) at BBYSCC, and a comparison group of 16 violent offenders were incarcerated at BBYSCC at a similar time and for a similar length of time, but did not attend treatment. Reasons for not participating in treatment included: a sentence length that did not coincide with the commencement and termination of group,
and unwillingness to attend. Comparison youths were randomly selected from a list of violent offenders who had been incarcerated at BBYSCC for similar periods as treated youths.

**Site 2: Prince George Youth Forensic Psychiatric Services (PGYFPS)**

Prince George Youth Forensic Psychiatric Services (PGYFPS) is an outpatient-based adolescent forensic psychiatric assessment facility. In 1998, a VOTP was established, and some youth with convictions for violent offences have since been treated there.

Participants from Site 2 were 47 adolescents (35 males and 12 females) convicted of a violent offence, 24 who participated in the VOTP at PGYFPS and 23 who served as a comparison group. The treatment group included all youths that attended the VOTP between 1998 and 2000. Comparison group youths were youths with violent convictions that did not receive treatment. Reasons for non-participation included a sentence length that did not coincide with treatment dates, inappropriate location (unable to travel to treatment), pending charges, an unwillingness to participate, and scheduling difficulties.

**Site 3: Kamloops Youth Forensic Psychiatric Services (KaYFPS)**

Kamloops Youth Forensic Psychiatric Services (KaYFPS) is an outpatient facility similar to that of PGYFPS, where youths charged with criminal offences are assessed, and treatment recommendations are made. In 1994, a VOTP was established in Kamloops, and some adolescents with convictions for violent offences have been
treated there since that time. In the present study, youth who participated in treatment between 1997 and 2000 were examined.

Participants from Site 3 were 39 adolescents (30 males and 9 females) convicted of a violent offence. Twenty youth received treatment and 19 served as a comparison group. The comparison group comprised youth with violent convictions who did not receive treatment in the VOTP. Reasons for non-participation included a sentence length that did not coincide with treatment dates, inappropriate location (unable to travel to treatment), pending charges, refusal to participate, and scheduling difficulties.

Descriptive and Criminal History by Site

Descriptive and criminal history information is examined separately for each site. This analysis sought to determine the similarities and differences that exist between sites, and to characterise individuals who are referred for assessment at YFPS for a violent offence at each site. Table 1 presents demographic information for participants (both treated and untreated) in each site.

Although the majority of youth were Caucasian, there were relatively more youth of First Nations descent in PGYFPS than in BBYSCC or KaYFPS. Youth were on average 17 years of age at the commencement of the follow-up period. Tukey’s post-hoc analyses revealed that youth in BBYSCC were significantly older (7 months on average) than youth in KaYFPS at the start of the follow-up ($p < .05$). Since BBYSCC was a secure custody centre, it is expected that adolescents housed there would tend to be older than those in KaYFPS, who were seen on an outpatient basis.
Table 1:  

Demographic Information by Site

<table>
<thead>
<tr>
<th></th>
<th>BBYSCC</th>
<th>PGYFPS</th>
<th>KaYFPS</th>
<th>F/χ²</th>
<th>df</th>
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<tr>
<td>Ethnicity (%)</td>
<td></td>
<td></td>
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<tr>
<td>Caucasian</td>
<td>60.6</td>
<td>46.7</td>
<td>75.0</td>
<td>28.71**</td>
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<tr>
<td>First Nations</td>
<td>12.1</td>
<td>51.1</td>
<td>18.8</td>
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<td></td>
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<tr>
<td>Asian</td>
<td>15.2</td>
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<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>12.1</td>
<td>2.2</td>
<td>6.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age start follow-up</td>
<td>17.8 (1.1)</td>
<td>17.4 (1.3)</td>
<td>17.1 (1.3)</td>
<td>3.09*</td>
<td>2, 116</td>
</tr>
<tr>
<td>Age end follow-up</td>
<td>21.8 (1.3)</td>
<td>20.1 (1.5)</td>
<td>21.3 (2.0)</td>
<td>12.27**</td>
<td>2, 116</td>
</tr>
</tbody>
</table>

Note. Age start follow-up refers to subjects' age at the start of the follow-up period; age end follow-up refers to their age at the end of the follow-up period. * p < .05, ** p < .01.

Table 2 shows the criminal history and index offence information for subjects at all three sites. Youth were, on average, 14 years of age when they committed their first offence at all sites. A substantial proportion of youth in the study had a history of non-violent offending, despite their referral for a violent offence. All youth in BBYSCC and PGYFPS had charges or convictions for violent offences prior to the follow-up. Ten percent of those in KaYFPS did not have formal charges for violent offending but were identified by probation officers and other officials as engaging in acts of violence that they had not been charged with, but were of concern to community safety. The pattern of index offences differed across sites. Individuals in KaYFPS were more likely to be charged with a less serious offence such as simple assault or threatening. Conversely, individuals in BBYSCC and PGYFPS were more likely to commit robberies and aggravated assaults. BBYSCC, as a secure custody centre, and PGYFPS, which saw a proportion of individuals who were incarcerated, tended to have individuals who
committed more serious index offences than KaYFPS, which was an outpatient-only treatment facility.

A substantial proportion of individuals had a history of frequent substance use. Eighty-two percent (82%) of individuals in BBYSCC, 79% of individuals in PGYFPS, and 70% of individuals in KaYFPS engaged in substance use in excess of several times per week, $\chi^2 (2, N = 106) = 1.27, p = .53$. Youth had reached, on average, grade 8 in school at all sites. Between a quarter (24%; BBYSCC) and over a third (39%; PGYFPS and 38%; KaYFPS) had been diagnosed with a learning disability, $\chi^2 (2, N = 97) = 1.49, p = .47$.

**Table 2:**

**Criminal History and Index Offence Information by Site**

<table>
<thead>
<tr>
<th></th>
<th>BBYSCC</th>
<th>PGYFPS</th>
<th>KaYFPS</th>
<th>$F/\chi^2$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at 1st offence (SD)</td>
<td>14.3 (1.4)</td>
<td>14.4 (1.6)</td>
<td>14.1 (1.2)</td>
<td>0.33</td>
<td>2, 91</td>
</tr>
<tr>
<td># of CD Symptoms</td>
<td>6.7 (3.1)</td>
<td>6.4 (2.7)</td>
<td>6.0 (2.6)</td>
<td>0.62</td>
<td>2, 109</td>
</tr>
<tr>
<td>History of Offending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Violent (%)</td>
<td>90.9</td>
<td>87.2</td>
<td>74.4</td>
<td>4.24</td>
<td>2</td>
</tr>
<tr>
<td>Violent (%)</td>
<td>100.0</td>
<td>100.0</td>
<td>89.7</td>
<td>8.49*</td>
<td>2</td>
</tr>
<tr>
<td>Index Offence (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robbery</td>
<td>24.2</td>
<td>31.9</td>
<td>7.7</td>
<td>7.48*</td>
<td>2</td>
</tr>
<tr>
<td>Assault</td>
<td>15.2</td>
<td>19.1</td>
<td>56.4</td>
<td>18.96**</td>
<td>2</td>
</tr>
<tr>
<td>Agg. Assault</td>
<td>33.3</td>
<td>34.0</td>
<td>10.3</td>
<td>7.52*</td>
<td>2</td>
</tr>
<tr>
<td>Poss. Weapon</td>
<td>0.0</td>
<td>6.4</td>
<td>12.8</td>
<td>4.70</td>
<td>2</td>
</tr>
<tr>
<td>Threatening</td>
<td>3.0</td>
<td>4.3</td>
<td>17.9</td>
<td>6.91*</td>
<td>2</td>
</tr>
<tr>
<td>Other Violent</td>
<td>15.2</td>
<td>4.3</td>
<td>2.6</td>
<td>5.27</td>
<td>2</td>
</tr>
</tbody>
</table>

Note. # of CD Symptoms = number of DSM-IV conduct disorder symptoms, as rated from files. History of Offending refers to any offending that took place before the beginning of the follow-up. Index offences do not add to 100% due to the possibility of being charged with multiple index offences and the possibility of index offences not being formally charged. * $p < .05$, ** $p < .01$
Treatment Program

At the time of the present study, the Violent Offender Treatment Programs (VOTPs) were primarily cognitive-behavioural in nature, but also contained other components. CBT focuses on the role that cognitions play in regulating emotions and behaviour and attempts to modify maladaptive cognitions and contingencies that maintain aggressive behaviour (see Howells, 1998, for a review of CBT in treating anger and violence). The treatment programs were delivered through both group and individual sessions. All three sites provided treatment manuals that outlined program modules and goals. Treatment components included an examination of offence cycle (or route to offending); cognitive distortions; personal needs; development of empathy; the development of respectful relationships; problem solving strategies and skill development; and the development of a supportive network/relapse prevention. All three programs followed similar treatment manuals, although small differences existed between programs. Each program was designed to be approximately 6-8 months in length, although the program was flexible to meet the individual needs of the adolescent and individual sessions sometimes continued well beyond the 6-8 month timeline (for a detailed description of the treatment programs, see Appendix A).

To be included in treatment, youth were required to have a sentence that fit with the timeframe of the treatment group and to make a commitment to participate. Furthermore, the treatment providers assess the suitability of the youth.

The present project received ethical approval from the Director of the Office of Research Ethics on behalf of the Research Ethics Board at Simon Fraser University (see Appendix B). In addition, the clinical director of Youth Forensic Psychiatric Services
approved the VOTP evaluation, and the Provincial Chair of Program Evaluation and Research approved my use of the data for the present purpose.

**Comparison of Treated and Untreated Participants**

For the following analyses, information was collapsed across sites and examined separately for individuals in the treatment and comparison groups. These analyses are particularly important to illustrate the degree of comparability between the treatment and comparison groups before the start of treatment. This information is presented in Tables 3 and 4. Table 3 shows that the ethnicity and ages at beginning and end of follow-up, were similar for youth in the treatment and comparison groups.

**Table 3:**

**Demographic Information by Treatment Status**

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Comparison</th>
<th>$t/\chi^2$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>58.9</td>
<td>59.3</td>
<td>4.51</td>
<td>3</td>
</tr>
<tr>
<td>First Nations</td>
<td>25.0</td>
<td>35.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>5.4</td>
<td>3.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>10.7</td>
<td>1.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age beginning follow-up (SD)</td>
<td>17.6 (1.3)</td>
<td>17.2 (1.2)</td>
<td>-1.36</td>
<td>117</td>
</tr>
<tr>
<td>Age end follow-up (SD)</td>
<td>21.2 (1.7)</td>
<td>20.8 (1.8)</td>
<td>-1.19</td>
<td>117</td>
</tr>
</tbody>
</table>

*Note.* No differences were statistically significant

Table 4 shows that treated and comparison youths were a similar age at the time they committed their first offence (14 years on average) and showed as similar number of CD symptoms. Table 4 also shows the percentage of individuals in the treatment and comparison group who had a history of violent and non-violent offending prior to the
follow-up period. Although treatment and comparison individuals had similar rates of violent offending, comparison individuals were more likely to be charged with a non-violent offence prior to the follow-up. The mean number of pre-follow-up non-violent offences was 7.0 for the treatment group ($SD = 10.0$) and 10.3 ($SD = 10.3$) for the comparison group, $t(117) = 1.78$, $p = .08$. The mean number of pre-follow-up violent offences was the same for the treatment and comparison groups; $M = 3.8$ in both cases; $t(117) = .01$, $p = .99$. Treated and comparison individuals showed similar types of index offending.

Table 4:

**Criminal History and Index Offence Information by Treatment Status**

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Comparison</th>
<th>$t$/$X^2$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at first offence ($SD$)</strong></td>
<td>14.3 (1.6)</td>
<td>14.3 (1.3)</td>
<td>0.07</td>
<td>92</td>
</tr>
<tr>
<td><strong>Number of CD Symptoms ($SD$)</strong></td>
<td>6.3 (2.7)</td>
<td>6.4 (2.8)</td>
<td>0.37</td>
<td>110</td>
</tr>
<tr>
<td><strong>History of Offending (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Violent</td>
<td>77.0</td>
<td>91.4</td>
<td>4.55*</td>
<td>1</td>
</tr>
<tr>
<td>Violent</td>
<td>96.7</td>
<td>96.6</td>
<td>0.01</td>
<td>1</td>
</tr>
<tr>
<td><strong>Index Offence (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robbery</td>
<td>27.9</td>
<td>15.5</td>
<td>2.66</td>
<td>1</td>
</tr>
<tr>
<td>Assault</td>
<td>27.9</td>
<td>32.8</td>
<td>0.34</td>
<td>1</td>
</tr>
<tr>
<td>Aggravated Assault</td>
<td>23.0</td>
<td>29.3</td>
<td>0.63</td>
<td>1</td>
</tr>
<tr>
<td>Possession of Weapon</td>
<td>4.9</td>
<td>8.6</td>
<td>0.65</td>
<td>1</td>
</tr>
<tr>
<td>Threatening</td>
<td>3.3</td>
<td>13.8</td>
<td>4.27*</td>
<td>1</td>
</tr>
<tr>
<td>Other Violent</td>
<td>11.5</td>
<td>1.7</td>
<td>4.51*</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note. History of Offending refers to any offending that took place before the beginning of the follow-up. Index offences do not add to 100% due to the possibility of being charged with multiple index offences and the possibility of index offences not being formally charged. * $p < .05$, ** $p < .01$
The substance use and academic functioning of youths in both the treatment and the comparison group was examined. A similar proportion of treated (74%) and untreated (80%) individuals had a history of frequent substance use, in excess of several times per week. A similar proportion of treated (33%) and untreated (37%) individuals had been diagnosed with a learning disability.

_Predicting Differences between Treated and Untreated Youth_

In order to determine the most substantial differences between treated and untreated participants, a logistic regression was conducted in which the following variables were entered as potential predictors: age at the beginning of the follow-up period, index offence type, number of conduct disorder symptoms, a history of non-violent and violent offending, and PCL:YV scores. Results are presented in Table 5.

**Table 5:**

<table>
<thead>
<tr>
<th>Logistic Regression Examining Predictors of Treatment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>Age at beginning of follow-up</td>
</tr>
<tr>
<td>CD total symptoms</td>
</tr>
<tr>
<td>Pre non-violent offending</td>
</tr>
<tr>
<td>Pre violent offending</td>
</tr>
<tr>
<td>Index offence violent/non-violent</td>
</tr>
<tr>
<td>PCL:YV Total score</td>
</tr>
</tbody>
</table>

Overall, while the model was predictive of treatment status, $\chi^2 (6, N = 104) = 14.78, p = .02$, only PCL:YV scores were significant. This will be statistically controlled for in subsequent analyses.
Data Sources

Background

Background information was recorded from clinical and forensic files, including predisposition reports, social histories, police and victim statements, psychological and psychiatric reports, and summaries documenting the youths' behaviour and progress during their assessment (and, if applicable, in treatment). Information was collected on the youths' offending histories (nature, frequency, age of onset) and conduct disorder symptoms. Raters were at the late stages of a bachelor's degree or had completed a bachelor's degree in psychology. Research assistants and a psychologist who developed the coding system trained them. They were blind to PCL:YV ratings.

Follow-up Information

Criminal record information was obtained using British Columbia Corrections (BC Corr) files on May 14, 2003. BC Corr records charges once a youth has appeared in court and received an order (such as bail or remand), and records convictions once a youth has been given a sentence. Information from this source was used to tabulate the number of criminal offences (charges and convictions), types of offences, months spent in custody, months on probation and months free in the community for each participant.

Participants were followed for an average of 3½ years following their discharge from their respective facility. Criminal record information was obtained for all participants; none were censored. No differences existed between treated and untreated youth in follow-up time at risk, 43.5 months ($SD = 15.61$) versus 42.6 months ($SD = 20.91$),
respectively, \( t (117) = -0.29, p = .77 \). All offences that occurred in the follow-up period were coded, including multiple offences for an individual, if applicable.

Individual information and identifying features were kept confidential through a data coding system.

**Outcome Variables**

Outcome variables are offences (as indicated by charges and convictions on BC Corr) that occurred following the youths’ release from their respective facilities until the end of the follow-up period. Both violent and non-violent offences were coded. Of the 135 follow-up violent offences, 14% were robbery, 21% were assaults, 21% were assaults with a weapon, 20% were intimidation/harassment, 20% were weapons offences, and 3% were other violent offences. Of the 434 follow-up non-violent offences, 43.5% were theft-related (including 15.7% theft, 8.5% break and enter, 10.1% possession of stolen property, 5.1% possession of housebreaking tools, 2.3% attempt/accessory to theft, and 1.8% trespassing/unlawfully in dwelling); 3% were drug-related (possession and trafficking), 3.7% were motor-vehicle related, 2% were fraud-related, 32.3% were breaches, 1.4% were for escaping custody, 3.5% were for failure to appear, 2.8% were for obstruction of a peace officer, 5.1% were for mischief, and 2.8% were for other non-violent offences.

Figures 1-3 illustrate the dispersion of general, non-violent, and violent offences over time. Figure 1 shows that over 50% of participants had reoffended by 18 months into the follow-up period.
Figure 1:

*Months to First Follow-up Offence*

Figure 2 illustrates the time to first non-violent offence. Over 50% of participants had non-violently reoffended by 18 months into the follow-up period.
Figure 2:

*Months to First Non-violent Follow-up Offence.*

Figure 3 shows the dispersion of follow-up violent offences over time. By 24 months into the follow-up period, 30% of participants had committed a violent offence. The survival rate at 48 months post-follow-up was over 60%; less than 40% of participants violently reoffended during the follow-up period.
Figure 3:
Months to First Violent Follow-up Offence.

Psychopathy Checklist: Youth Version (PCL:YV)

The PCL:YV (Forth et al., 2003) is a 20-item clinical rating tool that assesses youths on several behavioural and personality characteristics associated with psychopathy. The PCL:YV closely parallels the adult version of the Psychopathy
Checklist, the PCL-R (Hare, 1991), with some items having been slightly modified for use with adolescents. Each item is scored on a 3-point scale. The total score can range from 0 to 40, with higher scores reflecting a greater degree of psychopathic traits. Mean scores in forensic youth populations range from 23 - 25 (Gretton et al., in press). In the present study, the mean PCL:YV score was 22.3 ($SD = 7.11$). For categorical analyses, PCL:YV scores were divided into three groups: low (0 - 19.9), medium (20 - 29.9), and high (30 - 40), with youth scoring 30 and above considered "psychopathic" and those scoring below 20 considered "nonpsychopathic." In the present study, 36.4% were rated low, 43.6% moderate and 20.0% high on the PCL:YV. Figure 4 presents a histogram for the continuous PCL:YV scores.

The PCL-R has been found to have good psychometric properties (Salekin et al., 1996), and studies of the PCL:YV show equally promising results. The PCL:YV has high internal consistency (Cronbach's $\alpha$s of .85 - .90) and high inter-rater reliability (ICCs of .82 - .94; Brandt et al., 1997; Catchpole & Gretton, 2003; Gretton et al., 2001). Validity data show that the PCL:YV is a good predictor of recidivism in a sample of adolescent sex offenders (Gretton et al., 2001), and in general offenders (Brandt et al., 1997). In the present study, the inter-rater reliability of the PCL:YV, as measured by the single-rater intra-class correlation (ICC) was 0.91, based on a sub-sample of 38 double-rated files. The internal consistency of the ratings, as measured by Crohnbach's $\alpha$, was 0.95.
Ratings were made by trained bachelor’s-level research assistants following a detailed review of participants' files. They were trained by a Ph.D. psychologist with considerable experience coding the PCL:YV, and had to obtain a reliability (ICC) of at least 0.80 on ten training files before commencing the coding.

Table 6 shows the PCL:YV scores for individuals at each site. Youth in BBYSCC had, on average, higher scores than those in KaYFPS, as revealed by Tukey’s post-hoc pairwise comparisons ($p = .01$). Similarly, when examining the distribution of PCL:YV groups by site, BBYSCC had the highest percentage of youth rated as high on the
PCL:YV, which may be expected since it is a secure custody centre, which tends to house more severe and recurrent young offenders. KaYFPS had relatively fewer youth in the high group, when compared with the other sites.

**Table 6:**

<table>
<thead>
<tr>
<th>PCL:YV Scores by Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBYSCL</td>
</tr>
<tr>
<td>Mean PCL:YV Score (SD)</td>
</tr>
<tr>
<td>PCL:YV Groups</td>
</tr>
<tr>
<td>Low (0-19.9)</td>
</tr>
<tr>
<td>Mod. (20-29.9)</td>
</tr>
<tr>
<td>High (30+)</td>
</tr>
</tbody>
</table>

*Note:* *p < .05.*

Table 7 shows PCL:YV scores for individuals in the treatment and comparison groups separately. On the PCL:YV, youth in the comparison group had scores that were, on average, 3 points higher than the treatment group. Examining the PCL:YV groups revealed that a greater proportion of individuals in the comparison group had scores that exceeded 30. This difference in PCL:YV scores is accounted for in subsequent analyses of criminal outcome and treatment response.

The relationship between psychopathy and descriptive and criminal history was examined. PCL:YV scores were unrelated to age at the beginning \(r = 0.06\) or end of follow-up \(r = 0.05\). PCL:YV scores were negatively related to age at first offence, \(r (88) = -0.38, p < .001\), with youth scoring higher on the PCL:YV committing their first offence at an earlier age. Higher PCL:YV scores were associated with a greater number of pre-follow-up violent and non-violent offences, \(r (110) = 0.35, p < .001\) and \(r (110) = 0.48, p\)
< .001, respectively. The PCL:YV was not associated with a greater probability of committing a particular type of index offence (.14 < p < .93).

**Table 7:**

**PCL:YV Scores by Treatment Status**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Comparison</th>
<th>T/χ²</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean PCL:YV Scores (SD)</td>
<td>20.9 (6.5) 24.1 (7.5)</td>
<td>2.38*</td>
<td>108</td>
</tr>
<tr>
<td>PCL:YV Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (0-19.9)</td>
<td>43.3</td>
<td>28.0</td>
<td></td>
</tr>
<tr>
<td>Moderate (20-29.9)</td>
<td>45.0</td>
<td>42.0</td>
<td></td>
</tr>
<tr>
<td>High (30+)</td>
<td>11.7</td>
<td>30.0</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p* < .05

PCL:YV scores were strongly related to number of conduct disorder symptoms, *r* (90) = 0.49, *p* < .001. There was no relationship between the PCL:YV and the presence of a learning disability (*r* = 0.11); however, PCL:YV scores were negatively related to highest grade achieved, *r* (90) = -0.32, *p* = .002, with youth exhibiting more psychopathic traits completing less school, on average. PCL:YV scores was unrelated to substance use frequency, *r* (100) = 0.14, *p* = .17.
RESULTS

Table 8 shows the percentage of youth reoffending non-violently and violently during the follow-up period for each site. Overall, 64% of people reoffended in the follow-up period. Sixty percent of individuals non-violently reoffended, and 35% violently reoffended. There were no significant differences in the proportion of individuals who reoffended by site, although in absolute numbers individuals in KaYFPS reoffended less frequently.

Table 8:

Follow-up Offences by Site

<table>
<thead>
<tr>
<th></th>
<th>BBYSCC</th>
<th>PGYFPS</th>
<th>KaYFPS</th>
<th>X²</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reoffending (%)</td>
<td>72.7</td>
<td>66.0</td>
<td>53.8</td>
<td>2.91</td>
<td>2</td>
</tr>
<tr>
<td>Non-Violent (%)</td>
<td>69.7</td>
<td>63.8</td>
<td>46.2</td>
<td>4.68</td>
<td>2</td>
</tr>
<tr>
<td>Violent (%)</td>
<td>39.4</td>
<td>40.4</td>
<td>25.6</td>
<td>2.38</td>
<td>2</td>
</tr>
</tbody>
</table>

Note. This table shows the percentage of individuals who were charged or convicted of an offence in the follow-up period for each type of offence: non-violent and violent. No differences were statistically significant.

Table 9 shows the percentage of individuals who were charged with an offence during the follow-up period separately for the treatment and the comparison group. Results showed that youth in the treatment group had lower rates of both violent and non-violent reoffending during the follow-up period. Because of the higher average PCL:YV scores in the comparison group, a partial correlation between treatment status and reoffending was conducted, controlling for PCL:YV scores. For violent offending, the partial correlation between treatment status and outcome, controlling for PCL:YV scores, was −0.21 (p = .03), which represents only a slight reduction from the straight bivariate
correlation of -0.27. For non-violent reoffending, the correlation between treatment and outcome, after controlling for PCL:YV scores, was reduced from \(-0.19\) \((p = .04)\) to \(-0.07\) \((ns)\). Finally, for any reoffending, the correlation between treatment and outcome, after controlling for PCL:YV scores, was reduced from \(-0.24\) \((p = .008)\) to \(-0.14\) \((ns)\).

Because of the covariates in the present study, this analysis was followed up with a Cox regression to see if the findings between treatment and outcome held. This is presented below.

**Table 9:**

**Follow-up Offences by Treatment Status**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Comparison</th>
<th>(X^2)</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reoffending (%)</td>
<td>52.5</td>
<td>75.9</td>
<td>7.06**</td>
</tr>
<tr>
<td>Non-Violent (%)</td>
<td>50.8</td>
<td>69.0</td>
<td>4.07*</td>
</tr>
<tr>
<td>Violent (%)</td>
<td>23.0</td>
<td>48.3</td>
<td>8.35**</td>
</tr>
</tbody>
</table>

*Note.* *p* < .05, **p* < .01.

**The Relationship between Psychopathy and Treatment Outcome**

A Cox regression was conducted to examine whether the PCL:YV and treatment status were predictive of time to first offence, first non-violent and first violent offence (respectively), after controlling for a number of other potentially confounding variables. Moreover, in a subsequent step, the interaction between PCL:YV scores and treatment status in predicting outcome was also examined in order to address the question of whether PCL:YV scores moderated treatment response. That is, are psychopathic traits relevant when determining treatment response?

Cox regression is a statistical analysis that allows for the examination of a time-dependent outcome variable, while allowing for the inclusion of multiple independent
predictors (Allgulander & Fisher, 1986). In this case, the Cox regression was conducted in 3 steps. In step 1, covariates including age at the beginning of the follow-up period and history of violent offending (yes/no) were entered. In step 2, PCL:YV scores and treatment status were entered. Finally, in step 3, the interaction between PCL:YV scores and treatment were added. Treatment site (BBYSCC, PGYFPS, or KaYFPS) was included as a stratification variable. Results are presented in Table 10 for all recidivism types, Table 11 for violent offending, and Table 12 for non-violent offending.

**Table 10:**

*Cox Regression Examining the Interaction between PCL:YV Scores and Treatment Status in Predicting Latency to First Offence.*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age beg. follow-up</td>
<td>-0.20</td>
<td>0.11</td>
<td>3.34</td>
<td>1</td>
<td>0.07</td>
<td>0.82</td>
</tr>
<tr>
<td>Prev. violent offences</td>
<td>-0.10</td>
<td>0.75</td>
<td>0.02</td>
<td>1</td>
<td>0.90</td>
<td>0.91</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age beg. follow-up</td>
<td>-0.18</td>
<td>0.11</td>
<td>2.72</td>
<td>1</td>
<td>0.10</td>
<td>0.83</td>
</tr>
<tr>
<td>Prev. violent offences</td>
<td>-0.32</td>
<td>0.76</td>
<td>0.18</td>
<td>1</td>
<td>0.67</td>
<td>0.73</td>
</tr>
<tr>
<td>PCL:YV Scores</td>
<td>0.08</td>
<td>0.02</td>
<td>16.13</td>
<td>1</td>
<td>&lt;0.001</td>
<td>1.09</td>
</tr>
<tr>
<td>Treatment Status</td>
<td>-0.66</td>
<td>0.27</td>
<td>6.17</td>
<td>1</td>
<td>0.01</td>
<td>0.52</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age beg. follow-up</td>
<td>-0.19</td>
<td>0.11</td>
<td>2.73</td>
<td>1</td>
<td>0.10</td>
<td>0.83</td>
</tr>
<tr>
<td>Prev. violent offences</td>
<td>-0.32</td>
<td>0.76</td>
<td>0.18</td>
<td>1</td>
<td>0.67</td>
<td>0.73</td>
</tr>
<tr>
<td>PCL:YV Scores</td>
<td>0.10</td>
<td>0.06</td>
<td>2.50</td>
<td>1</td>
<td>0.11</td>
<td>1.10</td>
</tr>
<tr>
<td>Treatment Status</td>
<td>-0.39</td>
<td>1.04</td>
<td>0.14</td>
<td>1</td>
<td>0.71</td>
<td>0.68</td>
</tr>
<tr>
<td>PCL:YV X Treatment</td>
<td>-0.01</td>
<td>0.04</td>
<td>0.07</td>
<td>1</td>
<td>0.79</td>
<td>0.99</td>
</tr>
</tbody>
</table>
For the Cox regression for general reoffending (non-violent and violent offences combined; Table 10), results showed that the model at Step 1 (covariates including age at the beginning of the follow-up and previous violent offences) was not significant, $\chi^2 (2, N = 110) = 3.38, p = .18$. The addition of the PCL:YV and treatment status at Step 2 resulted in a significant model change, $\chi^2 (2, N = 110) = 26.93, p < .001$. At Step 2, both the PCL:YV and treatment status contributed significantly to the equation ($p < .05$). At Step 3, the addition of the interaction term between PCL:YV scores and treatment status did not result in a significant model change, $\chi^2 (3, N = 110) = 0.07, p = .79$.

For violent offending (Table 11), results showed that the model at Step 1 was not significant, $\chi^2 (2, N = 110) = 2.38, p = .31$. The addition of the PCL:YV and treatment status at Step 2 resulted in a significant model change, $\chi^2 (2, N = 110) = 25.75, p < .001$. At Step 2, both the PCL:YV and treatment status contributed significantly to the equation ($p < .05$). At Step 3, the addition of the interaction term between PCL:YV scores and treatment status did not result in a significant model change, $\chi^2 (3, N = 110) = 0.56, p = .45$. Thus, overall, although PCL:YV scores and treatment status contributed to the prediction of latency to violent recidivism, their interaction did not. In other words, PCL:YV scores did not significantly moderate treatment response in this case. That is, youth who scored higher on the PCL:YV had a similar reduction in subsequent violent offending as those who scored lower on the PCL:YV.

Table 12 shows the results of the Cox regression in predicting latency to first non-violent offence. Results from the Cox regression showed that the addition of the covariates at Step 1 did not result in a significant predictive model, $\chi^2 (2, N = 110) = 1.83, p = .40$. 
Table 11:  
Cox Regression Examining the Interaction between PCL:YV Scores and Treatment Status in Predicting Latency to First Violent Offence

<table>
<thead>
<tr>
<th>Step</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age beg. follow-up</td>
<td>-0.12</td>
<td>0.13</td>
<td>0.79</td>
<td>1</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>Prev. violent offences</td>
<td>-0.97</td>
<td>0.80</td>
<td>1.46</td>
<td>1</td>
<td>0.23</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age beg. follow-up</td>
<td>-0.03</td>
<td>0.13</td>
<td>0.07</td>
<td>1</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>Prev. violent offences</td>
<td>-1.83</td>
<td>0.87</td>
<td>4.47</td>
<td>1</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>PCL:YV Scores</td>
<td>0.10</td>
<td>0.03</td>
<td>10.98</td>
<td>1</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Treatment Status</td>
<td>-0.97</td>
<td>0.37</td>
<td>7.02</td>
<td>1</td>
<td>0.008</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age beg. follow-up</td>
<td>-0.04</td>
<td>0.13</td>
<td>0.08</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>Prev. violent offences</td>
<td>-1.89</td>
<td>0.88</td>
<td>4.66</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>PCL:YV Scores</td>
<td>0.04</td>
<td>0.09</td>
<td>0.17</td>
<td>1</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Treatment Status</td>
<td>-2.18</td>
<td>1.68</td>
<td>1.68</td>
<td>1</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>PCL:YV X Treatment</td>
<td>0.05</td>
<td>0.06</td>
<td>0.55</td>
<td>1</td>
<td>0.46</td>
</tr>
</tbody>
</table>

The addition of the PCL:YV scores and treatment status at Step 2 did contribute to a significant model change, $\chi^2 (2, N = 110) = 16.82$, $p < .001$. However, at Step 2, only PCL:YV scores were significant ($p < .01$); treatment status approached, but did not meet, conventional levels of statistical significance ($p = .08$). The addition of the interaction between PCL:YV scores and treatment status, at Step 3, did not result in a significant model change, $\chi^2 (1, N = 110) = 0.001$, $p = .97$. 
Table 12:

Cox Regression Examining the Interaction between PCL:YV Scores and Treatment Status in Predicting Latency to First Non-Violent Offence

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age beg. follow-up</td>
<td>-0.15</td>
<td>0.11</td>
<td>1.74</td>
<td>1</td>
<td>0.19</td>
<td>0.86</td>
</tr>
<tr>
<td>Prev. violent offences</td>
<td>-0.21</td>
<td>0.76</td>
<td>0.07</td>
<td>1</td>
<td>0.79</td>
<td>0.81</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age beg. follow-up</td>
<td>-0.11</td>
<td>0.11</td>
<td>0.93</td>
<td>1</td>
<td>0.34</td>
<td>0.90</td>
</tr>
<tr>
<td>Prev. violent offences</td>
<td>-0.22</td>
<td>0.77</td>
<td>0.08</td>
<td>1</td>
<td>0.77</td>
<td>0.80</td>
</tr>
<tr>
<td>PCL:YV Scores</td>
<td>0.07</td>
<td>0.02</td>
<td>11.02</td>
<td>1</td>
<td>0.001</td>
<td>1.07</td>
</tr>
<tr>
<td>Treatment Status</td>
<td>-0.45</td>
<td>0.27</td>
<td>2.73</td>
<td>1</td>
<td>0.10</td>
<td>0.64</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age beg. follow-up</td>
<td>-0.11</td>
<td>0.12</td>
<td>0.92</td>
<td>1</td>
<td>0.34</td>
<td>0.90</td>
</tr>
<tr>
<td>Prev. violent offences</td>
<td>-0.22</td>
<td>0.77</td>
<td>0.08</td>
<td>1</td>
<td>0.77</td>
<td>0.80</td>
</tr>
<tr>
<td>PCL:YV Scores</td>
<td>0.07</td>
<td>0.06</td>
<td>1.30</td>
<td>1</td>
<td>0.25</td>
<td>1.07</td>
</tr>
<tr>
<td>Treatment Status</td>
<td>-0.42</td>
<td>1.04</td>
<td>0.16</td>
<td>1</td>
<td>0.69</td>
<td>0.66</td>
</tr>
<tr>
<td>PCL:YV X Treatment</td>
<td>-</td>
<td>0.04</td>
<td>0.001</td>
<td>1</td>
<td>0.97</td>
<td>1.00</td>
</tr>
</tbody>
</table>

In summary, although PCL:YV scores were predictive of latency to first non-violent offence, treatment status was not (although there was a trend in the appropriate direction), and PCL:YV scores did not moderate treatment response.
DISCUSSION

The present study examined the criminal recidivism rates of 119 adolescent offenders over a 3½-year follow-up period, half who completed a violent offender treatment program, and half who did not receive treatment. The primary goal of this study was to investigate whether PCL:YV scores moderated treatment, that is, whether psychopathic traits influenced treatment outcome. Two sub-goals were also examined: 1) whether PCL:YV scores were predictive of non-violent and violent offences over the follow-up period, and 2) whether treatment was associated with a lower recidivism rate. I will discuss each in turn.

The Predictive Ability of the PCL:YV

PCL:YV scores were associated with subsequent non-violent and violent offences during the follow-up period. These findings parallel other research which has found psychopathy to be predictive of criminal outcomes over follow-up periods ranging from one to ten years (e.g., Brandt et al., 1997; Catchpole & Gretton, 2003; Forth et al., 1990; Gretton et al., 2001; Gretton et al., in press). The Cox regression survival analysis revealed that the predictive ability of the PCL:YV held after controlling for the effect of treatment status and other covariates, suggesting that the predictive ability of the PCL:YV was not accounted for by the differences in PCL:YV scores between treated and comparison youths nor by other potentially confounding variables.

The predictive ability of the PCL:YV observed in the present study adds to the body of evidence that suggests that the construct of psychopathy may provide
meaningful information about risk for ongoing criminal behaviour among adolescents. Another recent study has found that psychopathy was incrementally predictive of future violence and criminality over 10 years, above a host of criminal history, conduct disorder, and psychosocial variables (Gretton et al., in press). This body of research, along with the results of the present study, is beginning to suggest that the construct may hold some utility in determining the longer-term criminal courses of adolescents involved in the legal system. Despite these findings, however, questions still remain about the nature and course of psychopathy among adolescents. In particular, issues surrounding what exactly is being measured with adolescents and how adolescent psychopathy may be developmentally linked with adult psychopathy are in need of clarification and further study. These issues are discussed in greater detail below.

**Issues Surrounding the Construct of Psychopathy in Adolescence**

The issue of the stability of personality traits among adolescents has been, and continues to be, the subject of considerable debate when examining the construct of psychopathy among adolescents. On the one hand, adolescence is recognized as a time of substantial developmental change and maturation - a time of exploration, in which there is a period of questioning and struggle around issues such as choice of vocation, religion, and other important matters. Many argue that the process of identity formation, which involves integrating biological capabilities and personal preferences and opportunities within the realities of one's environmental context, is at its peak in adolescence (Waterman, 1992). This would lead us to question whether it is appropriate to consider whether the personalities or behavioural characteristics of adolescents are more than transient states. On the other hand, there is a considerable body of
developmental research that identifies stability in constellations of traits from well before adulthood. As an example, the development of a prosocial disposition, or “enduring tendency to think about the welfare and rights of other people, to feel concern and empathy for them, and to act in a way that benefits them” (Penner & Finkelstein, 1998, p. 526) has been shown to be a fairly stable personality characteristic by adolescence (Eisenberg et al., 2002). However, on the other end of the spectrum, the notion that psychopathy may exist as a stable personality trait in adolescence has been the subject of considerable debate among forensic psychologists (e.g., Frick, 2002; Seagrave & Grisso, 2002). These concerns range from ethical objections to developmental objections to objections over the state of the literature in the area of adolescent psychopathy (e.g., Edens et al., 2001). Criticisms levied against the construct of psychopathy with adolescents often focus on individual items, remarking that certain components, such as irresponsibility, are normative among adolescents, and thus will not remain stable into adulthood (Edens et al., 2001). However, these arguments fail to consider that aggregates of traits offer greater stability than single traits (Paunonen, 2001). Similarly, Frick (2002) argued that the presence of individual characteristics in adolescents may not be unusual, but that psychopathy assesses an accumulation of characteristics that together comprise the construct.

Here I am arguing that some criticisms of youth psychopathy go too far by seemingly denying the presence of any longitudinal stability in adolescent personality. Statements such as these contradict substantial bodies of developmental literature that do find evidence of consistency in personality traits before adulthood (e.g., Block, 1993). The converse of this argument, however, is that one must recognize the potential for change and malleability, particularly in adolescent development. A personality theory
known as developmental contextualism sees personality as developing through many reciprocal exchanges in one's surroundings, in which both persons influence each other (Caprara & Cervone, 2000). Developmental contextualism sees the development of personality as resulting from the many interactions that one has throughout one's lifetime, beginning with child-caregiver interactions in infancy, and continuing throughout life in many domains. Each interaction serves to reinforce, or contradict, certain ways of viewing, and interpreting, one's surroundings. From this perspective, psychopathy is the result of continually (and cumulatively) reinforcing experiences. A corollary of this theory is that the stability of the personality characteristics that arise from these interactions presumably grows with time. As such, one would expect greater malleability of personality in adolescence.

The issue of malleability is an important one when considering the construct of psychopathy. Because of the serious consequences of labelling, clinicians need to consider not only the quality of the measures used (e.g., Seagrave & Grisso, 2002) but also to pay attention to the temporal stability of the underlying construct. A "false positive" that is used to justify retributive justice is a serious error that interferes with the rights and freedoms of the youth (Catchpole & Gretton, 2003) and must be carefully guarded against.

Generally, the objections outlined above urge us to carefully consider the notion that, despite the accumulating body of evidence showing the predictive ability of the PCL:YV, there is still reason to be cautious in applying the construct of psychopathy to adolescents. In particular, concerns have been raised that adolescents identified as psychopathic will be seen as recalcitrant to treatment efforts given their callous and manipulative nature, and therefore will be denied access to potentially helpful resources.
This raises a whole host of ethical issues, when one could potentially be denying individuals access to treatment resources at such a young age. There is also the issue of labelling, in which a young person may be identified as “psychopathic” and subsequently be treated differently within the legal system, potentially resulting in a worse outcome than would have occurred had the individual not been so identified. Finally, there is the concern over the developmental course of the disorder. The construct of psychopathy originated with adults, and the model has been extended downward to adolescents. However, there has been a relative paucity of research extending from childhood or adolescence into adulthood, examining the early nature and course of the disorder. While some research has examined individual classes of factors thought to be causal to the development of the disorder (e.g., Lynam, 1996; Patrick, Cuthbert & Lang, 1994; Frick, Barry, & Boudin, 2000), the vast majority of this research has focused solely on behaviours, biology, or interpersonal variables and has failed to integrate the literature in order to see how classes of risk and possibly protective factors may interact. The lack of a cohesive, multidimensional model of the development of psychopathy engenders doubt in our understanding of the nature and course of the disorder, including likely points and methods for intervention as well as longer term stability.

Despite these developmental, ethical, and validation concerns, it is a very important task for researchers to clarify the nature of the construct of psychopathy among adolescents. Adolescence is typically viewed as a time of greater possibility for change. As such, it may be important to identify individuals presenting with psychopathic traits earlier in their lives with the aim of providing more effective intervention, and perhaps prevention, of the long-term criminal outcomes observed by those individuals.
with many psychopathic traits (e.g., Gretton et al., in press). The present study examined this question, with the aim of determining the effectiveness of cognitive-behavioural intervention in reducing subsequent criminality with psychopathic adolescents.

**Treatment Outcome**

Completing the violent offender treatment program was associated with lower rates of recidivism for adolescents in the present study. This cognitive-behaviourally-based treatment program, which was designed to address criminogenic needs in both a group and individual format, appeared successful in reducing formally detected charges and convictions for both violent and non-violent offending.

One potential confound in the present study was the difference in PCL:YV scores between the treatment and comparison group. There was, on average, a 3 point difference between the groups, with higher PCL:YV scores on average obtained by youth in the comparison group. Because of this difference, PCL:YV scores were controlled for in analyses of treatment response. When PCL:YV scores were controlled, the treatment outcome for general and violent offending remained significant. In contrast, the relationship between treatment and non-violent reoffending diminished and became non-significant. The empirical finding of higher PCL:YV scores among youth who did not receive treatment is an interesting one. There are many possible reasons for this finding. First, there is the difficult clinical task of providing treatment to individuals who may be lacking remorse and behaving impulsively – clinicians may be “weeding out” individuals with many psychopathic traits without explicitly excluding psychopathic adolescents. Moreover, psychopathic youth may be more difficult to keep in treatment given their
tendency towards irresponsibility and impulsive behaviour. In adulthood, it is well documented that psychopaths pose more problems in treatment than do non-psychopaths (see Hemphill & Hart, 2002, for a review). Further research is required to address these important issues. In particular, there is a complete absence of process treatment research with psychopathic adolescents that would help to clarify the nature of the changes that occur as a youth attends a treatment program.

The Relationship between the PCL:YV and Treatment Outcome

One of the primary concerns of applying the construct of psychopathy to adolescents has been that adolescents identified as psychopathic will be viewed as difficult or impossible to treat, and may end up being excluded from treatment programs as has sometimes happened with adults. This concern seems to be largely based on clinical lore, resulting from a select few studies on adult psychopaths using outdated models of treatment, such as the therapeutic community (Ogloff et al., 1990). Ogloff et al.'s (1990) study was significant because non-psychopaths benefited from treatment, whereas psychopaths got worse, suggesting that psychopathy was operating as a significant responsivity factor for treatment.

In an initial attempt to address the issue of whether youth with many psychopathic characteristics benefit from treatment, the main research question in the present study was to examine whether psychopathic traits moderated response to treatment. When examining the influence of treatment on individuals with many psychopathic traits, whether in adolescence or adulthood, it is important to consider how those traits may influence treatment response. In the case of psychopathy, one feature
of which is a callous and manipulative interpersonal style, it is probable that a very unstructured model of treatment, such as the therapeutic community, may facilitate the expression and development of such a style. In contrast, a highly-structured program, such as a cognitive-behavioural approach, which places the focus on examining consequences of actions and on “weighing” the options, would not seem to be as problematic given a manipulative interpersonal style. Further research is required to determine the optimal treatment components for individuals exhibiting many psychopathic traits; however, the present study provides preliminary evidence in this regard. In the present study, the number of psychopathic traits did not moderate treatment response. In other words, the number of psychopathic traits that an individual possessed did not influence the degree to which participation in treatment was associated with a reduction in subsequent criminal recidivism. This suggests that, within the current study that examined a cognitive-behaviourally based VOTP, psychopathy was not a responsivity factor (although it may be within the context of other treatment modalities). Instead, psychopathy appears to be better characterised as a “risk/needs” variable, that may bring with it specific risks, but that generally responds to a cognitive-behavioural format.

When one discusses the risk associated with psychopathy, there is a temptation to investigate treatments “of” psychopathy – that is, those aimed at eliminating the disorder (Hemphill & Hare, 2002). However, rather than attempting to cure the disorder, from a risk/needs or criminogenic perspective, it may be of greater benefit to target specific malleable aspects of psychopathy (such as impulsivity) as part of a larger treatment program while at the same time recognizing some of the core personality aspects that are better viewed as issues to be aware of rather than to directly target. For
example, if an adolescent presents as low on empathy, rather than working on empathy development one may take the approach of convincing the youth that it is not in their best interest to engage in criminal behaviour. Future work is needed to better understand the manner in which psychopathy may affect treatment delivery, in order to better design programs to maximize benefit to adolescents exhibiting many psychopathic traits. In particular, the present study did not examine treatment non-completers, an important group to study in this context. Previous research has found that psychopathic traits were associated with poorer attendance in treatment, in a sample of adolescents exhibiting substance abuse (O’Neill, Lidz, & Heilbrun, 2003). Keeping psychopathic individuals in treatment in order that they may derive the maximal benefit is an important intervention target, and is one that has not been thoroughly examined to date.

Furthermore, future research on the relationship between treatment and psychopathy would benefit from experimental designs including random assignment to treatment/control groups. The present study utilized a quasi-experimental design in which efforts were made to ensure the comparability of the treatment and comparison groups. Nonetheless, the conclusions that are drawn from such a research design must be more tentative in nature; an experimental design would increase our confidence in the validity and generalisability of the findings. Moreover, a research design that included interviews as well as file review in rating the PCL:YV would likely increase the validity of the ratings, particularly in the area of the affective/interpersonal items, which are more difficult to capture through a file-review-only design. Finally, examining a broader range of outcome measures than simply formally detected criminal recidivism is an important target for future research.
REFERENCES


Appendix A:

Detailed Description of the Treatment Programs

The goal of the violent offender treatment programs was to reduce the frequency and severity of acts of violence by youth in the program by providing comprehensive treatment with high quality assessments, individual and group treatment using proven treatment methods. Youth entered the treatment program after being assessed to determine whether they were suitable for the program. Before beginning treatment, the program and its expectations were outlined for a youth and a commitment was solicited. A contract was signed stating that each youth agrees to maintain confidentiality regarding personal matters discussed, and to be on time and attend each group session.

The core of the program consisted of twice weekly, cognitive-behavioural/psychoeducational/risk-focussed groups directed at challenging the youth’s criminal thinking and attitudes towards others, and to develop problem solving strategies and empathy for victims. The goal of group was to change the youth’s way of viewing his or her life, to see him or herself as responsible for their actions and behaviours, to stop justification of his or her antisocial lifestyle, and to develop problem solving strategies that exclude the victimisation of others. During group, youth were challenged to examine their maladaptive attitudes and beliefs, to make personal changes on a daily basis, and are encouraged towards prosocial alternatives to the criminal, violent lifestyle.

A typical treatment outline, although varying slightly from site to site, included a general introduction, including a review of the rules of the group, establishing answers to questions such as why the youth was in treatment, what they want to accomplish, and a review of the offences that they have committed. At this point, work was done to
establish group trust. Following the introduction, youth progressed to a detailed review of their recent violent crime (an “offence cycle”) that included a detailed review of what had occurred, who the victims were, and a review of the antecedents to their offending. In this section, the group leaders challenged inconsistencies in their reports and sought to fill in the picture of what led to their offending behaviour. This served as a means to look for prevention tools that youth may use in avoiding future violent behaviour. Other topics addressed throughout treatment included a further assessment of a youth’s “route of offending,” including a cycle of problems, contributing contextual factors, cognitive distortions, and a review of the experience of the victim, including developing empathy for the victim. In addition, the youths’ personal needs (including relationships) were addressed, including how to achieve them without engaging in criminal behaviour. Also, skill development and relapse prevention were addressed. Group treatment lasted for an average of 6-8 months.

In addition to the group sessions, youth also met with a therapist for one-on-one sessions to supplement the work done during group. These sessions were much less structured than the groups, and served as a place to reinforce what was learned in group, as well as to address other issues that a youth may be facing that were not covered during, or appropriate for, group. The timeline for individual sessions varied from individual to individual, depending on personal needs.

Discharge occurred when it was determined that a youth no longer benefited from further treatment, and/or when sentence is completed if a youth was unwilling to continue. In Kamloops there was a formal graduation, which consisted of recognition of the client’s achievement, followed by a small celebration during one of the group sessions.
Appendix B:

Research Ethics Approval

SIMON FRASER UNIVERSITY

November 13, 2003

Ms. Rosalind Catchpole
Graduate Student
Department of Psychology
Simon Fraser University

Dear Ms. Catchpole:

Re: Psychopathy and Recidivism Following Treatment
Among Previously Violent Youth

I am pleased to inform you that the above referenced Request for Ethical Approval of Research has been approved on behalf of the Research Ethics Board. This approval is in effect for twenty-four months from the above date. Any changes in the procedures affecting interaction with human subjects should be reported to the Research Ethics Board. Significant changes will require the submission of a revised Request for Ethical Approval of Research. This approval is in effect only while you are a registered SFU student.

Your application has been categorized as 'minimal risk' and approved by the Director, Office of Research Ethics, on behalf of the Research Ethics Board in accordance with University policy R20.0, http://www.sfu.ca/policies/research/r20-01.htm. The Board reviews and may amend decisions or subsequent amendments made independently by the Director, Chair or Deputy Chair at its regular monthly meetings.

"Minimal risk" occurs when potential subjects can reasonably be expected to regard the probability and magnitude of possible harms incurred by participating in the research to be no greater than those encountered by the subject in those aspects of his or her everyday life that relate to the research.
Please note that it is the responsibility of the researcher, or the responsibility of the Student Supervisor if the researcher is a graduate student or undergraduate student, to maintain written or other forms of documented consent for a period of 1 year after the research has been completed.

Best wishes for success in this research.

Sincerely,

Dr. Hal Weinberg, Director
Office of Research Ethics

c: Dr. S. Hart, Supervisor

/bjr