Running Head: PREDICTIVE VALIDITY OF THE PCL:YV AND THE YLS/CMI

Predicting Risk of Violence in a Young Offender Population

The Predictive Validity of the PCL:YV and the YLS/CMI

By

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Abstract

The current study examined the predictive validity of two adolescent instruments, using outcome measures of recidivism. The Psychopathy Checklist:Youth Version (PCL:YV) was retrospectively coded from file information on 102 young offenders referred to an out-patient setting for multi-disciplinary assessment; the Youth Level of Service/Case Management Inventory (YLS/CMI) was previously completed by probation workers on the same sample. A 3½ year follow-up period occurred prior to examination of criminal records. The predictive accuracy of both instruments was examined using area under the curve (AUCs). AUCs for general and violent recidivism ranged from .57 to .81, and .57 to .79, respectively. The PCL:YV outperformed the YLS/CMI in most areas. Implications for follow-up are discussed.

Table of Contents

List of Tables

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Dedication

He said: "Be grateful when you are surprised by
a sudden illumination. Welcome this light; make
it your own. Follow its beam as far as it shines.
It is a blessing from God."

This thesis is dedicated in Loving Memory of my father, William C. McKinnon, and to my mother, Mable McKinnon, who throughout their lives have encouraged their children to pursue high academic levels. Mable continues to model strength and resilience and the ability to manage even the toughest "bump in the road". This thesis is also dedicated to my sister, Patty Milne, with best wishes for a rewarding experience on your academic journey. In thoughtful memory of Sharon Pudas, Program Manager, Court Services Unit, who was diagnosed with cancer and passed away during this thesis research project. You are sadly missed by all of us. To Christian and Courtney - you continue to make me very proud.

Introduction

Fifty years of sound empirical research has led to emerging evidence of the most critical risk factors associated with youth and violent behaviour. Based upon this impressive body of literature, we are now witnessing a recent trend in the development of formalized adolescent risk assessment tools, modelled after well-established adult prototypes (Gendrea, Little, & Goggin, 1996). By comparison with adult literature, research on adolescent measures has received little attention (Jung & Rawana, 1999). The new adolescent instruments reflect the limited life experience of the juvenile offender and incorporate salient developmental factors. Risk assessment instruments continue to be designed in order to improve decision-making processes around the determination of risk, and, the corresponding level of intervention needs. The current study evaluated two different youth assessment instruments with a specific interest in gender and ethnicity.

The purpose of the risk assessment evaluation is: 1) to identify and classify those youth at low, medium, and high risk of dangerousness, and, 2) to identify the treatment needs of offending youth (Risler, Sutphen, & Shields, 2000). According to McNaught (2000), a small number of young offenders are disproportionately responsible for the majority of serious and violent crimes. This knowledge supports a growing interest in targeting persistent, high-risk youth, for costly, specialized, and intensive services. Furthermore, Krysik and LeCroy (2002) suggest that low-risk youth are negatively impacted when assigned intensive intervention. Costly custodial sentences, for instance, have the tendency of immersing youth further into a delinquent life-style due to exposure to negative peer associations. Both points support the need to reconsider the popular perspective endorsing indiscriminate, punitive sentencing options. Thus, identifying the risks, needs and responsivity of youth are important issues as juvenile justice professionals attempt to maximize their efforts and make the most of limited resources (Risler et al., 2000).

Various standardized risk assessment instruments continue to be developed in psychology, social work, and related fields. Relevant issues are the psychometric properties of

reliability and validity. Inherent in this discussion is the need to consider gender, culture, and sexual orientation when assessing the risks, needs, and responsivity of offending youth. Questions continue to be raised about validation of the instruments across different populations, and varying regions. Past efforts at validating youth offender assessments, however, have yielded inconsistent results (Ashford & LeCroy, 1990; Krysik & LeCroy, 2002).

Although the area of specialized risk and needs assessments has not yet been fully explored, there is a growing interest in developing and refining assessment and treatment options that are sensitive to unique differences in youth (Cunningham, 2000; Leschied, Cummings, Brunschot, Cunningham, & Saunders, 2001). Future research endeavours will no doubt continue to explore diversity issues and program development will likely move from the current "mix and stir" formula to more inclusive practices. That is, a shift from service delivery developed for Caucasian, male youth, to gender and culturally-sensitive programs. Ultimately, the goal of this field of study is precision in identifying all youth at risk, providing rehabilitative services that are appropriate and affordable, and the reduction of youth crime, recidivism, and violence in our communities (Borum, 2000; Risler et al., 2000).

Anti-Social and Violent Behaviour In Youth

Both the general public and mental health workers have raised concern about youth crime and the potential risks for violence in communities. Due to many misconceptions and myths underlying this complex issue, there are three key points to be made. First, while the public generally believes that youth crime is on the rise (Leschied, Cummings, Brunschot, Cunningham, & Saunders, 2000), the Canadian Crime Statistics indicate that youth crime is actually down for the seventh year in a row (McNaught, 2000). Second, approximately three-quarters of the youth involved in adolescent crime will not continue on a pathway of criminal behaviours into their adult years (Farrington, 1986; as cited in McEachran, 2001). To some extent, these behaviours are simply part of the adolescent developmental stage, known for impulsive and careless behaviour (McNaught, 2000). Third, a consistent finding in the literature is that a relatively

small number of persistent young offenders (5% to 6%) are responsible for a large proportion of known crimes (Moffit, 1993). These youth require early identification and appropriate treatment interventions due to the stability and frequency of the deviant behaviours. Ultimately, the goal is to prevent serious occurrences and reduce the devastating impact of crime on vulnerable populations. Thus, risk assessment instruments continue to be developed, studied, and refined, in order to detect those youth susceptible to persistent and serious conflict with the law.

Definition of Aggression and Violence

The threshold for defining violence has generally been set high in research pertaining to risk assessments. This is to ensure that "normal" adolescent behaviour, which often represents some degree of aggression, is not captured (Borum, 2003). According to Loeber and Stouthamer-Loeber (1998), a distinction needs to be made between aggression and violence, with aggression being confined to those acts that result in less than serious harm. Similarly, Borum, Bartel, and Forth (2002, p. 29) describe violence as an act "... that is sufficiently severe to cause injury to another person or persons (i.e., cuts, bruises, broken bones, death, etc.), regardless of whether injury actually occurs; any forcible act of sexual assault or threat made with a weapon in hand." Intent to cause harm is included in the definition, while unintentional injury is not.

Furthermore, the literature defines subtypes of violence (Borum et al., 2002). The subtypes of violence include reactive (impulsive, angry, and retaliatory) and proactive ("instrumental", controlled, and predatory). Instrumental violence, more severe and pathological in nature, is associated with behaviour that is used as a tool to achieve a goal, such as "evening the score", or, an act of vengeance. Both subtypes can operate independently but are not mutually exclusive of each other (Borum et al., 2002).

Gender Differences and Violence

There is substantial debate in the literature regarding the presence of gender differences in risk factors for delinquency, however, recent articles are increasingly commenting on the need

to address gender-specific versus gender-neutral assessment and treatment options. One of many important contributions is that of Simourd and Andrews (1994), who conducted a meta-analysis, which failed to identify any gender differences in the factors associated with risk prediction. Other researchers have identified different developmental pathways to crime, mental health symptomotology, and behavioural presentations (Leschied et al., 2000). For instance, girls generally tend to enter the criminal system as runaways, trying to escape harsh living conditions at home (Acoca, 1999; Funk, 1999). They report higher incidents of substance abuse, often related to self-medicinal attempts to alter mood states (Acoca, 1999). They also have a higher likelihood of developing multiple disorders, and, higher rates of comorbidity with depression, suicidal ideation and anxiety (Leschied et al., 2001; Loucks & Zamble, 1994).

Studies have shown girls to be less violent and aggressive than males, but still defiant and anti-social (Salekin, Rogers, & Machin, 2001). In conjunction with social roles, girls place more importance on relationships, and they tend to express aggression through connections and associations with others. Unlike boys, aggressive girls resort to gossiping, verbal threats, exclusion, and insults. Boys, on the other hand, are more prone to use physical aggression and verbal insults (Leschied et al., 2001). Statistics on violence and girls show that the assault charges are predominately, but not exclusively, in the minor assault category, such as slapping and hitting, and there are far fewer assaults with weapons (Acoca, 1999).

Pearson (1997), and Simourd and Andrews (1994), argue that girlhood violence is far more common than most people think. Pearson (1997) makes a compelling argument that female violence is under-represented in the criminal statistics due to social biases; that is, society's stereotypical view of women in loving and nurturing roles. Accepting that women are capable of violent acts, forces society to challenge notions of femininity and womanhood. Thus, society more readily accepts the position of women in victimized roles and underestimates the prevalence of female violent offending.

In summary, Acoca (1999) states that girls have greater mental health needs than boys, and their pathways to the criminal justice system have consistently been identified with a history

of physical, sexual and emotional victimization. Specific gender experiences (menstruation, pregnancy, and child-bearing) further influence and colour the girlhood experiences as they enter and maintain criminal lifestyles. Finally, a growing number of researchers and clinicians are showing interest in this area, and question the need for gender-specific risk assessment instruments and specialized intervention services, based on identified differences. This area of study is complicated, however, by conflicting research and the paucity of studies that support either side of the debate. It is also confounded by the lack of consensus on definitions of violence and aggression (Leschied et al., 2000), social and contextual issues, and compounding difficulties related to the accuracy of official crime statistics.

Risk factors associated with anti-social behaviour

There are a number of empirically derived risk factors that distinguish the subgroup of anti-social adolescents at risk for violent behaviour. Clearly identified in the risk prediction literature, the multi-determined factors have been referred to as both *static* (non-changeable) and *dynamic* (changeable) in nature (Borum et al., 2002; Risler et al., 2000). Both are linked to juvenile offending and recidivism, with the static factors reflecting historical aspects and the dynamic reflecting those which can profoundly change as the young adolescents mature and develop (Borum et al., 2002).

The broad range of causes and correlates of delinquency (both static and dynamic) include numerous individual, family, educational, social, and peer variables (Borum et al., 2002; Hawkins, et al., 1998; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998; Marczyk, Heilbrun, Lander, & DeMatteo, 2003; Risler et al., 2000; Simourd, Hoge, Andrews, & Leschied, 1994; Webber, 1997). Specific factors include age of first offence, number of prior arrests, number of out-of home placements, academic achievement, school behaviour and attendance, substance abuse, family stability, parental control, and peer relationships (Marczyk et al., 2003; Borum et al., 2002; Hennegler et al., 1998).

Three prominent factors are strong predictors of juvenile recidivism. In predicting future violence for both adults and adolescents, the best single predictor is prior violent behaviour (Borum, et al., 2002). Substance abuse is another primary risk factor, and the risk is especially elevated when the young person engages in poly-substance abuse (Marczyk et al., 2003). With respect to criminal career paths, longitudinal studies have shown that the best predictor of antisocial behaviour into adulthood is the onset of severe conduct problems prior to the teen years (Frick, Barry, & Bodin, 2000). Other empirically derived risk factors include the following: past supervision/intervention failure, history of self-harm or suicide attempts, exposure to violence in the home, childhood history of maltreatment, parental/caregiver criminality, early caregiver disruption, poor school achievement, peer delinquency, peer rejection, stress and poor coping, poor parental management, lack of social support and community disorganization (Borum et al., 2002).

Added to this, children identified with conduct problems often have the presence of other disorders known as "comorbidities" (Frick et al., 2000). According to Frick et al. (2000), between 65%-90% of children diagnosed with conduct disorder also have severe problems of inattention and impulsivity. These youth, often presenting with an early diagnosis of Attention-Deficit Hyperactivity Disorder and/or Oppositional Defiant Disorder, are particularly at risk. They are known to develop conduct problems at an earlier age, they tend to present as more aggressive, and they are more likely to use illegal drugs at an early age (Frick et al., 2000).

According to Gretton (1998), one individual factor that can accurately predict adolescent violent offending is psychopathy. The identification of these traits can give important information about the long-term risks, even though the youth may present with no known history of violence. According to Moffit (1993), there are characteristics of youth that can be identified as "early starters" or "life-course persistent" offenders. These characteristics are consistent with that used to identify psychopathy (i.e., impulsiveness, aggressiveness, versatility of delinquent behaviours and social deficits). Thus, it should not be surprising that early studies are identifying

psychopathy as a major risk factor when considering chronic adolescent aggression and recidivism (Gretton, 1998).

Protective Risk Factors

Strengths associated with youth are frequently referred to as protective risk factors. This topic is receiving increased recognition in the literature, but continues to be a controversial area (Farrington & Loeber, 2000). Although protective factors are argued by some to have limited relevance in determining risk, they have been incorporated into recently developed structured assessment tools (Borum et al., 2002). Protective factors include involvement in prosocial activities (i.e., recreational activities), school success, and strong social supports (both peers and adults). Also included in this category are strong attachment and bonds with others, a positive attitude towards intervention, and resilient personality traits (Borum et al., 2002). Clinical and forensic assessments now incorporate both protective factors and psychopathology in order to present a comprehensive and balanced perspective on the youth.

Debate on Differing Approaches to Risk Assessment

In completing a thorough evaluation of risk assessment instruments, it is important to acknowledge the current debate in the literature that argues the efficiency and effectiveness of different models of decision-making. The current debate hinges on the preferred choice of decision-making; that is, relying on actuarial formulas (statistical equations), or, unstructured clinical judgement (Borum et al., 2002; Litwack, 2001).

Statistical risk assessments have generated skepticism as they are subject to substantial prediction error (Marczyk, et al., 2003). However, the same is true for unstructured clinical judgement. For instance, Monahan (1981) concluded that psychiatrists and psychologists were twice as likely to be wrong as right in predicting violent behaviour. In another study, Quinsey and Ambtman (1979) found that professionals had no expertise over laypersons in predicting violence and that they based their judgments on similar information.

Clinical judgement, or, "using our heads", (Borum, 1999), has limitations as the same criteria often is not consistently considered on each case and the discretionary and informal format leads to inconsistent results. While unstructured clinical judgement is supported to some extent by research (in situations whereby the clinician is highly experienced and trained), overall the actuarial assessment tools have had at least an equal or superiour tract record (Borum, 2000; Borum, Bartel, & Forth, 2002).

Recently, a new evaluation procedure, based upon a checklist, has been introduced. The structured professional judgement format (a guided clinical assessment) helps navigate the thinking processes to systematically consider important elements (Borum et al., 2002). This current approach to risk evaluation helps youth justice front-line workers, as well as court officials, in all stages of the decision making-process, from arrest and sentencing to intervention services.

One risk assessment tool that is based on an objective, actuarial approach is the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge, Andrews, & Leschied, 2002). The YLS/CMI is considered to be a generalized and comprehensive assessment instrument, and it is the mandatory tool used by Probation Officers in the Province of Ontario. An example of a structured clinical assessment instrument is the Psychopathy Checklist:Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003). The PCL:YV is composed of four dimensions that represent interpersonal (i.e., superficial, grandiose, manipulative), affective (i.e., callousness, lacking remorse), behavioural (i.e., impulsivity, lacking goals), and antisocial (i.e., criminal versatility and serious criminal behaviour) characteristics of the psychopathy disorder. The PCL:YV is not a risk assessment tool per se, as this instrument was developed to assess for a personality disturbance. However, it has shown promising results at identifying youth at risk for general and violent criminal recidivism.

Psychopathy Overview

The past decade of work on adolescent risk assessments has brought many advancements and new assessment instruments designed to help target both adults and youth considered at risk. As the construct of psychopathy has been developed, it has been extended from adult measures to youth. Psychopathy, now considered a major risk factor in adult violent and general offending, has been incorporated into some of the newly developed adolescent standardized instruments.

History of Psychopathy

The first clinical application of psychopathy occurred in the mid 20th century. A group of psychiatrists were responsible for early initiatives with this subset of anti-social adults. The best known, Hervey Cleckley, is credited for his well-renowned book, *The Mask of Sanity* (1941). Cleckley identified the clinical profile of adult psychopathic individuals, and developed the original personality construct. Central to the construct are personality traits such as profound lack of empathy, callousness, superficiality, lack of emotional depth, and grandiosity; all of which significantly impair the individual in many areas of functioning (Hare, 1998).

The history of psychopathy predates the 20th Century, however, and was first seen in the translated writings of an ancient Greek philosopher, Theophrastus (Millon, Simonsen, & Birket-Smith (1998). According to Millon and colleagues (1998), this early writer made observations of human behaviour and developed profiles of men "without moral feeling". In the early sixteenth century, Niccolo Machiavelli (1469-1527) wrote about men with unscrupulous and deceptive personalities. Today, the term "Machiavellianism" has become commonly used to refer to individuals acting in unethical ways (see Fehr, Samson, & Paulhus, 1992). More recently, Dr. Robert Hare, of the University of British Columbia, was the first to operationalize psychopathy with a standardized adult instrument, the Psychopathy Checklist, known as the PCL (Hare, 1980, cited in Forth, Hart, & Hare, 1990). This instrument has since undergone revisions and it is now known as the PCL-R (Hare, 1991, 2003).

Psychopathy Defined

Psychopathy is often referred to as a personality structure that highly correlates with an individual's predisposition toward violent behaviour. The personality traits are recognized as universal in adults, crossing the boundaries of gender, ethnicity, and culture (Hare, 2003). The constellation of traits, known to remain relatively stable over a life span (Forth, et al., 1990; Hare, 1998), have previously received little attention by youth justice researchers. Only recently have studies emerged on groups of adolescents (Campbell, 2003; Forth, et al., 1990; Forth & Mailoux, 2000; Gretton, 1998; McEachran, 2001) and have been extended to children as young as six years old (Frick et al., 2000).

Adult psychopaths are prone to create havoc in the lives of those whose pathways they cross. They are characterized by egocentricity, callousness, superficial charm, and a profound lack of empathy (Forth, Brown, Hart, & Hare, 1996; Forth & Mailloux, 2000; Hare, 1991, 2003). Lacking concern for the rights of other's, psychopaths violate the innocent and defy major societal norms and expectations. They are often disproportionately involved in criminal activity and have a costly impact on society (Hare, 1998). According to Forth and Mailloux (2000) the precise etiology and conceptual boundaries are not yet completely understood, but the overall lifestyle is generally chronically unstable, they are resistant to treatment, and the individual tends to deny the level of disturbance.

Extending the Construct of Psychopathy to Youth

Extending the construct of psychopathy to youth has not evolved without controversy, as concern has been voiced about the potential for improper use (Frick, 2002; Seagrave & Grisso, 2002). For instance, youth may reflect normal adolescent "transient" behaviour (i.e., egocentric, unempathetic) or a comorbid condition (e.g., impulsivity), rather than psychopathic traits. Because of the possibility for misdiagnoses, Seagrave and Grisso (2002) raise the likelihood of exaggerated elevations of false positives (youth identified as psychopathic who are not) and note that this occurrence could lead to highly detrimental effects on youth. Hervey Cleckley (1941)

also identified the false positive problem in youth. According to Cleckley (1976, p. 270; cited in Forth, 2003), "...sometimes...the child or adolescent will for a while behave in a way that would seem scarcely possible to anyone but the true psychopath and later change, becoming a normal and useful member of society". While controversial, the literature generally promotes further study of the construct of psychopathy in youth. However, consensus has been reached that clinicians and researchers need to proceed with caution, adhering to high standards of ethical practice, and a solid base of knowledge on the adolescent developmental phase.

Adolescent Psychopathy and Recidivism

The prediction of both general and violent criminal recidivism in adults has been studied extensively (Quinsey, Harris, Rice, & Cormier, 1998). Violent adult recidivists tend to have lengthy histories of violent behaviour and present with a high prevalence of psychopathic traits. Most studies on youth have examined the psychometric properties of reliability and validity for this younger cohort, looking at common patterns between adult and youth, including reoffending behaviours. Recidivism studies that assess for psychopathic traits in youth only began to emerge in the past decade.

Forth and colleagues (1990) were the first to investigate the construct of psychopathy as it relates to adolescent youth. Using the modified 18-item Psychopathy Checklist (Hare, 1980; cited in Forth et al., 1990), 75 incarcerated male young offenders were evaluated in a maximum-security facility. The findings include significant correlations between PCL scores and conduct-disorder symptoms, history of violent offences, violent behaviour in the institution, and violent recidivism.

Rowe (2002) examined the long-term predictability of the youth version of the PCL, i.e., the PCL:YV, the Youth Level of Service/Case Management Inventory (YLS/CMI), and other assessment instruments, using an archival file review. This study's sample included 408 adolescent offenders, considered to be "at risk". The findings proved the instruments to be valid for male and female subgroups, and that there were no substantial differences between the

instruments. The high psychopathy group (n=39) had high rates of recidivism; in fact, 74% of the youth in this sample reoffended in the general recidivism category, while 41% reoffended violently. The study design was unusual with a 10 to 15 year follow-up period, exceeding that normally discussed in the literature. The findings indicated that psychopathy in adolescence is substantially predictive of adult re-offending. Rowe (2002) concluded that the instruments were relevant and useful for forensic services, in evaluating risks and needs of youth.

Gretton (1998) retrospectively coded the PCL:YV for criminal history and demographic data on 157 subjects between the ages of 12 to 18. The sample participants were referred to a Youth Court Service for mental health assessment. The criminal records were examined after a ten-year period, thus also providing for a lengthy follow-up period. The findings demonstrated that psychopathic traits youth had a greater risk for committing violent offences than nonpsychopathic youth. The violent recidivism rate occurred at higher rate, and earlier following release from custody than nonpsychopathic traits youth. They were also more likely to escape custody. Results also indicated that the PCL:YV score, differences in intellectual functioning, and history of self-harm, each contributed significantly to the prediction of violent outcome.

Gretton, McBride, Hare, O'Shaughnessy, and Kumka (2001) found that psychopathic traits may be as common among young offenders, including young sex offenders, as they are for the adult offenders. The study's sample included 220 male adolescent sex offenders referred to a 6-8 month outpatient treatment program. The results showed that high scoring psychopathic youth tend to drop-out of treatment services at high rates and were more likely to escape from custody. The combination of a moderately-high psychopathy scores and deviant sexual arousal patterns prior to treatment placed a youth at very high risk of general reoffending. Offenders with high psychopathic traits violated conditions of release, and became involved in general and violent recidivism in the 5-year follow-up period. Overall, youth with psychopathic traits are a tremendous challenge for the youth justice system and society as a whole, as they experience high rates of community failure.

In summarizing this brief review of the literature on adolescent psychopathy and recidivism, a concerning profile and discouraging prognosis emerges. Psychopathy in youth is associated with a range of behaviours including a high frequency of institutional violence, attempted and achieved escapes, poor treatment compliance, and community failure. These findings acutely illustrate the need for special resources and services if we are to intervene successfully and promote community safety.

Early identification may be the best option to intervene in this destructive life course. It is agreed that further investigation is needed to understand etiology, correlates, and developmental precursors of psychopathic traits youth. Due to the high-risk nature of psychopathic traits youth, and the concern that a small number of youth are responsible for a large proportion of crime, it is not surprising that the development of valid and reliable adolescent risk assessment instruments has become a priority in the youth justice field.

Adolescent Assessment Instruments

The Hare Psychopathy Checklist:Youth Version (PCL:YV; Forth et al., 2003) is a structured clinical assessment, developed from the adult version, the Psychopathy Checklist-Revised (PCL-R; Hare, 1991). The PCL-R is a 20-item instrument used to identify psychopathy personality traits across affective and behavioural dimensions that include unemotionality and callousness (Hare, 1998). The PCL-R, well-established in adult forensic assessments, is known to operationalize psychopathy with demonstrated reliability and validity (Forth & Mailloux, 2000). It is used extensively today both in adult clinical and forensic settings as a predictor of general and violent recidivism, including sex offending behaviour (Gretton et al., 2001). Retrospective and cross-sectional studies are supporting theoretical claims that psychopathic traits are stable over the life span, and this has led to the extension of the instrument for use in assessment of adolescent youth and children. Specifically, the PCL:YV was designed for use

with adolescent youth between the ages of 12 to 18 years. Modifications have resulted in age-appropriate items that were more representative of the life stage that focussed on peer relationships and educational issues.

The psychometric properties of reliability and validity associated with the PCL:YV have been studied in a number of research projects. To date, the PCL:YV has shown high indexes of internal consistency (Forth & Mailloux, 2000) and convergent validity (Marczyk et al., 2003). Interrater reliability analyses for total scores have shown correlations between raters of .90 or above (Forth & Mailloux, 2000). The high rate of reliability is considered to be representative of the cautious approach used in the assessment. The instrument, available in the past for research only, has recently become available for clinical use as well. Clinical cautions are provided due to the possible negative repercussions attached to the label of psychopathy.

The Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge et al., 2002), formerly known as the Ministry Risk/Need Assessment Form (MRNAF; Hoge, Andrews, & Leschied, 1994) is another standardized adolescent instrument that primarily identifies the risks/needs and responsivity of youth. It has been well-accepted in the juvenile justice field as a useful tool in assessing youth's risks and needs. The YLS/CMI was modelled after the adult instrument, the Level of Service Inventory-Revised (LSI-R; Andrews & Bonta, 1995). The LSI-R consists of a 54-item scale with 10 dimensions (criminal history; education/employment; financial situation; family/marital relationships; accommodation; leisure and recreation; companions; alcohol and drug use; emotional/mental health; and attitudes/orientations).

The YLS/CMI is the mandatory risk assessment tool used by Probation Officers in Ontario since its inception in 1994. This instrument is applied to all youth between the ages of 12 to 18, under the supervision of a Probation Officer, employed by the Ministry of Public

Safety and Security (MPSS), in the Province of Ontario. Due to the dramatically changing nature of the adolescent personality, it is recommended that the assessment be completed every six months, as the results would no longer be considered valid after that period of time. The YLS/CMI has been validated as a robust predictor of recidivism for both male and females (Jung & Rawana, 1999). Reliability and validity analyses of the YLS/CMI have previously been completed on this present study's sample group (Schmidt, Hoge, & Gomes, in press) and the authors have granted permission to incorporate the results into the current study.

In addition to the PCL:YV and the YLS/CMI, there exists a number of other valid risk assessment instruments, available for use for youth and children. The Structured Assessment of Violence Risk in Youth (SAVRY) developed by Borum, Bartel, & Forth (2002), is one of several examples of newly developed risk assessment instruments. The SAVRY is based on the structured professional judgement model. It was designed for use with youth between the ages of 12 to 18, and originally included psychopathy as one of the twenty-four risk items. This item has been revised to assess for low empathy/remorse, due to the interest in the risk-marker versus the personality construct, psychopathy. The instrument is developmentally informed and the preliminary data indicates that the SAVRY is empirically grounded (McEachran, 2000). The SAVRY assesses for protective factors as well as risk factors, and it is considered to be a useful tool for identifying the risk of dangerousness in youth (Borum, 2003).

The Present Study

The area of youth violence and crime has been identified as a major social concern. The result is unprecedented interest by the general public and professionals to focus on early identification, prevention, and rehabilitation needs of our youth. We have recently seen signs of

radical change in Canadian policy with the introduction of the new Youth Criminal Justice Act (YCJA; 2003). This new policy is an attempt to lower incarceration rates and focus on community involvement in response to youth and crime. Sound empirical support is evidenced in the principals and philosophy behind the YCJA. In conjunction with these policy changes, ongoing research efforts have progressed to organize empirically-derived risk factors in user-friendly formats. The standardized assessment protocols are in the early stages of development and require further examination of the predictive power in determining recidivism.

Thus far, a decade of research has generated inconsistent and conflicting data on the validity of risk assessment instruments across diverse populations. Gender and ethnicity effects are still debated and these are important issues when considering rehabilitation programs that meet the needs of special populations. The YLS/CMI is one instrument which has demonstrated validity in identifying criminogenic risks and corresponding needs. Since the personality construct, psychopathy, has been inextricably linked with violent behaviour, and early identification of psychopathic traits is paramount for reducing the risk of future violent behaviour, the PCL:YV was chosen for comparison.

The question posed relates to the performance of both instruments, in predicting the risk for criminal activity and violence in adolescent offenders. Specifically, is one instrument superior to the other in identifying youth who will continue on a pathway of general delinquency or violent behaviour? This study evaluated the predictive validity of the PCL:YV and the YLS/CMI assessment tools. The following research questions were addressed:

1) Are the PCL:YV and the YLS/CMI instruments able to predict recidivism as defined by a) any reoffending , b) violent reoffending, and, c) time to new offence?

2) Is the predictive validity of the PCL:YV and the YLS/CMI robust across gender and ethnicity?

Method

Participants

The present study included a sample of 119 Phase I young offenders who consecutively underwent a mental health assessment in accordance with a Section 13 order under the *Young Offender's Act* (R.S.C. 1985, cY-1). Twelve youth were eliminated from the original 119 participants as the YLS/CMI could not be obtained, or the dates between the YLS/CMI and the Section 13 assessment exceeded a 12-month period. Recidivism data was not available on three subjects and a further two subjects were eliminated from the study as the files lacked the information required to code the PCL:YV. The remaining 102 youth became the total sample size available for the archival file review and statistical analyses.

The sample participants were referred by Provincial Court judges for a specialized multi-disciplinary assessment. The youth were evaluated by the Court Clinical Services assessment team at Lakehead Regional Family Centre (LRFC), in Thunder Bay, Ontario. They were interviewed and assessed on an out-patient basis, between March 1996 and October 2000. In this study, all youth referred to LRFC by the Court during the time frame were included as participants. With the exception of the eliminations referred to earlier, one hundred per cent of the referred youth became subjects in the study. As sampling has not taken place, there was no opportunity to equalize numbers for gender or ethnicity.

Information regarding ethnicity was collected as part of the referral process. Gathering demographic information is routine agency policy, which helps to ensure that the rights of specialized groups are being considered. Thus, for the purpose of this study, there is confidence that the youth were correctly identified according their ethnic backgrounds.

Measures

The Psychopathy Checklist: Youth Version (PCL:YV):

Forth and colleagues (1990) were the first to assess psychopathic traits in adolescents using the adult version, the PCL-R. The instrument had previously been normed on incarcerated, Caucasian men. In the earlier version of the PCL:YV, referred to as the 18-item PCL-R, two items were dropped (parasitic lifestyles and many short term marital relationships) as they were more suitable in defining adult lifestyles than youth; other items were also later amended to be more reflective of youth characteristics.

The PCL:YV (Forth et al., 2003), is a recently published, 20-item tool, that assesses personality disturbances in youth. The PCL:YV measures four features or factors of psychopathy. Factor 1, the Interpersonal dimension, represents the following items: impression management, grandiose sense of self-worth, pathological lying, and manipulation for personal gain. Factor 2, the Affective dimension, includes callous/lack of empathy, lack of remorse, shallow affect, and failure to accept responsibility. Factor 3, the Behavioural domain, represents stimulation seeking, impulsivity, irresponsibility, lacks goals, and parasitic orientation. Factor 4, the Anti-social dimension, includes poor anger control, early behavioural problems, serious criminal behaviour, serious violations of conditional release, and criminal versatility. The remaining two factors, unstable interpersonal relationships and impersonal sexual behaviours are not loaded on any of the factors.

Unlike the YLS/CMI which is designed for use across various disciplines (child care workers, social workers and so on), the PCL:YV is recommended for use by experienced clinicians, under supervision, with a minimal educational qualification at the Master Degree

level. Rather than labelling a youth as psychopathic, the scores are considered on a continuum, concerned with the degree of the presence of psychopathic traits. This is due to the potentially negative consequences associated with the label, psychopath.

Youth Level of Service/ Case Management Inventory (YLS/CMI)

Part 1 of the YLS/CMI involves the rating of 42 items described in the following eight sub-scales: 1) prior and current offences/dispositions, 2) family circumstances/parenting, 3) education/employment, 4) peer relations, 5) substance abuse, 6) leisure/recreation, 7) personality /behaviour, 8) attitudes/orientation. All items are rated on a scale of low, moderate, or high risk. Part 11 through V1 of the YLS/CMI involves a summary of risk factors, assessment of special considerations, an opportunity for professional override of results, the recommended supervision level, and the case management plan. Schmidt et al. (2003) recently completed the reliability and validity analyses of the YLS/CMI using the same sample population as this present study. The data previously collected has been made available for use in this study as a comparison for its utility in predicting validity. Schmidt et al. (2003) focussed on Part 1 of the instrument, which provides for the risk/need assessment.

Jung and Rawana (1999) found that the YLS/CMI total and sub-scores discriminate significantly between offender and non-offender groups. Although some differences were noted between Aboriginal and non-Aboriginal youths and male and female youth, ethnicity and gender did not impact the ability of the instrument to predict recidivism. Costigan and Rawana (1999) repeated the study with the same sample and found significant predictive validity.

Procedures

In preparation for the current research study, the primary researcher attended a two-day training conference in Orlando, Florida, in August, 2003. The training was facilitated by Dr. Forth and Dr. Hare (Forth, 2003; Hare, 2003), and practice sessions were provided in a small group format. Case histories were provided and the conference participants practiced the coding and scoring of the PCL:YV. As the current research study began, the primary researcher provided training to the secondary researcher and a small group of clinicians. As recommended in the Technical Manual (Forth et al., 2003) training continued in a small group format. Practice sessions involved coding and scoring approximately twenty case files not included in the study sample. This procedure continued until sufficient confidence was gained that the protocol was being administered appropriately and consistently.

Once training was completed, the data collection phase of the study began with the file audit. Interrater reliability analysis involved both primary and secondary researchers coding the same twenty-four files. To ensure that reliability was consistent throughout the study, and that changes in rating were not being inadvertently made by raters, the files coded by both researchers were dispersed throughout the entire file review, from beginning to end. The methodology adopted for this research study involved an archival file review only as the study is retrospective in design and the subjects involved were not available for interview. This method of application has previously been noted in the literature as an acceptable procedure in archival data research (Catchpole & Gretton, 2003; Gretton et al., 2001). It is noted, however, that although archival only coding is commonly done on the PCL:YV, and, appears to produce scores that are generally similar to the interview and file review format, there is a draw back to this

procedure. According to Wong (1988), there is a tendency for underestimation of high PCL scores and overestimation of low PCL scores.

The archival file review for the current study, included a Section 13 Assessment report, previously completed in accordance with the Court request under the *Young Offenders Act*, (R.S.C. 1985, cY-1). The specialized multi-disciplinary assessment team completed social work, psychological and psychiatric evaluations prior to disposition at court. This was to ensure that the juvenile courts understood the personality profiles, individual/contextual issues, and any psychiatric diagnosis that may be impacting each offending youth. The Court was also provided with recommendations regarding the youth's criminogenic risks and needs.

Other available file information included demographic data, predisposition reports, and collateral reports. Following the review of each file, the PCL:YV items were coded on a 3-point scale, in which 2 indicated a reasonable match, 1 indicated that the item applied to some degree, and, 0 indicated that the item did not apply. Information missing was coded as an "omit" and then prorated by using the Prorating Tables on the QuikScore (TM) Form (Forth et al., 2003). More than 5 omitted items (out of the possible twenty), would have resulted in disqualification of the youth from the sample, however, the Section 13 Assessment proved to be rich in information, and this action was not necessary. Each of the 20-items in the PCL:YV is described in detail in the Rating Booklet (Forth et al., 2003).

The total score was determined by summing the rating of the 20-items. The total score on the PCL:YV ranged from 0 to 40 with higher numbers reflecting the archetypical psychopathic personality (Forth et al., 2003). The presence of psychopathic characteristics in each youth can be identified on a continuum. While there is no diagnostic cutoff, an arbitrary score of 30 has been consistently used in adult research (Forth et al., 2003; Hare, 2003), while

the cut-off scores for capturing high psychopathic traits in youth has been between the low 20's to 30.

The YLS/CMI had been previously completed by probation workers on each youth in the sample. Both YLS/CMI and recidivism data were previously entered into the SPSS computer program. One final procedure that needs to be addressed is the determination of an acceptable level of predictive validity. A decision was made regarding the cut-off point of $\geq .60$ for the Area Under the Curve (AUC), which is similar to that of previous studies. Rice and Harris (1995) used an AUC $\geq .70$ while others have found an AUC of $\geq .60$ to be satisfactory.

Outcome Variables

The total scores on the PCL:YV and the YLS/CMI were compared to the recidivism data on each youth identified in this study. The recidivism data was obtained from the Royal Canadian Military Police (RCMP) national police registry, which detailed the youth's complete criminal records. Recidivism was measured by three different outcome variables: 1) any reoffending (AR), 2) violent reoffending (VR), and, 3) time to new offence. The classification of violent offences used in the present study has been described in previous research concerning adult offenders. McEachran (2001) used other researcher's classifications (see Gretton, 1998), for defining a violent offence; violent offences included murder, manslaughter, attempted murder, assault, aggravated assault, assault with weapon, robbery, kidnapping, possession and/or use of a weapon, and arson. All other offences are considered non-violent.

Results

Interrater Reliability

To ensure accuracy and consistency of coding, interrater reliability was assessed. Two raters coded the same, randomly selected, twenty-four cases from the sample. The results are presented in Table 1. Twenty-four cases out of the total sample of 102 were used for comparison by selecting every fourth to fifth case. The list was composed of the names of youth consecutively referred for assessment from March 1996 to October 2000.

Interrater reliability was calculated using interclass correlation coefficients (ICCs). According to Bartko (1976), ICCs are a conservative approach to measuring interrater reliability. ICC is calculated using relative ranking and absolute values, and estimates correlation of scores as well as accounting for differing anchor points between raters.

In calculating the absolute agreement, the two raters had a mean score of 16.2 (SD = 1.7), matching 81% of the time on the instrument's 20 items. ICC agreement of .92 for the Total Score is consistent with the results available in recent research. For instance, research using file audit only procedures report ICCs ranging from .85 (n = 36; McEachran, 2001) to .93 (n = 30; Jack, 2000; cited in Forth et al., 2003). The present study reports similar results for Factor 1, 2, and 4 with ICC agreements of 0.88, 0.88, and 0.89, respectively. Factor 3 was much lower, with an ICC agreement of only 0.65. This is perhaps reflective of difficulties in coding certain items in the file review that were not detailed in the assessment. For instance, the items in Factor 3, the Behavioural domain, that were not consistently coded by the raters, were parasitic orientation, lacking goals, and stimulation seeking. The overall high rater agreement, however, in the three studies noted above is considered to be the result of careful training protocol and practice with

Table 1

Interrater Reliability of the PCL:YV Total and Factor Scores

Measure	Interrater Reliability (ICC)
PCL:YV	
Factor 1	0.88
Factor 2	0.88
Factor 3	0.65
Factor 4	0.89
Total Score	0.92

Note: n=24; ICC= average-measure interclass coefficient

the instrument prior to use. Forth et al. (2003) recommends this approach in using the instrument due to legal and social ramifications for youth identified with psychopathic traits.

Previous research recommends that for comparison analyses, independent raters code and score assessment tools, namely the PCL:YV and the YLS/CMI (Forth et al., 2003). Otherwise, rater bias could inadvertently occur as a high scoring youth may elicit a higher score on the subsequent tool. That is, the rater may score the first instrument, and then subsequently over-score the second instrument, based on his/her predetermined perception that the youth is high risk. Likewise, a similar occurrence may take place with low scoring youth, thus eliciting low scores on the second instrument. This methodological issue was addressed in the present study as the coding and scoring of the YLS/CMI was previously completed for this sample by a separate research team (Schmidt et al., in press).

The Schmidt et al. (in press) study, found interrater reliability for the YLS/CMI to be well within acceptable limits. All the findings were statistically significant. ICCs reported for the sub-scales ranged from .61 for Peer Relations to .85 for Education (Schmidt et al., in press). The results of reliability and validity of the YLS/CMI support the instrument as an appropriate tool for the purpose and setting for which it was designed.

Demographic Information

The sample participants had a mean age of 14.6 (SD = 1.0, range = 12.0 to 16.8). The gender composition of the sample consisted of 64 (62.7%) males and 38 (37.3%) females. Ethnic representation included both non-Aboriginal and Aboriginal youth (i.e., those youth identified as having a least one parent of Aboriginal decent). This sample included 74 (72.5%) non-Aboriginal youth and 28 (27.5%) Aboriginal youth.

The participants included 47 (46.1%) with a history of past criminal charges. Both males and females had a similar history of any type of past criminal charges; (43% and 50%, respectively), as well as a similar history of past violent criminal charges, (25% and 26%, respectively).

Descriptive Statistics

Descriptive statistics for the PCL:YV are presented in Table 2. Included are the subscores and total scores and the re-offending indices for male, female and total sample. As one of the central parts of this study is gender, the comparison in this section will be mainly focused on this subgroup. PCL:YV total scores ranged from 4 to 38, out of a possible 0 to 40, with a mean of 22.2 (SD = 6.7). The total PCL:YV scores and all subscale scores were fairly consistent in comparing gender. The total mean score for male offenders was slightly higher at 22.4 (SD = 7.3) than female offenders, 21.8 (SD = 5.9). Forth et al. (2003), noted this pattern in previous research studies on youth, and a similar pattern has been well-established in adult populations.

As discussed by Forth et al. (2003), PCL:YV scores tend to vary considerably depending on setting. For instance, institutionalized samples (youth sentenced to secure correctional facilities or inpatient facilities) produce the highest scores given that the crimes are often repetitive, and/or, violent in nature. Probation, or open custody youth, or those arrested and referred for outpatient evaluation are next in order. Clinic samples (conduct-disordered youth attending treatment programs), and community samples (non-delinquent youth) present with relatively lower scores. In the PCL:YV Technical Manual (Forth et al., 2003), data from 19 combined studies present institutional youth with a weighted mean score of 24.42; probation youth displayed less psychopathic characteristics with a weighted mean of 20.11; clinic youth

Table 2

Descriptive Statistics for the Psychopathy Checklist: Youth Version Subscales, Any Re-offences and Violent Re-offences by Total Sample and Gender

	Total (*N*=102)	Male (*n*= 64)	Female (*n*=38)
Factor 1- Interpersonal	1.9 (1.8)	2.2 (2.0)	1.5 (1.5)
Factor 2- Affective	3.7 (2.0)	3.7 (2.0)	3.7 (1.7)
Factor 3- Behavioural	7.9 (2.5)	7.9 (2.7)	8.1 (2.4)
Factor 4- Anti-social	5.7 (2.5)	5.7 (2.8)	5.6 (2.0)
Total Score	22.2 (6.7)	22.4 (7.3)	21.8 (5.9)
Any Re-offending (%)	47.1	51.6	39.5
Violent Re-offending (%)	26.5	32.8	15.8

Note: Standard deviation in parentheses

had a weighted mean score of 16.95; and, community youth with almost no psychopathic resemblance, scored a weighted mean of 3.21. The results of the present study would fall between the institutional and probation samples in the above studies. The total sample mean score of 22.2 (SD = 6.7) is somewhat higher than the clinic samples of other research, which may be accounted for by the richly detailed, Section 13 assessments.

At present, there is virtually no data available for comparing female offending youth and their mean scores from the setting described in this present study. Table 2 shows that the PCL:YV Factor scores reflect similarities across gender including mean subscores and mean total scores. The one noteworthy result is the low scores obtained for the Factor 1, Interpersonal Subscale. The mean subscale score (out of a possible score of 8) on Factor 1 was 1.9 (SD = 1.8) for total sample; 2.2 (SD = 2.0) for males; and, 1.5 (SD = 1.5) for females. While the reason behind this remains speculative, one consideration is the relative difficulty in assessing Factor 1, Interpersonal traits (impression management, grandiosity, pathological lying, manipulation for personal gain), for both female and male youth. Regarding the re-offending indices, Table 2 demonstrates that male youth (51.6%) have a higher number of any type of re-offences (AR) than female youth (39.5%), and a higher percentage of males (32.8%) compared to females (15.8%) were subsequently charged and convicted of a violent re-offence (VR).

As shown in Tables 3 and 4, the classifications of psychopathic traits were divided into low (0 – 19), moderate (20 – 29), and high (30 – 40) categories. The cut-off points for each category were similar to that used in previous research pertaining to the PCL:VY (Forth, 2003). Both Tables 3 and 4 demonstrate that the majority of youth fall in the moderate psychopathic range with scores ranging from 20 to 29. In fact, 53% (54 out of 102) fell within this category. The low psychopathic group, designated by a score of 0 to 19, accounted for 35% (36 out of 102) youth. Only 11.8% (12 out of 102) of the sample fell in the high psychopathic group, representing youth with a score ranging from 30 to 40. Table 3 presents information comparing the category classifications to the re-offence measures by gender. It clearly identifies that the

Table 3

Re-offence Measures by Psychopathy Categories (Low, Moderate, High Scores) and Gender

	Low (0 – 19)			Moderate (20 - 29)			High (30-40)		
	Male (*n*=23)	Female (*n*=13)	Total (*n*=36)	Male (*n*=30)	Female (*n*=24)	Total (*n*=54)	Male (*n*=11)	Female (*n*=1)	Total (*n*=12)
Any Re-offence (%)	26	31	28	57	46	52	91	0	83
Violent Re-offence (%)	9	15	11	43	17	32	55	0	50

Note: N =102

Table 4

Re-offence Measures by Psychopathy Categories (Low, Moderate, and High Scores) and Ethnicity

	Low (0 – 19)			Moderate (20 – 29)			High (30-40)		
	Non-Native (*n*=30)	Native (*n*=6)	Total (*n*=36)	Non-Native (*n*=37)	Native (*n*=17)	Total (*n*=54)	Non-Native (*n*=7)	Native (*n*=5)	Total (*n*=12)
Any Re-offence (%)	27	33	28	49	59	52	86	80	83
Violent Re-offence (%)	10	16	11	22	53	32	29	80	50

Note: N =102

high psychopathic males encountered AR (91%) and VR (55%) at high rates, as well as the total sample. There was only one female in this high category from the total sample, and this individual did not reoffend during the recidivism time frame. Table 4 presents information comparing the category classifications to the re-offence measures by ethnicity. Identified is that high scoring Aboriginal youth with psychopathic traits encountered AR (80%) and VR (80%) at high rates.

Chi-square analyses were completed to examine recidivism across PCL:YV severity ratings for Total Sample, gender, and ethnicity, as seen in Tables 3 and 4. These results revealed significant differences in male youth recidivism by PCL:YV category for AR and VR recidivism, $\chi^2(2,n=102)=13.1$, $p<.001$, and, $\chi^2(2,n=102)=9.9$, $p<.007$, respectively. As well, a significant difference was observed for Total Sample recidivism across AR, $\chi^2(2,n=102)=12.20$, $p<.002$, and VR, $\chi^2(2,n=102)=8.5$, $p<.01$ outcomes. Due to the low categorical frequency count for girls and Aboriginal youth, chi-square analyses could not be completed.

T-test analyses showed no significant differences of the means across gender for PCL:YV Factor 1 scores, $t(100)=1.9$, $p>.064$; Factor 2 scores $t(100)=-.062$, $p>.95$; Factor 3 scores $t(100)=-.40$, $p>.70$; Factor 4 scores, $t(100)=.35$, $p>.73$; and, Total scores, $t(100)=.41$, $p>.69$.

Table 5 presents information on the frequency of item endorsement using the PCL:YV. Although all twenty items were consistently coded, three items stand out in that the files did not contain enough information to make any determination of a score of 0, 1, or 2. As a result these three items were coded as "missing" and then prorated as described in the Technical Manual of the PCL:YV, (Forth et al., 2003). The three items were manipulation for personal gain, parasitic orientation, and impersonal sexual behaviours.

Table 5

Frequency of Item Endorsement on the Psychopathy Checklist: Youth Version (N=105)

Item	Frequency of Score 0	1	2	Missing
1. Impression Management	78	24	3	0
2. Grandiose Sense of Self-worth	73	22	10	0
3. Stimulation Seeking	13	19	73	0
4. Pathological Lying	61	32	12	0
5. Manipulation for Personal Gain	9	27	13	56
6. Lack of Remorse	21	20	63	1
7. Shallow Affect	99	2	4	0
8. Callous/Lack of Empathy	40	52	12	1
9. Parasitic Orientation	25	2	1	77
10. Poor Anger Controls	14	6	85	0
11. Impersonal Sexual Behaviour	10	3	38	54
12. Early Behaviour Problems	55	14	35	1
13. Lacks Goals	10	17	77	1
14. Impulsivity	8	11	86	0
15. Irresponsibility	10	18	77	0
16. Failure to Accept Responsibility for Actions	19	16	70	0
17. Unstable Interpersonal Relationships	10	17	77	1
18. Serious Criminal Behaviour	12	21	72	0
19. Serious Violations of Conditional Release	49	22	34	0
20. Criminal Versatility	48	41	16	0

Correlations

A correlation analysis was conducted to analyze the strength of the relationships between the different variables. Table 6 presents the correlations between Total Score of the PCL:YV and the re-offending indices for the total sample, gender and ethnicity. Four indicies were used in assessing the predictive validity of the PCL:YV scores: AR, VR, number of new offences and time to new offence (months).

The results of this analysis revealed a significant positive correlation between the PCL:YV and presence of AR ($r=.40$, $p<.01$), VR ($r=.35$, $p<.01$), and number of re-offence convictions ($r=.40$, $p<.01$) for total sample. A significant negative correlation was obtained for months without a re-offence ($r=-.35$, $p<.01$) for the total sample. Similarly significant correlations were found for male, Aboriginal, and non-Aboriginal groups. For females, the analysis revealed non-significant positive correlations for AR ($r = .15$), VR ($r = .14$), and number of re-offence convictions ($r=.20$). A non-significant negative correlation was present for months without a re-offence ($r=-.16$).

Receiver Operator Characteristics

Receiver operating characteristics (ROCs) were used to assess the predictive validity of the PCL:YV. Rice and Harris (1995) have shown the superiority of ROC analyses over more traditional analyses. ROC analyses are meaningful means of determining the strength of predictive validity, as they are relatively independent of base rates and selection ratios. When base rates are low in the population, statistical techniques such as discriminant analyses usually cannot classify people more accurately than the absence of the base rate. The ROC curve plots the sensitivity (true positive rate) of the predictor as a function of specificity (false positive rate) in the form a curve. This occurs with a straight diagonal line from the bottom left corner to the

Table 6

Correlations Between Psychopathy Checklist: Youth Version Total Scores and Recidivism Outcome Measures by Gender, Ethnicity and Total Sample

Outcome Measures	Total (*N*=102)	Male (*n*=64)	Female (*n*=38)	Native (*n*=28)	Non-native (*n*=74)
Presence of Any Re-offence	.40**	.52**	.15	.44*	.37**
Presence of Violent Re-offence	.35**	.42**	.14	.46*	.27*
Number of Months Without a Re-offence	-.35**	-.44**	-.16	-.20	-.38**
Number of Re-offence Convictions	.40**	.47**	.20	.40*	.40**

Note: *p < .05; **p < .01

top right corner reflecting an area under the curve (AUC) of 50%. Simply put, the larger the AUC, the better the prediction. Based on a fixed cut-off score, the AUC defines the probability that a randomly selected violent offender will become violent compared to a non-violent offender. In achieving an AUC of 0, a perfect negative classification is obtained, while an AUC of .5 would be chance ("50/50"), and 1.0 would be a perfect prediction.

Table 7 presents the AUCs for the overall PCL:YV and YLS/CMI Total Scores. The results for the PCL:YV show a value of 0.74 for AR, and a value of 0.73 for VR, demonstrating strong predictive validity of the instrument. The AUC for males resulted in a value of 0.81 for AR and 0.77 for VR. Similar findings were present for the ethnic subgroups, however, the values for the female subgroup were substantially lower, and not much better than chance ("50/50"). In this case, a value of 0.57 was present for both AR and VR on the PCL:YV. These results suggest that the PCL:YV instrument can predict AR and VR for each subgroup, with the exception of females.

In comparing the two different instruments the analyses showed the AUC values for the YLS/CMI Total Score was 0.60 for AR, and 0.63 for VR. The AUC observed in all categories was much less than the PCL:YV indicating the PCL:YV is a stronger predictive tool, with the exception of the female subgroup. There were similar results for AR, but the YLS/CMI out-preformed the PCL:YV for females in predictive validity on the VR values (0.79 and 0.57 values, respectively).

Table 7

Receiver Operating Characteristic (ROC) Values for the Psychopathy Checklist: Youth Version and Youth Level of Service/ Case Management Inventory by Gender, Ethnicity, and Total Sample

	Any Re-offence (AR)		Violent Re-offence (VR)	
	PCL:YV	YLS/CMI	PCL:YV	YLS/CMI
Male	0.81	0.64	0.77	0.63
Female	0.57	0.58	0.57	0.79
Native	0.76	0.63	0.78	0.65
Non-Native	0.72	0.57	0.68	0.57
Total	0.74	0.60	0.73	0.63

Note: N=102

Discussion

Understanding Psychopathic Traits in Youth

Prevalence of Psychopathy in Youth and the General Population

The base rate in the general population is estimated at 1% for adult psychopathic individuals (Hare, 1996, as cited in O'Neil, Lidz, & Heibrun, 2003). The most commonly studied setting for psychopathic individuals has been adult forensic and correctional institutions, where the base rate is considerably higher, at an estimated 10 to 20% (Hare, 2003).

The base rate of 11.8% for youth with psychopathic traits was calculated for the present community-based, adolescent sample. That is, 12 youth, out of 102 in the current sample, fell into the high psychopathic traits category, indicated by a score above the arbitrary cut-off point of 30. The sample's base rate is similar to that reported by Salekin et al. (2001), who found a base rate of 8.9%. Similarly, Campbell, Porter, and Santor (2004) reported a base rate of 9.4% on incarcerated youth, using a lowered cut-off point of 25. Previous literature has shown that young offender populations in Canadian custodial institutions have a wide range of base rates, up to and including 34 to 38% (Gretton, 1998). Referring back to the base rate in the general adult population, and remembering the stability of the construct across developmental stages, one can see that individuals with psychopathic traits are overly-represented in criminal activity and the youth justice system.

Discussion on Research Questions

The objective of the present study was to address the following questions:

1) Are the PCL:YV and the YLS/CMI instruments able to predict recidivism as defined by a) any reoffending , b) violent reoffending, and, c) time to new offence?

2) Is the predictive validity of the PCL:YV and the YLS/CMI robust across gender and ethnicity?

Comparing Predictive Validity and Outcome Measures

The findings in the current study are similar in some respects to the literature, yet different as well. Overall, the research to date has shown inconsistent results around predicting risk of dangerousness and consistently acknowledges the difficulties involved in this process. One of the key considerations is that adolescence is a time of profound change and "transient features" need to be considered due to the false positive problem. As a result of this concern, recommendations support updating assessments on youth at regular intervals.

Notwithstanding the above, research efforts continue to grapple with the complexities of determining risk of recidivism. In the present study the PCL:YV was seen as a meaningful predictor of both AR and VR. The evidence is supported by the ROC analyses, showing AUC's for overall PCL:YV total scores ranging in values from 0.73 to 0.74 for both AR and VR. The predictive ability of the instrument was exceptionally strong for the male sub-group, showing AUC values ranging from 0.77 to 0.81.

In comparing the predictive validity of the PCL:YV and the YLS/CMI, some interesting results surface. For instance, the ROC analyses for the YLS/CMI showed that the AUC values were well within acceptable limits, but did not meet the high level of predictability of the PCL:YV. Specifically, the ROC analyses for the YLS/CMI total scores range in AUC values of 0.60 and 0.63 for both AR and VR, respectively. Given that the two instruments have different purposes, some varying degree of results could be expected.

The PCL:YV proved to be the superior instrument in predictive ability for AR and VR, even though it was not initially designed for this purpose. These results may suggest that there are risk factors present in the PCL:YV that may aid the understanding of recidivism (including some core psychopathic traits such as callousness and unemotionality). Also, there may be ways to improve the assessments now available for youth by further refinement of these existing instruments.

In predicting time to re-offence, the correlations between the PCL:YV total scores and recidivism outcome measures showed that the total sample, male subgroup, and non-Aboriginal

subgroup recidivated significantly in months to new re-offence. While the Aboriginal group (n = 28) received a non-significant result, this may be the result of the small number in the study. The girls also were non-significant in number of months without a re-offence. As one would expect, the increase in the PCL:YV scores, seems to be associated with a notable increase in imminence of reoffences, and failure within the community upon release from institutional settings.

In summary, the PCL:YV and YLS/CMI assessment instruments were able to predict recidivism as defined by a) any reoffending, b) violent reoffending, and, c) time to new offence. The key finding was stronger results for the total sample using the PCL:YV as compared to YLS/CMI.

Predictive Validity, Gender, and Ethnicity

The total mean scores on the PCL:YV were similar for both male and female (22.4 and 21.8 respectively; see Table 2). However, the PCL:YV scores did not predict AR or VR as well for girls as it did for boys. The limited utility of the PCL:YV in females in this study probably has to due with the fact that there was only one female in the high psychopathic trait category. The findings of AUC values of 0.57 for AR and VR for girls, suggest that these results are not much better than chance (i.e., 50/50). However, given the low sample size of female young offenders, and the lack of high scores on the PCL:YV for this group, it is not surprising that the PCL:YV was less than adequate in predicting recidivism. It is noted that the PCL:YV total score range landed in the low to moderate end, representing antisocial female youths – not psychopathic girls. Therefore, the PCL:YV, designed to identify high psychopathic traits youth, would have limited utility in the absence of female youth, scoring high on psychopathy.

Also of interest, the AUC value on the YLS/CMI was 0.79 for girls for the VR outcome measure, suggesting that the YLS/CMI is superior to the PCL:YV in predicting violence for girls. This was an unexpected result, but most likely indicative of the YLS/CMI instrument being a more generalized and comprehensive assessment of risk. These results suggest that it may make sense to combine both instruments, the PCL:YV and the YLS/CMI, for any future

analyses. This is based on the premise that non-psychopathic youths may have a high risk of recidivism, which may be captured by the YLS/CMI, but not by the PCL:YV. It is very important to note, however, that the presence of high psychopathic traits increases the relevance of the PCL:YV in the prediction of risk. An important limitation of this study is the low number of females in the sample, and the low number of female psychopathic youths (n=1). At this point, it is far too early to categorically dismiss the PCL:YV as being irrelevant for girls in the prediction of risk, even though the AUC's in Table 7 appear, at first glance, to be well below the acceptable level.

Table 3 illustrates the categories of Low, Moderate, and High PCL:YV scores and gender differences. As stated above, only one female was classified in the High category, that is, above the cut-off point of 30, reflecting prototypical "psychopathic" traits. However, it is interesting that more than 50% of the girls in the total sample placed in the Moderate category (n = 24), and from that sub-group, 46% encountered experiences of AR, and 17%, VR. This illustrates a moderately-high scoring group of females and begs the question about the arbitrary cut-off point of 30. For instance, a high scoring female in mid-20's to high-20's, who violently re-offends would not be included in the final analyses for psychopathic prototypical traits and behaviours.

Table 4 presents the re-offence measure by psychopathy categories and ethnicity. The high category reflecting higher PCL:YV scores, corresponds with increased percentages of AR and VR. For Aboriginal youth, for instance, who scored above the cut-off point 30, (n = 5), 80% were involved in both AR and VR. While this indicated a high probability of general and violent recidivism, and consistent with similarities between Aboriginal and non-Aboriginal adults (Bonta, LaPrairie, & Wallace-Capretta, 1997), the PCL:YV did not prove to be statistically significant for Aboriginal youth. These results were considered to be the related to the small sample size and warrant further investigation in future research projects. On examination of the ROC analysis, the PCL:YV proved to be an adequate predictor of AR for both Aboriginal and Non-Aboriginal youths, though slightly better for Aboriginal youths. The AUC was

substantially higher for Aboriginal youths for VR, while the Non-Aboriginal youths fell just below the cut-off. Therefore, the PCL:YV was an adequate predictor of AR and VR for both Aboriginal and Non-Aboriginal youths, but was strongest in the prediction of VR for Aboriginal youths.

In summary, the findings show significantly stronger results using the PCL:YV to predict AR and VR for males as compared to the YLS/CMI. As well, markedly weaker results were found in comparing the predictive ability of the PCL:YV for girls than for boys. This was more than likely related to the small sample size and the low number of girls in the High psychopathy group. Based on the results of this study alone, it is clearly far too early to categorically dismiss the PCL:YV as a relevant instrument to assess the risk for female adolescent youth. In regards to ethnicity, this group did not show statistical significance due to low numbers, but it is noted that the PCL:YV was generally an adequate predictor of both AR and VR in Aboriginal and Non-Aboriginal youths, but was strongest in predicting VR among Aboriginal youths. Finally, it is noted that few studies have taken into consideration these two demographic variables and that the results are preliminary, at best. Future research clearly needs to consider larger samples, and the use of different research designs.

Gender-Specific Issues

Although boys and girls share many common risk factors, current assessment instruments may not adequately capture the full scope of risks associated with young female offenders. For instance, Cunningham (2000) reports that the strongest predictor of violent recidivism in an adult female inmate population was a history of attempted suicide, and another study correlated history of self-injury with recidivism (see Blanchette, 1997). In addition, Coulson, Illacqua, Nutbrown, Giulekas, and Cudjoe (1996) suggest that cut-off points in male risk assessment instruments are not appropriate for women. Furthermore, Salekin et al. (2001) found important gender differences for youth, and suggested that the current measures may not be sensitive enough to fully detect the prototypical psychopathic traits in young female populations

Gender differences are present in recidivism data as well. In the present study, both genders had similar total and factor mean scores, reflecting commonalities in affective and behavioural dimensions. This raises the question of why the general and violent recidivism rates differ between the girls and boys? Some insight may be found in theoretical writings on gender and violent girls (see Artz, 1998; Reitsma-Street, 2000; Pearson, 1997). For instance, theories maintain that violence can be understood in terms of the socialization process; while aggressivity is encouraged in males, girls are rewarded for passivity. Society reinforces gender roles by promoting the "good girl" image and conformity. Following a "brush with the law" there may be intense pressure experienced from family or community that would lead to desistance of criminal activity.

Contradictory findings for gender have found that the PCL-R had similar prevalence, factor structure, and correlates for male and female adult offenders (see review by Vitale & Newman, 2001; as citied in Forth et al., 2003). Forth and colleagues (1996), however, examined psychopathic traits in a noncriminal population and found important differences among male and female university students. Males scored significantly higher than females, and females did not score above the diagnostic cut-off (Forth et al., 1996). To date, only six published studies compare gender in adolescent samples, with no data available on community-based or clinic-referred youth (Forth et al., 2003). Forth et al. (2003), report that the PCL:YV total scores in the six research studies, do not seem to be influenced by the young person's age, ethnicity, or gender. The current study found that that the male and female subgroups obtained similar mean scores on the PCL:YV, and that the PCL:YV was predictive of recidivism for boys. The results remain inconclusive for the girls, however, due to the low number in the psychopathic group. In the light of the above remarks, and in the absence of comparative studies, it is far too early to draw any decisive conclusions, as there is so little data available.

In summary, a coordinated research agenda may be required for female young offenders but it is far too early to emphatically state this, as contradictory evidence exists in the current risk assessment research. Based on the present research, it seems that further studies are warranted as

there is such a paucity of research in this area, and yet some clear differences are noted in the recidivism data and pathways literature. There is a small body of theoretical literature that is promoting gender-specific treatment needs and programs, and advocating for specialized services for this unique demographic group. Other research designs need to be considered, such as prospective and longitudinal studies, as retrospective design methods have limitations, especially in regards to findings on recidivism rates.

Strengths and Limitations

The current study had a number of strengths. Notably, research on young offender populations and the validation of risk assessment instruments has only recently emerged in the literature. The limited research involving the PCL:YV has primarily focussed on populations of male offending youth in incarcerated settings. The current study involved a population of youth who were clinic-referred. Notwithstanding the limitations involved using recidivism data, this study involved a longer follow-up time than usually found in offender literature, of 3½ years, and, incorporated a number of outcome measures, such as any recidivism (AR) and violent recidivism (VR). A further strength included the use of an independent research team to code and score the YLS/CMI. Using one team to code both instruments has been previously noted in the literature as a concern, due to possible contamination in collecting data (Forth et al., 2003).

There were a number of limitations in this research study. The primary issue was the fact that the size of the sample for female youths and Aboriginal youths was low in number. As well only one female youth landed in the high psychopathy category. This limited the analyses for female youth as well as the interpretation of the results. Another limitation relates to the retrospective design of this research. This study's procedure included an archival file review, which limits the study to file information only. Researchers are dependent on the quality of the

assessments and vulnerable to biases in the reports. Missing information is often a significant issue, and inferences may be unavoidable in the coding process. This, unfortunately, could result in the collection of inaccurate data. Although missing information was not an obstacle in this study, it remains an important research consideration. As is stated, the research model itself has limitations and alternative designs are recommended in future studies.

Another major limitation in doing research of this nature is the accuracy of the recidivism data (Nouwens, Motiuk, & Boe, 1993). For instance, recidivism information is based on official court records. These documents record all crimes in which a youth has made an appearance in court and subsequently convicted with an offence. As Canadian Federal law oversees all provincial jurisdictions, Canadian-based research has advantages (as compared to US counterparts), as there can be cross-jurisdictional checks. There is a cautionary note, however, as recidivism records do not tell the whole story. For instance, some youth have a variety of encounters with police that go officially unrecorded. For example, following an illegal activity, a youth may receive a police or Crown warning; he/she may be sent to an Alternative Measures program, acquitted or found not-guilty at trial, or receive a suspended sentence. As well, victims may be reluctant to report crime. As a result, far more general and violent crimes are committed than those officially recorded. While relying on official recidivism data for research purposes the limitations of these processes must be considered. One way to surpass this problematic area would be research designs that include self-reports from youth. For instance, previous studies involving girls and violent behaviours (Artz, 1998) have found that female youth self-report more frequent violent activity than reflected in the official statistics.

Summary and Conclusion

Identifying youth at risk for violent behaviour is a significant concern for social workers in the youth justice sector. Predicting dangerousness is a central function of newly designed risk assessment instruments now available for use in clinical social work practice. Practitioners need to be informed about reliability and validity of youth assessment protocols, considering the suitability and appropriateness across diverse populations. As a result, risk assessment instruments continue to be actively studied. Standardized assessments benefit service delivery by aiding in the decision-making process, with structured and consistent approaches to assessment, intervention, and prevention services.

Adult risk assessment instruments routinely incorporate psychopathy into evaluations. This is largely due to the strong proven record of demonstrated reliability and validity in predicting risk for violence and recidivism. The relevance of psychopathy to adolescence, however, has been less understood and often vigorously debated. Highlighting the present knowledge available, we note that criminal patterns include an early onset, higher frequency and severity, and the stability of offending throughout the adolescent years.

Psychopathic youth are particularly difficult to manage in the community, have increased institutional incidents involving reactive and instrumental violence, and escapes from custody. Psychopathic traits youth are costly for society and disproportionately responsible for a large percentage of crime. Rehabilitation efforts have been limited due to the lack of treatment compliance and overall lack of understanding of best practices by clinicians. Implications for service delivery include the need for early intervention and increased community resources in order to manage risk in community. As well, program development and evaluation needs to be systematically in place to appraise the impact of service delivery and identify interventions that have successful outcomes. Finally, the youth justice workers need specialized training. Otherwise, the manipulative, deceptive, and charming presentation of the youth may result in misreading the potential risk for dangerousness.

Future directions need to include further studies on psychopathy and gender, ethnically diverse groups, younger youth, and community youth. The current study identified that the PCL:YV differentiated for risk of offending male, non-Aboriginal youths, and Aboriginal youths. The findings appear to support the PCL:YV as having an important function in assessing for risk, needs and responsivity of youths in the justice system, but further understanding of the relationship between psychopathy and special subgroups appears to be warranted.

Developing an understanding of protective factors may provide some insight into reasons why youth spontaneously cease offending behaviours. This, in turn, may help in the development of solutions that provide buffering, such as strengths-oriented, rehabilitative programs. As well, prospective research and longitudinal studies are needed to understand how the psychopathic disorder progresses through time. Further research is needed in order to develop insight into the life course of the disorder, and answer pressing questions around the suitability of risk assessment instrument in aiding troubled youth from diverse backgrounds.

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