Running Head: RISK AND NEED FACTORS

Assessment of risk and need factors and service use in diverted youth

by

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Abstract

The purpose of the present study was to assess the risk and need factors in a sample of youth that have been diverted from the criminal justice system at the precharge stage. These factors were also examined among children under the age of 12 who commit criminal acts. Risk and need factors were evaluated from a developmental perspective to determine if younger children differ from older youths in these regards. The first goal of the current study was to establish the psychometric properties of the Youth Level of Service/Case Management Inventory (YLS/CMI) and the YLS/CMI: Screening Version. Findings showed the YLS/CMI and YLS/CMI: Screening Version were reliable and valid assessments of risk and need factors. Results showed that diverted youths displayed a number of specific risk and need factors that placed them at risk to reoffend. Moreover, diverted youths differed significantly from children under the age of 12 in many respects. It was found that children under the age of 12 had higher risk levels and more diversified needs, presenting at clinical levels and with comorbid symptoms in comparison to diverted youths. A third purpose of this investigation was to survey community placements to which youth were diverted or referred. Results found that children under the age of 12 used more services than diverted youths over their lifetime and in the past year. Finally, the current study compared the risk and need factors and recidivism rates of youth who have been diverted by police to a group of youth who have been charged by police during the same time period. Results showed that charged youths had higher risk/need levels than diverted youths. Moreover, charged youths reoffended at a faster rate than the diverted group. Finally, the current study showed that a number of

standardized assessment measures were useful in the prediction of reoffending. The findings of the current study have implications for theory, research, and practice.

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Assessment of risk and need factors and service use in diverted youth

Juvenile offending is a social issue that continues to receive attention from the public, policy makers, and researchers. The main focus of concern among researchers revolves around issues of prevention and intervention. In order to prevent the onset and recurrence of criminal behaviour among young people, one must be able to identify those risk factors that are directly associated with criminal activity and these factors must be targeted using appropriate interventions.

Researchers have contributed substantial knowledge regarding the correlates and predictors of juvenile offending using increasingly sophisticated methodologies (Hawkins, Herrenkohl, Farrington, Brewer, Catalano, & Harachi, 1998; Lipsey & Derzon, 1998; Simourd & Andrews, 1994). Moreover, researchers have been successful in identifying effective interventions that appear to reduce the likelihood of future criminal activity (Andrews, Zinger, Hoge, Bonta, Gendreau, & Cullen, 1990; Lipsey, 1995). Despite this accumulating knowledge on what works in reducing juvenile offending, public concern remains about the levels of youth crime. Current statistics regarding youth violent crime suggest that work is still needed in this area.

The overall purpose of the current study was to identify risk and need factors and service use among young people who have been in conflict with the law in the Ottawa area. Young people who have been diverted from the criminal justice system at the precharge stage were of particular interest due to the implementation of the new *Youth Criminal Justice Act*. Offending behaviour of children under the age of 12 was also of interest because this population was in a unique position to obtain services through the Ottawa Police Service.

Juvenile Crime Statistics

Logan (2001) and the Solicitor General Canada (2001) present the most recent official crime statistics in Canada from the Uniform Crime Reporting Survey. Table 1 displays the rate of youths charged with Criminal Code incidents in Canada from 1990 to 2000. Table 1 shows that the rate of youths aged 12 to 17 charged with criminal offences increased slightly (+1%) in 2000, after having decreased in the previous eight years. The rate of youths charged with property crimes showed a similar trend to that found for all crimes, decreasing for the ninth straight year in 2000 (-4%). The rate for other Criminal Code offences had a variable pattern over the last decade then increased in 2000 (+6%).

After four consecutive years of decline (1996-1999), the rate of youths charged with violent crime increased 7% in 2000. This was the largest yearly increase since 1991. The youth violent crime rate in 2000 is 33% higher than 10 years ago (Logan, 2001). Logan (2001) reported that over the last decade, the increase in the rate of female youths charged with violent crimes (+61%) was more than twofold than that for male youths (+25%). In 2000, the rate of male youths charged with violent crime (1,342 per 100,000) is still almost three times that of female youths (481 per 100,000), but rates for male and female youths increased by about the same amount from the previous year's rates.

Logan (2001) further reported that property crimes accounted for 46% of youth crime, compared to only 33% of adult crime. An additional 22% of youths were charged with violent crimes, compared to 31% of adults. The distribution of property crimes to violent crimes among youths has changed from a decade ago when only 12% of youths were charged with violent crimes and 66% were charged with property crimes. Logan indicates that increases in youths charged with common assault and decreases in charges

Table 1

Juvenile Charge Rates (per 100,000) in Canada from 1990 to 2000

Offence type	Year										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Criminal Code	5,609	6,259	5,869	5,444	5,071	5,056	4,939	4,543	4,387	4,072	4,114
Males	8,957	9,927	9,142	8,395	7,872	7,720	7,506	6,878	6,600	6,129	6,157
Females	2,075	2,386	2,408	2,323	2,110	2,242	2,230	2,078	2,050	1,898	1,954
Total violent crime	695	832	869	921	917	940	932	909	906	862	923
Males	1,071	1,290	1,328	1,367	1,381	1,410	1,386	1,321	1,314	1,254	1,342
Females	299	349	383	450	426	444	452	473	475	445	481
Total property crime	3,712	4,031	3,627	3,217	2,921	2,854	2,759	2,391	2,209	1,960	1,886
Males	5,906	6,367	5,617	4,944	4,509	4,319	4,183	3,644	3,350	2,983	2,820
Females	1,396	1,564	1,521	1,390	1,243	1,306	1,256	1,069	1,004	913	900
Total other Criminal Code	1,202	1,396	1,373	1,305	1,233	1,262	1,249	1,243	1,272	1,234	1,304
Males	1,980	2,270	2,198	2,083	1,982	1,990	1,937	1,913	1,936	1,892	1,996
Females	381	473	504	483	441	492	522	536	571	541	574

Note. Adapted from “Crime statistics in Canada, 2000,” by R. Logan, 2001, p. 20. Copyright 2001 by Minister of Industry and

“Corrections and conditional release statistical overview,” by Solicitor General Canada, 2001, p. 20. Copyright 2001 by Public

Works and Government Services Canada.

for theft and breaking and entering account for much of this shift. In 2000, the remaining 32% of youths were charged with other Criminal Code offences, such as mischief and offences against the administration of justice (e.g., bail violations or escapes from custody).

In the last eight years, the trends in police data have been consistent with the trends in court data showing decreasing involvement of youths in the criminal justice system. Specifically, from 1992 to 1999 the rate of youths charged with Criminal Code offences declined by 31%, a pattern reflected in the rate of youth court cases involving Criminal Code offences, which declined by 26% (Sudworth & deSouza, 2001). Sudworth and deSouza suggested that this trend may be due in part to the increased use of police diversion and alternative measures for youth committing less serious crimes.

Young persons in conflict with the law may be formally charged or they may be dealt with informally. The decision regarding whether or not to lay a charge is influenced by many factors, one of which is the eligibility of the youth for an alternative measures program (Tremblay, 1999). In addition, when dealing with first-time offenders involved in minor incidents, a police officer may choose to deal with a youth informally by giving the individual a warning or discussing the incident with the youth's parents. Therefore, charge rates are influenced by the extent to which alternative measures are used, whether the alternative measure is applied at the pre- or postcharge stage, and the extent to which youths are dealt with informally by police (Tremblay, 1999).

Since the enactment of the *Young Offenders Act (YOA)* in 1984, a growing number of youths have been diverted from the formal justice system by some form of diversion instead of the laying of a charge (Tremblay, 2000). Therefore, in order to gauge

the extent of youth involvement in crime, it is important to examine the rate of youths not charged. It is possible that the observed decline in the number of youths charged over the past few years could be explained by a corresponding increase in the number of youths dealt with by other means such as alternative measures or warnings (Tremblay, 2000).

According to the Uniform Crime Reporting Survey scoring rules, police must categorize why a case was cleared without laying formal charges. In 1999, Tremblay (2000) reported that police discretion, which includes warnings and cautions, accounted for the largest proportion of those not charged (41%). The next most frequent reasons were referral to alternative measures programs (23%) and the complainant refusing to press charges (23%). Further explanations for why charges were not laid included reasons that were beyond the control of the police department (7%; e.g., policies) and the accused had other criminal charges (6%).

Tremblay (2000) presents data that indicate that the rate of youths not charged dropped in 1999 (-7%). Similar to the case for youths charged in 1999 (refer to Table 1), all major categories of youths not charged in the same year decreased: violent crime (-4%), property crime (-11%), and other Criminal Code offences (-3%). Overall, the rate of youths not charged was more than 2,400 per 100,000 youths, corresponding to a ratio of 2 youths not charged for every 3 youths charged (Tremblay, 2000). Tremblay suggests that these figures for youths not charged appear to substantiate the drops in youth crime as measured by the number of youths charged by police in 1999.

Tremblay (2000) cautioned that data on youths not charged is underreported because certain police services do not collect any information on such youths. Moreover, given that less serious offences tend to be committed by youths, these offences are most

susceptible to not being formally documented and declared by the police. It should be noted that the data presented on charged youths are also an underrepresentation of the true incidence of crime due to failure to report on the part of victims.

In addition to crime committed by youths aged 12 to 17, there is ample public concern surrounding the criminal activity of children under the age of 12. According to the *YOA*, the minimum age of criminal responsibility is 12, which means that children under 12 cannot be charged by police. Instead, criminal behaviour of these children is dealt with under provincial and territorial child welfare laws. In cases involving children under age 12 who commit criminal acts, referrals are usually made to child welfare or mental health agencies that can provide treatment that is age-appropriate and family-oriented (Stevenson, Tufts, Hendrick, & Kowalski, 1998).

Although the police cannot charge children under age 12, suspected involvement in criminal activity is reported to the Revised Uniform Crime Reporting Survey. Police statistics do not capture all of the incidents that children under age 12 engage in, but they can provide a general picture of the criminal activities of this age group. Clark and O'Reilly-Fleming (1994) report data from the Uniform Crime Report, which was based on 4,757 children under age 12 for the years 1988 to 1992. It was reported that the accused child under the age of 12 constitutes approximately 2% of total national offences, while young offenders aged 12 through 17 represent 21% of that total, with the remaining 78% being adult offenders. Children under age 12 were predominantly accused of property offences: mischief (41%), theft under (23%), and break and enter (19%). A very small proportion committed serious police-reported crime: 1% were alleged to have sexually assaulted someone, 1% were accused of using weapons in an assault, 5% of

accused were linked to common assaults, and 3% were considered to have committed arson.

Clark and O'Reilly-Fleming (1994) also reported that across all ages, roughly 90% of the accused children under age 12 were males. The majority of under age 12 children, approximately 70% of males and females, fell within the 10- and 11-year old category. A further 27% were 8 and 9 year olds and 13% were 7 years of age and under.

In 1997, data from police records indicated that children under age 12 comprised 5% of the persons accused of a crime who were less than 18 years of age, with the majority of these being 10- and 11-year old children (Stevenson et al., 1998). Stevenson et al. report that in comparison to older youths, the under age 12 group appear to commit a higher proportion of property crimes and a lower proportion of other offences.

Specifically, in 1997, more than 80% of children under age 12 in conflict with the law were suspected of committing property crimes, 16% were suspected of violent crimes, and 3% were suspected of other offences. The corresponding figures in 1997 for 12- to 17-year-olds were 63%, 16%, and 21%, respectively. Among the children who were suspected of property crime, 46% were suspected of theft under \$5,000, 35% of mischief and 11% of break and enter. Of all children suspected of a violent offence, more than 65% were suspected of common assault, 8% were suspected of sexual assaults and 7% of robberies.

Stevenson et al. (1998) further report that boys were the predominant suspects in children under age 12 in 1997 (82%), which was slightly higher than the percentage of charged male youths aged 12 to 17 (78%). Consistent with the data on youths, boys were involved in more violent incidents and fewer property incidents than girls. Among the

under age 12 boys, 80% were suspected of property crimes, 17% for violent crimes, and 3% for other offences. Among the under 12 girls, 85% were suspected of property crimes, 12% for violent crimes, and 3% for other offences.

Consistent with the 1997 data, in 1999, of all persons under the age of 18 suspected of a crime, 5% were under age 12, with the majority (62%) being 10- and 11-year old children (Minister of Industry, 2001). The more recent data suggest that there has been a shift in the distribution of offences among children under the age of 12 towards a higher proportion of violent offences being committed by this age group. Specifically, in 1999, 75% of suspected children under age 12 were suspected of committing property crimes, 22% were suspected of violent crimes, and 3% were suspected of other offences (Minister of Industry, 2001).

In summary, the data suggest that there has been little change in recent years in terms of the proportion of criminal incidents that involve children under age 12 in Canada (Roberts, 1999). Moreover, the trends have remained consistent with respect to children under the age of 12 committing substantially more nonviolent crime and a small percentage engaging in serious incidents. However, the most recent data suggest that children in this age group are committing proportionally more violent offences. Results from official statistics reveal that youth aged 12 to 17 are contributing to a significant proportion of crime. Although decreases in the crime trend have been noted over the past few years, with the exception of 2000, juvenile offending still remains at a level to cause social concern.

Previous research has shown that 61% of child delinquents later become chronic offenders (Blumstein, Farrington, & Moitra, 1985). In light of this finding, the cost to

victims and society becomes apparent. As an example, Cohen (1998) calculated that the cost to American society of a single high-risk young person engaging in four years of crime as a juvenile and 10 years of crime as an adult. Cohen's estimates range from \$1.7 million to \$2.3 million. These findings point to a need to focus efforts on the prevention and intervention of criminal activity with children under the age of 12 who may become further entrenched in a criminal lifestyle and on those offenders who have already penetrated the juvenile justice system. Various theoretical perspectives have been proposed by researchers in order to explain and understand the causes and correlates of child and adolescent delinquency, and to inform policy decisions regarding prevention and intervention.

Theories of Delinquency

Traditional theories of delinquency have been proposed across five broad categories: classical, biological, psychodynamic, control, and economic/sociological (for a review see Andrews & Bonta, 1998 and Hoge, 2001a). The traditional theories have been criticized because of their tendency to focus on one level of analysis, be it social forces, interpersonal dynamics, or psychological processes (Hoge, 2001a). More recent theoretical developments have been proposed that attempt to integrate a range of potential causal variables into the analysis of criminal behaviour (Hoge & Andrews, 1996a). An additional advantage of many contemporary theories is that they have a developmental focus; thus, explanations are offered for the offending behaviour of individuals across a number of developmental periods. The contemporary theories that will be reviewed include: Moffitt's (1993) theory of adolescent-limited and life-course persistent antisocial behaviour, Patterson, Capaldi, and Bank's (1991) coercion theory, Thornberry and

Krohn's (2001) interactional theory, Catalano and Hawkins' (1996) social development model of antisocial behaviour, and Andrews and Bonta's (1998) general personality and social psychological perspective on criminal conduct.

Moffitt (1993, 1997) presented a dual taxonomy to reconcile two incongruous facts about antisocial behaviour: 1) it shows impressive continuity over age, but 2) its prevalence changes dramatically over age, increasing almost 10-fold temporarily during adolescence. Moffitt (1993) suggests that delinquency conceals two distinct categories of individuals, each with a unique natural history and etiology: A small group of individuals engages in antisocial behaviour of one sort or another at every stage of life, whereas a larger group is antisocial only during adolescence.

According to Moffitt's (1993) theory of life-course persistent antisocial behaviour, children's neuropsychological problems interact cumulatively with their criminogenic environments across development, culminating in a pathological personality. In a description of the life-course persistent type of offender, Moffitt (1993) states:

beginning in childhood, discipline problems and academic failures accumulate increasing momentum, cutting off opportunities to practice prosocial behaviour. As time passes, recovery is precluded by maladaptive individual dispositions and narrowing life options, and delinquents are channeled into antisocial adult lifestyles. Thus, the strongest prospective predictors of persistent antisocial behaviour are anticipated to be measures of individual and family characteristics. These measures include health, gender, temperament, cognitive abilities, school achievement, personality traits, mental disorders (e.g., hyperactivity), family

attachment bonds, child rearing practices, parent and sibling deviance, and socioeconomic status, *but not age*. (p. 695)

According to Moffitt's (1993) theory of adolescence-limited antisocial behaviour, a contemporary maturity gap encourages teens to mimic antisocial behaviour in ways that are normative and adjustive. Thus, youths with little risk from personal or environmental disadvantage encounter motivation for crime for the first time when they enter adolescence. It is explained that the consequences of delinquency reinforce and sustain the adolescence-limited youths' efforts, but only until aging into adulthood brings a subjective shift in the valence of the consequences of crime. In adulthood, then, such offenders readily desist from crime, substituting the prosocial skills they practiced before they entered adolescence (Moffitt, 1993). Moffitt suggests that individual differences should play little or no role in the prediction of short-term adolescent offending careers, rather, the strongest prospective predictors should be knowledge of peer delinquency, attitudes toward adulthood and autonomy, cultural and historical context, and age.

Moffitt's (1993) theory predicts that the two types of offenders will engage in different patterns of offending. Adolescence-limited offenders should engage primarily in crimes that symbolize adult privilege or that demonstrate autonomy from parental control: vandalism, public order offences, substance abuse, status crimes such as running away, and theft. Conversely, life-course-persistent offenders should engage in a wider variety of offences, including types of crimes that are often committed by lone offenders; thus, in addition to the aforementioned crime types, they should commit more of the victim-oriented offences, such as violence and fraud (Moffitt, 1993).

Patterson and his colleagues (Patterson, Capaldi, & Bank, 1991) and Moffitt (1993) agree that there are two distinct groups of offenders: early starters who are more likely to be chronic serious offenders and later starters who initiate in and desist from delinquency during adolescence. Patterson et al.'s coercion theory suggests that antisocial behaviour among early starters can be explained by the interaction between parents and their children.

According to Patterson et al. (1991), the early starter path is initiated by poor family management practices, primarily unskilled discipline. Parental efforts to discipline the child often serve to actually strengthen the child's coercive behaviours rather than weaken them. The key contingencies that operate in this process are assumed to be negative reinforcement. Patterson et al. provide an example in which a family member intrudes with an aversive behaviour such as nagging or scolding, the child reacts coercively and the family member then reacts in a neutral or even positive manner and often withdraws. With the progression of the training in coercion, the child's conduct escalates from coercive behaviours of little significance (e.g., noncompliance, whining, talking back) to more intense, higher amplitude behaviours (e.g., temper tantrums, hitting, fighting). Moreover, the child is increasingly likely to be engaged in low base rate, more serious antisocial acts (from temper tantrums and fighting to stealing and fire setting).

Patterson et al. (1991) suggest that coercive exchanges are the key component in setting the early starter process in motion. Once the process begins, it seems to move through a sequence of three stages: 1) the child shows clearly identifiable antisocial behaviours (e.g., fighting, temper tantrums, disobedience, stealing), 2) the child is

rejected by the normal peer group, and 3) the child fails in school. As the child passes through each stage, the individual is placed at increased risk of continuing on to the next stage. At each stage, there is an increase both in the spectrum of antisocial behaviours and in accompanying skill deficits.

Patterson et al. (1991) hypothesize that in preadolescence the delinquent peer group does not play a part in early antisocial behaviour, rather delinquent peers appear to influence delinquent behaviour in mid- to late adolescence. At that time, the family will make a smaller contribution to the child's delinquent behaviour. Patterson et al. anticipate that the early starters will eventually be shown to carry a strong heritable component, as well as lower social status, as factors contributing to the antisocial behaviour. Conversely, the late starter model proposes that delinquent peers play an important role in the process by which such individuals begin to engage in delinquency.

In the late starter model, Patterson et al. (1991) suggest that the boys are not identified as problem children during the elementary grades and they are at least marginally skilled in peer relations and academics. The late starter process appears to begin in early adolescence. At this point, Patterson et al. propose that parents' marginal family-management skills are disrupted by factors such as divorce, unemployment, substance use, illness, or by the normal disturbances that accompany their son's shift into pubescence. The consequent disruptions in parental supervision produce a situation in which the child can become heavily involved in and influenced by the deviant peer group. Thus, the training and support provided by deviant peers lead the youth to engage in delinquent activity. Patterson et al. hypothesize that late starters do not begin offending until age 15 or later.

In contrast to Moffitt's (1993, 1997) and Patterson et al.'s (1991) topological theories of delinquency, Thornberry and Krohn's (2001) interactional theory adopts the view that onset of delinquency is continuously distributed over childhood and adolescence. Thornberry and Krohn present three fundamental premises to their theory that in combination can be used to explain continuity and change in delinquent behaviour. First, interactional theory adopts a developmental or life course perspective. In this sense, it assumes that the causes of delinquency vary systematically with stages of the life course and with the success or failure with which the life course has been traversed. Accordingly, this theory takes into account the opportunities that are opened and closed to individuals by the effect that their behaviour has on others and on their life changes.

The second premise of Thornberry and Krohn's (2001) interactional theory emphasizes behavioural interactions and bidirectional causality. It is suggested that antisocial and prosocial behaviour patterns emerge from interactions between the person and his or her environment and not simply from the environment acting on the individual. Third, interactional theory incorporates the impact of social structural influences in explaining the development of individual criminal careers.

Thornberry and Krohn (2001) purport that an individual's structural position influences and to some extent determines the initial values of process variables at early stages of the life course. In effect, children born to severely disadvantaged families are more likely to start life with deficits on a host of important explanatory variables (i.e., family, school, peer, and individual attributes) as compared to children born to more advantaged families. Children of severely disadvantaged families also are more likely to have multiple and cumulating deficits as compared to children in more advantaged

families, which makes the former more likely to experience the cascading impact of these multiple, interacting deficits. Finally, Thornberry and Krohn suggest that children from severely disadvantaged backgrounds are likely to have fewer buffering or protective factors available in their environments to counteract burgeoning antisocial careers.

Interactional theory incorporates the three aforementioned premises to describe four types of individuals: precocious offenders, early onset offenders, later onset offenders, and prosocial individuals. Precocious offenders initiate antisocial behaviour as toddlers and during the preschool years and continue their antisocial behaviour through to adulthood. Thornberry and Krohn (2001) state that:

very-early-onset offending is brought about by the combination and interaction of structural, individual, and parental influences. Extreme social adversity contributes to both parenting deficits and negative temperamental qualities in the child; in turn, both attributes, and especially their interaction, greatly increase the likelihood of early onset offending. (p. 295)

Thornberry and Krohn propose two processes to account for the persistence of antisocial behaviour throughout the life course. The first process is produced by continuity in the basic causal processes across the life course. Families experiencing extreme levels of structural adversity rarely escape such conditions and the development of children raised in those families is constantly threatened by its consequences. Correspondingly, continuity is present in ineffective parenting styles, which is caused to some extent by the constancy of the social environment in which these families find themselves. Finally, negative temperamental traits and neuropsychological deficits observed at very young ages continue through the adult years.

The second process affecting continuity, which is at the core of interactional theory, concerns the consequences of behaviour, including early manifestations of antisocial behaviour (Thornberry & Krohn, 2001). Thornberry and Krohn (2001) suggest that prolonged involvement in antisocial behaviour can have severe negative consequences for many aspects of the child's development, including the quality of relationships with parents and peers and academic performance. As these youth enter adolescence and adulthood, they are not prepared to meet the developmental challenges of these stages of life. Thus, early and persistent involvement in antisocial behaviour reduces the formation of social bonds and social capital and increases the establishment in deviant networks and belief systems, all of which serve to foreclose conventional lifestyles and entrap the individual in deviant lifestyles (Thornberry & Krohn, 2001).

Thornberry and Krohn (2001) describe early onset offenders as individuals who are generally prosocial during early childhood and then begin to manifest antisocial behaviour during the elementary school years, from approximately ages 6 through 13. The authors suggest that it is unlikely that early onset offenders' antisocial behaviour is characterized by the intense coupling of difficult temperament, ineffective parenting, and structural adversity that characterize precocious offenders. Rather, the absence of strong bonds and social capital to control behaviour becomes coupled with abundant deviant opportunities to produce antisocial behaviour.

Thornberry and Krohn (2001) predict a strong negative association between both the strength and number of these deficits and age of onset. However, as these deficits diminish, with increased bonding and decreased deviant opportunities, age of onset will increase and move toward the normative age of onset that occurs during early

adolescence. Thus, as the potency of the causal forces increase, both in their intensity and coupling, the age of onset will decrease; conversely, as the causal forces diminish the age of onset increases.

For early onset offenders, Thornberry and Krohn (2001) suggest that continuity is explained by the interlocking nature of these deficits and the stability of these causal influences, with stronger deficits being more stable over time. Three processes have been proposed to explain desistance from antisocial behaviour. First, the changeable nature of social environments can serve as turning points in the child's life course trajectory, especially if antisocial behaviour has not yet become an ingrained part of their behavioural repertoire. Therefore, individuals who have a richer set of protective factors are at a reduced likelihood of persisting in their antisocial careers. Second, desistance is likely if the causal factors that foster the initial antisocial behaviour are not intensely coupled. Finally, youth exposed to effective programs will have earlier desistance. Thornberry and Krohn also suggest that the shorter careers of these individuals can be accounted for by services, especially those provided outside of the juvenile justice system that are more apt to be utilized by youth from more advantaged backgrounds.

Thornberry and Krohn's (2001) interactional theory hypothesizes that later onset offenders are unlikely to have been exposed to the more extreme and interwoven causal factors that characterize the precocious or early onset offenders. Thus, at a later age of onset such individuals are more likely to have adequate prosocial bonds, they are less likely to be drawn from positions in the social structure marked by structural adversity, and they are likely to have relatively low access to deviant opportunity structures. As

well, they are more likely to have compensating mechanisms in their backgrounds to offset the consequences of exposure to any major risk factors that may be present.

Thornberry and Krohn (2001) explain that prior to adolescence, parents and teachers largely control the behaviour of later onset offenders. However, adolescence brings with it the expectation of independence and preparedness to enter and succeed in the adult world, a process called age-appropriate autonomy. This creates a tension between teenagers and parents and other adult authority figures, reducing the impact of parental and associated prosocial bonds and control over adolescents, which results in young adolescents seeking distance from these individuals and gravitation towards adolescent peers.

In the search for autonomy, adolescent peer groups will be closed to adult authority while valuing behaviours that demonstrate rebellion from adult authority figures. Consequently, deviant behaviours are encouraged and reinforced within the peer group. This behaviour typically involves less serious forms of delinquency. With the persistence of delinquent behaviour, feedback effects result on social bonds which allows for greater immersion in adolescent peer networks and more involvement in delinquent activity. Thornberry and Krohn (2001) note that with later onset offenders persistent deviant behaviour is a distinct possibility if their behaviour has long term adverse effects (e.g., teenage pregnancy, drug abuse), however, more typically involvement in delinquency is relatively short. Desistance is possible because the motivating force for delinquency is developmentally specific and these youth have substantial levels of human and social capital to draw on to extricate them from whatever trouble their involvement in delinquency produced.

Thornberry and Krohn (2001) suggest that to establish persistent prosocial behaviour over the life course, conditions in early childhood either must prevent the development of predispositions to antisocial behaviour or be able to compensate for those predispositions so that they do not lead to antisocial conduct. The authors propose that social and economic circumstances that are not characterized by structural adversity play a key role in generating prosocial behaviour early in the life course. With a secure financial position, parental levels of stress and antisocial behaviour are reduced; consequently, individuals have an increased probability of exhibiting more appropriate parenting behaviours. In addition, they are also likely to have the human and social capital to ameliorate or correct the developmental consequences of early temperamental difficulties such as oppositional behaviour.

Thus, according to Thornberry and Krohn (2001), prosocial careers can be accounted for by a strong bond to the family and the absence or control of negative temperamental qualities. Since antisocial conduct is not part of the behavioural repertoire of these children, such behaviour does not have an adverse effect on family life, peer relationships, and school success. As these children age, they are also more likely to have limited access to deviant peer groups and learning environments. Interestingly, the increased demand for autonomy results in decisions about alternative prosocial activities rather than between prosocial and antisocial behaviour. Thus, prosocial adolescents are more likely to experience smooth and timely transitions to adulthood.

Catalano and Hawkins' (1996) social development model (SDM) of antisocial behaviour incorporates several key features of developmental theories: both delinquency and drug abuse are predicted by the theory, it adopts four developmentally specific

submodels, and it incorporates risk and protective factors into the theory. The SDM is a synthesis of control theory, social learning theory, and differential association theory.

According to Catalano and Hawkins (1996), the SDM hypothesizes that children learn patterns of antisocial and prosocial behaviour from the socializing units of family, school, religious and other community institutions, and peers. The underlying socialization is assumed to follow the same processes of social learning whether prosocial or antisocial behaviour is the outcome. Children's socialization occurs through processes involving four constructs: 1) perceived opportunities for involvement in activities and interactions with others, 2) the degree of involvement and interaction, 3) the skills to participate in these activities, and 4) the reinforcement they perceived as forthcoming from performance in activities and interactions. A social bond develops between the individual and the socializing unit when these socializing processes are consistent. When this social bond is firmly established it has the power to affect behaviour independently of the four social learning processes, by creating an informal control on future behaviour. Moreover, this control inhibits deviant behaviours by establishing an individual's stake in conforming to the norms and values of the socializing unit.

Catalano and Hawkins (1996) hypothesize that the behaviour of the individual will be prosocial or antisocial depending on the predominant behaviours, norms, and values held by those to whom the individual is bonded. Three ways have been proposed in which antisocial behaviour can develop. First, antisocial behaviour results when individuals are denied the opportunities to engage in prosocial life or their skills are inadequate for prosocial performance to produce reinforcement, or when the environment fails to reinforce them consistently for effective prosocial performance. Second,

antisocial behaviour develops, even in the presence of prosocial bonding, when the individual's calculation of the rewards and costs shows a profit for the antisocial action. Finally, antisocial behaviour results when a child is bonded to immediate socializing units who hold antisocial beliefs or values.

Figure 1 presents the general model of the SDM, in which two pathways are hypothesized, a prosocial pathway and an antisocial pathway. Similar processes are expected to operate on these paths. According to the SDM, when the preponderance of

Figure 1. The social development model of antisocial behaviour – general model.

Note. From "The Social Development Model: A theory of antisocial behavior," by R. F. Catalano and J. D. Hawkins, 1996, *Delinquency and crime: Current theories*, p. 159.

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influences are prosocial, prosocial behaviour results; conversely, when the preponderance of influences are antisocial, antisocial behaviour results. The model allows for variation in the experience of both prosocial and antisocial influences because most individuals engage in both types of behaviour; thus separate paths are included whose processes of reinforcement, learning, and bonding are independent but influence one another over time (Catalano & Hawkins, 1996).

Catalano and Hawkins (1996) included in the model three variables exogenous to the theory: 1) position in the social structure, 2) constitutional or physiological factors, and 3) external constraints. It is expected that the effects of these three variables on antisocial behaviour are fully mediated by other social development model constructs. For example, in Figure 1 it can be seen that an individual's constitutional or physiological traits are hypothesized to be mediated by the constructs of prosocial and antisocial perceived opportunities and skills, and prosocial perceived reinforcement. Catalano and Hawkins demonstrate the role of individual constitutional factors by providing an example of an individual with Attention Deficit Disorder. This individual may not be able to recognize and take advantage of existing opportunities for prosocial interaction and involvement, and thus may be drawn to antisocial opportunities and individuals.

Catalano and Hawkins (1996) provide specific models for four developmental periods: preschool, elementary school, middle school, and high school. The general model describes processes hypothesized to operate across developmental periods, whereas the developmentally specific models specify the social units that are involved in the processes of each developmental period. In addition, the developmentally specific models specify the exogenous external constraints that are relevant within each period.

According to Catalano and Hawkins (1996), in the preschool period, constitutional biological factors, such as preterm birth, low birth weight for age, or prenatal alcohol or drug exposure, negatively affect cognitive skill development. Constitutional psychological factors, such as positive temperament and positive social orientation, are hypothesized to have their greatest impact during this period through their influence on enhancing early skill development. External constraints consist of family management practices and the child management practices of childcare providers.

In the preschool period, the social units with which the social development processes occur on the prosocial path include nondrug using, noncriminally involved household members, members of extended support systems that participate in the child's socialization, and other caretakers. The antisocial path includes drug using, criminally involved, and violent family and other caretakers. Catalano and Hawkins (1996) hypothesize that drug use in the home or child care setting and interpersonal conflict or violence are the most salient environmental factors in this period that predispose an individual toward antisocial behaviour. The belief in antisocial values construct is omitted from this period since the authors suggest that it is not likely to develop during this period. Antisocial behaviour predicted in the preschool period includes aggressive behaviour and other conduct disorders.

In Catalano and Hawkins' (1996) model for the elementary school period, the school is added to the family as an important socializing environment with teachers and classroom peers joining parents, siblings and other adult caretakers as important socialization units. External constraints in the school environment (i.e., classroom management practices and school policies) are now included with family management

practices as important indicators of this exogenous variable. During this period, prosocial parents and teachers remain the most significant influences on prosocial behaviour, but involvement with nondrug using and nondelinquent peers is expected to increase in importance toward the end of elementary school. Similarly, interaction with drug-using, or criminally involved family members, school personnel, or toward the end of this period, peers, are influential socializing units on the antisocial path. The antisocial behavioural outcomes predicted during the elementary school period are the onset of drug use and delinquent behaviours.

In Catalano and Hawkins' (1996) model for the middle/junior high school period, peers increase in importance as a socialization unit. In addition to the external constraints of school policies, classroom management practices, and family management practices, peer norms and behaviours are included and for the first time, the legal codes and police and court enforcement of these codes are relevant exogenous variables. During this developmental period, the antisocial outcomes are predicted to be the diversity and frequency of drug use and delinquent behaviours.

In the final model for the high school period, Catalano and Hawkins (1996) suggest that many of the risk and protective factors for drug use and delinquency have been established by the time youths enter this period. Thus, during the high school period, factors relevant to the maintenance of prosocial or antisocial behaviours characterize the model. External constraints consist of peers, school, the legal system, and, to a lesser extent, the family. On the prosocial path, the referent group consists of nondrug using and noncriminal family, peers, school personnel, and community

members. On the antisocial path, the referent groups consist of drug users and criminally involved individuals.

Catalano and Hawkins (1996) suggest that the actual and perceived rewards and costs of prosocial and antisocial involvement and interaction determine behaviours that are maintained during the high school period. The rewards for delinquency are expected to decrease for adolescents who are experimenting with antisocial behaviour as a means of adolescent individuation, and for those who have not been exposed to high levels of early risk factors. In contrast, adolescents who experience few rewards for prosocial interaction and involvement, have high levels of early risk factors, and are involved with drug use and delinquency are expected to be more likely to become persistent delinquents. Catalano and Hawkins propose that the antisocial behavioural outcomes during this period include a high rate of delinquency and drug abuse indicated by the frequency and persistence of these behaviours as well as by problems associated with the behaviours.

Andrews and Bonta's (1998) general personality and social psychological perspective on criminal conduct recognizes that there are multiple routes to involvement in illegal activity, with the chances of illegal conduct increasing dramatically as the number and variety of the more proximal set of predispositional factors increase. One example of this approach is the Personal, Interpersonal, and Community-Reinforcement (PIC-R) perspective on deviant behaviour (see Figure 2). PIC-R is a broad based social learning perspective on human conduct that integrates elements of motivational and control theories in considering factors that actively encourage or discourage deviant activity. As well, PIC-R recognizes factors at the personal, interpersonal and community

Figure 2. A personal, interpersonal and community-reinforcement perspective on the multiple classes of relevant variables in the analysis of criminal behaviour.

Note. From "The General Personality and Social Psychological Approach: A Personal, Interpersonal and Community Reinforcement Perspective," by D. A. Andrews and J. Bonta, 1998, *The Psychology of Criminal Conduct*, p. 149. Copyright 1998 by Anderson.

levels of analysis. Andrews and Bonta (1998) contend that: “while the immediate contingencies of action account for variation in human conduct, it is the personal, interpersonal, and community factors that are responsible for the development, maintenance and modification of these contingencies” (p. 152). The model also recognizes that biological, maturational, and developmental factors may moderate the influence of rewards and costs on behaviour.

Figure 2 illustrates the various classes of variables that may influence individual behaviour ordered from the broadest structural level down to the person in an immediate situation. In the immediate situation, the perceived balance of rewards and costs associated with the criminal act is the critical variable influencing deviant behaviour. A second level of analysis identifies four sets of variables that are hypothesized to directly influence criminal conduct (i.e., the “Big Four” risk factors; Hoge & Andrews, 1996a). The young person’s attitudes, values, beliefs, rationalizations, neutralizations, and feelings favourable to crime constitute the first set of immediately causal variables. It is these procriminal versus antipcriminal sentiments that determine whether the direction of personally mediated control favours criminal over noncriminal alternatives, and they determine the pool of justifications and exonerating statements that the person has available in any particular situation (Andrews & Bonta, 1994).

The second set of immediately causal variables are antisocial or procriminal associates, which impact criminal activity by influencing the youth’s reactions to the immediate situation, or they may contribute more indirectly by promoting the adoption of antisocial attitudes and modes of conduct (Hoge & Andrews, 1996a). Third, behavioural history is an immediate causal variable that reflects the importance of the young person’s

learning experiences. Hoge and Andrews (1996a) note that these are of immediate concern because they account for many aspects of the youth's cognitions and behavioural dispositions, which consequently have a direct impact on the youth's responses in current situations.

The final set of immediate causal variables identified in the model includes temperamental and personality attributes of the youth that are conducive to criminal activity. Constructs included in the model that are related to criminal activity include psychopathy, weak socialization, impulsivity, restless aggressive energy, egocentrism, below average verbal intelligence, neuroticism, a taste for risk, and weak problem solving/self-regulation skills (Andrews & Bonta, 1998). A basic assumption of the model is that a youth's propensity to engage in a criminal act in a particular situation reflects, in part, these more-or-less stable attributes that the individual brings to the situation (Hoge & Andrews, 1996a).

A third level of analysis is proposed in the model, which includes two factors that appear to influence criminal behaviour by operating in a more distal manner. The first factor includes aspects of the family environment, with a particular focus on parent-child relations. Thus, familial factors include criminality and a variety of psychological problems in the family, and, in particular, low levels of affection, caring, and cohesiveness; poor parental supervision and discipline practices; and neglect and abuse (Hoge & Andrews, 1996a). Hoge and Andrews (1996a) suggest that these factors appear to have an indirect impact on criminal activity through their influence on the youth's attitudinal, personality, and behavioural dispositions. However, the parent may have a more direct influence in some cases, such as when lax supervision provides increased

opportunities for the youth to engage in criminal acts. The second factor relates to the youth's educational experiences, such as academic achievement, school adjustment, and commitment to educational pursuits, all of which have been implicated in antisocial acts.

Andrews and Bonta's (1998) model of criminal behaviour is comprehensive and flexible because it incorporates a wide array of variables and recognizes individual variation in criminal conduct both across individuals and within the individual according to his or her developmental level. The model, however, fails to identify resilience or protective factors (Hoge & Andrews, 1996a). Andrews and Bonta note that PIC-R has practical and clinical utility because of its ability to encourage comprehensive assessments and to assist in planning reasonable and effective interventions.

Research on the Risk Factors of Delinquency

Although the various theoretical positions reviewed point to many risk factors of delinquency, an empirical link must also be established. Research on the covariates of delinquency in young people has proliferated since the seminal work of Glueck and Glueck (1950) a half century ago. Meta-analytic studies provide a useful way to summarize the vast amount of empirical studies that have been conducted to date. The advantage of meta-analysis over the traditional narrative reviews of the literature is that the former examines both the direction and magnitude of effects obtained in each study as well as the distribution of effects across studies (Durlak & Lipsey, 1991).

Gendreau, Andrews, Goggin, and Chanteloupe's meta-analysis (as cited in Andrews & Bonta, 1998) of the predictors of criminal behaviour reported effect sizes for six categories of variables. The same pattern of results emerged for both adult and juvenile offenders regarding the direction and magnitude of the associations across the

risk factors. Specifically among juveniles, the results showed that the strongest risk factors for criminality were antisocial attitudes/associates ($r = .23$), temperament/misconduct/personality ($r = .22$), and parental/family factors ($r = .18$). Personal education/vocational achievement ($r = .10$) was a moderate risk factor, while personal distress/pathology ($r = .09$) and lower-class origins ($r = .03$) served as minor risk factors. The rank ordering of the risk/need factors were also robust across gender and race, and across methodological variables (i.e., self-report versus official measures and longitudinal versus cross-sectional designs).

Simourd and Andrews (1994) conducted a meta-analysis of 60 studies examining the correlates of delinquency among male and female youths. The most important risk factors were antisocial peers or attitudes (females: $r = .39$; males: $r = .40$), temperament or misconduct problems (i.e., psychopathy, impulsivity, substance abuse; females: $r = .35$; males: $r = .36$), educational difficulties (i.e., poor grades, dropout; females: $r = .24$; males: $r = .23$), poor parent-child relations (i.e., attachment, supervision; females: $r = .20$; males: $r = .22$), and minor personality variables (i.e., empathy, moral reasoning; females: $r = .18$; males: $r = .22$).

The results of Simourd and Andrews (1994) further revealed that personal distress (i.e., anxiety, low self esteem, apathy; females: $r = .10$; males: $r = .09$), family structure or parent problems (i.e., broken home, marital problems; females: $r = .07$; males: $r = .09$), and lower social class (females: $r = .07$; males: $r = .06$) were minor risk factors of delinquency. As can be seen, a similar pattern of results emerged for male and female youths in regards to the magnitude and rank ordering of the risk factors. The general pattern of results was also robust across various sample and study characteristics.

Lipsey and Derzon (1998) conducted a meta-analysis of 34 longitudinal studies that examined predictors of violent or serious delinquency. This meta-analysis is unique because the authors separated predictors measured at age 6 to 11 and those measured at age 12 to 14. The outcome variable, violent or serious delinquency, was measured at age 15 to 25. The rank ordering and regression adjusted effect size estimates of the predictors are presented in Table 2. Lipsey and Derzon note that within a group, the estimated aggregated effect sizes are not generally significantly different from each other; between groups, most do differ.

Table 2 shows that the strongest predictors for the early age period were different from those in the later period. Having a juvenile offence (i.e., general offence) was a strong predictor of subsequent violent or serious delinquency for the 6 to 11 and 12 to 14 age periods, but it was ranked first in the former and second in the latter. Interestingly, substance use emerged as the second strongest predictor for the age 6 to 11 group, but it was one of the weakest for age 12 to 14. In the age 12 to 14 group, the strongest predictors both involve interpersonal relations, that is, lack of social ties and association with antisocial peers. Conversely, among the age 6 to 11 group, these factors are relatively weak predictors, especially antisocial peers. Thus, antisocial peers and substance use appear to show complete reversals, serving as the weakest predictors for one group despite being among the strongest predictors for the other (Lipsey & Derzon, 1998).

Lipsey and Derzon (1998) found that the second and third rank predictors primarily consisted of relatively fixed personal characteristics for the age 6 to 11 group (i.e., gender, family SES, ethnicity, antisocial parents), whereas those for the age 12 to 14

Table 2

Ranking of Age 6-11 and Age 12-14 Predictors of Violent or Serious Delinquency at Age 15-25

Age 6-11 Predictor (<i>r</i>)		Age 12-14 Predictor (<i>r</i>)
	Rank 1 group	
General offences (.38)		Social ties (.39)
Substance use (.30)		Antisocial peers (.37)
	Rank 2 group	
Gender (male) (.26)		General Offences (.26)
Family SES (.24)		
Antisocial parents (.23)		
	Rank 3 group	
Aggression (.21)		Aggression (.19)
Ethnicity (.20)		School attitude/performance (.19)
		Psychological condition (.19)
		Parent-child relations (.19)
		Gender (male) (.19)
		Physical violence (.18)
	Rank 4 group	
Psychological condition (.15)		Antisocial parents (.16)
Parent-child relations (.15)		Person crimes (.14)
Social ties (.15)		Problem behaviour (.12)
Problem behaviour (.13)		IQ (.11)
School attitude/performance (.13)		
Medical/physical (.13)		
IQ (.12)		
Other family characteristics (.12)		
	Rank 5 group	
Broken home (.09)		Broken home (.10)
Abusive parents (.07)		Family SES (.10)
Antisocial peers (.04)		Abusive parents (.09)
		Other family circumstances (.08)
		Substance use (.06)
		Ethnicity (.04)

Note. From "Predictors of Violent and Serious Delinquency in Adolescence and Early

Adulthood," by M. W. Lipsey and J. H. Derzon, 1998, *Serious and violent juvenile*

offenders, p. 97. Copyright 1998 by Sage.

group had a heavier representation of behavioural characteristics (e.g., general offences, aggression, school performance). Finally, for both age groups broken homes and abusive parents were among the weakest predictors. Although this meta-analysis summarizes useful research conducted with younger children (i.e., under age 12) who engage in delinquent behaviour, researchers have noted that there is still a paucity of studies in this area (Loeber & Farrington, 2001). Thus, further studies are needed on child delinquents.

In summary, the meta-analytic results of Gendreau and colleagues (as cited in Andrews & Bonta, 1998) and Simourd and Andrews (1994) are consistent with contemporary theoretical positions that assign priority to antisocial attitudes, antisocial peers, antisocial history, and antisocial personality as being among the strong risk factors of juvenile offending. As well, empirical findings confirmed that poor parent-child relations and personal educational/vocational achievement are moderate risk factors, and that lower class origin and personal distress serve as minor risk factors. Furthermore, the meta-analytic findings of Lipsey and Derzon (1998) are consistent with developmental theories that suggest different risk factors for particular developmental periods.

As an extension of these results, Cottle, Lee, and Heilbrun (2001) conducted a meta-analysis of 23 prospective studies to identify risk factors that best predict juvenile recidivism. They postulated that the variables significantly associated with reoffending behaviour are not necessarily useful in initially distinguishing between adolescents who will or will not become delinquent. The predictors were divided into eight domains: 1) demographic information, 2) offence history, 3) family and social factors, 4) educational factors, 5) standardized test scores, 6) substance use history, 7) clinical factors, and 8) formal risk assessment.

A summary of the results is presented in Table 3. The results showed that the strongest individual predictors were younger age at first commitment, younger age at first contact with the law, and history of nonsevere pathology (e.g., stress, anxiety). The latter finding is inconsistent with meta-analytic results examining recidivism among adult samples of general offenders (Gendreau, Little, & Goggin, 1996), mentally disordered offenders (Bonta, Law, & Hanson, 1998), and sex offenders (Hanson & Bussière, 1998). Cottle et al. report that in the broader sense, the domains of offence history and family and social factors were consistently associated with recidivism, whereas other domains contained certain variables that were significant but were less consistent across the entire domain.

Interestingly, two of the “Big Four”, antisocial history and antisocial peers, from Andrews and Bonta’s (1998) general personality and social psychological perspective of criminal conduct were among the strongest risk factors. These findings concur with research on adult offender recidivism (Bonta et al., 1998; Gendreau et al., 1996; Hanson & Bussière, 1996). Consistent with the aforementioned theory and previous research, poor relationships within the family, ineffective use of leisure time, substance abuse, and to a lesser extent, intellectual and achievement factors, were moderately related to recidivism, and clinical (severe pathology) and demographic variables (i.e., race, SES) served as minor predictors of recidivism (Bonta et al., 1998; Gendreau et al., 1996; Hanson & Bussière, 1996). Contrary to theory and the aforementioned studies with adult offenders, nonsevere pathology emerged as a strong predictor. Unfortunately, Cottle et al. (2001) failed to examine the remaining two of the “Big Four” predicted by theory to be strongly associated with criminal behaviour, antisocial attitudes and antisocial

Table 3

Predictors of Recidivism in Juveniles by Predictive Strength (N = 15,256)

Variable	Zr	k
Age at first commitment	-.346**	3
Age at first contact with the law	-.341**	8
Nonsevere pathology	.305**	7
Family problems	.227**	5
Conduct problems	.255**	7
Effective use of leisure time	-.233**	2
Delinquent peers	.204**	7
Length of first incarceration	.187**	3
Number of out-of-home placements	.184**	2
Number of prior commitments	.174**	3
Type of crime	.159**	7
Standardized achievement score	-.153**	3
Substance abuse	.149**	6
Full scale IQ score	-.142**	5
History of special education	.130*	2
Risk assessment instruments	.118**	6
History of abuse	.112**	5
Gender (male)	.111**	3
Verbal IQ score	-.111*	4
Single parent	.070**	5
Severe pathology	.069	2
Race (minority status)	.067**	6
Socioeconomic status	.065**	3
Number of prior arrests	.058**	7
School attendance	-.048	2
Parent pathology	.047	3
Performance IQ score	-.031	2
School report of achievement	-.028	6
History of treatment	.019	2
Substance use	.014	2

Note. Zr = weighted mean effect size, k = number of unique samples. Adapted from “The

Prediction of Criminal Recidivism in Juveniles: A Meta-analysis,” by C. C. Cottle, R. J.

Lee, and K. Heilbrun, 2001, *Criminal Justice and Behavior*, 28, p. 385.

* $p < .01$. ** $p < .001$.

personality. The overall pattern of results, with the exception of nonsevere pathology, is also consistent with those found by Simourd and Andrews (1994) and Gendreau and his colleagues (as cited in Andrews & Bonta, 1998).

Research on Rehabilitation

Theoretical and empirical knowledge of the covariates of criminal behaviour should be used to guide treatment efforts. Several meta-analyses have been conducted to assess the effectiveness of treatment with juvenile offenders (e.g., Andrews et al., 1990; Dowden & Andrews, 1999; Garrett, 1985; Gensheimer, Mayer, Gottschalk, & Davidson, 1986; Gottschalk, Davidson, Mayer, & Gensheimer, 1987; Hill, Andrews, & Hoge, 1991; Lipsey, 1992, 1995; Mayer, Gensheimer, Davidson, & Gottschalk, 1986; Whitehead & Lab, 1989). Lösel (1995) presented the mean overall effect sizes for meta-analyses conducted up to 1995. All of the effect sizes were positive in magnitude and ranged from .05 (Lipsey, 1992) to .36 (Mayer et al., 1986). Contrary to the ‘nothing works’ sentiment of the antirehabilitation era, these findings reveal that treatment does indeed have a positive impact on reoffending.

The meta-analyses by Andrews et al. (1990) and Dowden and Andrews (1999) provide more compelling evidence by examining the efficacy of treatment according to the principles of risk, need, and responsivity proposed by Andrews, Bonta, and Hoge (1990). The risk principle of case classification states that services to offenders should be matched with the individual’s risk level. Thus, more intensive service should be reserved for higher risk cases, while less intensive service should be given to lower risk cases. The need principle of case classification states that services to offenders should be matched with their criminogenic needs. Criminogenic needs are dynamic risk factors that can be

changed, and, if changed, will produce reductions in recidivism. According to the responsivity principle, styles and modes of service should be matched to the learning styles and abilities of offenders. Appropriate types of services typically involve the use of behavioural and social learning principles of interpersonal influence, skill development, and cognitive change (Andrews, Zinger et al., 1990).

The findings of Dowden and Andrews' (1999) meta-analysis will be examined because it is an extension of the 1990 study focusing on young offenders (Andrews, Zinger et al., 1990). The overall mean effect size for the sample was .09. The results showed that the mean effect size for interventions based solely on criminal sanctions was -.02 compared with a significantly different mean effect size of .13 for human service programs. Support was provided for the risk principle of case classification because correctional interventions were associated with a significantly higher mean effect size when delivered to higher risk (.12) than lower risk (.03) offenders.

Programs that had appropriately addressed the need principle yielded significantly larger mean effect sizes (.22) than programs that did not adhere to this principle (-.01). Moreover, all of the criminogenic needs that were targeted in treatment were associated with a positive mean effect size. The strongest effect sizes were observed for treatments that targeted family supervision ($r = .35$), family affection ($r = .33$), barriers to treatment ($r = .30$), self-control ($r = .29$), anger/antisocial feelings ($r = .28$), vocational and job skills ($r = .26$), and academics ($r = .23$). Targeting prosocial models ($r = .19$), antisocial attitudes ($r = .13$), and antisocial peers ($r = .11$) also produced moderately positive effects. Each of the noncriminogenic needs that were targeted in treatment was negatively associated with effect size, which indicates that targeting these factors resulted in an

increase in recidivism in the intervention group. Programs that used a fear of official punishment ideology in particular, such as shock incarceration, yielded a significant negative relationship ($r = -.18$) with recidivism.

Dowden and Andrews (1999) coded the responsivity principle as being met if the program was behavioural or used several treatment methods such as modeling, graduated practice, role-playing and several other skill building techniques. The results showed that the mean effect size for behavioural programs (.24) was significantly larger than the mean effect size for nonbehavioural programs (.04).

Dowden and Andrews (1999) further conducted a count of the number of the principles of risk, need, and responsivity that were appropriately addressed within each program and coding was assigned based on this score. Criminal sanctioning approaches were automatically placed in the inappropriate service category. Analyses revealed significant differences between the different levels of this variable, with the most promising service consistent with each of risk, need, and responsivity ($r = .28$) yielding a significantly larger mean effect size than each of the remaining categories. Moreover, the promising service category ($r = .21$), coded as two scores of risk, need or responsivity, was associated with a significantly larger mean effect size than either the weak service ($r = .08$), consisting of human service consistent with one of risk, need, and responsivity or inappropriate service ($r = -.04$) categories, with the latter two being statistically indistinguishable.

In the meta-analysis by Andrews, Zinger et al. (1990), it was found that nonresidential programs produced significantly higher mean effect sizes compared to residential settings. Using an extended data set with adult and juvenile offenders,

Andrews and Bonta (1998) replicated this result and further found that the positive effects of appropriate treatment were enhanced in community settings ($r = .38$) and the negative effects of inappropriate service were augmented in residential settings ($r = -.10$). In light of the observed findings, it is clear that young people who commit delinquent acts can benefit from treatment if it is delivered according to the principles of risk, need, and responsivity. Moreover, beneficial effects of appropriate treatment can be augmented when delivered in community settings.

Diversion

Many treatment studies examined in the meta-analytic reviews included diversionary programs. Diversion is a process by which youths are dealt with through nonjudicial, community-based alternatives rather than the formal judicial process (Engler & Crowe, 2000). In Canada, there are currently two forms of diversion in use: police discretion, which is utilized primarily by police departments and does not involve the court system, and alternative measures, which are usually administered by the Crown (Engler & Crowe, 2000).

Gensheimer, Mayer, Gottschalk, and Davidson (1986) note that diversionary practices were assumed to protect youths from the abuses of the criminal justice system, to reduce the excessive number of children processed through the overburdened courts, and to avoid the negative effects of labelling and stigmatization. Moreover, it was expected that diversion would foster a reduction in recidivism rates among juveniles, promote a sense of community responsibility for its youth, and provide financial relief for the system by reducing the costs of processing delinquency cases.

Polk's (1984) review of the literature comments on one of the unintended consequence of diversion programs in widening the net of juvenile justice. Polk concludes that:

study after study suggests that the programs are often run by, or closely connected to, the justice system, and that most of the clients are not offenders being referred outward, but are youngsters with a variety of personal problems far removed from offense behavior who are being referred into this system. (p. 657)

According to Polk's reading of the literature, he further deduced that the data on the impact of diversion programs do not permit the rejection of the hypothesis that the services may be either of no benefit or even harmful to the clients experiencing the diversion program.

Gensheimer et al. (1986) conducted a meta-analysis of intervention efficacy among youth that were diverted from the criminal justice system. The studies were coded for the primary type of intervention: nonspecific (39%), group psychotherapy (25%), case work/probation (14%), behavioural (14%), educational/vocational (5%), and individual psychotherapy (5%). The effect size measures will be discussed in terms of Pearson's r for interpretive purposes (the authors used Cohen's d). When the outcome measure was overall effectiveness (i.e., recidivism, behavioural outcomes, and attitudinal outcomes), the effect sizes were $r = .06$ (pre/post design) and $r = .10$ (experimental/control group design). When recidivism was the outcome measure, the effect sizes were $r = -.11$ (pre/post) and $r = .13$ (experimental/control). All confidence intervals included 0. Gensheimer et al. (1986) concluded that diversion interventions produce no strong positive or strong negative effects with youths diverted from the juvenile justice system.

Further analyses with moderator variables revealed that the older the participant, the less likely the intervention would have a positive effect ($r = -.35$), the greater the number of contact hours (i.e., amount of intervention) between the youth and the service deliverer, the greater the positive effect on outcome measures ($r = .69$). Moreover, Gensheimer et al. (1986) found a significant correlation between the investigator's influence in the design and implementation of treatment and the mean effect size ($r = .76$), a finding consistent with other meta-analyses (e.g., Andrews, Zinger et al., 1990).

Gensheimer et al. (1986) failed to assess the impact of the type of interventions used in the diversion process. Examining the results of Andrews, Zinger et al. (1990), which included studies examining programs offered through the diversion process, it is evident that programs adhering to the principles of risk, need, and responsivity produced positive effects on recidivism. Thus, one must not consider the effectiveness of 'diversion programs' per se, rather it is the characteristics of the programs that are offered through the diversion process that appears more important. An advantage of the diversion process is that programs can be offered within the community setting, which appears to be the setting most conducive to positive results.

Hornick et al. (1996) propose a model for police response to juvenile offending that includes a set of graduated and integrated responses to a criminal incident where a youth suspect is known and enough evidence exists to lay a charge (see Figure 3). The responses range from minimal intervention (i.e., warning) to maximum intervention (i.e., laying a charge and prosecution in court). The first three responses, warning, formal caution, and precharge diversion programs involve direct decision making by police and

Figure 3. A model for police response to young offenders.

Note. Adapted from “A Conceptual Framework for Diversion,” by J. P. Hornick et al., 1996, *A Police Reference Manual on Crime Prevention and Diversion with Youth*, p. 67. Copyright 1996 by the Canadian Research Institute for Law and the Family and Solicitor General Canada.

thus define police diversion. The first two steps, warning and formal caution, fall within the role of the police alone, while referral to precharge diversion programs would involve the decision of the police to refer the youth to other community resources.

Hornick et al. (1996) note that it is important for any model of diversion to respect due process and protect individual rights; therefore, diversion programs should only be

used in cases where reasonable grounds exist to lay a charge. Implementation of the model of responses to juvenile offenders requires police to make two decisions: 1) whether a young offender should be diverted or charged; and 2) if diverted, the appropriate type of diversion or level of intervention (Hornick et al., 1996).

Consideration of the diversion process is important given the current changes to Canada's young offender legislation.

In Canada, the *Young Offenders Act* was replaced by the new *Youth Criminal Justice Act (YCJA)* on April 1, 2003. This shift in legislation will have implications for the police who are the first point of contact with young offenders. There is consensus among youth court judges across Canada that a significant proportion of cases coming to court could be dealt with adequately outside of the youth court (Department of Justice Canada, 2002). In line with this sentiment, the *YCJA* contains many provisions to increase the appropriate use of extrajudicial measures for less serious offences, including the following principles: a) extrajudicial measures should be used in all cases where they would be adequate to hold the young person accountable, b) extrajudicial measures are presumed to be adequate to hold first-time nonviolent juvenile offenders accountable, and c) extrajudicial measures may be used if the young person has previously been dealt with by extrajudicial measures or has been found guilty of an offence (Department of Justice Canada, 2002). Thus, one of the key objectives of the *YCJA* is to increase the use of effective and timely noncourt responses to less serious offences by youth, which would consequently decrease court case loads and costs.

According to the Department of Justice Canada (2002), the *YCJA* requires police officers to consider the use of extrajudicial measures before deciding to charge a young

person. Police officers are specifically authorized to use various types of extrajudicial measures including taking no further action, informal warnings, police cautions, and referrals of young persons to community programs or agencies; the latter three options constitute precharge diversion. Extrajudicial sanctions, known as alternative measures under the *YOA*, which are handled by the Attorney General, may be used only if the young person admits responsibility for the offence and is to be used only if the young person cannot be adequately dealt with by a warning, caution, or referral.

Thus, a consequence of the new legislation is that police officers must make assessments of the best available options for dealing with youth, and they must become aware of the resources available to deal with criminal behaviour among youths. Another implication of the *YCJA* is that service providers in the community will most likely have increased caseloads. An important issue that must be addressed then is the availability and appropriateness of services in the community.

The *YCJA* applies to offending behaviour of youths age 12 to 17 years. Thus, children under the age of 12 are not criminally liable for their behaviour under federal law. Child welfare legislation across the provinces and territories differs in terms of their directions to the police when confronted with a child delinquent. Augimeri, Koegl, and Goldberg (2001) report that in Manitoba, Prince Edward Island, and Québec offending behaviour by children under age 12 is not specifically addressed. In contrast, in Alberta, police have discretion to report any illegal behaviour by children under age 12 to a child welfare director. In British Columbia, police are obligated to report serious incidents (e.g., homicide, assault, endangerment), but are allowed discretion in reporting less serious incidents to a child welfare director. In Newfoundland, Nova Scotia, Ontario, and

the Northwest and Nunavut Territories, child welfare legislation characterizes severe or repeated offending as a specific criterion for intervening on the grounds of child protection. Finally, in New Brunswick, Saskatchewan, and the Yukon Territory, child welfare legislation allows offending of any type to be a criterion for intervening on the grounds of child protection.

For the provinces and territories that have sections in their child welfare legislation relating to criminal behaviour of children under age 12, continued intervention is possible only if there is some determination that the child's parents are unable to address or remedy the child's deviant behaviour (Augimeri et al., 2001). Goldberg, Augimeri, Koegl, and Webster (1999) conducted a study examining child welfare responses across Canada to children under age 12 who commit offences. The results indicated that the emphasis in child welfare is on child protection from parental abuse or neglect, not on offending behaviour per se. Overall, the results of the survey suggest that there is no systematic response of child welfare systems across Canada to address criminal behaviour in children under age 12.

Augimeri, Goldberg, and Koegl (1999) conducted a survey of police services across Canada to determine police responses to children under age 12 who commit offences. Responses ranged from returning children to their families to referring children to a child welfare agency, with the latter response increasing in frequency with the severity of the offence. Augimeri et al. further reported that other community-based agencies (e.g., schools, mental health centers, community recreation centers) were used to provide nonspecified treatment to children. When police services were asked whether they had formal procedures or protocols consistent with their child welfare legislation to

deal with offending behaviour of children under age 12, only the Toronto Police Service reported having a protocol. The Toronto Police Service protocol involved channelling child delinquents into relevant community-based treatment services. At the present time, the Ottawa Police Service also uses a protocol to refer children under age 12 to various community treatment agencies.

Service Use

An area that must be addressed when dealing with young people in trouble with the law concerns not only the availability of current services, but also the use of past services. The majority of research on mental health services typically does not identify delinquent status, but instead describes youths seeking treatment by diagnosis (Burns et al., 2001). Typically, nondelinquent conduct problems precede delinquent behaviour, although both types of behaviours share common features. The former behaviours are not officially identified as delinquent until the individual is detected by the criminal justice system. Thus, research examining service use of youths with conduct problems will be reviewed, and where available, research with identified delinquents will be presented.

Estimates of children and adolescents displaying clinical levels of emotional or behavioural problems range from 15% to 20% (Costello et al., 1996; Rutter & Smith, 1995). Substantially higher rates are found among juvenile offenders (Kataoka et al., 2001; Kurtz, Thornes, & Bailey, 1998; Lyons, Baerger, Quigley, Erlich, & Griffin, 2001; Nicol et al., 2000; Pliszka, Sherman, Barrow, & Irick, 2000; Timmons-Mitchell et al., 1997). For example, Pliszka et al. (2000) found that 42% of juvenile offenders met criteria for an affective disorder and 60% met the criteria for conduct disorder, with very high rates of substance abuse also observed. Lyons et al. (2001) found that in a sample of

young offenders 68% met criteria for a serious emotional disorder (e.g., ADHD, oppositional, emotional) while 94% met criteria for substance-related problems.

Conduct symptoms often emerge during early childhood and increase with age (Burns et al., 2001). Since youths displaying conduct symptoms frequently have comorbid conditions, such as attention deficit hyperactivity disorder (ADHD), internalizing disorders (i.e., anxiety and depression), and substance abuse (Angold, Costello, & Erkanli, 1999; Pliszka et al., 2000), it is important that young people have early access to services that can effectively address these conditions. Services can be offered across a variety of human service sectors including mental health, health, child welfare, juvenile justice, and education.

In the Ontario Child Health study, Offord et al. (1987) report that the overall provincial rate for mental health and social service use was 6.5% over a 6-month period using a general population sample. Sixteen percent of children with a disorder (i.e., conduct disorder, hyperactivity, emotional disorder, somatization) received services within this time period. In a follow-up study, Offord et al. (1992) found that almost 45% of children with conduct disorder at ages 4 to 12 still qualified for conduct disorder four years later, at ages 8 to 16, and over 46% had one or more psychiatric disorders at that time.

Offord et al. (1992) divided individuals aged 4 to 12 who were diagnosed with conduct disorder in 1983 into groups of 4 to 7 and 8 to 12 year olds and examined them four years later with respect to the presence of disorder and mental health/social service use. Of the 4 to 7 year olds, 25% had conduct disorder four years later, with 21% using mental health/social services at that time. Among the 8 to 12 year olds, 60% were

diagnosed with conduct disorder after four years, with 42% using services during that time period.

Koot and Verhulst (1992) examined 4 to 12 year old children from a general population sample in the Netherlands. Using the Child Behaviour Checklist, it was found that 44% of the children had scores on the CBCL that were above the 90th percentile over the 4-year time interval. Externalizing problem behaviour tended to be somewhat more stable than internalizing problem behaviour. Over the 4-year interval, 6.0% of the children were referred at least once to mental health services, 6.7% were referred to special education services, and 1.9% were referred to the juvenile justice system. High initial levels of externalizing and internalizing problems and persistence of these problems were predictive of referral to mental health services. Referral to special education was higher for younger boys with high initial attention problems and school problems; moreover, police contacts occurred more often in older boys with high initial aggression scores.

Verhulst and van der Ende (1997) reported that 3.5% of their sample of 4 to 18 year olds was referred to mental health services within the past year. Of the 428 children who were in the deviant range on the CBCL Total Problem score, only 13% were referred for mental health services. They also found that 30% of children whose parents indicated that their child's problems were worse than those of other children had been referred. Thus, the higher the level of parental perceived severity of problems, the greater the likelihood that the child had been referred.

Zahner, Pawelkiewicz, DeFrancesco, and Adnopolz (1992) examined lifetime rates of service use. Results showed that 28.3% of the sample of 6 to 11 year old children

used any service in their lifetime. It was further shown that of the children screened as at risk for psychiatric disturbance using the CBCL, 51.2% used any service, predominantly in the school sector (37.3%), followed by medical (13.3%) and mental health (10.9%) settings.

Studies examining service use among identified delinquents are fewer in number. Kurtz et al. (1998) surveyed perceptions among relevant service providers of the mental health needs of children in the criminal justice system. Mental health needs were identified for 22.6% of young persons who had a social service needs assessment. Of those who had an assessment, 29% were in the care of a mental health professional. Based on their findings, the authors suggest that young people's mental health needs are neither well recognized, nor widely understood, or adequately met.

Kataoka et al. (2001) investigated the level of mental health problems and lifetime use of specialty mental health services and special education programs among incarcerated female juvenile offenders. Eighty percent of youths had symptoms of an emotional disorder or substance use problem, and 63% had a history of recidivism. Fifty seven percent of the female offenders had used specialty mental health or special education services during their lifetime. Of those with emotional symptoms or a substance use problem, 51% had used specialty mental health services and 58% had accessed special education services in the past.

Novins et al. (1999) examined the use of alcohol, drug, and mental health services among a sample of American Indian juvenile detainees. The results showed that 36.7% of the participants received services in the past. Among youths reporting any alcohol, drug, or mental health disorder, 38.4% reported using services for substance use problems

during their lifetime and 28.8% for emotional problems. Nicol et al. (2000) examined the mental health service needs of troubled young people, including young offenders.

Overall, the study found that the individual needs of young people were not met (51%).

Indeed, needs were met in only 18% of the sample.

Rosenblatt, Rosenblatt, and Biggs (2000) compared youths served by mental health and juvenile justice systems. They found that 20% of those youths receiving mental health services had recent arrest records, and 30% of youths arrested received mental health services. The results further showed that of all youths arrested in the county, mental health service users had more arrests than nonmental health service users. A subsample of mental health service users with arrests was matched on demographics with a subsample of mental health service users without arrests. It was shown that youths with arrests had a higher frequency of conduct disorder, higher Child Behaviour Checklist Externalizing and Total Problem scores, and more functional impairment in comparison to youths without arrests.

Stouthamer-Loeber, Loeber, Van Kammen, and Zhang (1995) explored the onset and development of disruptive problems in young males as related to parental efforts at help seeking and the youths' contact with juvenile court. The results demonstrated that by eighth grade, around age 14, approximately 20% of a sample of boys who had committed delinquent acts had been in contact with the juvenile court. Of these delinquent males, only 41% of their parents had ever sought help from anyone for their children's problems. By the eighth grade, delinquent males had been exhibiting problem behaviours for an average of six years. Individuals with a court contact had an interval between the

onset of problems and court contact of four years. More intensive help was given to males with a court contact for whom help had been sought.

In summary, the findings on service use consistently show that the needs of youths are not being met. Essentially, this points to the need to focus efforts on providing services to youths. It appears that youths are exhibiting a variety of emotional and behavioural problems a number of years before they enter the juvenile court arena; thus, opportunities exist to intervene before youths engage in a sustained pattern of delinquency. The findings of Glueck and Glueck (1950) reveal that families of delinquents had access to more social service agencies in comparison to nondelinquent families. Thus, it appears that the quality of service is more important than the number of services (Andrews & Bonta, 1998).

A weakness identified in studies on service use among general population samples, and young offender samples more specifically, is that service use was typically measured by simply asking parents or youths what services they accessed within a given time period. Standardized assessments would provide a more reliable and valid way to examine this concept and would allow for more diversity in the characteristics of the services being investigated. The Service Assessment for Children and Adolescents (Stiffman et al., 2000) is a standardized tool that appears promising in this regard.

Risk and Needs Assessment

When dealing with forensic decisions regarding the service needs of youths in conflict with the law, the most encouraging tools appear to be standardized risk and needs instruments. Several examples of these instruments have been provided by Hoge (2001), such as the Arizona Juvenile Risk Assessment Form, the Psychopathy Checklist: Youth

Version, and the Youth Level of Service/Case Management Inventory (YLS/CMI). The YLS/CMI appears particularly useful because it is based on solid theoretical and empirical grounds.

The assessment and treatment implications of the general personality and social psychological perspective on criminal conduct are expressed according to the four principles of case classification: risk, need, responsivity, and professional override. The YLS/CMI was designed to incorporate these principles. The first three principles of case classification were previously discussed. The professional override principle states that once risk, need, and responsivity have been considered, decisions are made as appropriate under present conditions (Andrews et al., 1990).

Thus, the YLS/CMI can be used to provide an estimate of risk, and areas of need can be identified and suggested as treatment targets, which would be outlined using a case plan. The assessor has the opportunity to override the risk estimate by using the professional override feature of the instrument; thus, flexibility is allowed in decision making where appropriate. An advantage of the YLS/CMI is that the young person's strengths are recorded for various risk/need domains; these strengths can then serve as areas to build on using the case plan.

Hoge (2001) suggests that in some circumstances a more thorough psychological assessment of the risk and need levels of young persons is appropriate; for example, cases dealing with a particularly high risk, high need youth. Hoge outlined a comprehensive risk/need assessment battery that can be used in these instances. The model battery includes a structured interview, an aptitude measure, personality tests, attitudinal

measures, measures of behavioural pathology (i.e., parent and teacher forms), and a broad-based risk/need assessment measure.

As was previously mentioned, police officers must decide whether a young offender should be diverted or charged, and, if diverted, the appropriate type of diversion or level of intervention (Hornick et al., 1996). While it is unrealistic for police officers to conduct a comprehensive risk/needs assessment given their other duties, the use of a screening tool may be useful to guide decisions for low risk offenders and to determine whether a more thorough assessment is required for higher risk cases. If a more comprehensive assessment is needed, then the case could be referred to a youth coordinator within the police service. Although the YLS/CMI Screening Version is in the developmental stages, it could be useful for this purpose once the psychometric properties of the tool have been established. This leads to the purpose of the present study.

Purpose of the Current Study

The general purpose of the current study was to assess risk/need factors and service use in a sample of youths that have been diverted from the criminal justice system at the precharge stage. The sample included youths too young to be charged (under age 12), those eligible for charges (age 12 and older), and those that have been charged (age 12 to 17). Five goals were outlined for the current study:

1. The first goal was to evaluate the psychometric properties of two standardized instruments for assessing risk/need in juvenile offenders, the Youth Level of Service/Case Management Inventory (YLS/CMI), and the Youth Level of Service/Case Management Inventory (YLS/CMI) Screening Version.

2. The second goal was to present descriptive data on the pattern of risks and needs exhibited by (a) youths age 12 and older apprehended for a crime and provided a diversion disposition, and (b) youths under the age of 12 apprehended by the police. Consistent with previous research on the correlates of youth crime, it was predicted that, in general, the sample of diverted youths would display clinical levels of pathology on the behavioural and personality measures, and, further, that high levels of comorbid problems would be observed in the sample. Comparisons were made between the under 12 and 12 and older groups to determine if there are differences in patterns of risk/need scores. More specifically, based on previous research it was hypothesized that children under age 12 would display more needs related to the family domain, whereas for older youths, antisocial peers would play a more prominent role.
3. A third goal was to compare the diverted and charged youths on the risk/need factors identified in the empirical research just reviewed. A specific prediction was that the charged youths will exhibit higher risk/need levels than the diverted group.
4. A fourth goal was to present descriptive data on past and current service use by youths. One specific prediction from the literature was that there will be a higher incidence of using school services rather than mental health or criminal justice services. It was also predicted that higher levels of service use will be exhibited by higher risk/need youth. An effort was also made in the current study to analyze the current diversion placements in terms of their relation to (a) the severity of the youth's risk and needs and (b) the specific needs of the youth.

5. A fifth goal was to explore links between a wide range of risk/need factors and reoffending rates for both the diverted and charged samples. Consistent with the literature, it was predicted that criminal history, antisocial attitudes, personality, peer associations (the Big Four) and family problems will constitute the major predictors of reoffending for both groups. It was also predicted that (a) reoffending rates would be higher in charged than diverted youths (controlling for custody placements), and (b) reoffending rates would be higher for diverted youth who fail to complete assigned programs than those who do. As well, the ability of the various standardized measures to predict reoffending rates was assessed in children under age 12 and diverted youths.

Method

Participants

Diversion group. The participants in the diversion group consisted of youths who had criminal contacts with all Youth Intervention/Diversion Unit (YID) officers, School Resource Officers (SROs), and CADO unit officers (i.e., robbery squad) from the Ottawa Police Service. In addition, the diversion group included youths who had criminal contacts with a sample of the Neighbourhood Officers (NHOs), frontline patrol officers, and investigators who volunteered to participate in the study. To be included in the study, youths must have consented to participate in the diversion process, and have been referred to various community agencies from the period of March 1, 2002 to December 31, 2002. In total, 538 referrals were made by police officers, of which 458 youths were age 12 and older and 80 children were under the age of 12. Of the 538 referrals, 101 families agreed to participate in the interview portion of the study. Due to the low

participation rate in the interviews after four months of data collection, families were offered \$10 remuneration for their participation. In total, 50 interview participants were given remuneration.

The final sample size overall was 423 for youths age 12 and older and 78 for children under the age of 12. Thirty-four participants in the diversion group and 3 participants in the under 12 group were rejected for inclusion in the study due to missing data. The gender distribution of the under 12 group was: 91.0% male ($n = 71$) and 9.0% female ($n = 7$). The diversion group was also predominantly male (65.5%, $n = 277$), but there were proportionally more females (34.5%, $n = 146$) than in the under 12 group, $\chi^2(1, N = 501) = 20.25, p < .001$. The gender distributions for the interview participants followed a similar pattern, with only 2 females (9.5%) in the under 12 group and 29 females (36.3%) in the diversion group, $\chi^2(1, N = 101) = 5.59, p = .02$.

Comparison group. The comparison group consisted of youths who were formally charged by all YID officers, School Resource Officers, and CADO unit officers. As well, the current study included youths who were formally charged by a sample of Neighbourhood Officers, frontline patrol officers, and investigators who volunteered to participate in the study. Charged youth cases were collected from March 1, 2002 to December 31, 2002. In total, police officers participating in the current study charged 254 youths. Five charged youths were rejected for inclusion in the study due to missing data, resulting in a final sample size of 249 for the charged group. The gender distribution of the charged group was as follows: 84.7% male ($n = 211$) and 15.3% female ($n = 38$). There were significantly more females in the diversion group than in the charged group, $\chi^2(1, N = 672) = 29.22, p < .001$.

The rejected and accepted cases were subjected to independent-samples t tests to determine if there were statistical differences in recidivism rates. Overall, the accepted cases were not significantly different from the rejected cases across many of the recidivism measures (i.e., new charges, violent charges, convictions, and violent convictions). It should be noted, however, that the rejected cases had significantly fewer new police incidents ($M = .33$, $SD = .82$), $t(74) = -5.14$, $p < .0001$, and violent police incidents ($M = .14$, $SD = .52$), $t(59) = -3.28$, $p = .002$, than the accepted cases ($M = 1.09$, $SD = 2.04$; $M = .34$, $SD = .99$, respectively).

Participation rates. Of the 538 diversion referrals completed by police officers, 101 families agreed to participate in the assessment portion of the current study, which resulted in a participation rate of 18.8%. There were a number of reasons why participants were not included in the assessment portion of the present study. In the majority of cases, the parent or youth refused to complete the assessment process (71.4%) when contacted by the primary investigator. The next most prominent reason was that in 13.5% of the cases too much time had elapsed between the current incident and the time the primary investigator obtained the referral. It should be noted that although the intention of the primary investigator was to obtain the referrals from police officers on a weekly basis, in the majority of cases it took months to obtain the requested information.

In 7.6% of the diversion cases the youth was not eligible to be interviewed because he or she was charged with a new offence before contact was attempted. In one instance, a police officer completed the YLS/CMI:SV for his/her youth cases that qualified for the current study, but this individual refused to allow the primary investigator to contact these families (4.6% of cases) for professional reasons. Finally,

there was no way to contact the family in 2.7% of the cases because the phone number provided had changed or the family moved and could not be located, and 1 youth (.2%) died before contact was attempted.

Statistical differences in recidivism rates were examined between interview cases and refusals, with the exception of the one deceased case. Using a Bonferroni correction (critical $\alpha = .0083$), there were no significant differences found between the two groups on the total number of new police incidents, $t(535) = .08, p = .94$, total number of new violent police incidents, $t(535) = -1.53, p = .13$, total number of new charges, $t(405) = 2.44, p = .015$, total number of new violent charges, $t(535) = .37, p = .71$, total number of new convictions, $t(523) = 2.21, p = .03$, and total number of new violent convictions, $t(535) = .66, p = .65$.

Materials

Youth Level of Service/Case Management Inventory. The Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 1994, 2001a, 2002) is a standardized instrument that can be used by professional workers to assess risk, need, and responsivity factors in clients and to formulate a case plan for clients (see Appendix A). The YLS/CMI consists of risk/need items, responsivity items, a professional override feature, and a direct linkage with levels of supervision and case planning (Hoge & Andrews, 2001a). The instrument is composed of six sections.

Part I is designed to provide a survey of all risk and need factors the youth manifests. The 42 risk/need items, which are presented in a checklist format, are divided into eight categories: Prior and Current Offences/Dispositions; Family Circumstances/Parenting; Education/Employment; Peer Relations; Substance Use;

Leisure/Recreation; Personality/Behaviour; and Attitudes/Orientation. Within each category, the assessor checks items applicable to the young person. Next, the assessor records the total number of items checked within the subset and the overall level of risk (low, moderate, high) represented in the category. The assessor is also asked to record whether the area in question represents a strength for the young person in seven of the eight categories.

Part II provides a summary of the individual risk/need levels recorded in Part I as well as an overall risk/need score that is computed by summing across the subscores. The overall risk level is categorized into low, moderate, high, and very high. Part III is an assessment of other needs and special considerations that might be relevant to disposition or intervention decisions about the young person. The items are divided into two groups, those dealing with family circumstances and parenting and those related to circumstances of the youth, with the latter including factors relevant to security considerations. While the variables in this section are not used in the overall risk/needs assessment, many of the variables represent responsivity factors that may be relevant to case planning.

In Part IV, the assessor provides an assessment of the client's general risk/need level based on all of the information available about the client. In most cases the risk level in this section will correspond to the risk level indicated in Part II. However, circumstances may exist where the assessor is cognizant of elements not included in the instrument that, when considered, may indicate a risk level different from that provided by the inventory. In Part V, the assessor records the contact level appropriate for the case as indicated by the overall risk assessment obtained (e.g., intensive levels of service for higher risk cases). The four levels of supervision are Administrative Supervision,

Minimum Supervision, Medium Supervision, and Maximum Supervision. In Part VI, the assessor forms a case management plan in which specific goals for the youth and the means for achieving these goals are delineated. The need areas identified in Part I should guide the assessor's selection of goals.

The risk/need items from the YLS/CMI were developed from an earlier version of this measure called the Youth Level of Service Inventory (Andrews, Robinson, & Hoge, 1984). Research conducted with the Youth Level of Service Inventory confirms the psychometric properties of the risk/need items (Andrews, Robinson, & Balla, 1986; Hoge & Andrews, 1996b; Shields & Simourd, 1991; Simourd, Hoge, & Andrews, 1991; Simourd, Hoge, Andrews, & Leschied, 1994). Specifically, support has been provided for the reliability, construct validity, and criterion-related validity (i.e., concurrent and predictive) of the risk/need items (Hoge & Andrews, 2001a).

Research conducted with young offender samples demonstrates the psychometric integrity of the risk/need (Part I) section of the YLS/CMI (Hoge & Andrews, 2001a). Jung and Rawana (1999) reported internal consistency estimates for the YLS/CMI that ranged from .62 for the substance abuse scale to .77 for the prior and current offences/dispositions scale. Coefficient alpha for the total risk/need score was .93. Interrater reliability estimates were provided by Poluchowicz, Jung, and Rawana (as cited in Hoge & Andrews, 2001a). Trained interviewers scored thirty-three cases by attending the same interview with the offender and examining the same file information. Acceptable levels of reliability were found for the total risk/need score: $\kappa = .69$, intraclass correlation coefficient = .75. Satisfactory reliability values were obtained for all of the subscale scores, with the exception of Leisure/Recreation, ranging from $\kappa = .38$ and

intraclass correlation coefficient = .50 (Attitudes/Orientation) to κ = .90 and intraclass correlation coefficient = .92 (Prior and Current Offences).

Support for the construct and criterion-related validity of the total risk/need score and the eight subscale scores has been provided by Jung (Jung, 1996; Jung & Rawana, 1999). The samples included 263 adjudicated offenders (male and female; native and nonnative) and 62 nonoffending youths. Reoffence data were collected over a 6-month follow-up period. The total risk/need score and the subscale scores significantly discriminated between samples of offenders and nonoffenders. These findings were robust across gender and ethnic subgroups. Results from a discriminant function analysis revealed that the eight risk/need subscale scores produced a 75.4% correct classification rate in the prediction of reoffending.

Costigan (1999) provided further predictive validity data for the total risk/need score and the eight subscale scores over a 2-year follow-up period. The total risk/need score and the subscale scores significantly predicted reoffending rates for the total sample of young offenders; these findings were robust across gender and ethnic subgroups. Using a discriminant function analysis, the extended follow-up period of two years increased the correct classification rate for reoffending to 91.3%.

Jack (2000) contributed further construct and predictive validity data for the YLS/CMI. The sample consisted of 150 male young offenders referred to an inpatient assessment unit. Acceptable construct validity was demonstrated by significant correlations between the YLS/CMI scores and scores from the adolescent version of the Psychopathy Checklist and between the YLS/CMI scores and the Behaviour Problem subscore of the Brief Psychiatric Rating Scale for Children. Predictive validity was

confirmed by the total YLS/CMI risk/need score significantly predicting reoffending rates over a one to three and one-half year follow-up period.

Catchpole and Gretton (2003) provide additional evidence to substantiate the predictive validity of the YLS/CMI using a sample of 74 violent young offenders. The authors followed up youths for one year, examining criminal charges and convictions using areas under the curve (AUCs) to test predictive accuracy. For general recidivism, the AUC for the YLS/CMI was .74, while for violent recidivism the AUC was .73. These results indicate a moderately strong ability of the YSL/CMI in predicting the occurrence of general and violent reoffending.

Youth Level of Service/Case Management Inventory (YLS/CMI) Screening Version. The Youth Level of Service/Case Management Inventory Screening Version (YLS/CMI:SV; Hoge & Andrews, 2001b) is a short version of the YLS/CMI. The screening version is designed to provide an initial screening of risk and need levels in young people for the purpose of deciding whether a more thorough assessment is required (see Appendix B). The instrument includes eight items comprising the risk/need areas. Each item in the screening version corresponds to an overall risk/need area measured in Part I of the long version of the YLS/CMI.

Items 1 through 6 require a yes, no, or omit response by the assessor. Items 7 and 8 are based on a 4-point Likert scale ranging from 0 [a satisfactory situation, with no (or little), need for improvement] to 3 (a very unsatisfactory situation with a very clear and strong need for improvement). The total score is calculated by assigning 1 point for each yes response and 1, 2, or 3 points for questions 7 and 8. Scores may range from 0 to 12, with higher scores indicating the need for a more thorough assessment.

The YLS/CMI:SV was recently developed; therefore, limited psychometric information is available. Foss (2003) examined the reliability and predictive validity of the YLS/CMI:SV using a subsample of the current study ($N = 457$). The results showed that the YLS/CMI:SV had acceptable internal consistency (Cronbach's $\alpha = .77$) and interrater reliability for the full scale score was $r = .62, p < .01$. In terms of predictive validity, it was found that the total score was significantly related to the number of new police contacts ($r = .21, p < .001$), number of new charges ($r = .39, p < .001$), and number of new convictions ($r = .20, p < .001$). When the outcome results were examined by gender, small to moderate correlations were found with higher correlations among the females across all variables. Hence, based on a preliminary examination of data with the YLS/CMI:SV, it appears that this is a reliable and valid assessment tool.

It should be noted that in the current study police officers completed the YLS/CMI:SV with items 7 and 8 scored on a continuous scale. Since the completion of data collection, it was decided that items 7 and 8 should be recoded into dichotomous variables so that these items will not contribute disproportionately to the total score. Thus, responses of 0 and 1 on the original scale were recoded as no and scores of 2 or 3 were recoded as yes. Consequently, total scores may range from 0 to 8. The present study will collect additional psychometric information on the YLS/CMI:SV using the aforementioned modified scoring.

Child Behavior Checklist for Ages 6-18. The Child Behavior Checklist for Ages 6-18 (CBCL/6-18; Achenbach, 1991a; Achenbach & Rescorla, 2001) is a standardized instrument designed to measure child and adolescent competencies, and emotional and behavioural problems as reported by parents or parent surrogates. The CBCL/6-18 is a

revised form of the CBCL/4-18. Items 2, 4, 5, 28, 78, and 99 have changed from the CBCL/4-18 to the CBCL/6-18 (Revised School-Age Forms Now Available, n.d.).

Achenbach and Rescorla (2001) note that the changes were made to items that were rarely endorsed or were ineffective in order to improve assessment of conduct problems, attention problems, and depression. In addition, small changes were made in the wording of items 51, 54, 56f, 75, and 83.

The checklist consists of 118 items and uses a 3-point Likert scale ranging from 0 (not true of their child) to 2 (very true or often true). Parents are instructed to respond to the items based on their child's behaviour now or within the past 6 months (Achenbach, 1991a). The instrument takes 15 minutes to complete. The scoring profile for the CBCL/6-18 is comprised of 15 scales: a) three competence scales (Activities, Social, and School); b) a total competence scale score; c) eight syndrome scales (Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior); d) an Internalizing problem scale score; e) an Externalizing problem scale score; and f) a Total problems scale score (Furlong & Wood, 1998).

The Total problems score is computed by summing the 1 and 2 scores on all the problem items, while the syndrome scale scores are computed by summing the 1 and 2 scores of the respective scales. The Externalizing score is computed by summing the scores for the two Externalizing syndromes (i.e., Rule-Breaking Behavior and Aggressive Behavior) and the Internalizing score is computed by summing the scores for the three Internalizing syndromes (i.e., Anxious/Depressed, Withdrawn/Depressed, and Somatic Complaints).

The CBCL/6-18 also contains new DSM-oriented scales. The scales were constructed by having 22 experienced child psychiatrists and psychologists from 16 cultures rate the consistency of the school-age items with DSM-IV categories (Child Behavior Checklist for Ages 6-18, n.d.). The six DSM-oriented scales are: Affective Problems (items rated as very consistent with Dysthymia and Major Depressive Disorder); Anxiety Problems (items rated as very consistent with Generalized Anxiety Disorder, Separation Anxiety Disorder, and Specific Phobia); Somatic Problems (items rated as very consistent with Somatization Disorder and Somatoform Disorder); Attention Deficit/Hyperactivity Problems (items rated as very consistent with Inattentive and Hyperactive-Impulsive types of ADHD); Oppositional Defiant Problems; and Conduct Problems (Achenbach & Rescorla, 2001). Due to the fact that the DSM-oriented scales are quantitatively scored, they can be used to assess the severity of an individual's problems.

Raw scores and their corresponding *T* scores for each subscale may be tallied by hand and graphed on a profile using a specific template for each gender. Normative data are available for the CBCL/6-18 and research suggests that the reliability and validity of the instrument are well-established (Achenbach & Rescorla, 2001; Child Behavior Checklist for Ages 6-18, n.d.).

Achenbach and Rescorla (2001) report on the psychometric properties of the CBCL/6-18. In terms of interinterviewer reliability, the overall ICC for the CBCL/6-18 was .93 for the 20 competence items and .96 for the 118 specific problem items (both $p < .001$), which indicates very high interinterviewer reliability. For test-retest item reliabilities computed at a one-week interval, the overall ICC was 1.00 for the 20

competence items and .95 for the 118 specific problem items (both $p < .001$), which indicates very high test-retest reliability. Twelve and 24 month stability estimates were also provided for CBCL/6-18 scale scores. Over the 12 and 24 months, respectively the mean r s were .70 and .61 on the competence scales, .74 and .70 on the empirically based problem scales, and .65 and .68 on the DSM-oriented scale (all $p < .05$). Overall, these results suggest that the scale scores are quite stable over 12- and 24-month periods for the CBCL/6-18.

Internal consistency was assessed using split-half reliability. The Cronbach alphas for the competence scales were moderately high, ranging from .63 to .79, while for the problem scales the alphas ranged from .78 to .97. For the DSM-oriented scales, the alphas ranged from .72 to .91, indicating moderately strong to strong reliability.

Cross-informant agreement was computed using CBCLs completed by mothers and fathers and YSRs completed by youths. Between pairs of parents, the mean r s were .69 for the competence scales, .76 for the empirically based problem scales, and .73 for the DSM-oriented scales ($p < .05$ for all r s), which indicates strong cross-informant agreement. For the combinations of CBCL x YSR rating, the mean r s were .44 for the DSM-oriented scales, .48 for the empirically based problem scales, and .54 for the competence scales. Achenbach and Rescorla (2001) report the mean cross-informant r s found in meta-analyses of many instruments used in many studies to provide a basis for comparison with their cross-informant findings: between pairs of parents the mean r was .59 and between children and their parents, the mean r was .25. Hence, the cross-informant r s for the CBCL/6-18 and YSR scales were commensurate with or higher than

those found in meta-analyses of correlations obtained with many instruments (Achenbach & Rescorla, 2001).

Achenbach and Rescorla (2001) note that the content validity of the competence and problem item scores of the CBCL has been supported by four decades of research, consultation, feedback, and revision. Further evidence was provided for the content validity of the CBCL/6-18 because findings showed that all items discriminated significantly ($p < .01$) between demographically matched referred and nonreferred children. The criterion-related validity of the CBCL/6-18 was supported by multiple regressions, odds ratios, and discriminant analyses, all of which showed significant ($p < .01$) discrimination between referred and nonreferred children. Finally, the construct validity of the CBCL/6-18 scales has been supported in many ways, such as evidence for significant associations with analogous scales of other instruments (e.g., Conners Rating Scales and Behavior Assessment System for Children Scales) and with DSM criteria (e.g., ADHD, ODD, Depressive Disorder); by cross-cultural replications of syndromes; by genetic and biochemical findings; and by predictions of long-term outcomes (Achenbach & Rescorla, 2001).

Youth Self-Report for Ages 11-18. The Youth Self-Report for Ages 11 to 18 (YSR; Achenbach, 1991b; Achenbach & Rescorla, 2001) was designed to obtain youths' reports of their own competencies and problems using a standardized format. The YSR consists of 112 items, with problem items similar to those on the CBCL/6-18 and uses the same 3-point Likert scale described for the CBCL/6-18. The YSR can be completed in 15 minutes by youths having fifth-grade reading ability, or it can be administered orally (Achenbach & Rescorla, 2001; Youth Self Report for Ages 11-18, n.d.). Youths are

required to rate themselves for how true each item is now or was within the past six months. The scoring profile for the YSR is the same as the CBCL/6-18, but without one of the competence scales (School). A revised version of the YSR was used in the current study with changes to items 2, 4, 5, 28, 78, and 99 (Revised School-Age Forms Now Available, n.d.).

Achenbach and Rescorla (2001) provide evidence for the reliability and validity of the YSR. Internal consistency estimates using Cronbach's α for the competence scales were moderately high, ranging from .55 to .75 for the YSR. For the empirically based problem scales, the alphas ranged from .71 to .95 on the YSR, while for the DSM-oriented scales, the alphas ranged from .67 to .83. The one-week test-retest reliabilities were .89 for Total Competence, .87 for Total Problems, and .79 for the DSM-oriented scales. For the YSR over 7 months, the mean r s were .54 on the competence scales, .53 on the empirically based problem scales, and .51 on the DSM-oriented scales (all $p < .05$).

Similar to the CBCL/6-18, adequate levels of reliability and validity have been established for the YSR (Achenbach, 1991b; Achenbach & Rescorla, 2001). Achenbach and Rescorla present similar evidence to that previously mentioned for the CBCL/6-18 that substantiates the content validity, criterion-related validity, and construct validity of the YSR. Furlong and Wood (1998) suggest that since the YSR, as well as the CBCL, have been especially well validated in empirical research, professionals are advised to use both checklists as an integrative unit where appropriate for the age of the youth.

Jesness Inventory. The Jesness Inventory (JI; Jesness, 1998) is a self-report measure consisting of 155 true-false items designed to measure personality dimensions in

children and adolescents aged 8 and older. The use of the JI is intended primarily for delinquents and those suspected of delinquency (Mooney, 1984). Respondents can complete the JI with a fourth-grade reading level.

The JI yields scores on 22 scales: Conventional Scales (Social Maladjustment, Value Orientation, Immaturity, Autism, Alienation, Manifest Aggression, Withdrawal-Depression, Social Anxiety, Repression, Denial, Asocial Index); Validity Scales (Lie, Random Response); and Subtype Classification. The nine subtype classification scales consist of: Unsocialized, Aggressive/Undersocialized, Active (AA); Unsocialized, Passive/Undersocialized, Passive (AP); Immature Conformist/Conformist (CFM); Cultural Conformist/Group-Oriented (CFC); Manipulator/Pragmatist (MP); Neurotic, Acting-Out/Autonomy-Oriented (NA); Neurotic, Anxious/Introspective (NX); Situational Emotional Reaction/Inhibited (SE); and Cultural Identifier/Adaptive (CI).

The subtype classifications fall into three integration levels (I-Level): I-Level 2 (AA, AP), I-Level 3 (CFM, CFC, MP), and I-Level 4 (NA, NX, SE, CI). Jesness and Wedge (1984) describe individuals at the I-2 level of perceptual integration and interpersonal maturity as prone to view the world in concrete terms. Those at the I-3 level tend to perceive the world in terms of rules and power. Individuals are aware of the rules, and much of their behaviour is rule oriented (i.e., getting around them, using them, and/or conforming to them). Individuals at the I-4 level see the world as more complex in comparison to those at the I-3 level, with the former being more aware of their own and others' motivations. I-4 level individuals are more prone to act in accordance with internalized values, with the failure to do so possibly leading to distress and discomfort.

In a review of the JI, Urbina (2001) indicates that the personality scales (i.e., Conventional Scales) aim to differentiate delinquents from nondelinquents and to describe respondents. *T*-score norm comparisons on the personality scales are based on nondelinquent samples, separated by gender and age level. Normative samples for the JI consisted of 970 delinquent and 1,075 nondelinquent males between the ages of 8 and 18 as well as 450 delinquent females, aged 12 to 19, and 811 nondelinquent females between the ages of 8 and 18.

Three of the personality scales, Social Maladjustment, Value Orientation, and Immaturity, have items that were selected based on whether they distinguished between delinquent and nondelinquent youths from different social class groups, and youths from different age groups. Seven other personality scales assess maladaptive traits (e.g., Alienation, Manifest Aggression, and Withdrawal-Depression). The remaining personality scale score, an Asocial Index, combines information from the eight other personality scales and is considered as the best JI measure of an individual's generalized tendency to violate social rules (Urbina, 2001).

Research confirms that the JI has acceptable psychometric properties (Guion, 2001; Jesness, 2000). Jesness (2000) reported that reliability data based on odd-even item correlations were adequate. The mean odd-even item correlation was .73, with correlations ranging from .62 to .88. Internal consistency estimates were provided with Cronbach's alpha. Several scales (i.e., Social Maladjustment: $\alpha = .85$, Value Orientation: $\alpha = .87$, and Manifest Aggression: $\alpha = .81$) showed strong alphas. Acceptable levels of internal consistency were found in other scales (i.e., Autism, Alienation, Withdrawal-Depression, Social Anxiety, Repression, and Denial), with alphas ranging from .61 to .78.

Internal consistency of the Immaturity scale was quite low ($\alpha = .43$). Test-retest reliability over an 8-month period ranged from .55 to .79, while estimates provided over a one-year period ranged from .46 to .75 (Jesness, 2000).

According to Jesness (2000), research shows that the JI leads to correct classification and prediction a large percentage of the time, which supports the discriminant validity of the instrument. Construct validity has been demonstrated by modest to strong significant correlations of the JI subscales with subscales on the Minnesota Multiphasic Personality Inventory and the California Psychological Inventory. Research on the predictive validity of the JI over a 10-year follow-up has shown that chronic offenders obtained higher scores on the intake Social Maladjustment and Asocial Index scales than did those who had no offences or only a few arrests for minor nonfelony violations in the follow-up period. As well, statistically significant linear trends were found for the most serious violent offenders to the less serious (and chronic) of five offender categories.

Reliability and validity of the JI subtypes are reported in Jesness (2000). A median test-retest correlation of .65 was obtained for subtype scale scores over a one-year period. Of the 284 individuals with a single classification at time 1, 48% obtained the same primary classification after one year; in 56% of these cases, the same subtype appeared as the primary or secondary classification on retest. Subtype agreement over an 8-month test-rest interval was 52%, whereas agreement over almost two years was only 36%. Construct validity is supported with the JI subtypes agreeing with theoretically-related concepts, including correlations of .58 with Ego Level, -.38 with an internal-external locus of control scale, and -.36 with the Embedded Figures Test. Jesness (2000)

suggests that these correlations provide supportive construct validity for the I-Level theory and the use of the JI as a measure of levels. Construct validity was also demonstrated by Jesness and Wedge's (1984) study in which subtype means were shown to differ on socioeconomic background, verbal and numerical aptitude, attitudes toward family, attitudes toward school, self-concept, observer ratings of institutional behaviour, self-reported delinquency, and a number of subsequent criminal offences.

In regards to predictive validity of the subtypes, Jesness (2000) reported that small subtype differences were found in subsequent adult arrests of previously delinquent samples. Moreover, results of follow-up analyses of a nondelinquent sample showed differences across subtypes in the average number of referrals to probation and in the percentage of youths referred to probation over a 4-year follow-up period. The highest proportion of delinquents was found among those classified as CFC, NA, and AP; the lowest proportion was found among SEs, CIs, and NXs.

Criminal Sentiments Scale-Modified. The Criminal Sentiments Scale –Modified (CSS-M; Shields & Simourd, 1991) is a 41-item scale scored on a 3-point Likert scale (see Appendix C). The CSS-M is divided into three subscales: Attitudes Toward the Law-Courts-Police (LCP; attitudes towards the criminal justice system), Tolerance for Law Violations (TLV; rationalizations for offences), and Identification with Criminal Others (ICO; personal evaluative judgements about law violators). Higher scores on the LCP, TLV, and ICO subscales are indicative of greater procriminal attitudes.

Participants are asked to provide a response of either agree, disagree, or undecided to each statement. A score of 2 is given for the endorsement of antisocial statements (or the rejection of prosocial statements), whereas a score of 0 is given for the

rejection of antisocial statements (or the acceptance of prosocial statements). A score of 1 is given for undecided responses.

The CSS-M has been reliably used with young offenders with higher scores differentiating predatory from nonpredatory behaviour among incarcerated offenders and recidivists from nonrecidivists (Shields & Simourd, 1991; Shields & Whitehall, 1994). Thus, the CSS-M has demonstrated predictive validity with young offenders. Convergent validity has been supported by correlations of the CSS-M with the Neutralization Scale ($r = .56$; Shields & Whitehall, 1994), the YO-LSI ($r = .45$; Shields & Simourd, 1991) and with the STAXI, a measure of anger ($r = .48$; Granic & Butler, 1998).

Research conducted with adult offenders further demonstrates acceptable psychometric properties of the CSS-M (Simourd, 1997; Simourd & van de Ven, 1999). Internal consistency estimates for the total score were .73 and .75 using two different samples (Simourd, 1997; Simourd & van de Ven, 1999). Cronbach alphas for the subscale scores ranged from .70 to .76; moreover, modest correlations were found among the subscales (Simourd, 1997). Concurrent validity of the CSS-M was supported by significant correlations of the CSS-M with institutional misconducts. Convergent validity was supported by significant correlations between the CSS-M with well-established criminal risk measures, such as the Level of Service Inventory-Revised, General Statistical Information on Recidivism Scale, and the Psychopathy Checklist-Revised (Simourd, 1997). As well, the CSS-M has been found to correlate adequately with another measure of criminal attitudes ($r = .51$), the Pride in Delinquency Scale (Simourd & van de Ven, 1999).

The criterion-related validity of the CSS-M has also been demonstrated among adult offenders (Simourd & van de Ven, 1999). In regards to concurrent/postdictive validity, results showed that the CSS-M was significantly and modestly correlated with incarceration and misconduct criteria. Similarly, predictive validity was confirmed by modest correlations between the CSS-M and rearrest and reincarceration criteria, particularly among violent offenders.

How I Think (HIT) Questionnaire. The How I Think (HIT; Gibbs, Barriga, & Potter, 2001) Questionnaire is a self-report measure comprised of 54 items that primarily measure self-serving cognitive distortion. The questionnaire is typically completed in 5 to 15 minutes and requires only a fourth-grade reading level. The authors suggest that the questionnaire can be read to youths with reading difficulties. Youths respond to the items according to a 6-point Likert scale ranging from strongly disagree (score of 1) to strongly agree (score of 6). Barriga, Gibbs, Potter and Liao (2001) state that each of the cognitive distortion items represents one or another of four categories: Self-Centered, Blaming Others, Minimizing/Mislabeling, and Assuming the Worst.

The items also refer to one or another of four categories of antisocial behaviour derived from the Conduct Disorder and Oppositional Defiant Disorder syndromes listed in the fourth edition of the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-IV; American Psychiatric Association, 1994): disrespect for rules, laws, or authorities (i.e., Opposition-Defiance); Physical Aggression; Lying; and Stealing. As an example, the item “People force you to lie if they ask too many questions” represents a Blaming Others cognitive distortion applied to a Lying behavioural referent. Barriga et al. (2001) considered the four behavioural referent categories to be generic and

comprehensive while excluding specific behaviours that apply only to a relatively small proportion of antisocial youth (e.g., fire-setting, cruelty to animals).

Within each cognitive distortion category at least two and not more than three items refer to a given behavioural referent category. Thus, questionnaire items were generated according to a cognitive distortion by behavioural referent 4 x 4 design, which resulted in eight subscales. The eight subscales were used to comprise three summary scales [i.e., Overt Scale (OV), Covert Scale (COV), and total score]. The Opposition-Defiance and Physical Aggression subscales constitute the OV scale reflecting behavioural referents that usually involve direct confrontation of a victim. The Lying and Stealing subscales constitute the COV scale reflecting antisocial behaviours that typically do not involve direct confrontation of a victim. The overall score is derived from summing all eight subscale scores.

Barriga et al. (2001) note that the HIT also contains two additional sets of items that are used to camouflage the distortion items. The Anomalous Responding (AR) scale was designed to screen for disingenuous, inadequate, or otherwise suspect responding. The remaining items, which are not scored, are positive fillers (PF items) that consist of prosocial statements intended to camouflage the distortion items and to encourage full use of the response scale. The HIT is composed of 39 cognitive distortion items, 8 AR items, and 7 PF items.

Subscale and summary scores for the HIT were normed with reference to 412 nonreferred male and female youths aged 14 to 19 from five samples across the United States. Percentile equivalents were derived from this overall sample. To derive cutoff scores for the profile form, discriminant analyses were used to compute questionnaire

scores that best differentiated referred and nonreferred youth in each sample. Scores between the 73rd and 83rd percentile were defined as representing the “borderline-clinical” range, with scores above the 83rd percentile considered in the “clinical” range and scores below the 73rd percentile considered in the “nonclinical” range.

Research using four validation samples shows that the HIT is a psychometrically sound instrument (Barriga et al., 2001). Internal consistency estimates for the cognitive distortion subscales, behavioural referent subscales, and AR Scale were high, with alphas ranging from .63 to .92. The Overt and Covert Scales also displayed high internal consistency, with alphas ranging from .83 to .94. Alphas for the overall score were very high, ranging from .92 to .96. Adequate test-retest reliability has also been established ($r = .91$, at a 1-week interval).

In order to ensure adequate content validity, Barriga et al. (2001) state that cognitive distortion items were written to represent all four cognitive distortion categories (Self-Centered, Blaming Others, Minimizing/Mislabeling, and Assuming the Worst) as applied to all four behavioural referent categories (Opposition-Defiance, Physical Aggression, Lying, and Stealing). At least 2 (and not more than 3) items refer to each cell in the 4 x 4 matrix and at least 8 (and not more than 11) items represent each of the eight subscales.

To evaluate face validity of the cognitive distortion items, 10 judges classified the items first according to the cognitive distortion categories and then according to the behavioural referent categories using written descriptions of all eight categories. Results showed that judges were highly accurate in classifying the items by cognitive distortion category. Of the 39 items, 16 items were accurately classified by 100% of the judges, 13

items by 90% of the judges, 1 item by 80% of the judges, 5 items by 70% of the judges, and 2 items by 60% of the judges. Judges were also highly accurate in classifying the items by behavioural referent category. Of the 38 items, 23 items were accurately classified by 100% of the judges, 10 items by 90% of the judges, 1 item by 80% of the judges, and 4 items by 70% of the judges.

Barriga et al. (2001) report that factor analytic validity was established through confirmatory factor analyses. The results suggested that the items clustered in accordance with the intended subscale design. Construct validity was assessed in several ways. Convergent validity was demonstrated through correlations of the HIT with antisocial behaviour as measured through self-report (i.e., Self Report Delinquency Scale, Externalizing Scale of the Youth Self Report, Novaco Anger Scale), parental report (i.e., Externalizing Scale of the Child Behavior Checklist), and institutional records (i.e., frequency of institutional misconducts and school suspensions).

In analyses of divergent validity, HIT scores did not correlate with age, socioeconomic status, intelligence, and academic achievement. In discriminant validity analyses, the HIT generally displayed a lack of confoundance with gender and race. In addition, the HIT successfully differentiated high school students from referred youths, including youths who were incarcerated, psychiatrically hospitalized, or court-mandated for psychological evaluation.

Barriga et al. (2001) suggest that the aforementioned findings regarding content validity, face validity, factor analytic validity, internal consistency, convergent validity, divergent validity, and discriminant validity provide support for the construct validity of the HIT. Additional support for construct validity was demonstrated by scores on the HIT

showing inverse correlations with indicators of moral maturity or adequacy, specificity in cognition-behaviour relationships, and sensitivity in clinical outcome studies (Barriga et al., 2001). For example, Barriga et al. discuss research that was conducted to determine whether self-serving versus self-debasing cognitive distortions (as measured by the Children's Negative Cognitive Error Questionnaire; CNCEQ) were specifically associated, respectively, with externalizing versus internalizing behaviours (both measured by the YSR). Results showed that the scores on the HIT correlated with externalizing behaviour, whereas scores on the CNCEQ, but not on the HIT, correlated with internalizing behaviour. Barriga et al. further report findings involving intervention that revealed reductions in HIT scores after treatment. Moreover, findings showed that the AR Scale correlated significantly with a measure of social desirability.

Service Assessment for Children and Adolescents. The Service Assessment for Children and Adolescents (SACA) was designed to assess the types of mental health services children use, the treatments they receive within service settings, the reasons for service use, and the quality of service (Stiffman et al., 2000). The SACA, which has both parent and child versions of the interview, was constructed in modules by service setting and structure such that, with longitudinal assessment over defined, consistent periods, episodes of care could be identified (Horwitz et al., 2001).

The SACA youth version begins with a module that gathers data on lifetime and past-year use of 25 service settings grouped in three broad domains: residential, outpatient, and school. The age when the child first used the service is also requested. Stiffman et al. (2000) note that eight of the settings assess residential services (hospital, drug or alcohol treatment unit, residential treatment center, group home, foster home,

detention center/prison, emergency shelter, or other); 13 assess outpatient services (community mental health center or other outpatient mental health clinic, professional not already mentioned, partial hospitalization or day treatment, drug or alcohol clinic, family preservation worker, emergency room, pediatrician or family doctor, probation or juvenile corrections, priest/minister/rabbi, alternative healer/chiropractor, crisis hotline, self-help group, respite care provider); and 4 assess schools (a special school, a special classroom, special help in the regular classroom, counselling or therapy in the school).

Following the initial module, the assessor can gather information using individual modules for each setting, which ask more specific questions about use in the preceding year. The current study used the initial module of the SACA youth version, but the instrument was administered to the parent in a paper-and-pencil format (see Appendix D). Research conducted on the SACA suggests that it is a reliable and valid instrument (Hoagwood et al., 2000; Horwitz et al., 2001; Stiffman et al., 2000).

Horwitz et al. (2001) assessed the test-retest reliability of the SACA. Retests were conducted within one week. For parents, both lifetime and 12-month test-retest reliability figures were excellent, with kappas ranging from .82 to .94 for services ever used and .75 to .86 for service use within the previous twelve months. The children's test-retest reliability increased with age, with those aged 11 years and older demonstrating moderate to excellent reliability. For children age 11 and older, the kappas for lifetime use ranged from .64 to .96, and for services used within 12 months the kappas ranged from .63 to .77. The results for children aged 9 and 10 were adequate with kappas for lifetime use ranging from .41 to .64, and for 12-month use, a kappa of .64 was obtained.

Hoagwood et al. (2000) assessed the concurrent validity of the SACA by examining the accuracy of parent reports compared to service records. The results showed kappas of .76 for any services, 1.0 for residential, .67 for outpatient, and .31 for school services. Stiffman et al. (2000) assessed the accuracy of reports from youths over age 11 in comparison to service records. The results showed excellent agreement (97%) between youth reports and records for specialty residential care. Reports of any specialty outpatient service use yielded fair-to-good levels of agreement with records (73%, $\kappa = .44$). Fair levels of agreement (69%) were obtained between youth reports of school service use and school records.

Canino et al. (2002) examined the reliability and validity of the SACA among a clinical sample of 146 Puerto Rican parents and children and adolescents aged 4-17. Test-retest reliability was examined by two independent interviewers over an average 12-day follow-up period. The results showed that parents and children (aged 11-17) were able to report with fair to moderate reliability any last year use of mental health services ($\kappa = .57$ and $\kappa = .50$, respectively), any outpatient mental health services ($\kappa = .50$ and $\kappa = .41$, respectively), and school services ($\kappa = .64$ and $\kappa = .41$, respectively). Findings for parental and child reports of lifetime use of services were generally similar to those for services used in the last year; that is, reliability for most services was in the fair to moderate range. Substantial sensitivity of the SACA was obtained when medical records were compared to parental and child reports of lifetime use of any service (96.2% and 94.9%, respectively) and outpatient mental health service (94.9% and 89.8%, respectively). Moderate sensitivity was obtained for last year use of mental health services for both parent and child informants (79.7% and 72.1%, respectively).

Services Accessed by Youth Measure. The Services Accessed by Youth measure is comprised of the services that are available to police officers dealing with youth from the Ottawa Police Service (see Appendix E). The measure includes warning and formal caution because these are considered forms of diversion at the precharge stage. The measure also includes questions that were asked of the child's parent about the anticipated start date and the length of the program(s) the child was referred to. The level of intensity of the treatment services will be scored on this form using the preceding information and more detailed information on the services provided in a booklet used by the Ottawa Police Service.

Recidivism Measure. Recidivism data for diverted and charged youths consist of the presence and number of new police contacts, charges, and convictions (see Appendix F). Follow-up information was collected from the Ottawa Police Service's computerized database system, RMS, and from conducting a Canadian Police Information Center (CPIC) check on the youths. RMS contains police occurrence reports that include details of incidents in which individuals come into contact with the law. Information from CPIC includes conditions of supervision, new charges, and convictions.

Procedure

All YID officers ($n = 5$), SROs ($n = 20$), and CADO unit officers ($n = 6$), and a sample of NHOs ($n = 6$), frontline patrol officers ($n = 36$), and investigators ($n = 6$) were asked to volunteer to participate in the current study by collecting data on the YLS/CMI:SV. A brief training session was provided to familiarize officers with the instrument and risk/needs assessment. A script was read to officers to inform them of the voluntary nature of the study, the length of their participation, and the confidentiality of

their responses (see Appendix G). Once officers were trained, the primary investigator asked them to fill out the YLS/CMI:SV on all youth cases (i.e., diversion and charged) they were involved in upon initiation of the study. At the time of the current incident officers briefly informed parents of diverted youths that the primary investigator would be contacting them regarding participating in a research study.

For diversion cases, a referral sheet was provided to each officer in order to gather information on the officer's name, the name of the youth, the case number, contact number of the family, and the service that the youth was diverted to. Officers wrote the name of the youth and case number on the YLS/CMI:SV so that it could be cross referenced with the referral sheet. When informal warnings were used, if documentation of the incident was not accessible through the Ottawa Police Service's computerized database system (RMS), then the officer was also required to record the type of police contact on the diversion referral sheet.

A similar referral sheet for charged youths was provided to each officer in order to gather information on charged youths. Information on the referral sheet included the officer's name, the youth's name, the case number, and the type of charge or charges. Once a number of cases had been completed, officers were asked to provide the aforementioned information on the referral sheet, and send the completed YLS/CMI:SVs and referral sheets to the primary investigator at the YID office on a weekly basis. The Services Accessed by Youth measure was coded initially from information on the diversion referral sheets provided by officers.

In order to ensure confidentiality, all youths in the study were given an identification number that could not link the individual to the particular criminal incident

that he or she was involved in. This number was used as an identifier for data analysis purposes; therefore, data for the youths could not be matched with their names. Police officers were also coded according to an identification number. The lists of names and matching identification numbers, and the weekly referral lists provided by the officers were locked up in the YID office unless the referral list was required for contact purposes or the names were needed to conduct the follow-up portion of the study.

Youths who had been diverted and referred to various community agencies, informally warned, or formally cautioned were contacted by telephone to determine participation in the study (see Appendix H). The primary investigator set up an interview and testing date for the parent and youth to meet the primary investigator at the closest police station or community police center to where the family lives. On the assessment date, the purpose and procedure of the assessment was explained to the parent and youth and the limits of confidentiality were outlined. Thereafter, written consent to participate in the study was obtained from the parent and the youth (see Appendix I and Appendix J, respectively).

After the parent and youth consented to participate in the study, the parent was asked to verify the service (i.e., diversion type) that his or her child was referred to, as recorded on the Services Accessed by Youth measure. The parent was then asked the remaining questions related to the anticipated length and start date of the referred service on the Services Accessed by Youth measure. It should be noted that each service was categorized as low intensity, moderate intensity, or high intensity based on the type of program or programs that the youth was referred to and based on the content of the programs. A description of services was provided by the YID Unit and was used in the

categorization process. The primary investigator and a registered psychologist from Carleton University rated each diversion type as low, moderate, or high intensity. Ratings were then compared and discrepancies discussed and settled so that a final list of treatment intensity ratings was available for use in the current study (see Appendix K).

The parent was asked to complete the self-report questionnaires (i.e., CBCL/6-18 and SACA) while the youth was interviewed and tested in a separate room. In some cases the child or youth was more comfortable with the parent in the same room; this was particularly so in cases where the participant was under age 12. Indeed, all children under the age of 12 completed the assessment process with his or her parent in the interview room.

The YLS/CMI was administered first in an interview format with the youth (see Appendix L). Once the interview was complete, a screening of the participant's reading level was undertaken to determine whether the study measures should be read to the participant or completed via self-report. Reading ability was ascertained by using word identification at the grade 3 and grade 4 levels¹, as determined by the Woodcock Reading Mastery Tests-Revised (Woodcock, 1987). In order to qualify at each grade level, the participant was required to read each word within 5 seconds and 6 consecutive words must have been read correctly. The grade 3 level words were presented first to gain the participant's confidence. If the participant successfully identified the grade 3 words, then the grade 4 words were presented.

¹ Grade 3 level words: wonderful, should, money, lemon, without, exit, chew, question, piece. Grade 4 level words: strange, brought, cattle, groan, dangerous, journey, major, garage, cruel.

Each grade level was presented on a separate piece of paper. If upon screening the participant's reading level it was determined that he or she could not read at the grade 4 level, then the assessment measures were administered orally, as suggested in the assessment manuals (e.g., HIT, YSR). In these instances, the participant was given a key of responses from which to choose. For example, during the oral administration of the HIT Questionnaire, the participant was given a sheet of paper with the following responses to choose from: disagree strongly, disagree, disagree slightly, agree slightly, agree, and agree strongly. In the under 12 group, 90.5% were administered the questionnaires orally, while only 5.0% in the diversion group (i.e., age 12 and older) were administered the measures using an interview format. In one case (1.3%) the CSS-M and HIT questionnaires were administered via self-report, but the JI and YSR were administered orally because the youth was having trouble concentrating due to Attention Deficit Disorder.

Thus, the self-report measures (i.e., CSS-M, HIT, JI, and YSR) were administered to the youth via oral or self-report administration. The order of the self-report measures for parents and youths were counterbalanced. After completion of the assessments, the parent and youth were debriefed together and given information for further contact with the primary researcher or the dissertation advisor if the parent or youth had any further questions or concerns (see Appendix M). The total testing time was approximately two hours.

Follow-up information was collected at least 3 months after the interview cases were completed or 3 months after the current incident for charged and interview refusal cases. Recidivism data for diverted and charged youths consisted of new police contacts,

charges, and convictions collected from July 10, 2003 to August 27, 2003. Information regarding new police contacts and charges was collected from the Ottawa Police Service's computerized database system (RMS) using the youth's name and date of birth. Similarly, new convictions were collected from RMS by conducting a CPIC check using the youth's name and date of birth. A CPIC check was conducted on all youths to determine the number and types of previous criminal convictions. As well, previous criminal contacts in the Ottawa area were obtained using RMS.

Parents of youths in the diversion group who were interviewed and referred to community treatment programs were telephoned during the follow-up period. Each parent was asked whether or not his or her child participated in and completed the program to which he or she was referred and the amount of time the child participated in the program. If the child did not participate, the parent was asked for the reason why (e.g., decided not to do the program).

A research proposal was presented to the Executive Committee of the Ottawa Police Service and to senior managers of the Youth Intervention/Diversion Unit. Permission to conduct the study using resources available from the Ottawa Police Service was granted (see Appendix N). Specifically, approval was granted to ask police officers to volunteer to collect data on the YLS/CMI:SV, and to access police facilities across the three divisions of the Ottawa Police Service to conduct the interviews. Moreover, permission to access the computerized police database system was provided to the primary researcher and a research assistant in order to collect information on the criminal behaviour of the participants.

To assess interrater reliability of the YLS/CMI, 10% of the interviews were randomly selected and examined by a fourth year psychology student from Carleton University who was trained in the administration of the YLS/CMI and the scoring of all other assessment measures. To assess interrater reliability of the recidivism follow-up coding, 10% of the sample of participants was randomly selected and coded by a fourth year psychology student who was trained on RMS and CPIC.

Results

Sample Descriptives

An alpha level of .05 was used for all statistical tests. The sample used in the current analyses consisted of 750 young people who have been in conflict with the law. Overall, the sample (74.5%) was predominantly male. The racial composition of the sample was primarily Caucasian (63.9%), followed by Black (13.2%), Middle East (9.2%), Asian (2.7%), Aboriginal (1.5%), and Other (1.4%), with a small percentage being unknown (8.1%). A summary of demographic characteristics and criminal history variables of the total sample and each group is presented in Table 4.

Criminal History Descriptives

As can be seen, the diversion group was significantly younger than the charged group at the time of the current incident (for age distribution by group see Appendix O). Interestingly, when age at first criminal incident was examined, the under 12 group was the youngest to first engage in criminal acts, followed by the charged group, then the diversion group. Similarly, the under 12 group was significantly younger than the diversion or charged groups with respect to age at first violent criminal incident, yet the diversion and charged groups were not significantly different from each other in this

Table 4
Descriptive Statistics of Demographic and Criminal History Variables

	Group				<i>F</i>	η^2
	Total <i>M(SD)</i>	Under 12 <i>M(SD)</i>	Diversion <i>M(SD)</i>	Charged <i>M(SD)</i>		
Age at current incident ^a	14.80 (2.19)	10.09 (1.43)	14.90 (1.46)	16.09 (1.23)	116.78**	.15
Age at first criminal incident	13.55 (2.35)	9.84 (1.58) _a	14.17 (1.92) _b	13.67 (2.16) _c	158.73**	.30
Age at first violent incident	13.71 (2.41)	9.65 (1.63) _a	14.00 (1.88) _b	14.40 (2.09) _b	13.75**	.34
Number of incidents under age 12	.43 (1.19)	2.03 (1.23) _a	.14 (.59) _b	.40 (1.52) _c	104.24**	.22
Number of violent incidents under age 12	.23 (.71)	1.31 (1.29) _a	.07 (.39) _b	.16 (.59) _b	138.53**	.27
Number of prior missing incidents	1.67 (6.01)	.08 (.27) _a	.46 (2.97) _a	4.21 (9.18) _b	36.84**	.09
Number of prior police incidents	2.11(3.51)	.65 (1.02) _a	1.06 (1.91) _a	4.35 (4.81) _b	95.57**	.20
Number of prior violent police incidents	.87 (1.68)	.37 (.81) _a	.47 (.94) _a	1.71 (2.41) _b	53.29**	.12
Number of prior charges	1.16 (3.31)	--	.09 (.52)	2.97 (4.89)	143.26**	.18
Number of prior violent charges	.37 (1.20)	--	.03 (.23)	.94 (1.81)	103.06**	.13
Number of prior convictions	.54 (1.74)	--	.04 (.31)	1.38 (2.62)	107.76**	.14
Number of prior violent convictions	.23 (1.71)	--	.11 (2.00)	.43 (1.02)	5.54*	.008

Note. Means in the same row with different subscripts differ at $p < .05$ using Bonferroni's correction. Total sample: $N = 750$; under 12 group: $n = 78$; diversion group: $n = 423$; charged group: $n = 249$.

^aDiversion group compared to charged group.

* $p < .05$. ** $p < .01$.

regard. In terms of the number of criminal incidents that young people engaged in prior to age 12, the under 12 group was involved in the greatest mean number, followed by the charged group then the diversion group. The same trend emerged for violent incidents prior to age 12; however, the diversion group was not significantly different from the charged group. Background information was also obtained on the number of missing incidents that young people were previously involved in. It was found that the charged group engaged in significantly more missing incidents than the diversion or under 12 groups, which did not differ significantly from each other.

In terms of prior police contacts, the diversion and under 12 groups were involved in significantly fewer incidents in general and violent incidents more specifically than the charged group, but the diversion and under 12 groups did not differ significantly from each other. For the remaining criminal history variables in Table 4 the under 12 group was not included because under the *Youth Criminal Justice Act* children under the age of 12 cannot be charged with a criminal offence. Across all indices (i.e., prior charges, violent charges, convictions, and violent convictions) it was found that the charged group was involved in a significantly larger number of charges and convictions than the diversion group.

Youths' involvement in prior criminal acts that resulted in diversion was examined next among the groups. The results showed that the charged group was not only involved in more criminal incidents than the diversion group, but they were also more likely to be involved in prior diversion incidents that resulted in no action (73.9%) on the part of police officers than the diversion group (34.8%), $\chi^2(1, N = 672) = 96.08, p < .001$. Indeed, the mean number of such incidents for the charged group was 2.46 ($SD =$

1.94) as opposed to 1.33 ($SD = .92$) for the diversion group, $F(1, 229) = 24.30, p < .001$, $\eta^2 = .10$. Criminal acts can also result in police issuing the youth an informal warning or a formal caution as the diversion. The charged group had a significantly higher mean number of such incidents ($M = 1.45, SD = .81$) than the diversion group ($M = 1.20, SD = .45$), $F(1, 186) = 6.54, p = .01, \eta^2 = .03$.

Another diversion option that police officers have at their disposal is to refer a young person to a treatment agency in the community; referrals can also be used for children under the age of 12 if resources are available. In the under 12 group, only 6 children (7.7%) were previously referred to a treatment agency, while 37 youths (8.7%) in the diversion group and a higher number of charged youths ($n = 60, 24.1\%$) were referred to a community agency, $\chi^2(2, N = 750) = 33.85, p < .001$. However, the mean number of incidents in which referrals were made was not significantly different among the groups, $F(2, 100) = 1.88, p = .16, \eta^2 = .04$. Young people age 12 and older who were involved in criminal acts could also be charged and referred to an alternative measures program at the postcharge stage. Very few youths in the diversion group (.9%) and the charged group (2.4%) were involved in such incidents prior to the current study, $\chi^2(1, N = 672) = 2.29, p = .13$.

Table 5 presents the frequency and percent of prior police contacts, charges, and convictions, and current offences for the total sample and for each group. With respect to prior police contacts, the under 12 group appear to have engaged in predominantly person based offences, followed by property based offences and relatively few other offences. A similar pattern emerged for the under 12 group with respect to the current incident except that one incident involved a drug based offence and there was a higher percentage of

Table 5

Frequency and Percent of Prior Police Contacts, Charges, and Convictions, and Current Offences by Group

		Group			
		Total	Under 12	Diversion	Charged
		<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)
Prior police contacts					
Person based	657 (41.6%)	29 (56.9%)	198 (44.5%)	430 (39.7%)	
Property based	680 (43.1%)	18 (35.3%)	191 (42.9%)	471 (43.5%)	
Drug based	81 (5.1%)	0	23 (5.2%)	58 (5.4%)	
Driving based	1 (0.6%)	0	0	1 (0.09%)	
Other	160 (10.1%))	4 (7.8%)	33 (7.4%)	123 (11.4%)	
Prior charges					
Person based	250 (32.1%)	--	14 (35.0%)	236 (31.9%)	
Property based	238 (30.5%)	--	15 (37.5%)	223 (30.2%)	
Drug based	17 (2.2%)	--	2 (5.0%)	15 (2.0%)	
Driving based	18 (2.3%)	--	6 (15.0%)	12 (1.6%)	
Other	256 (32.9%)	--	3 (7.5%)	253 (34.2%)	
Prior convictions					
Person based	115 (31.9%)	--	7 (43.8%)	108 (31.3%)	
Property based	124 (34.3%)	--	6 (37.5%)	118 (34.2%)	
Drug based	6 (1.7%)	--	0	6 (1.7%)	
Driving based	5 (1.4%)	--	1 (6.2%)	4 (1.2%)	
Other	111 (30.7%)	--	2 (12.5%)	109 (31.6%)	
Current incident					
Person based	508 (46.1%)	67 (66.3%)	199 (41.4%)	242 (46.6%)	
Property based	421 (38.2%)	30 (29.7%)	245 (50.9%)	146 (28.1%)	
Drug based	44 (4.0%)	1 (1.0%)	33 (6.9%)	10 (1.9%)	
Driving based	8 (0.7%)	0	0	8 (1.5%)	
Other	120 (10.9%)	3 (3.0%)	4 (0.8%)	113 (21.8%)	

person based offences committed. The diversion group was involved in proportionally equal amounts of person to property based prior police contacts and prior charges. The diversion group was involved in more person than property based offences for both prior convictions and current police contacts. Drug and driving related offences were relatively infrequent among the diversion group.

Table 5 also shows that across all criminal history indicators, the charged group was involved in similar proportions of property and person-based offences, which were the predominant offences this group engaged in. The next most frequent offences for the charged group were other based incidents followed by drug then driving based incidents across all prior history indicators. In terms of current offences for the charged group, the person based offences were predominant, followed by property offences, other offences, with drug and driving based offences being relatively infrequent.

The mean number of criminal incidents was significantly different among the groups, with the charged group ($M = 2.09$, $SD = 1.44$) being higher than the under 12 group ($M = 1.31$, $SD = .65$) and the diversion group ($M = 1.14$, $SD = .42$), $F(2, 747) = 86.17$, $p < .001$, $\eta^2 = .19$. Post hoc comparisons using Bonferroni's correction revealed that the charged group was significantly higher than the under 12 group ($p < .001$) and the diversion group ($p < .001$), but the diversion group was not significantly different from the under 12 group ($p = .39$) in terms of the number of current incidents. Examining violent offences for the current incident, the results showed a significant difference between the groups, $F(2, 747) = 16.73$, $p < .001$, $\eta^2 = .04$. Post hoc comparisons using Bonferroni's correction showed that the charged group ($M = 1.09$, $SD = .09$) was significantly higher than the diversion group ($M = .47$, $SD = .07$; $p < .001$), but the under

12 group ($M = .87$, $SD = .15$) was not significantly different from either the charged group ($p = .05$) or the diversion group ($p = .64$).

Risk/Needs Instruments and Psychometric Properties

The YLS/CMI:SV is a recently developed instrument; therefore, data is required on the psychometric properties of this tool. One of the goals of the current study was to provide data on the psychometric properties of the YLS/CMI:SV and the associated YLS/CMI. Given the lack of information on the screening tool, missing data has been collected and provided in Table 6 for the entire sample ($N = 792$). The missing item data from the YLS/CMI:SV was used to determine which cases to exclude from analyses in the current study.

The number of items omitted ranged from 0 to 8. The following distribution of missing items was obtained with the current sample: no items (43.6%); 1 item (23.2%); 2 items (15.7%); 3 items (6.9%); 4 items (5.2%); 5 items (2.3%); 6 items (1.4%); 7 items (.5%); and 8 items (1.3%). Table 6 shows that items 4 and 5 were the most frequently omitted, followed by items 3 and 6. Items that were scored the most consistently by police officers were 1, 7, and 8. In general, data from the current study showed that respondents were able to score a majority of the YLS/CMI:SV items, which suggests that this tool may be promising as a screening tool for risk/needs assessment.

Normative data for the YLS/CMI: SV and the YLS/CMI are presented in Appendix P for the diversion and charged groups combined (i.e., age 12 and older sample) and for each group separately (i.e., under 12, diversion, and charged). It should be noted that additional normative data are included for items on the YLS/CMI that typically are not included on separate scales. More specifically, scale scores were

Table 6

*Missing Data on the Youth Level of Service/Case Management Inventory Screening
Version*

	% of cases with items missing
Item 1 (history of delinquency/conduct disorders)	4.0
Item 2 (current school or employment problems)	12.4
Item 3 (some criminal friends)	18.3
Item 4 (alcohol/drug problems)	35.6
Item 5 (leisure/recreation)	32.4
Item 6 (personality/behaviour)	14.8
Item 7 (family circumstances/parenting)	6.8
Item 8 (attitudes/orientation)	5.1

provided for Total Strengths and Total Other Needs (i.e., Family/Parents and Youth) sections of the instrument.

A correlation matrix for the YLS/CMI Total and subscale scores is provided in Table 7. As can be seen, large correlations were obtained between the Total score and each subscale score. In general, correlations between the subscales were modest to strong indicating that the subscales were significantly but not too highly intercorrelated.

Internal consistency estimates and descriptive statistics for the YLS/CMI and the YLS/CMI:SV are provided in Table 8. Total scores on the YLS/CMI:SV ranged from 0 to 8 ($M = 4.73$, $SD = 2.36$), while total scores on the YLS/CMI ranged from 0 to 31 ($M = 13.23$, $SD = 7.15$). Cronbach's α ranged from .49 for the Attitudes/Orientation subscale to .81 for the Substance Abuse and Personality/Behaviour subscales on the YLS/CMI. A coefficient alpha was not provided for the Offence History subscale of the YSL/CMI due to a lack of variability in the scale items.

The coefficient alpha was acceptable for the YLS/CMI:SV total score ($\alpha = .85$) and the YLS/CMI Total Risk/Needs score ($\alpha = .89$). Coefficient alphas for the Total Strengths and Total Other Needs subcomponents were adequate. Results of the split-half reliability for the risk/need instruments also revealed adequate reliability for the YLS/CMI ($\alpha = .87$) and the YLS/CMI:SV ($\alpha = .82$). Internal consistencies of the remaining scales used in the current study have been established in previous studies, but are provided in Table Q1 of Appendix Q for the current sample. In general, acceptable levels of internal consistency were found for the instruments used in the current study.

Interrater reliability of the YLS/CMI:SV ($n = 34$) and the YLS/CMI ($n = 10$) is provided in Table 9. As can be seen, the total scores of the screening version ($r = .53$,

Table 7

Correlation Matrix for the YLS/CMI (n = 101)

	Total	1	2	3	4	5	6	7	8
1	--	1.00							
2	.72	--	1.00						
3	.85	--	.57	1.00					
4	.50	--	.22	.22	1.00				
5	.48	--	.17 [†]	.21	.52	1.00			
6	.56	--	.26	.33	.43	.28	1.00		
7	.76	--	.48	.76	.02 [†]	.08 [†]	.28	1.00	
8	.82	--	.58	.70	.25	.29	.39	.66	1.00

Note. 1 = Offence History; 2 = Family; 3 = Education; 4 = Peer Relations; 5 = Substance Abuse; 6 = Leisure/Recreation; 7 = Personality/Behaviour; 8 = Attitudes/Orientation. All correlations were significant at $p < .05$.

[†] $p < .10$.

Table 8

Descriptive Statistics and Internal Consistency Estimates of YLS/CMI and YLS/CMI:SV

Measure	<i>M</i>	<i>SD</i>	Cronbach's
			α
YLS/CMI:SV ^a	4.73	2.36	.85
YLS/CMI total risk/needs ^b	13.23	7.15	.89
Offence history	0.00	0.00	NA
Family	2.09	1.66	.68
Education	2.49	1.86	.67
Peer relations	2.03	1.42	.80
Substance abuse	.72	1.29	.81
Leisure/recreation	1.58	1.00	.62
Personality/behaviour	2.83	2.17	.81
Attitudes/orientation	1.49	1.02	.49
Total strengths	.24	.68	.60
Total other needs	3.98	3.54	.77
Other needs – family/parents	1.02	1.14	.33
Other needs – youth	2.90	2.76	.73

^aMean and standard deviation based on $n = 750$, Cronbach's α based on $n = 345$. ^b $n =$

101.

Table 9

Interrater Reliability Estimates for the YLS/CMI and YLS/CMI:SV

Measure	YSL/CMI			YLS/CMI:SV
	<i>Pearson's r</i>	ICC	Spearman <i>r</i>	Cohen's κ
Total risk/needs	.95**	.89***	.76*	.53**
Offence history	--	--	--	.18
Family	.85**	.68***	.67*	.17
Education	.95***	.67***	.88**	.83***
Peer relations	.73*	.80***	.82**	--
Substance abuse	.75*	.81***	.91***	.61**
Leisure/recreation	.82**	.62***	.72*	.36
Personality/behaviour	.96***	.81***	.83**	.00
Attitudes/orientation	.95***	.49***	.76*	--

Note. Pearson correlation coefficients were used to correlate the total and subscale scores on the YSL/CMI and the total score of the YSL/CMI:SV across raters. Spearman's correlation coefficient was used to correlate risk/need levels on the YLS/CMI across raters.

* $p < .05$. ** $p < .01$. *** $p < .001$.

$p = .001$) and the YLS/CMI ($r = .95, p < .001$) were significantly correlated across raters. For the YLS/CMI subscales all interrater reliability estimates were adequate, with Pearson r s ranging from .73 (Peer Relations) to .95 (Education). The intraclass correlation coefficients ranged from .49 (Attitudes/Orientation) to .81 (Personality/Behaviour and Substance Abuse). Concordance among risk/need levels of the YSL/CMI were also acceptable ranging from .67 (Family) to .91 (Substance Abuse). It should be noted that estimates could not be provided for Offence History of the YLS/CMI and Peer Relations and Attitudes/Orientation of the screening version due to one set of scores among the raters being a constant for these subscales and items, respectively. Interrater reliability of the YLS/CMI:SV items ranged from virtually none ($\kappa = .00$, Personality/Behaviour) to substantial ($\kappa = .83$, Education). The obtained results are likely a result of the small sample size ($n = 34$) available for analysis of the YLS/CMI:SV item scores.

To establish the construct validity of the screening tool it was necessary to determine whether the risk/need domains sampled by the single items on the YLS/CMI:SV corresponded to the subscales of the YLS/CMI. Correlations between the YLS/CMI risk/need domains and the corresponding items on the YLS/CMI:SV were as follows: Family ($r = .42, p < .001$), Education/Employment ($r = .70, p < .001$), Peers ($r = .41, p < .001$), Substance Abuse ($r = .78, p < .001$), Leisure/Recreation ($r = .39, p < .001$), Personality/Behaviour ($r = .64, p < .001$), and Attitudes/Orientation ($r = .25, p = .01$). A correlation could not be computed between the Criminal History subscale on the YLS/CMI and item 1 on the YLS/CMI:SV because the former was a constant. The moderate to strong correlations found between the YLS/CMI:SV items and the YLS/CMI

subscales confirms that the screening tool is indeed measuring similar constructs to that found in the parent instrument.

The construct validity of the YLS/CMI:SV, and YLS/CMI, was further assessed by correlating the total scores with established measures that have previously been shown to correlate with criminal behaviour. Since the screening version was based on the YLS/CMI, which has been shown to demonstrate convergent validity (Schmidt, Hoge, & Robertson, 2002), it was expected that the former would also show construct validity. As expected, the YLS/CMI total score correlated significantly with the YLS/CMI:SV total score ($r = .69, p < .001$). Table 10 reveals large effect sizes for the YLS/CMI across measures, with the exception of the Internalizing scores of the CBCL and YSR, for which moderate effect sizes were found. Similarly, moderate to large effect sizes were obtained between the YLS/CMI: SV and all measures, with the exception of the Internalizing scores of the CBCL and YSR, for which moderate effect sizes were found. Overall, the results in Table 10 support the construct validity of the YLS/CMI and the YLS/CMI:SV through significant correlations with convergent measures. Criterion-related validity of the YLS/CMI:SV will be assessed subsequently in the recidivism section of the results.

Gender differences were explored for the YLS/CMI:SV total score and the YLS/CMI and its subscales in Table 11. The only significant difference that emerged was for the YLS/CMI:SV on which males scored significantly higher than females. Males also scored higher than females on the YLS/CMI Education and Attitudes/Orientation subscales, but these differences did not reach significance using Bonferroni's correction. Cohen's (1992) conventions for effect sizes (ES) for ANOVAs are .01 (small ES), .06 (medium ES), and .14 (large ES). Thus, the gender effect noted in the previous analysis

Table 10

*Correlations of Total YLS/CMI and YLS/CMI:SV Scores with Selected Assessment**Measures (n = 101)*

Measure	YLS/CMI total score	YLS/CMI:SV total score
Criminal Sentiments Scale-Modified total score	.73***	.46***
Law, courts, police score	.68***	.41***
Tolerance for law violations score	.56***	.37***
Identification with criminal others score	.57***	.41***
How I Think Questionnaire (HIT) total score	.66***	.49***
HIT overt score	.69***	.51***
HIT covert score	.55***	.40***
Jesness Inventory asocial index	.57***	.49***
Child Behavior Checklist total problem score	.70***	.51***
Externalizing score	.73***	.61***
Internalizing score	.37***	.22*
Youth Self Report total problem score	.61***	.46***
Externalizing score	.57***	.59***
Internalizing score	.35***	.24*

* $p < .05$. *** $p < .001$.

Table 11

Means and Standard Deviations for the Risk/Needs Scales Across Gender

Measure	Males	Females	<i>F</i>	η^2
	<i>M (SD)</i>	<i>M (SD)</i>		
YLS/CMI:SV ^a	4.98 (2.24)	3.98 (2.54)	26.18***	.03
YLS/CMI total ^b	13.96 (6.31)	11.58 (8.64)	2.41	.02
Offence history	0.0 (0.0)	0.0 (0.0)	--	--
Family	2.24 (1.59)	1.74 (1.79)	1.97	.02
Education	2.74 (1.76)	1.90 (1.97)	4.54 [†]	.04
Peer relations	2.01 (1.44)	2.06 (1.41)	.03	.00
Substance abuse	.57 (1.08)	1.06 (1.63)	3.21	.03
Leisure/recreation	1.66 (.96)	1.42 (1.09)	1.21	.01
Personality/behaviour	3.10 (2.09)	2.23 (2.26)	3.58	.04
Attitudes/orientation	1.63 (.94)	1.16 (1.13)	4.71 [†]	.05

Note. Using Bonferroni's correction, critical alpha = .0056.

^aMales: *n* = 559; females: *n* = 191. ^bMales: *n* = 70, females: *n* = 31.

****p* < .001. [†]*p* < .05, approached significance.

would be considered small to moderate in magnitude.

Racial and socioeconomic status (SES) differences were also explored on the risk/need instruments. In terms of race, results showed that the groups did not differ significantly on the YLS/CMI Total score or on the subscale scores. A significant difference was found across race, however, on the YLS/CMI:SV total score, $F(6, 682) = 3.16, p = .005, \eta^2 = .03$. Post hoc comparisons using the Games-Howell procedure for unequal variances revealed that the Asian group ($M = 3.50, SD = 2.86$) scored significantly lower than the Aboriginal group ($M = 6.55, SD = 1.97$) and the Latin American group ($M = 6.57, SD = 1.51$).

Socioeconomic status (SES) differences were noted for the YLS/CMI on the Family subscale, $F(2, 98) = 3.30, p = .04, \eta^2 = .06$, Education subscale, $F(2, 98) = 3.34, p = .04, \eta^2 = .06$, Substance Abuse subscale, $F(2, 98) = 3.48, p = .04, \eta^2 = .07$, and Leisure/Recreation subscale, $F(2, 98) = 3.83, p = .03, \eta^2 = .07$. Post hoc comparisons using Bonferroni's correction for the Family subscale revealed that the low SES group ($M = 2.80, SD = 1.76$) scored significantly higher than the middle SES group ($M = 1.83, SD = 1.52, p = .01$). Post hoc comparisons for the remaining subscales were not significant; however, there was a trend for the low SES group to score the highest on the need factor while the high SES group scored lowest. The exception was for the Substance Abuse subscale whereby the trend was in the opposite direction (i.e., high SES group scored highest on the subscale).

In summary, the YLS/CMI and YLS/CMI:SV appear to demonstrate adequate reliability and construct validity. Gender and racial effects were not associated with the YLS/CMI Total score or any of the subscale scores. Differences were noted, however, on

the YLS/CMI:SV such that males obtained higher scores than females, which could be considered a small to moderate effect. A moderate effect was observed between race and half of the YLS/CMI subscales. Moreover, a trend was noted such that scores on four YLS/CMI subscales were inversely related to SES; that is, higher scores were associated with low SES. Racial differences were only noted on the YLS/CMI:SV for Asian participants, such that their scores were lower than Aboriginal and Latin American participants. The observed racial effect, however, was small in magnitude.

Patterns of Risk and Need Factors

In addition to providing data on the psychometric properties of the YLS/CMI and the associated screening version, a further goal of the current study was to assess risk and needs among youths eligible for charges (i.e., age 12 and older) but have alternatively been diverted from the criminal justice system at the precharge stage and youths too young to be charged (i.e., under age 12). In light of the new *YCJA*, information on the risk and need factors of youths eligible for extrajudicial measures is paramount in order to establish the appropriate community responses and to allocate scarce resources based on the requisite need for services. Descriptive information on the risk and need factors of children under the age of 12 is also important in order to determine whether they require different community resources than typical offenders of legal criminal age.

First, data will be presented for the pattern of risk and needs on the YLS/CMI:SV for diversion and under 12 groups ($n = 423$ and $n = 78$, respectively) and differences between groups will be examined. Then the diversion and under 12 groups will be examined for patterns on the YLS/CMI ($n = 80$ and $n = 21$, respectively) and differences between the groups will be noted.

Table 12 demonstrates the presence and absence of risk/need factors as measured by the YLS/CMI:SV across groups. A breakdown by gender was not provided due to the small number of females in the under 12 group. As can be seen, the predominant risk/need factors for the diversion group were Attitudes (87.9%), Family Circumstances/Parenting (71.2%), and Peers (60.1%). Approximately equal percentages of diverted youths presented with Leisure/Recreation (51.4%) and Personality/Behaviour (52.3%) as risk/need factors. Interestingly, History of Delinquency/Conduct Disorders (46.1%) and Current School or Employment Problems (46.1%) were the least prevalent risk/need factors.

For the under 12 group, Attitudes/Orientation (92.3%), Family Circumstances/Parenting (90.7%), and Personality/Behaviour (78.1%) were clearly the most prevalent risk/need factors. School Problems (74.3%), Leisure/Recreation (69.5%), and History of Delinquency/Conduct Disorders (65.4%) emerged as the next most prominent risk/need factors. Interestingly, the under 12 participants presented with Peers (36.4%) and Substance Abuse (3.6%) as risk/need factors the least frequently.

Comparisons were undertaken between the diversion and under 12 groups on the YLS/CMI:SV Total score and across each risk/need item on the screening instrument. A 2x2 factorial analysis of variance (ANOVA) was conducted with gender and group as the independent variables and YLS/CMI:SV Total score as the dependent variable. Due to the presence of disproportional cell frequencies it was decided to use the Type II sums of squares method in SPSS. First the results were examined to determine whether there was a significant interaction. Since the gender x group interaction was not significant,

Table 12

Presence of Risk/Need Factors on YLS/CMI:SV by Group

YLS/CMI:SV item		Group				χ^2
		Under 12 (<i>n</i> = 78)		Diversion (<i>n</i> = 423)		
		Risk/need factor present				
		No	Yes	No	Yes	
1		34.6	65.4	53.9	46.1	9.74**
2		25.7	74.3	52.5	47.5	17.84***
3		63.6	36.4	39.9	60.1	10.89**
4		96.4	3.6	69.1	30.9	17.96***
5		30.5	69.5	48.6	51.4	6.40*
6		21.9	78.1	47.7	52.3	16.57***
7		9.3	90.7	28.8	71.2	12.53***
8		7.7	92.3	12.1	87.9	1.25

Note. Item 1 = History of Delinquency/Conduct Problems; Item 2 = Current School or Employment Problems; Item 3 = Some Criminal Friends; Item 4 = Alcohol/Drug Problems; Item 5 = Leisure/Recreation; Item 6 = Personality/Behaviour; Item 7 = Family Circumstances/Parenting; Item 8 = Attitudes/Orientation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

$F(1, 497) = .57, p = .45, \eta^2 = .001$, the interaction was taken out of the error term and the analysis rerun.

Thereafter, the results showed a significant main effect of gender, $F(1, 498) = 9.96, p = .002, \eta^2 = .02$. Specifically, males ($M = 4.30, SD = 2.24$) scored significantly higher than females ($M = 3.48, SD = 2.47$). The main effect of group was also significant, $F(1, 498) = 3.98, p = .046, \eta^2 = .01$, with the under 12 group ($M = 4.69, SD = 1.96$) scoring significantly higher than the diversion group ($M = 3.93, SD = 2.39$) on the YLS/CMI:SV Total score. The obtained main effects of gender and group are considered small in magnitude.

Table 12 shows that the groups were significantly different across seven of the eight risk/need areas, the exception being for the Attitudes/Orientation subscale that both groups predominantly endorsed as a risk/need factor. A significantly higher percentage of the under 12 group than the diversion group had the following risk/need factors present: prior delinquency/conduct problems, school/employment problems, leisure activities, personality, and family circumstances/parenting (items 1, 2, 5, 6, and 7). Conversely, Table 12 demonstrates that a significantly higher percentage of the diversion group than the under 12 group indicated the presence of peers and substance abuse as risk/need factors (items 3 and 4).

The current results from the screening instrument provide preliminary evidence that, in general, children under the age of 12 who come into conflict with the law have different needs than youths age 12 and older. More specifically, the findings, with respect to the YLS/CMI:SV, provide preliminary support for the hypothesis that children under age 12 are more likely to display needs related to the family domain, whereas for older

youths antisocial peers play a more prominent role. The specific risk/need factors identified by the YLS/CMI:SV will be examined more comprehensively using the YLS/CMI and additional instruments used in this study.

Each of the items in the YLS/CMI:SV corresponds to a risk/need domain on the subscales of the YLS/CMI. Obviously, an assessment of risk and need factors using the subscales of the YLS/CMI will provide a more comprehensive picture of a youth's risk/need areas than that provided by the screening version alone. For instance, the YLS/CMI provides a quantitative score and an associated risk/need level for each subscale in contrast to the YLS/CMI:SV, which indicates only whether or not a risk/need factor is present or absent.

Table 13 presents the mean scores on the YLS/CMI for diverted youths and children under age 12 and normative data from a sample of adjudicated males aged 12 to 17. The mean scores of the diversion group were highest for Personality, then Peers, Education, and Family. The lowest mean scores were obtained for the Leisure, Attitudes, and Substance Abuse subscales. When one examines the mean scores of the diversion group in comparison to a group of adjudicated male offenders of the same age range, it appears that diverted youths scored higher on Family, Substance Abuse, Leisure, Personality, and Attitudes. Diverted youths' scores were consistent with those of the normative group on Peer Relations, but were slightly lower on Education.

The under 12 group had the highest mean scores on the Personality, Education, and Family risk/need factors (see Table 13). The lowest mean scores for the under 12 group were observed on the Substance Abuse and Peer Relations subscales. The mean

Table 13

Mean Scores on the YLS/CMI Subscales for Diversion and Under 12 Groups and Normative Data for Adjudicated Males Age 12 to 17

YLS/CMI subscale	Group		Normative
	Under 12 (<i>n</i> = 21)	Diversion (<i>n</i> = 80)	data
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Family	2.33 (1.56)	2.03 (1.69)	1.82 (1.72)
Education	3.62 (1.60)	2.19 (1.82)	2.25 (1.73)
Peer relations	1.29 (1.31)	2.23 (1.40)	2.25 (1.73)
Substance abuse	.19 (.60)	.86 (1.38)	.76 (1.15)
Leisure/recreation	1.67 (1.02)	1.56 (1.00)	1.25 (1.10)
Personality/behaviour	4.57 (1.69)	2.37 (2.05)	1.57 (1.69)
Attitudes/orientation	1.95 (1.07)	1.36 (.97)	.95 (1.25)

Note. Normative data were obtained from “Appendix D: Normative Data for Part I:

Assessment of Risks and Needs,” by R. D. Hoge and D. A. Andrews, 2002, *Youth Level of Service/Case Management Inventory: User’s manual*, pp. 45-46. Copyright 2002 by Multi-Health Systems.

scores of the under 12 group were consistently higher than the normative sample, with the exception of the Peer Relations and Substance Abuse risk/need subscales.

A multivariate analysis of covariance (MANCOVA) was conducted to compare the mean scores on the YLS/CMI subscales across the diversion and under 12 groups. The HIT Anomalous Responding (HITAR) scale was used as a covariate. Using Wilks' λ , the results showed that there was a significant difference between the groups on the set of dependent variables, $F(7, 92) = 5.68, p < .001, \eta^2 = .17$. The covariate was also significant on the linear combination of dependent variables, $F(7, 92) = 2.59, p = .02, \eta^2 = .17$.

Univariate results indicated that the differences between the groups were found on the following subscales: Education, $F(1, 98) = 14.17, p < .001, \eta^2 = .13$; Peers, $F(1, 98) = 6.95, p = .01, \eta^2 = .07$; Substance Abuse, $F(1, 98) = 4.33, p = .04, \eta^2 = .04$; Personality, $F(1, 98) = 23.13, p < .001, \eta^2 = .19$; and Attitudes, $F(1, 98) = 8.25, p = .005, \eta^2 = .08$. Given Cohen's (1992) ES conventions for ANOVA (small = .01, medium = .06, large = .14), the univariate group differences obtained were between small and large in magnitude.

The adjusted mean scores are presented in Figure 4 (the adjusted and original mean scores can be found in Table Q2 in Appendix Q). As can be seen, the under 12 group scored significantly higher than the diversion group on the Education and Personality/Behaviour subscales. Interestingly, by examining the risk/need domains in a quantitative manner, the groups now differ on the Attitudes subscale, which was not significant when a dichotomous present/absent indicator was used. Specifically, the under

Figure 4. Adjusted mean scores on YLS/CMI subscales for under 12 and diversion groups.

12 group had a significantly higher mean attitude score than the diversion group on the YLS/CMI.

Consistent with the aforementioned screening version findings, Figure 4 also demonstrates that the diversion group obtained higher adjusted mean scores than the under 12 group on the Substance Abuse and Peers risk/need domains. Interestingly, while the under 12 group was more likely than the diversion group to have Family and Leisure/Recreation present as risk/need factors, as measured by the YLS/CMI:SV, the two groups did not differ significantly with respect to the adjusted mean scores of these risk/need factors on the YLS/CMI.

The overall risk/need level and subscale risk/need levels of the YLS/CMI for under 12 and diversion groups are presented in Table 14. The diversion group was classified as predominantly moderate risk (51.3%) overall, with a smaller percentage being low risk (38.8%), and finally high risk (10.0%). In terms of the specific risk/need factors, it can be seen that a high percentage of the diverted youths (58.8%) were classified as high risk on the Leisure/Recreation subscale. The diversion group was classified predominantly in the moderate risk category for Attitudes/Orientation (76.3%), Personality (52.5%), Peer Relations (42.5%), and Education (41.3%). The risk/need factors for which diversion youths were classified primarily as low risk were: Offence History (100.0%), Family (70%), and Substance Abuse (63.8%).

As can be seen in Table 14, children under the age of 12 in conflict with the law were predominantly moderate risk overall (81.0%). The under 12 group were classified primarily as high risk on Leisure/Recreation (66.7%), Personality/Behaviour (52.4%), and Education (47.6%). Attitudes/Orientation (76.2%) emerged as predominantly as a

Table 14

Risk/Need Level Percentages on the YLS/CMI for Under 12 and Diversion Groups

Risk/need level	Group						χ^2
	Under 12 (<i>n</i> = 21)			Diversion (<i>n</i> = 80)			
	Low	Moderate	High	Low	Moderate	High	
Overall	4.8	81.0	14.3	38.8	51.3	10.0	8.90*
Offence history	100.0	0.0	0.0	100.0	0.0	0.0	--
Family	61.9	28.6	9.5	70.0	21.3	8.8	.56
Education	9.5	42.9	47.6	30.0	41.3	28.8	4.53
Peer relations	47.6	42.9	9.5	26.3	42.5	31.3	5.41 [†]
Substance abuse	85.7	14.3	0.0	63.8	21.3	15.0	4.73 [†]
Leisure/recreation	19.0	14.3	66.7	20.0	21.3	58.8	.59
Personality/behaviour	4.8	42.9	52.4	25.0	52.5	22.5	8.76*
Attitudes/orientation	19.0	76.2	4.8	22.5	76.3	1.3	1.13

[†]*p* < .10. **p* < .05.

moderate risk factor for the under 12 group. Finally, the under 12 participants were primarily classified as low risk on Offence History (100.0%), Substance Abuse (85.7%), Family Circumstances/Parenting (61.9%), and Peer Relations (47.6%) on the YLS/CMI.

For the statistical results presented in Table 14 a more liberal alpha level (.10) was used to increase power due to the low sample size ($n = 21$) of the under 12 group and to compensate for examining frequencies across three cells. Table 14 shows that for the Overall and Personality risk/need levels, the under 12 group had a significantly higher percentage of cases classified as moderate and high risk/need than the diversion group. Although nonsignificant, a similar pattern was noted for Education.

In contrast, the under 12 group had a higher percentage of cases in the low risk/need level category than the diversion group for the Peer Relations and Substance Abuse subscales. Indeed, the findings with respect to Peer Relations was consistent with the hypothesis that diversion youths would display more needs related to antisocial peers than children in the under 12 group. It was also hypothesized that children under age 12 would display more needs related to the family domain than the diversion group. This hypothesis was not supported by the current findings. In fact, both groups were predominantly low risk/need on the Family/Parenting subscale.

The risk principle states that higher risk cases should be given more intensive services. Accordingly, individuals in the moderate risk category would require their criminogenic needs to be targeted using services of moderate intensity. In order to identify risk/need factors that would warrant some form of intervention, risk/need level was collapsed into dichotomous categories (i.e., low versus moderate/high) and patterns were noted and differences between groups were examined (see Figure 5). Using a

Figure 5. Risk/need levels on the YLS/CMI for under 12 and diversion groups.

Note. Risk/need level was collapsed from low, moderate, and high into two categories: low risk/need (low R/N) and moderate/high risk/need (moderate/high R/N).

dichotomous categorization, overall the diversion group was moderate/high risk/need (61.3%). Examining the specific risk/need areas, the diversion group was predominantly moderate/high risk across the following subscales: Leisure/Recreation (80.1%), Attitudes/Orientation (77.6%), Peers (73.8%), Personality/Behaviour (75.0%), and Education/Employment (70.1%). Conversely, the diversion participants were predominantly low risk on: History (100.0%), Family (70.0%), and Substance Abuse (63.8%).

The under 12 group was moderate/high risk (95.3%) overall on the YLS/CMI. Across many of the individual subscales the under 12 participants were primarily in the moderate/high risk category: Personality/Behaviour (95.3%); Education (90.5%); Attitudes/Orientation (81.0%); and Leisure/Recreation (81.0%). The under 12 group was predominantly low risk on Offence History (100.0%), Substance Abuse (85.7%) and Family Circumstances/Parenting (61.9%). Approximately equal percentages of under 12 participants were classified as low risk (47.6%) and moderate/high risk (52.4%) for the Peer Relations risk/need factor.

For between group comparisons, the findings using dichotomous risk/need level variables mirrored what was found with the three risk/need levels. In addition, the results showed that a higher percentage of participants in the under 12 group than the diversion group were in the moderate/high category of risk/need on Education, $\chi^2(1, N = 101) = 3.65, p = .06$.

In order to determine whether the under 12 and diversion groups differed on a number of more specific measures of functioning, a MANCOVA was conducted using total scores of the YLS/CMI, CSS-M, HIT, JI Asocial Index, YSR Total Problems, and

CBCL Total Problems scales. The HIT AR score was used as a covariate. Using Wilks' λ , the results showed that there was a significant difference between groups on the set of dependent variables, $F(6, 93) = 5.10, p < .001, \eta^2 = .25$. Univariate results revealed that the groups differed significantly on the YLS/CMI, HIT, YSR, and CBCL (see Table 15). More specifically, the under 12 group scored significantly higher than the diversion group on the aforementioned scales. The univariate group differences were between small and medium in magnitude.

It should be noted that conventionally, power of .80 is required to obtain statistical significance (Cohen, 1992). A post hoc power analysis was conducted for the findings in Table 15. Insufficient power was found for the CSS-M (power = .11) and JI Asocial Index (power = .16), which likely contributed to the lack of significant findings. Although a small effect was noted for the CSS-M, it appears that the diversion group had significantly more criminal attitudes than the under 12 group. Conversely, a trend was evident whereby the under 12 group scored higher on the Asocial Index than the diversion participants suggesting a more deviant personality profile in general.

In summary, using a screening of risk/needs, it was determined that the diversion group presented predominantly with the following risk/need factors: peers, family circumstances/parenting, and attitudes/orientation. The remaining risk/need factors were identified as being present or absent in approximately equal amounts (i.e., 50%): history of delinquency/conduct problems, school or employment problems, leisure/recreation, and personality/behaviour. Interestingly, substance abuse was present as a risk/need factor in only 30.9% of the cases.

Table 15

Unadjusted and Adjusted Mean Scores on Assessment Measures across Groups

Measure	Group				<i>F</i>	η^2
	Under 12 (<i>n</i> = 21)		Diversion (<i>n</i> = 80)			
	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)		
YLS/CMI	15.62 (6.15)	16.12 (6.79)	12.60 (7.29)	12.47 (6.76)	4.80*	.05
CSS-M	23.19 (11.33)	24.01 (13.54)	26.54 (14.46)	26.32 (13.48)	.48	.01
HIT	3.33 (1.01)	3.43 (.71)	2.89 (.76)	2.71 (.71)	10.47**	.10
JI AI	61.00 (13.14)	62.41 (14.24)	59.41 (15.95)	59.04 (14.19)	.93	.01
YSR	54.48 (10.98)	59.67 (10.18)	54.96 (11.47)	54.65 (10.13)	4.03*	.04
CBCL	65.52 (10.07)	65.94 (10.14)	60.21 (10.24)	60.10 (10.11)	5.50*	.05

Note. Adjusted means evaluated at mean of covariate HIT Anomalous Responding score

= 4.22. YLS/CMI = Youth Level of Service/Case Management Inventory Total score;

CSS-M = Criminal Sentiments Scale-Modified Total score; HIT = HIT Total score; JI AI

= Jesness Inventory Asocial Index *T* score; YSR = Youth Self Report Total Problems *T*

score; CBCL = Child Behavior Checklist Total Problems *T* score.

p* < .05. *p* < .01.

Using a more comprehensive assessment of risk and needs, it was found that the diversion group was predominantly in the moderate risk category overall (51.3%). The findings showed that diversion youths were identified as being predominantly low risk on offence history (100.0%), family (70.0%), and substance abuse (63.8%). The diversion group was identified as being primarily moderate to high risk on education/employment problems, peer relations, leisure, personality/behaviour, and attitudes/orientation.

The present findings suggest that children under the age of criminal responsibility present criminogenic needs across a variety of areas with a somewhat different pattern of criminogenic needs in comparison to diverted youths. The following factors were identified as being present for the under 12 group when a screening of risk/needs was completed: history of delinquency/conduct problems, school problems, leisure/recreation, personality/behaviour, family circumstances/parenting, and attitudes/orientation.

Using a more thorough assessment of risk and needs, it was determined that the under 12 group was moderate risk (81.0%) overall, and more specifically, they presented as being predominantly moderate to high risk on education, leisure/recreation, personality/behaviour, and attitudes/orientation. While offence history (100%), substance abuse (85.7%), and family (61.9%), to a lesser extent, were identified as being predominantly low risk areas for the under 12 group, mixed results emerged for peer relations; that is, almost half of the cases were classified as low risk (47.6%) and half were classified as moderate/high risk (52.4%).

In general, when comparisons were made between the groups, it was found that the under 12 participants obtained more deviant scores than the diversion participants across a number of indicators of risk/need and more specific measures of functioning.

The following section will examine the attitude construct in more detail with respect to patterns of findings and whether differences exist between the diversion and under 12 groups.

Patterns of Antisocial Attitudes

Specialized assessments of antisocial attitudes that were administered to participants in the current study were the CSS-M and HIT. Table 16 presents the correlation matrix for the attitudinal measures. As can be seen, correlations ranged from moderate to large. Correlations were particularly high between the total score of the CSS-M and LCP subscale, and between the HIT total score and subscale scores. The HIT AR subscale was modestly related to the CSS-M and other HIT subscales, with the strongest association found with the Lying subscale.

For the diversion group, scores on the CSS-M indicate that they have attitudes, values, and beliefs related to criminal activity in general ($M = 26.54$, $SD = 14.46$), and that they have developed negative attitudes towards the criminal justice system ($M = 13.37$, $SD = 8.97$), they are tolerant of law violations ($M = 8.47$, $SD = 5.14$), and they identify with individuals who break the law ($M = 4.53$, $SD = 2.60$). In comparison to a sample of adjudicated young offenders (Robertson, 1999), the scores of diverted youths in the current study were slightly lower for the total score ($M = 29.98$, $SD = 15.16$), attitudes towards the criminal justice system ($M = 16.39$, $SD = 9.90$), and identification with criminal others ($M = 5.18$, $SD = 2.71$), but the diversion participants had a slightly higher tolerance for law violations ($M = 8.41$, $SD = 4.63$).

Table 16

Correlation Matrix for CSS-M and HIT Scales (n = 101)

Measure	CSS-M total	CSS-M LCP	CSS-M TLV	CSS-M ICO	HIT total	HIT overt	HIT covert	HIT AR	HIT SC	HIT BO	HIT MM	HIT AW	HIT OD	HIT PA	HIT L	HIT S
CSS-M total	1.00															
CSS-M LCP	.92	1.00														
CSS-M TLV	.79	.54	1.00													
CSS-M ICO	.69	.48	.54	1.00												
HIT total	.61	.52	.59	.41	1.00											
HIT overt	.57	.52	.52	.35	.94	1.00										
HIT covert	.58	.46	.60	.43	.94	.77	1.00									
HIT AR	.27	.21	.31	.21	.48	.39	.52	1.00								
HIT SC	.59	.50	.59	.37	.94	.85	.91	.49	1.00							
HIT BO	.52	.44	.49	.39	.93	.90	.85	.44	.80	1.00						
HIT MM	.55	.43	.58	.42	.92	.80	.89	.50	.84	.78	1.00					
HIT AW	.60	.56	.53	.34	.92	.92	.81	.33	.81	.86	.71	1.00				
HIT OD	.59	.53	.55	.39	.92	.91	.80	.41	.87	.82	.80	.87	1.00			
HIT PA	.50	.46	.45	.27	.86	.96	.66	.32	.74	.86	.72	.85	.76	1.00		
HIT L	.58	.49	.58	.38	.94	.85	.93	.53	.88	.87	.85	.86	.86	.87	1.00	
HIT S	.50	.39	.52	.40	.81	.59	.93	.44	.81	.71	.81	.67	.67	.75	.73	1.00

Note. All correlations significant at $p < .05$. CSS-M = Criminal Sentiments Scale-Modified; LCP = Law, Courts, Police; TLV = Tolerance for Law Violations; ICO = Identification with Criminal Others; HIT = How I Think Questionnaire; AR = Anomalous Responding; SC = Self-Centered; BO = Blaming Others; MM = Minimization/ Mislabeled; AW = Assuming the Worst; OD = Opposition-Defiance; PA = Physical Aggression; L = Lying; S = Stealing.

In terms of self-serving cognitive distortions, the diversion group showed a pattern of scores that was in the borderline-clinical range for the HIT Total score ($M = 2.89$, $SD = .76$), Overt score ($M = 2.90$, $SD = .84$), and Covert score ($M = 2.90$, $SD = .80$; see Figure 6). Examining the individual subscales, it appears that the diversion participants were in the nonclinical range for mean scores on the Self-Centered ($M = 2.83$, $SD = .86$) and Assuming the Worst ($M = 2.62$, $SD = .82$) cognitive distortion subscales. Mean scores in the borderline-clinical range were obtained on the Blaming Others ($M = 2.93$, $SD = .77$) cognitive distortion subscale, while mean scores in the clinical range were obtained for the Minimizing/Mislabeling ($M = 3.15$, $SD = .90$) cognitive distortions.

The behavioural referents to which the cognitive distortions apply were primarily in the borderline-clinical range for the Oppositional-Defiant ($M = 3.14$, $SD = .80$), Lying ($M = 3.24$, $SD = .90$), and Stealing ($M = 2.56$, $SD = .85$) subscales among the diversion group. The diversion participants' mean score on the Physical Aggression behavioural referent category was in the nonclinical range ($M = 2.66$, $SD = 1.02$).

Descriptive statistics from the CSS-M indicate that the under 12 group presented with attitudes, values, and beliefs conducive to criminal activity in general (CSS-M total score: $M = 23.19$, $SD = 11.33$), and more specifically, they maintained negative attitudes towards the criminal justice system ($M = 21.43$, $SD = 8.84$), they were tolerant of law violations ($M = 7.00$, $SD = 3.29$), and they identified with criminal individuals ($M = 3.76$, $SD = 2.55$). Interestingly, the mean scores of the under 12 group were found to be in the clinical range across all HIT summary scores, and cognitive distortion subscales, and for all behavioural referent categories (see Figure 6).

Figure 6. HIT Questionnaire profile of mean scores for diversion and under 12 groups.

Note. TOT = HIT Total score; OV = Overt score; COV = Covert score; SC = Self-Centered; BO = Blaming Others; MM = Minimizing/Mislabeling; AW = Assuming the Worst; OD = Opposition-Defiance; PA = Physical Aggression; L = Lying; S = Stealing. Nonclinical = < 73 percentile; Borderline-Clinical = 73-83 percentile; Clinical = > 83 percentile.

Multivariate results presented previously indicated that diversion and under 12 groups differed significantly with respect to total scores on the HIT, but not the CSS-M. Scores on the subscales of these instruments will be examined in more detail to determine whether the groups differ on specific areas of thinking. In light of the high correlations between various subscales on the CSS-M and HIT, it was decided to conduct the following analysis using summary scale scores rather than individual subscale scores. Thus, a MANCOVA was used to assess whether the under 12 and diversion groups differed on the linear combination of LCP, TLV, and ICO scales of the CSS-M, and the Overt and Covert scales of the HIT. The anomalous responding scale of the HIT was used as a covariate. The multivariate result showed that there was a significant difference between the groups on the set of dependent variables, $F(5, 94) = 5.65, p < .001, \eta^2 = .23$.

Univariate results and mean scores (adjusted and unadjusted) are presented in Table 17. It was determined that the groups differed significantly on the HIT Overt and Covert summary scores. More specifically, the under 12 group scored higher than the diversion group on the Overt and Covert scores, which was consistent with the direction of findings with the HIT Total score. A large effect was noted for the difference between groups on the Overt scale, while a small-moderate effect was observed for the Covert scale. On the CSS-M subscales, a post hoc power analysis was conducted and it was found that insufficient power may have contributed to the lack of significant findings for the LCP (power = .06), TLV (power = .15), and ICO (power = .16) subscales. Indeed, it was observed that the diversion group scored higher than the under 12 group on each subscale. Taking into account the observed effect sizes, the differences between groups in terms of criminal attitudes on the CSS-M were small in magnitude.

Table 17

Unadjusted and Adjusted Mean Scores on the CSS-M and HIT Summary Scales

Measure	Group				<i>F</i>	η^2
	Under 12		Diversion			
	Unadjusted <i>M (SD)</i>	Adjusted <i>M</i> (<i>SD</i>)	Unadjusted <i>M (SD)</i>	Adjusted <i>M</i> (<i>SD</i>)		
CSS-M LCP	12.43 (8.84)	12.83 (8.85)	13.37 (8.97)	13.27 (8.82)	.04	.00
CSS-M TLV	7.00 (3.29)	7.32 (4.65)	8.47 (5.14)	8.39 (4.63)	.87	.01
CSS-M ICO	3.76 (2.55)	3.88 (2.57)	4.53 (2.60)	4.50 (2.29)	.96	.01
HIT overt	3.53 (1.03)	3.62 (.80)	2.90 (.84)	2.88 (.80)	14.16***	.13
HIT covert	3.14 (1.03)	3.25 (.72)	2.90 (.80)	2.87 (.72)	4.56*	.04

Note. Adjusted means evaluated at mean of covariate HIT Anomalous Responding

score = 4.22. CSS-M = Criminal Sentiments Scale-Modified; LCP = Law, Courts, Police;

TLV = Tolerance for Law Violations; ICO = Identification with Criminal Others; HIT =

How I Think Questionnaire.

* $p < .05$. *** $p < .001$.

Due to the finding that the subscales of the HIT were strongly intercorrelated, the groups were examined with respect to the individual subscales using univariate ANCOVAs with HIT AR as a covariate. A Bonferroni correction (critical $\alpha = .0125$) was applied to control for the number of statistical tests conducted within each category of subscales (i.e., Cognitive Distortion and Behavioural Referent). Unadjusted and adjusted mean scores and F values are presented in Table 18. As can be seen, the under 12 group scored significantly higher than the diversion group on all subscales except the Lying and Stealing behavioural referent subscales. Given Cohen's (1992) ES conventions for ANOVA (small = .01, medium = .06, and large = .14), the current results with respect to cognitive distortion ranged from small to large. It should be noted that a trend was observed with respect to the lying and stealing behavioural referent categories, such that the under 12 group scored higher than the diversion group. A post hoc power analysis revealed that the nonsignificant results were likely due to a lack of power for the Lying (power = .67) and Stealing (power = .48) subscales.

Hence, the results indicate that in comparison to diverted youths age 12 and older, children under the age of 12 in the current study endorsed more self-centered cognitive distortions, they were more likely to blame others, and they were more likely to assume the worst. Moreover, this pattern of self-serving cognitive distortions applied to the opposition-defiance and physical aggression behavioural referent categories, and a trend was noted in this direction for the lying and stealing behavioural referent categories.

While it is useful to distinguish between children under age 12 who have come into conflict with the law and diverted youths in terms of mean scores, more importantly, it is necessary to determine whether these groups harbour attitudes that would require

Table 18

Unadjusted and Adjusted Mean Scores on HIT Cognitive Distortion and Behavioural Referent Category Subscales across Groups

HIT Subscale	Group				<i>F</i>	η^2
	Under 12 (<i>n</i> = 21)		Diversion (<i>n</i> = 80)			
	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)		
Cognitive distortions						
SC	3.20 (1.04)	3.31 (.78)	2.83 (.86)	2.80 (.78)	7.13*	.07
BO	3.49 (1.00)	3.59 (.72)	2.93 (.77)	2.91 (.72)	14.82**	.13
MM	3.21 (1.20)	3.32 (.85)	3.15 (.90)	3.12 (.84)	.91	.01
AW	3.36 (.97)	3.43 (.79)	2.62 (.82)	2.60 (.79)	18.36**	.16
Behavioural referents						
OD	3.57 (.82)	3.65 (.73)	3.14 (.80)	3.12 (.72)	8.75*	.08
PA	3.50 (1.30)	3.59 (1.01)	2.66 (1.02)	2.63 (1.01)	14.73**	.13
L	3.56 (1.02)	3.67 (.78)	3.24 (.90)	3.21 (.78)	5.93 [†]	.06
S	2.83 (1.15)	2.92 (.82)	2.56 (.85)	2.53 (.82)	3.68	.04

Note. SC = Self-Centered; BO = Blaming Others; MM = Minimization/ Mislabeling; AW

= Assuming the Worst; OD = Opposition-Defiance; PA = Physical Aggression; L =

Lying; S = Stealing.

* $p < .0125$. ** $p < .001$. [†] $p < .05$, did not reach significance.

clinical attention. Percentile scores on the HIT Questionnaire were converted into nonclinical (below the 73rd percentile), borderline-clinical (between 73rd and 83rd percentiles), and clinical (over 83rd percentile) categories and are presented in Table 19 for both groups. For the summary scores, although no between group differences were found to be significant, some trends were observed among the data. First, an examination of the under 12 group revealed that they were primarily classified in the clinical range on the HIT Total and Overt scores. For the Covert score, the under 12 group was classified an equal percentage for the nonclinical and clinical ranges. A similar pattern was noted for the diversion group for the Covert score. Conversely, a smaller percentage of the diversion group, compared to the under 12 group, scored in the clinical range on the Total and Overt scores.

For the cognitive distortion subscales, the under 12 group was significantly different from the diversion group on the Assuming the Worst subscale. Specifically, the under 12 group had a higher percentage of cases classified in the clinical range (66.7%) while the diversion group was predominantly classified in the nonclinical range (55.0%). Although significant differences were not found for the remaining cognitive distortion subscales, a similar trend was observed for the Blaming Others cognitive distortion. The groups appeared to be more similar to each other with respect to the Minimization/Mislabeling cognitive distortion, such that both groups were classified primarily in the clinical range.

In terms of the behavioural referent subscales, the under 12 group was significantly different from the diversion group on the Physical Aggression subscale. More specifically, the under 12 group was classified primarily in the clinical range

Table 19

Percentage of Respondents in Nonclinical, Borderline-Clinical, and Clinical Ranges on the HIT Questionnaire

Score	Nonclinical		Borderline-clinical		Clinical		χ^2
	Under 12	Diversion	Under 12	Diversion	Under 12	Diversion	
Summary scores							
Total	28.6	47.5	4.8	13.8	66.7	38.8	5.41 [†]
Overt	28.6	46.3	4.8	11.3	66.7	42.5	3.97
Covert	42.9	47.5	14.3	13.8	42.9	38.8	.15
Cognitive distortions							
SC	38.1	58.8	19.0	12.5	42.9	28.8	2.86
BO	23.8	48.8	19.0	15.0	57.1	36.3	4.34
MM	38.1	30.0	0.0	16.3	61.9	53.8	3.96
AW	28.6	55.0	4.8	13.8	66.7	31.3	8.88*
Behavioural referents							
OD	19.0	42.5	19.0	16.3	61.9	41.3	4.07
PA	38.1	57.5	0.0	10.0	61.9	32.5	7.00*
L	42.9	45.0	4.8	18.8	52.4	36.3	3.17
S	47.6	50.0	9.5	13.8	42.9	36.3	.44

Note. SC = Self-Centered; BO = Blaming Others; MM = Minimization/ Mislabeling; AW = Assuming the Worst; OD = Opposition-Defiance; PA = Physical Aggression; L = Lying; S = Stealing. Under 12 group $n = 21$; diversion group $n = 80$.

* $p < .05$. [†] $p < .10$, did not reach significance.

(61.9%) while the diversion group was predominantly in the nonclinical range (57.5%). On the Opposition-Defiance subscale the under 12 group was predominantly in the clinical range while the diversion group had an equal percentage of classifications in the nonclinical and clinical ranges. For the Lying and Stealing behavioural referents the under 12 group had almost equal proportions in the clinical and nonclinical range, while for the diversion group the cases were predominantly in the nonclinical range with fewer in the clinical categorization.

The preceding data are presented graphically in Figure 7 but the borderline-clinical and clinical ranges were collapsed into one category. An examination of the data reveals a slightly different picture using this dichotomization. Figure 7 shows that more than 50% of the cases in the under 12 group were classified in the borderline-clinical/clinical range on all summary scores and each cognitive distortion and behavioural referent subscale. The largest percentages observed with the under 12 group were on the Total (71.4%) and Overt summary scores (71.4%), and Blaming Others (76.2%), Assuming the Worst (71.4%), Opposition-Defiance (80.0%) subscales. The highest percentage in the borderline-clinical/clinical range for the diversion group was for the Minimization/Mislabeling subscale (70.0%) followed by the Opposition-Defiance subscale (57.5%). The remaining subscales were between 41.3% (Self-Centered) and 55.0% (Lying), with only Lying and Blaming Others (51.3%) being over 50.0% in the borderline-clinical/clinical range.

Statistical differences between the groups were noted for three subscales: Blaming Others, $\chi^2(1, N = 101) = 4.21, p = .04$; Assuming the Worst, $\chi^2(1, N = 101) = 4.65, p = .03$; and Opposition-Defiance, $\chi^2(1, N = 101) = 3.90, p = .048$. In particular, a

Figure 7. Percent of respondents in nonclinical and borderline-clinical ranges on the HIT Questionnaire.

Note. NC = Nonclinical; B/C = Borderline-Clinical/Clinical; SC = Self-Centered; BO = Blaming Others; MM = Minimization/Mislabeling; AW = Assuming the Worst; OD = Opposition-Defiance; PA = Physical Aggression; Lie = Lying; Steal = Stealing.

disproportionately large percentage of participants in the under 12 group scored in the borderline-clinical/clinical range in comparison to the diversion group participants.

In summary, the findings revealed a trend whereby diverted youths maintained a higher level of criminal cognitions with respect to attitudes towards the criminal justice system, tolerance for law violations, and identification with criminal others in comparison to children under age 12 in conflict with the law. In contrast, children under age 12, in comparison to older diverted youths, were more likely to present with self-serving cognitive distortions, such as self-centeredness, blaming others, and assuming the worst across a number of behavioural domains, particularly physical aggression and oppositional-defiance. Finally, both groups maintained clinical levels of thinking patterns across a number of areas, although children under age 12 had distortions in thinking that were more severe than diverted youths. Interestingly, children under the age of 12 had the highest clinical levels on the blaming others, followed by assuming the worst, cognitive distortions, with respect to oppositional-defiant behaviour.

Patterns of Behavioural Functioning

The current study examined youths in conflict with the law but too young to be charged and diverted youths age 12 and older with respect to behavioural functioning using multiple informants. The CBCL was administered to a parent and the YSR was administered to the young person. Diverted youths and children under the age of 12 were examined with respect to behavioural pathology using the assessment measures and then the groups were compared on the measures to determine similarities and differences in functioning.

First, the relationships between the YSR and CBCL total problems, internalizing, externalizing, and total competence were examined in Table 20 for the total sample ($N = 101$). It should be noted that the Total Problems score for each measure correlated highly with the respective Internalizing and Externalizing scores, ranging from .75 to .84. An examination of the Total Competence scores for each measure revealed moderate negative relationships with Total Problems, Internalizing, and Externalizing scores. Correlations between summary scores of the YSR and CBCL with each syndrome scale and DSM-oriented scale can be found in Tables Q3 and Q4 in Appendix Q.

Cross-informant comparisons of each summary score revealed correlations that ranged from .55 (Internalizing and Externalizing) to .65 (Total Competence). Cross-informant correlations for individual subscales ranged from .32 (Other Problems) to .72 (Conduct Problems; see Table Q5 in Appendix Q). Hence, it appears that the informants are not providing substantially overlapping information on the young person's behavioural functioning; rather, some unique information is likely being provided by each informant.

Figure 8 presents the mean T scores of the diversion group on the CBCL and YSR summary scales and subscales (for descriptive statistics see Tables Q6 and Q7 in Appendix Q). It should be noted that for the Total Problems, Internalizing, and Externalizing, the following cut-offs apply: Normal: $T < 60$; Borderline Clinical: $T = 60-63$; Clinical: $T \geq 64$. For the syndrome scales and the DSM-oriented scales, the following cut-offs apply: Normal: $T < 65$; Borderline Clinical: $T = 65-69$; Clinical: $T \geq 70$. The borderline clinical areas are demarcated by horizontal lines at the respective cut-offs and can be seen in Figure 8 and Figure 9.

Table 20

Correlation Matrix for CBCL and YSR Summary Scales (n = 101)

Measure	CBCL total problems	CBCL EXT	CBCL INT	CBCL total competence	YSR total problems	YSR EXT	YSR INT	YSR total competence
CBCL total problems	1.0							
CBCL externalizing	.84***	1.0						
CBCL internalizing	.78***	.51***	1.0					
CBCL total competence	-.42***	-.43***	-.31**	1.0				
YSR total problems	.62***	.48***	.51***	-.32**	1.0			
YSR externalizing	.58***	.55***	.29**	-.35***	.82***	1.0		
YSR internalizing	.39***	.20*	.55***	-.18	.75***	.47***	1.0	
YSR total competence	-.25*	-.26**	-.17	.65***	-.34**	-.42***	-.20*	1.0

Note. CBCL = Child Behavior Checklist; YSR = Youth Self Report; EXT = Externalizing; INT = Internalizing.* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 8. Child Behavior Checklist and Youth Self Report profile of mean *T* scores for diversion participants.

Note. Tot = Total Problems; EXT = Externalizing; INT = Internalizing; AD = Anxious/Depressed; WD = Withdrawn/Depressed; SC = Somatic Complaints; SP = Social Problems; ThP = Thought Problems; AP = Attention Problems; RB = Rule-Breaking Behavior; AB = Aggressive Behavior; OP = Other Problems; AffP = Affective Problems; AnxP = Anxiety Problems; SomP = Somatic Problems; AdhP = Attention Deficit/Hyperactivity Problems; OdP = Oppositional Defiant Problems; CP = Conduct Problems.

Figure 9. Child Behavior Checklist and Youth Self Report profile of mean *T* scores for under 12 participants.

Note. Tot = Total Problems; EXT = Externalizing; INT = Internalizing; AD = Anxious/Depressed; WD = Withdrawn/Depressed; SC = Somatic Complaints; SP = Social Problems; ThP = Thought Problems; AP = Attention Problems; RB = Rule-Breaking Behavior; AB = Aggressive Behavior; OP = Other Problems; AffP = Affective Problems; AnxP = Anxiety Problems; SomP = Somatic Problems; AdhP = Attention Deficit/Hyperactivity Problems; ODP = Oppositional Defiant Problems; CP = Conduct Problems.

Figure 8 shows that parents and children in the current sample had similar profiles (i.e., lines were approximately parallel), which indicates that parents' perspectives were quite similar to their children's with respect to behavioural functioning. Moreover, it appears that parents judged the young person as presenting with more severe behaviour problems in general, and for externalizing and internalizing problems. The profile for parents was consistently higher than the profile for youths, albeit by a small margin, with the exception of somatic complaints (syndrome scale) and somatic problems (DSM scale) for which parents and youths noted problems to the same degree.

To examine whether participants in the diversion group displayed clinical levels of pathology on behavioural measures, the mean *T* scores for each summary scale and subscale were plotted in Figure 8. It appears that the diversion group scored in the borderline clinical range on the CBCL Total Problems score. Moreover, participants scored in the clinical range on the CBCL Externalizing scale and borderline clinical range on the YSR Externalizing scale. Examining the syndrome scales, it appears that scores on the Rule-Breaking Behavior scale were in the borderline clinical range for the CBCL and the DSM-oriented Conduct Problems scale was in the borderline clinical range. Hence, as hypothesized, the diversion group displayed clinical levels of behavioural pathology on the CBCL Externalizing scale, and borderline clinical levels of pathology on the YSR Externalizing scale, and CBCL Total Problems scale, Rule-Breaking Behavior and Conduct problems syndrome and DSM-oriented scales, respectively.

The under 12 group was examined with respect to behavioural pathology on the CBCL and YSR (for descriptive statistics see Tables Q6 and Q7 in Appendix Q). Figure 9 shows that clinical levels of pathology were obtained for Total Problems (CBCL and

YSR), Externalizing scale (CBCL and YSR), and Rule-Breaking Behavior (CBCL), Aggressive Behavior (CBCL and YSR), Oppositional Defiant Problems (CBCL) and Conduct Problems (CBCL and YSR). Consistent with expectations, the present data confirms the prediction that high levels of comorbid problems would be observed in the current sample. Although this appears to be the case with the under12 group, behavioural pathology was not as severe in the diversion group.

A more thorough examination was undertaken of the hypothesis that the sample of diverted youths would display clinical levels of pathology on the behavioural measures by examining the frequency of respondents scoring in the nonclinical, borderline clinical and clinical ranges. Data from the CBCL is presented in Table 21 and data from the YSR is presented in Table 22. For the diversion group, data from the CBCL show that in terms of Total Problems, the participants were scoring predominantly in the nonclinical range (53.8%); however, a moderate percentage were scoring in the clinical range (41.3%). In terms of Externalizing Problems, the majority of the participants were classified in the clinical (47.5%) or borderline clinical (22.5%) ranges. The Total Competence score was predominantly in the clinical range (60.0%) as well for the diversion group; however, the competence subscales were primarily in the nonclinical range.

An examination of the syndrome scales in Table 21 reveals that the diversion group was classified primarily in the nonclinical range. The largest percentages of clinical classifications were obtained for the Rule-Breaking Behavior (33.8%) and Aggressive Behavior (32.5%) syndrome scales. A similar pattern was obtained for the DSM-oriented scales, with the preponderance of diversion participants scoring in the nonclinical range, with the exception of the Conduct Problems subscale, for which 37.5%

Table 21

Percentage of Participants Scoring in the Nonclinical, Borderline Clinical and Clinical Ranges on the Child Behavior Checklist

Scale	Under 12 (<i>n</i> = 21)			Diversion (<i>n</i> = 80)			χ^2
	NC	BC	Clinical	NC	BC	Clinical	
Tot Prob	28.6	4.8	66.7	53.8	5.0	41.3	4.49
EXT	9.5	14.3	76.2	30.0	22.5	47.5	5.81 [†]
INT	42.9	19.0	38.1	58.8	11.3	30.0	1.89
Tot Comp	28.6	9.5	61.9	32.5	7.5	60.0	.18
Activities	71.4	14.3	14.3	63.8	17.5	18.8	.44
Social	42.9	19.0	38.1	66.3	22.5	11.3	8.70*
School	57.1	9.5	33.3	71.3	3.8	25.0	2.04
Syndrome scale							
AD	71.4	19.0	9.5	75.0	10.0	15.0	1.53
WD	71.4	14.3	14.3	75.0	12.5	12.5	.11
SC	76.2	14.3	9.5	81.3	11.3	7.5	.27
SP	52.4	23.8	23.8	81.3	8.8	10.0	7.48*
ThP	81.0	9.5	9.5	82.5	8.8	8.8	.03
AP	47.6	28.6	23.8	71.3	13.8	15.0	4.34
RB	19.0	14.3	66.7	46.3	20.0	33.8	7.76*
AB	23.8	14.3	61.9	58.8	8.8	32.5	8.18*
DSM-oriented scale							
AffP	71.4	14.3	14.3	72.5	13.8	13.8	.01
AnxP	76.2	9.5	14.3	82.5	6.3	11.3	.47
SomP	71.4	14.3	14.3	83.8	7.5	8.8	1.69
AdhP	52.4	19.0	28.6	67.5	18.8	13.8	2.76
OdP	33.3	4.8	61.9	60.0	13.8	26.3	9.59**
CP	14.3	9.5	76.2	45.0	17.5	37.5	10.20**

Note. NC = Nonclinical; BC = Borderline Clinical; Tot Prob = Total Problems; EXT = Externalizing; INT = Internalizing; Tot Comp = Total Competence; AD = Anxious/Depressed; WD = Withdrawn/Depressed; SC = Somatic Complaints; SP = Social Problems; ThP = Thought Problems; AP = Attention Problems; RB = Rule-Breaking Behavior; AB = Aggressive Behavior; OP = Other Problems; AffP = Affective Problems; AnxP = Anxiety Problems; SomP = Somatic Problems; AdhP = Attention Deficit/Hyperactivity Problems; OdP = Oppositional Defiant Problems; CP = Conduct Problems.

[†]*p* < .10. **p* < .05. ***p* < .01.

scored in the clinical range and 17.5% scored in the borderline clinical range. A noteworthy percentage of participants also scored in the clinical (37.5%) and borderline clinical (13.8%) range on the Oppositional Defiant Problems subscale.

Table 22 presents data on the YSR, which provides behavioural indices from the young person's perspective. In general, it can be seen that a smaller percentage of diversion group participants scored in the clinical range across the summary scores and the syndrome and DSM-oriented scales. It should be noted that a similar pattern emerged as was found with the CBCL with respect to classifications in the clinical range. More specifically, diversion group participants obtained the highest percentage of clinical ratings for Externalizing Problems (38.8%), Total Competence (47.5%), Rule-Breaking Behavior (27.5%), Aggressive Behavior (23.8%), Oppositional Defiant Problems (21.3%), and Conduct Problems (36.3%).

Scores were collapsed into normal and deviant categories by combining the borderline clinical and clinical scores. Results for the CBCL showed that the diversion group obtained predominantly deviant scores on the Externalizing scale (70.0%) and Total Competence scale (67.5%), with a smaller percentage being deviant on the Internalizing scale (41.3%). In terms of the syndrome scales, a similar pattern was observed whereby the Rule-Breaking Behavior (53.8%) and Aggressive Behavior (41.3%) scales obtained the highest deviant ratings. Similarly, the diversion group obtained higher deviant scores for the Oppositional Defiant Problems (40.0%) and Conduct Problems (55.0%) scales.

Table 22

Percentage of Participants Scoring in the Nonclinical, Borderline Clinical and Clinical Ranges on the Youth Self Report

Scale	Under 12 (n = 21)			Diversion (n = 80)			χ^2
	NC	BC	Clinical	NC	BC	Clinical	
Tot Prob	52.4	19.0	28.6	66.3	8.8	25.0	2.21
EXT	23.8	14.3	61.9	42.5	18.8	38.8	3.74
INT	81.0	4.8	14.3	72.5	5.0	22.5	.70
Tot Comp	33.3	19.0	47.6	42.5	10.0	47.5	1.49
Activities	76.2	4.8	19.0	70.0	13.8	16.3	1.30
Social	52.4	19.0	28.6	80.0	11.3	8.8	7.57*
Syndrome scale							
AD	81.0	14.3	4.8	86.3	6.3	7.5	1.59
WD	90.5	0.0	9.5	83.8	10.0	6.3	2.45
SC	81.0	0.0	19.0	80.0	11.3	8.8	3.98
SP	66.7	14.3	19.0	87.5	7.5	5.0	5.87 [†]
ThP	95.2	0.0	4.8	88.8	6.3	5.0	1.39
AP	61.9	14.3	23.8	76.3	8.8	15.0	1.75
RB	81.0	0.0	19.0	53.8	18.8	27.5	6.47*
AB	23.8	28.6	47.6	63.8	12.5	23.8	10.80**
DSM-oriented scale							
AffP	81.0	14.3	4.8	78.8	11.3	10.0	.65
AnxP	95.2	0.0	4.8	95.0	1.3	3.8	.31
SomP	76.2	4.8	19.0	73.8	16.3	10.0	2.74
AdhP	66.7	19.0	14.3	83.8	7.5	8.8	3.36
OdP	47.6	19.0	33.3	66.3	12.5	21.3	2.46
CP	33.3	19.0	47.6	52.5	11.3	36.3	2.60

Note. NC = Nonclinical; BC = Borderline Clinical; Tot Prob = Total Problems; EXT = Externalizing; INT = Internalizing; Tot Comp = Total Competence; AD = Anxious/Depressed; WD = Withdrawn/Depressed; SC = Somatic Complaints; SP = Social Problems; ThP = Thought Problems; AP = Attention Problems; RB = Rule-Breaking Behavior; AB = Aggressive Behavior; OP = Other Problems; AffP = Affective Problems; AnxP = Anxiety Problems; SomP = Somatic Problems; AdhP = Attention Deficit/Hyperactivity Problems; OdP = Oppositional Defiant Problems; CP = Conduct Problems.

[†] $p < .10$. * $p < .05$. ** $p < .01$.

A similar pattern of results was obtained for the YSR when normal and deviant scores were examined. The diversion group obtained primarily deviant scores on the Externalizing (57.5%) and Total Competence (57.5%) scales. Moreover, the highest deviant ratings were obtained for the Rule-Breaking Behavior (46.3%) and Aggressive Behavior (36.3%) syndrome scales, and the Oppositional Defiant Problems (33.8%) and Conduct Problems (47.5%) DSM-oriented scales.

The presence of comorbid symptoms was examined in two ways. First, comorbidity was defined using the criterion of a clinical rating across two or more scales on the CBCL and YSR. Next, a broader definition of comorbidity was used to include two or more scales in the deviant range (i.e., borderline clinical or clinical). Using a broader definition will allow pathological behaviour that is likely to require the attention of professions to be identified.

Using the narrow definition of comorbidity, it was found that 21.3% of the diversion sample had comorbid Externalizing and Internalizing syndromes as measured by the parent ratings. A smaller percentage of participants were identified as having comorbid syndromes when the youth rating was examined (13.8%). Using a broader definition, comorbid Externalizing and Internalizing problems were obtained for 36.3% of participants using the parent ratings and 22.5% using the youth ratings of behavioural pathology. Therefore, as hypothesized, comorbid problems were evident for the diversion group.

For the diversion group, behavioural pathology in the clinical range was observed predominantly with the Rule-Breaking Behavior and Aggressive Behavior syndrome scales and the Oppositional Defiant Problems and Conduct Problems DSM-oriented

scales on the CBCL and the YSR. Indeed, examining the symptom scales, 32.5% of the diversion group obtained two or more clinical ratings on the CBCL, while 21.2% obtained clinical ratings as measured by the YSR. For DSM-oriented scales, 32.5% of the diversion group obtained two or more subscale scores in the clinical range as measured by the CBCL and 23.7% in the clinical range as measured by the YSR. While the obtained results may not be considered high levels, it is apparent that the levels obtained are of sufficient import to cause clinical concern.

An examination of the CBCL behavioural data for the under 12 group in Table 21 reveals that participants scored in the clinical range on the Total Problems (66.7%), Externalizing (76.2%), and Total Competence (61.9%) summary scales. For the syndrome scales, predominantly clinical classifications were noted for Rule-Breaking Behavior (66.7%) and Aggressive Behavior (61.9%). Similarly, for the DSM-oriented scales, primary clinical classifications were obtained for Oppositional Defiant Problems (61.9%) and Conduct Problems (76.2%).

Interestingly, an examination of Table 22 reveals that children under age 12 did not rate their behavioural problems overall as severely as their parents. For example, only 28.6% of respondents scored in the clinical range for the Total Problems scale while 47.6% were rated as being in the clinical range for Total Competence. Ratings of Externalizing Problems by youths were lower than parent ratings, but still predominantly in the clinical range (61.9%). The highest clinical ratings among the syndrome scales for the under 12 group were for Aggressive Behavior (47.6%) followed by Attention Problems (23.8%). Among the DSM-oriented scales, the under 12 group rated themselves

the highest clinically for the Oppositional Defiant Problems (33.3%) and Conduct Problems (47.6%) scales.

When scores were collapsed into normal and deviant categories, the same pattern of results emerged as was found using the nonclinical, borderline clinical and clinical ratings. However, the under 12 group appeared more deviant on the Social Problems (47.6%) and Attention Problems (52.4%) syndrome scales and the Attention Deficit/Hyperactivity Problems (47.6%) DSM-oriented scale.

Using the narrow definition of comorbidity, it was found that 33.3% of the under 12 participants had comorbid Externalizing and Internalizing syndromes as measured by the CBCL. A smaller percentage of participants were identified as having comorbid Externalizing and Internalizing problems using the YSR (14.3%). Using a broader definition, comorbid Externalizing and Internalizing problems were identified for 57.1% of the participants using the parent ratings, but only 19.0% using the youth ratings of behavioural pathology. Therefore, as expected, high levels of comorbid behaviour problems were evident for the under 12 group.

Behavioural pathology in the clinical range appeared predominantly with the Rule-Breaking Behavior and Aggressive Behavior syndrome scales and the Oppositional Defiant Problems and Conduct Problems DSM-oriented scales on the CBCL and the YSR, although clinical ratings were noted much less frequently for the Rule-Breaking Behavior scale on the YSR. Indeed, examining the syndrome scales, 52.4% of the under 12 group obtained two or more clinical ratings on the CBCL, while on the YSR 33.3% of the participants obtained two or more clinical ratings. Higher levels of clinical ratings were obtained for the DSM-oriented scales, with 66.7% of the under 12 group obtaining

two or more subscale scores in the clinical range as measured by the CBCL, while 38.1% of participants were identified as scoring in the clinical range on the YSR. Using the parent observations of behavioural pathology, the obtained results can be considered high clinical levels. While the clinical levels were lower when reported by the young person, the levels obtained can still be considered cause for clinical attention.

Next, statistical comparisons were conducted to determine whether the pattern of ratings differed between the diversion and under 12 groups on the CBCL and the YSR. As can be seen in Table 21, in general, the under 12 group obtained a higher percentage of clinical ratings than the diversion group. More specifically, the under 12 group (66.7%) had a higher percentage of clinical ratings on the Total Problems scale of the CBCL than the diversion group (41.3%), although this comparison was not significant. When Total Problems was dichotomized into normal and deviant ratings, the under 12 group (71.4%) was clearly more deviant than the diversion group (46.3%), $\chi^2(1, N = 101) = 4.22, p = .04$.

The results further showed that for the CBCL Externalizing scale, the under 12 group had a significantly higher percentage of clinical ratings (76.2%) than the diversion group (47.5%). While the groups did not differ with respect to their clinical ratings on the Total Competence scale, the under 12 group did obtain significantly higher clinical ratings on the Social scale (38.1%) than the diversion group (11.3%). The under 12 group had significantly higher clinical levels of pathology than the diversion group on the Social Problems (23.8% versus 10.0%, respectively), Rule-Breaking Behavior (66.7% versus 33.8%), and Aggressive Behavior (61.9% versus 32.5%, respectively) syndrome scales, and on the Oppositional Defiant Problems (61.9% versus 26.3%, respectively) and

Conduct Problems (76.2% versus 37.5%, respectively) DSM-oriented scales. One further significant difference emerged when the ratings were dichotomized into normal and deviant. The under 12 group was identified as having significantly more deviant ratings (52.4%) than the diversion group (28.8%) on the Attention Problems syndrome scale, $\chi^2(1, N = 101) = 4.16, p = .04$.

Fewer significant differences were noted between the groups on the YSR (see Table 22). The groups did differ on the Social Problems competence scale, with the under 12 group having a significantly larger percentage of cases classified in the clinical range (28.6%) than the diversion group (8.8%). The predominant differences between the groups were noted on the syndrome scales with the under 12 group obtaining a larger percentage of clinical classifications than the diversion group on the Social Problems (19.0% versus 5.0%, respectively) and Aggressive Behavior (47.6% versus 23.8%, respectively) scales. In contrast to the findings on the CBCL, the diversion group obtained a significantly higher percentage of clinical (27.5% versus 19.0%, respectively) and borderline clinical (18.8% versus 0.0%, respectively) classifications on the Rule-Breaking Behavior syndrome scale than the under 12 group.

No significant differences were noted between the groups with respect to the DSM-oriented scales. Both groups were rated predominantly in the nonclinical range on the Affective Problems, Anxiety Problems, Somatic Problems, and Attention Deficit/Hyperactivity Problems scales. However, a trend was noted when the ratings were dichotomized, such that the under 12 group had a higher percentage of deviant classifications on the Attention Deficit/Hyperactivity Problems scale (33.3%) than the diversion group (16.3%), $\chi^2(1, N = 101) = 3.06, p = .08$. In general, the direction of

results was such that the under 12 group had higher clinical levels of behavioural pathology than the diversion group across the CBCL and the YSR. It should be noted that statistical analyses using mean *T* scores revealed a similar pattern of findings for differences between diversion and under 12 groups.

Patterns of Personality Profiles

The current study utilized the Jesness Inventory (JI) to measure personality characteristics of diverted youths and children under age 12 in conflict with the law. It was hypothesized that the sample of diverted youths would display clinical levels of pathology on the personality measure. The following data will examine the validity of this hypothesis.

Table 23 presents results for the personality subtype classifications for the diversion and under 12 groups. As can be seen, the diversion group was predominantly classified as MP (23.8%) and NA (22.5%) subtypes, with fewer participants obtaining CFC (11.3%) classifications. Diversion participants were equally distributed across AA and SE classifications (8.8%) and CFM and NX classifications (6.3%). The lowest subtype classification attributed to the diversion group was AP (5.0%). The preceding subtype classifications correspond to specific I-levels. The AA and AP subtypes correspond to I-level 2; the CFM, CFC, and MP subtypes correspond to I-level 3; and NA, NX, SE, and CI correspond to I-level 4. Using the I-level subtypes, the diversion group was classified approximately equally across the I-3 (41.3%) and I-4 levels (45.0%). A small percentage were attributed an I-2 level classification (13.8%).

Table 23

Personality Subtype Classification using the Jesness Inventory

JI subtype	Group	
	Under 12 (%)	Diversion (%)
AA	9.5	8.8
AP	0.0	5.0
CFM	9.5	6.3
CFC	4.8	11.3
MP	19.0	23.8
NA	38.1	22.5
NX	9.5	6.3
SE	9.5	8.8
CI	0.0	7.5

Note. JI = Jesness Inventory; AA = Unsocialized, Aggressive/Undersocialized, Active;

AP = Unsocialized, Passive/Undersocialized, Passive; CFM = Immature

Conformist/Conformist; CFC = Cultural Conformist/Group-Oriented; MP =

Manipulator/Pragmatist; NA = Neurotic, Acting-Out/Autonomy-Oriented; NX =

Neurotic, Anxious/Introspective; SE = Situational Emotional Reaction/Inhibited; CI =

Cultural Identifier/Adaptive. Under 12 group $n = 21$; diversion group $n = 80$.

Jesness (2000) reports the following interpretive guidelines for *T* scores: above 70: very much above average (markedly problematic); 66-70: much above average (moderately problematic); 61-65: above average (mildly problematic); 56-60: slightly above average; 45-55: average; 40-44: slightly below average; 35-39: below average; 30-34: much below average; and below 30: very much below average. The unadjusted and adjusted mean *T* scores on the subtype scales are presented in Table 24. As can be seen, the diversion group obtained *T* scores in the average range on all subtypes, except MP, which was slightly above average.

Table 25 presents unadjusted and adjusted mean *T* scores on the JI Personality scales. The diversion group scored slightly below average on Wd and below average on SA. Average scores were obtained on the VO, MA, Rep, and Den scales. The highest scores were obtained on SM, Imm, Au, Al, and AI; these scores were in the slightly above average range. Jesness (2000) reports that two samples of young offenders scored in the average range on all scales except SM, which was slightly above average, and AI which was much above average (moderately problematic). Comparatively, the diversion group obtained scores that were consistent with that found in young offender samples for many of the scales, with the exception of the SM and AI scores, which were higher in the young offender samples. The current findings differed from young offender data presented by Jesness in that the diversion group obtained higher mean scores on Imm, Au, Al, and lower mean scores on Wd and SA.

The personality subtypes and personality scales were also examined among the under 12 group. Table 23 shows that the under 12 group was predominantly classified as NA (38.1%) and MP (19.0%) subtypes. Participants in the under 12 group were equally

Table 24

Unadjusted and Adjusted Mean T scores on the Jesness Inventory Subtype Scales Across Groups

Scale	Group				<i>F</i>	η^2
	Under 12 (<i>n</i> = 21)		Diversion (<i>n</i> = 80)			
	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)		
AA	46.29 (13.47)	47.50 (12.03)	49.87 (12.97)	49.56 (11.98)	.48	.005
AP	43.67 (10.57)	44.59 (11.47)	45.93 (12.43)	45.68 (11.43)	.15	.002
CFM	46.00 (12.36)	44.35 (10.65)	46.77 (12.95)	47.21 (10.61)	1.19	.01
CFC	51.19 (10.14)	51.71 (9.99)	55.22 (10.15)	55.09 (9.95)	1.90	.02
MP	57.00 (8.33)	56.32 (11.28)	56.24 (12.25)	56.42 (11.23)	.001	.00
NA	61.86 (14.56)	63.57 (11.25)	55.71 (13.19)	55.26 (11.21)	9.02**	.08
NX	50.52 (11.94)	50.70 (10.47)	45.72 (9.96)	45.68 (10.43)	3.81 [†]	.04
SE	54.14 (10.01)	52.96 (10.48)	52.68 (12.00)	52.99 (10.45)	.00	.00
CI	52.19 (9.20)	51.23 (11.26)	51.26 (12.53)	51.51 (11.22)	.01	.00

Note. Adjusted means evaluated at mean of covariate HIT Anomalous Responding score = 4.22. AA = Unsocialized, Aggressive/Undersocialized, Active; AP = Unsocialized, Passive/Undersocialized, Passive; CFM = Immature Conformist/Conformist; CFC = Cultural Conformist/Group-Oriented; MP = Manipulator/Pragmatist; NA = Neurotic, Acting-Out/Autonomy-Oriented; NX = Neurotic, Anxious/Introspective; SE = Situational Emotional Reaction/Inhibited; CI = Cultural Identifier/Adaptive.

[†]*p* < .10. ***p* < .01.

Table 25

Unadjusted and Adjusted Mean T scores on the Jesness Inventory Personality Scales across Groups

Scale	Group				<i>F</i>	η^2
	Under 12 (<i>n</i> = 21)		Diversion (<i>n</i> = 80)			
	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)		
SM	59.10 (16.10)	60.80 (15.16)	58.81 (16.97)	58.37 (15.10)	.43	.004
VO	51.62 (9.82)	52.69 (10.02)	53.26 (11.28)	52.98 (9.97)	.01	.00
Imm	48.14 (8.52)	47.60 (9.60)	58.05 (100.9)	58.19 (9.56)	20.19***	.17
Au	54.71 (9.11)	55.51 (8.79)	58.09 (9.47)	57.88 (8.76)	1.20	.01
Al	55.19 (9.97)	55.74 (11.50)	59.21 (12.02)	59.07 (11.46)	1.39	.01
MA	53.67 (13.09)	54.98 (10.61)	49.34 (11.73)	48.99 (10.57)	5.28*	.05
Wd	48.76 (9.22)	49.09 (10.43)	42.06 (10.70)	41.98 (10.38)	7.73**	.07
SA	41.10 (8.73)	41.62 (11.01)	39.34 (11.68)	39.20 (10.79)	.80	.01
Rep	45.00 (10.06)	43.86 (11.62)	49.49 (13.12)	49.79 (11.57)	4.31*	.04
Den	46.90 (80.4)	45.82 (9.69)	48.94 (11.30)	49.22 (9.65)	2.04	.02
AI	61.00 (13.14)	62.41 (14.57)	59.41 (15.95)	59.04 (14.19)	.93	.01

Note. Adjusted means evaluated at mean of covariate HIT Anomalous Responding score = 4.22. SM = Social Maladjustment; VO = Value Orientation; Imm = Immaturity; Au = Autism; Al = Alienation; MA = Manifest Aggression; Wd = Withdrawal-Depression; SA = Social Anxiety; Rep = Repression; Den = Denial; AI = Asocial Index.

* $p < .05$. ** $p < .01$. *** $p < .001$.

distributed across AA, CFM, NX, and SE classifications (9.5% for each) and CFM and NX classifications (both 6.3%). The lowest subtype classification attributed to the under 12 group was CFC (4.8%). Interestingly, none of the under 12 participants were classified as AP or CI. Using the I-level subtypes, the under 12 group was classified predominantly at the I-4 (57.1%) and I-3 (33.3%) levels. Only two individuals (9.5%) were classified at the I-2 level.

The mean *T* scores for the personality subtypes of the under 12 group are presented in Table 24. Examining the adjusted means, results showed that the under 12 group obtained scores predominantly in the average range (i.e., AA, AP, CFC, NX, SE, and CI). The CFM subtype score was slightly below average. The highest scores were obtained for the MP subtype, which was classified as slightly above average, and the NA subtype, which was classified as above average and mildly problematic.

Table 25 presents the unadjusted and adjusted *T* scores for the under 12 group on the personality scales. Examining the adjusted mean scores, the results showed that the under 12 group scored slightly below average on the SA and Rep scales. The preponderance of scores were in the average range, with slightly above average scores obtained on the Au and Al scales and above average scores on the SM and AI scales. The current findings with respect to JI personality subtypes and personality scales indicate that the under 12 group displayed some personality characteristics that were moderately high in terms of pathology.

Statistical comparisons between the diversion and under 12 groups are presented in Table 24 and Table 25. A MANCOVA was used to assess whether the diversion and under 12 groups differed on the linear combination of personality subtype scales of the JI.

The HIT AR score was used as a covariate. Using Wilks' λ , the multivariate result showed that there was a significant difference between the groups on the set of dependent variables, $F(9, 90) = 2.39, p = .02, \eta^2 = .19$. The univariate results in Table 24 showed that the two groups differed significantly on the NA subtype, with the under 12 group obtaining a higher adjusted mean score than the diversion group. The under 12 group also scored higher than the diversion group on the NX subtype, although the difference failed to reach significance, $F(1, 98) = 3.81, p = .054, \eta^2 = .04$.

A MANCOVA was also conducted to assess differences between the diversion and under 12 groups on the set of JI personality scales using the HIT AR score as a covariate. Multivariate results demonstrated that there was a significant difference between the groups on the set of personality scales, $F(11, 88) = 3.90, p < .001, \eta^2 = .33$. The univariate results are presented in Table 25. A general observation of the data reveals a similar trend across both groups for many of the scales. For example, both groups scored in the slightly above average range on the Au and Al scales, and scored in the average range on the VO, MA, and Den scales. In terms of statistical differences between the adjusted mean *T* scores, univariate tests revealed that the diversion group scored higher than the under 12 group on the Imm and Rep scales. Conversely, the under 12 group scored significantly higher than the diversion group on the MA and Wd scales. The magnitude of the obtained effects ranged from small to large.

In summary, the results on personality profiles showed that the highest percentage of both diversion and under 12 participants obtained NA, followed by MP, as the primary subtype classification. The combination of findings on JI subtypes and personality scales from the current study indicate that the diverted youths displayed higher than normal

levels of pathology, although not clinical levels as hypothesized, on the MP subtype and the SM and AI personality scales. Children under age 12 in conflict with the law displayed higher than normal levels of pathology on the MP and particularly NA subtypes. Moreover, this younger group of participants obtained scores that were mildly problematic on the SM and AI personality scales, while higher than normal levels were obtained on the Au and Al personality scales.

In general, it appeared that a higher level of pathology was observed with the under 12 group than the diversion group. The groups differed with respect to personality subtypes with the under 12 group scoring in the more deviant range on the NA and NX subtypes than the diversion group. Finally, mixed results were obtained with respect to differences on the personality scales, with the diversion group obtaining higher scores on the Imm and Rep scales while the under 12 group scored higher on the MA and Wd scales.

Comparison of Risk and Need Factors among Diverted and Charged Youths

The third goal of the present study was to compare the diverted and charged youths on empirically established risk and need factors. It was predicted that charged youths would exhibit higher risk/need levels than the diverted group. The following analyses provide evidence in support of this hypothesis.

A univariate ANOVA was conducted to determine whether the charged and diversion groups differed with respect to the total score on the YLS/CMI:SV. Results showed that the charged group ($M = 6.09$, $SD = 1.71$) scored significantly higher than the diversion group ($M = 3.93$, $SD = 2.39$) on the total score, $F(1, 670) = 156.13$, $p < .001$, $\eta^2 = .19$. The obtained difference between the groups was large in magnitude according to

Cohen's (1992) conventions. Given that a maximum score of 8 can be obtained on the YSL/CMI:SV, the present results confirm that the charged group was indeed higher risk than the diversion group.

Next, the groups were compared on the individual items of the YSL/CMI:SV to determine if they differed with respect to the presence of risk/need factors (see Table 26). As hypothesized, the charged group had a significantly higher percentage of risk/need factors present than the diversion group. These findings were consistent across every item of the YLS/CMI:SV.

An examination of the pattern of scores indicates that every risk/need factor was predominantly present among the charged group. The most prevalent risk/need factors were Attitudes and Peers, followed by Family. The third most prevalent risk/need factor was School/Employment, followed by History of Delinquency, and Leisure/Recreation. The least prevalent risk/need factors for the charged group were Personality/Behaviour and finally Substance Abuse. This pattern of results showed that the charged group had three of the 'Big Four' risk/need factors as the most prevalent.

Interestingly, similar to the charged group, the diversion group had Attitudes and Family identified as the most prevalent risk/need factors, but Peers was identified as the third most prevalent risk/need factor. Personality was identified as the fourth most prevalent risk/need factor, followed by Leisure/Recreation. Both groups identified Substance Abuse as the least prevalent item. Finally, School/Employment and History of Delinquency emerged as the sixth and seventh ranked risk/need factors for the diversion group. Hence, it appears that the diversion participants also had three of the 'Big Four' risk/need factors as the most prevalent.

Table 26

*Presence of Risk/Need Factors on the YLS/CMI:SV across Charged and Diversion**Groups*

YLS/CMI:SV		Group				χ^2
		Charged ($n = 249$)		Diversion ($n = 423$)		
		Risk/need factor present				
item	No	Yes	No	Yes		
1	17.6	82.4	53.9	46.1	83.68***	
2	17.0	83.0	52.5	47.5	73.36***	
3	2.9	97.1	39.9	60.1	105.50***	
4	32.5	67.5	69.1	30.9	57.48***	
5	18.7	81.3	48.6	51.4	44.72***	
6	25.6	74.4	47.7	52.3	29.15***	
7	10.8	89.2	28.8	71.2	28.27***	
8	2.4	97.6	12.1	87.9	18.35***	

Note. Item 1 = History of Delinquency/Conduct Problems; Item 2 = Current School or Employment Problems; Item 3 = Some Criminal Friends; Item 4 = Alcohol/Drug Problems; Item 5 = Leisure/Recreation; Item 6 = Personality/Behaviour; Item 7 = Family Circumstances/Parenting; Item 8 = Attitudes/Orientation.

*** $p < .001$.

Past and Current Service Use Among Youths

The fourth goal of the present study was to present descriptive data on past and current service use by youths. The participants were administered the Service Assessment for Children and Adolescents (SACA) to determine service use in the past year and lifetime use. As well, the age that services were first used was assessed.

Data presented in Table 27 demonstrates that 63.4% of the sample used any type of service over the course of a lifetime. Examining the types of services more specifically, it appears that the most used service was outpatient help (50.5%), followed by school services (33.7%). Few participants used residential (i.e., overnight) services (14.9%). The data presented for service use in the last year showed a similar pattern with the highest incidence obtained for outpatient services, followed by school based services, and finally residential services. Given the magnitude of the percentages obtained for services used in the last year, it appears that the majority of the lifetime service use was actually accounted for within the last year, particularly for school services that had a difference of 2% for lifetime use versus last year use.

Table 27 shows that while almost two thirds of the sample had used any service in the past, the actual mean number of services used was quite low (1.75). Across specific service types ever used, the largest numbers of services used were outpatient, followed by school services, and residential services. A similar pattern was observed for the number of services used in the last year. Data on service use was examined across diversion and under 12 groups to determine whether differences were evident (see Table 28). As can be seen, no significant differences were found between the groups when the dichotomous indicator of service use was examined. A trend was noted, however, across lifetime and

Table 27

Percentage and Number of Services Used by Youths as Measured by the Service Assessment for Children and Adolescents (n = 101)

Type of service	Service used in past		Number of services used <i>M (SD)</i>
	No	Yes	
Used ever			
Any	36.6	63.4	1.75 (2.32)
Residential	85.1	14.9	.23 (.62)
Outpatient	49.5	50.5	.99 (1.26)
School	66.3	33.7	.53 (.92)
In last year			
Any	43.6	56.4	1.30 (1.97)
Residential	89.1	10.9	.15 (.48)
Outpatient	58.4	41.6	.69 (1.12)
School	68.3	31.7	.46 (.83)

Table 28

Percentage and Number of Services Used by Diversion and Under 12 Groups as Measured by the Service Assessment for Children and Adolescents (n = 101)

Type of service	Service used in past				Number of services used			
	Group				<i>M (SD)</i>			
	Under 12 (<i>n</i> = 21)		Diversion (<i>n</i> = 80)		Under 12 (<i>n</i> = 21)		Diversion (<i>n</i> = 80)	
	No	Yes	No	Yes	χ^2			<i>t</i>
Used ever								
Any	28.6	71.4	38.8	61.3	.74	2.81 (3.25)	1.48 (1.94)	1.80 [†]
Residential	85.7	14.3	85.0	15.0	.01	.29 (.78)	.21 (.57)	.40
Outpatient	38.1	61.9	52.5	47.5	1.38	1.67 (1.74)	.81 (1.05)	2.15*
School	57.1	42.9	68.8	31.3	1.00	.86 (1.24)	.45 (.81)	1.43
In last year								
Any	33.3	66.7	46.3	53.8	1.13	2.38 (3.29)	1.01 (1.33)	1.87 [†]
Residential	85.7	14.3	90.0	10.0	.32	.29 (.78)	.11 (.36)	1.49
Outpatient	47.6	52.4	61.3	38.8	1.27	1.38 (1.83)	.51 (.76)	2.13*
School	61.9	38.1	70.0	30.0	.50	.71 (1.15)	.39 (.72)	1.62

[†]*p* < .10. **p* < .05.

last year use such that a higher percentage of under 12 participants had used any, residential, outpatient, and school services than diversion participants. Results also showed that the under 12 group used a significantly higher mean number of outpatient services than the diversion group across lifetime and past year indicators. Moreover, examining the use of any services across lifetime and last year indicators, a trend was noted that approached significance whereby the under 12 group appeared to use a higher mean number of services than the diversion group.

Table 29 presents age at first service use as measured by the SACA for the total sample and separated across groups. For the total sample, it appears that all service types were first used by participants when they were under the age of 12. However, a different pattern was noted when the data were examined across groups. First, it can be seen that the diversion group used all types of services at approximately age 12, which was consistent with the pattern observed for the total sample. In contrast, the under 12 group used the various services at differing ages. Specifically, residential services were first used at the earliest mean age (7.47) while residential services were used at an older age (9.00) by the under 12 participants. School services were first used by the under 12 group at age 8.22.

Thus, the findings with respect to age at first service use revealed a different pattern across service types for the under 12 group in comparison to the diversion group who showed uniformity in age across service types. Moreover, the results demonstrated that the under 12 group first used any, residential, outpatient, and school services at a significantly younger age than the diversion group.

Table 29

Age at First Service Use as Measured by the Service Assessment for Children and Adolescents

Type of service	Group					
	Total sample ($n = 101$)		Under 12 ($n = 21$)		Diversion ($n = 80$)	
	$M(SD)$	Range	$M(SD)$	Range	$M(SD)$	Range
Any	11.61 (3.08)	4.33-16.00	7.95 (1.81)	4.33-10.67	12.78 (2.41)	5.00-16.00
Residential	11.64 (2.31)	8.00-15.00	9.00 (1.73)	8.00-11.00	12.36 (1.91)	9.00-15.00
Outpatient	11.23 (3.37)	3.00-16.00	7.47 (2.06)	3.00-10.50	12.58 (2.65)	5.00-16.00
School	11.51 (3.34)	4.50-17.00	8.22 (1.94)	4.50-11.00	12.74 (2.90)	5.00-17.00
						4.31***

* $p < .05$. *** $p < .001$.

The current study predicted a higher incidence of using school services rather than mental health or criminal justice services. Data in Table 30 partially supports the prediction. As can be seen for both lifetime use and last year use, a higher incidence of service use was obtained for the school sector in comparison to the criminal justice setting. Contrary to expectations, a larger number of participants used mental health services than school services. When data were examined with respect to the number of services used, the same pattern of results was found.

Another prediction of the current study was that higher levels of service use will be exhibited by higher risk/need youths. In order to examine this prediction young people were divided into low and high risk/need groups using a median split on the YLS/CMI total score (i.e., score of 13). Results are presented in Table 31 for percentage of service use and mean number of services used among low and high risk/need groups. The results for both indicators of service use (i.e., percent and mean number of services) were significant across all types of service (i.e., any, residential, outpatient, school) and across past year and lifetime use of services. Thus, the current findings clearly confirm the prediction that higher risk/need youths exhibit higher levels of service use than lower risk/need youths.

The current study also sought to determine whether different service use patterns were exhibited by youths with more severe emotional and behavioural problems. It was expected that youths with more severe emotional and behavioural problems would be more likely to have accessed services in the past than youths with less severe emotional and behavioural pathology. The CBCL Total Problems, Externalizing, and Internalizing Problem scores were used to categorize youths into nonclinical and clinical groups.

Table 30

Percentage of School, Mental Health, and Criminal Justice Services Used by Youths as Measured by the Service Assessment for Children and Adolescents (n = 101)

Type of service	Service used in past		Number of services used
	No	Yes	<i>M (SD)</i>
Used ever			
School	66.3	33.7	.53 (.92)
Mental health	50.5	49.5	.98 (2.34)
Criminal justice	100.0	0.0	0.0
Used in last year			
School	68.3	31.7	.46 (.83)
Mental health	64.4	35.6	.56 (.98)
Criminal justice	100.0	0.0	0.0

Table 31

Percentage and Mean Number of Services Used Among Low and High Risk/Need Groups

Type of service	Group						χ^2	<i>t</i>
	Low risk/need (<i>n</i> = 50)			High risk/need (<i>n</i> = 51)				
	Service used in past		Number of services used <i>M</i> (<i>SD</i>)	Service used in past		Number of services used <i>M</i> (<i>SD</i>)		
	No	Yes		No	Yes			
Used ever								
Any	52.0	48.0	.90 (1.40)	21.6	78.4	2.59 (2.72)	10.07**	3.93***
Residential	98.0	2.0	.02 (.14)	72.5	27.5	.43 (.81)	12.93***	3.59**
Outpatient	64.0	36.0	.58 (.95)	35.3	64.7	1.39 (1.40)	8.32**	3.42**
School	78.0	22.0	.30 (.65)	54.9	45.1	.76 (1.09)	6.03*	2.62*
Used in last year								
Any	64.0	36.0	.52 (.86)	23.5	76.5	2.06 (2.41)	16.82***	4.29***
Residential	100.0	0.0	0.0 (0.0)	78.4	21.6	.29 (.64)	12.10**	3.27**
Outpatient	76.0	24.0	.30 (.58)	41.2	58.8	1.08 (1.37)	12.60***	3.73***
School	82.0	18.0	.22 (.51)	54.9	45.1	.69 (1.01)	8.57**	2.94**

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

Service use among nonclinical and clinical groups based on the CBCL Total Problems score is presented in Table 32. Examination of the data reveals a consistent pattern across lifetime service use and services used in the last year, as well as within the different types of services. Specifically, the results showed that participants obtaining total problem scores in the clinical range used a significantly higher percentage of services than participants scoring in the nonclinical range. In addition, participants with clinical problems used a significantly larger mean number of services. In terms of specific services used, it appears that the highest percentage and mean number of services used among both clinical and nonclinical scoring participants was outpatient services. School based services was used the next most commonly and frequently among the groups, with residential services being the least prevalent.

Table 33 presents the data on service use and nonclinical and clinical categorizations for CBCL Externalizing and Internalizing problems. Externalizing problems were examined as an indicator of behavioural problems while internalizing problems were used as an indicator of emotional pathology. The findings using internalizing and externalizing problems demonstrate the same pattern as was found using the total problems indicator. An interesting finding across all three behaviour problem indices was the magnitude of the differences found between the nonclinical and clinical groups. For example, 87.0% of participants with clinically identified externalizing problems had ever used any kind of service, while only 36.2% of the nonclinical participants had ever used services. Thus, as expected, the current findings showed that youths with more severe emotional and behavioural pathology were more likely to have accessed services in the past, and in the last year.

Table 32
Percentage and Mean Number of Services Used Among Nonclinical and Clinical Groups on CBCL Total Problems

Type of service	Group						χ^2	<i>t</i>
	Nonclinical (<i>n</i> = 54)			Clinical (<i>n</i> = 47)				
	Service used in past		No. of services <i>M</i> (<i>SD</i>)	Service used in past		No. of services <i>M</i> (<i>SD</i>)		
	No	Yes		No	Yes			
Used ever								
Any	59.3	40.7	.61 (.92)	10.6	89.4	3.06 (2.73)	25.59***	5.88***
Residential	96.3	3.7	.04 (.19)	72.3	27.7	.45 (.83)	11.40**	3.13**
Outpatient	72.2	27.8	.37 (.68)	23.4	76.6	1.70 (1.40)	23.96***	5.95***
School	83.3	16.7	.20 (.53)	46.8	53.2	.91 (1.12)	15.01***	3.99***
Used in last year								
Any	66.7	33.3	.46 (.77)	17.0	83.0	2.26 (2.45)	25.19***	4.82***
Residential	98.1	1.9	.02 (.14)	78.7	21.3	.30 (.66)	9.77**	2.86**
Outpatient	79.6	20.4	.26 (.56)	34.0	66.0	1.19 (1.38)	21.50***	4.34***
School	85.2	14.8	.19 (.52)	48.9	51.1	.77 (1.01)	15.26***	3.57**

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

Table 33
Percentage and Mean Number of Services Used Among Nonclinical and Clinical Groups on CBCL Externalizing and Internalizing Problems

Type of service	Group								χ^2	<i>t</i>
	Nonclinical				Clinical					
	Service used in past		No. of services used <i>M</i> (<i>SD</i>)	Service used in past		No. of services used <i>M</i> (<i>SD</i>)				
	No	Yes		No	Yes					
Used ever					<i>Externalizing problems^a</i>					
Any	63.8	36.2	.57 (.95)	13.0	87.0	2.78 (2.66)	28.00***	5.68***		
Residential	95.7	4.3	.04 (.20)	75.9	24.1	.39 (.79)	7.81**	3.12**		
Outpatient	76.6	23.4	.34 (.70)	25.9	74.1	1.56 (1.37)	25.81***	5.72***		
School	83.0	17.0	.19 (.45)	51.9	48.1	.83 (1.11)	10.90**	3.89***		
Used in last year										
Any	72.3	27.7	.43 (.85)	18.5	81.5	2.06 (2.33)	29.61***	4.79***		
Residential	97.9	2.1	.02 (.15)	81.5	18.5	.26 (.62)	6.96**	2.74**		
Outpatient	83.0	17.0	.23 (.56)	37.0	63.0	1.09 (1.32)	21.83***	4.35***		
School	85.1	14.9	.17 (.43)	53.7	46.3	.70 (1.00)	11.45**	3.55**		
Used ever			<i>Internalizing problems^b</i>							
Any	43.5	56.5	1.01 (1.50)	21.9	78.1	3.34 (2.94)	4.40*	4.24***		
Residential	91.3	8.7	.12 (.44)	71.9	28.1	.47 (.84)	6.53*	2.23*		
Outpatient	59.4	40.6	.58 (.83)	28.1	71.9	1.88 (1.56)	8.57**	4.42***		
School	73.9	26.1	.32 (.63)	50.0	50.0	1.00 (1.24)	5.60*	2.93**		
Used in last year										
Any	50.7	49.3	.78 (1.31)	28.1	71.9	2.41 (2.63)	4.54*	3.13**		
Residential	94.2	5.8	.09 (.41)	78.1	21.9	.28 (.58)	5.82*	1.70†		
Outpatient	65.2	34.8	.42 (.65)	43.8	56.3	1.28 (1.61)	4.15*	2.92**		
School	76.8	23.2	.28 (.57)	50.0	50.0	.84 (1.14)	7.26**	2.67*		

^a*n* = 47 nonclinical, *n* = 54 clinical. ^b*n* = 69 nonclinical, *n* = 32 clinical.

[†]*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

The Services Accessed by Youth measure was used to determine the types of services that young people were diverted to by police officers. Diversion options, or extrajudicial measures under the *YCJA*, could include no action, verbal warning, formal caution, or referral to a community agency. Although extrajudicial sanctions are considered a form of extrajudicial measure, only extrajudicial measures administered at the precharge stage were examined in the current study.

Descriptive data for diversion placements, as determined by police officers, and actual services completed by the youths are provided in Table 34 for 501 participants. It should be noted that although there were 501 participants that received extrajudicial measures or referrals to a service agency (i.e., children under age 12), 604 referrals were made due to police officers making more than one referral to a treatment agency. As well, in many cases police officers administered a warning or caution and then proceeded to refer the young person to a treatment agency. In such cases, the youth was classified as having been given a treatment referral as the diversion choice, since the referral is considered higher in intensity. Taking into account the overlap in diversion decisions, the distribution of extrajudicial measures was as follows: no action (.8%), warning (29.3%), caution (23.4%), referral to community agency (46.3%), and unknown (.2%).

Table 34 shows that the predominant extrajudicial measures of choice among police officers were verbal warnings (25.8%) and formal cautions (20.0%), which combined to form 45.8% of the diversion decisions. Less than 1% of the decisions involved no action at the referral stage; however, after the initial referral was made, no action was taken in 12.9% of the cases. Referrals to community agencies were conducted in 53.3% of the decisions. An examination of the distribution of community services

Table 34

Current Diversion Referrals and Actual Services Completed Among Youths

Diversion/referral type	Current referral <i>f</i> (%)	Services completed <i>f</i> (%)
None	4 (.7)	85 (14.1)
Warning	156 (25.8)	156 (25.8)
Formal Caution	121 (20.0)	121 (20.0)
Preventive Intervention at the Pre-court Level	74 (12.3)	18 (3.0)
Crossroads	54 (8.9)	26 (4.3)
John Howard Society	35 (5.8)	8 (1.3)
Roberts/Smart Centre	22 (3.6)	9 (1.5)
Alternative Response in Communities	20 (3.3)	5 (.8)
Elizabeth Fry Society Shoptheft Program	18 (3.0)	4 (.7)
Rideauwood Addictions Family Services	16 (2.6)	4 (.7)
Juvenile Firesetters Program	11 (1.8)	5 (.8)
David Smith Centre	9 (1.5)	1 (.2)
Youth Justice Committee	8 (1.3)	1 (.2)
School based counselling	6 (1.0)	2 (.3)
Elizabeth Fry Society	6 (1.0)	1 (.2)
Mediation	6 (1.0)	6 (1.0)
Youth Services Bureau	5 (.8)	1 (.2)
Ottawa Police Youth Centre	3 (.5)	2 (.3)
Mobile Crisis Unit	3 (.5)	0
CHEO (Psych./Outpatient/Inpatient)	2 (.3)	2 (.3)
Maison Fraternité	2 (.3)	1 (.2)
Centre Psycho Sociale	2 (.3)	0
Wraparound	2 (.3)	1 (.2)
Project Early Intervention	1 (.2)	0
Voluntary Monitoring Program	1 (.2)	1 (.2)
Dispute Resolution Centre	1 (.2)	1 (.2)
Other	16 (2.6)	6 (1.0)
Not specified	1 (.2)	136 (22.5)
Total Referrals	604	604

reveals that PIP was used the most frequently by police officers for referrals, followed by Crossroads, the John Howard Society, and the Roberts/Smart Centre. ARC, Elizabeth Fry Society Shoptheft Program, and Rideauwood Addictions Family Services obtained the next most frequent referrals. The Juvenile Firesetters Program also appeared to be a popular choice among police officers. The remainder of the community services received infrequent referrals from police officers.

Inspection of the services that were actually completed reveals that of the original 322 referrals to community agencies, only 106 of the referrals were completed (32.9%). It should be noted that in 136 instances (22.5%) the referral status could not be verified. Crossroads received the most referrals that were actually completed. PIP appeared as the second best service to be completed after referrals from police officers. Less than half of the referrals to the John Howard Society, ARC, Juvenile Firesetters Program, David Smith Centre, Youth Justice Committee, school based counselling, YSB, and the Elizabeth Fry Society resulted in service completion.

The diversion placements were analyzed with respect to low and high risk/need levels to determine whether there was a relationship between the type of diversion and risk/need level. A median split on the YLS/CMI and the YLS/CMI:SV was used to form the low and high risk/need groups. As can be seen in Table 35, a higher percentage of the high risk/need group than the low risk/need group was referred by police officers to community treatment programs. In contrast, the low risk/need group were given warnings and cautions most frequently. These findings were consistent across the YLS/CMI and YSL/CMI:SV indices.

Table 35

Diversion Referrals and Type of Diversion Actually Used Among Low and High Risk/Need Groups

Diversion type	YLS/CMI			YLS/CMI:SV		
	Risk/need level		χ^2	Risk/need level		χ^2
	Low	High		Low	High	
	(n = 50)	(n = 51)		(n = 259)	(n = 242)	
Current diversion referral			7.28*			44.32***
No action				1.2	.4	
Warning	30.0	13.7		32.8	21.2	
Caution	12.0	3.9		30.5	13.7	
Treatment program	58.0	82.4		35.5	64.7	
Actual diversion used			4.24			44.85***
No action	10.2	18.4		10.9	11.5	
Warning	32.7	18.4		40.7	30.8	
Caution	8.2	4.1		36.7	18.7	
Treatment program	49.0	59.2		11.8	39.0	

*** $p < .001$.

The current study also examined the type of diversion to which the young person was actually placed. The results in Table 35 using the screening instrument showed that a higher percentage of the high risk/need group than the low risk/need group completed treatment program diversion placements. The low risk/need group were given warnings and cautions more frequently than the high risk/need group as the actual diversion issued. A similar trend was noted when the YLS/CMI was used as the risk/need indicator; however, the results were not significant, likely due to the smaller sample size. These findings also substantiate the prediction that higher levels of service use will be exhibited by higher risk/need youths.

Diversion type was coded according to whether it was low, moderate, or high intensity (see Appendix L) to determine whether the level of risk was matched to the level of intensity of treatment services both referred to and delivered to participants. While the data in Table 35 provides support to the risk principle, it must be recognized that the level of intensity of the treatment program category was not differentiated. Thus, all levels of treatment intensity were included in the treatment program category. Table 36 presents risk/need level according to the level of intensity of diversion services the participants were referred to by police officers, and the level of intensity of services that they actually participated in. It should be noted that a strong relationship was found between the level of intensity of treatment services referred to and that actually used ($r = .78, p < .001$).

Table 36 shows that a significantly larger percentage of the participants classified as low risk, as opposed to high risk, were referred to low or moderate intensity services. Moreover, the high risk participants were referred to predominantly moderate or high

intensity services. A similar trend emerged when examining the level of intensity of services actually used by participants in the current study when the YLS/CMI was used as a risk/need indicator. As can be seen, across both risk/need instruments, the low risk/need group used predominantly low intensity services. Using the YLS/CMI, it appears that the high risk group used predominantly moderate and high intensity services; however, using the YSL/CMI:SV, the high risk group used predominantly low intensity services. It should be noted that this comparison was significant because there was a higher percentage of high risk participants in comparison to low risk participants who completed the high intensity services, and vice versa (i.e., low risk participants completing low intensity services in comparison to high risk participants). Overall, the findings of the current study suggest that a key theoretical principle of case classification, the risk principle, was adhered to in practice.

Another objective of the current study was to present descriptive data on the various diversion placements in terms of the specific needs of the youths. Table 37 presents endorsement of the YLS/CMI:SV items across diversion decisions. The overall mean scores on the YLS/CMI:SV for each diversion type are presented as well. Examining the mean scores on the screening instrument, a significant difference was found between the means overall, $F(3, 495) = 16.24, p < .001, \eta^2 = .09$. Post hoc comparisons using Bonferroni's correction revealed that the mean scores for warnings and formal cautions were significantly lower than the mean score for referral to a treatment agency.

First, a description of each diversion type will be provided for the data in Table 37, then comparisons will be made between diversion types for each YLS/CMI:SV item.

Table 37

Percentage of Risk/Need Items Present for Participants Across Diversion Placements

YLS/CMI:SV item	No action	Warning	Formal caution	Referral to treatment	χ^2/F
History of delinquency	25.0	39.5	27.0	64.9	51.75***
School/employment problems	25.0	37.3	29.6	70.0	62.87***
Peer relations	0.0	65.7	45.4	58.5	12.63**
Substance abuse	0.0	25.0	23.0	29.6	2.91
Leisure/recreation	0.0	48.1	44.9	62.5	12.35**
Personality/behaviour	25.0	48.3	35.9	70.5	40.48***
Family/parenting	100.0	74.4	61.0	79.5	13.91**
Attitudes/orientation	100.0	86.6	83.8	91.5	5.56
<i>N</i>	4	147	117	232	
<i>M (SD)</i>	2.25 (1.89)	3.61 (2.27) _a	3.12 (2.57) _a	4.78 (2.06) _b	16.24***

Note. Means with different subscripts differ at $p < .05$ using Bonferroni's correction.** $p < .01$. *** $p < .001$.

Although only 4 cases resulted in no action on the part of police officers, it is apparent that a minority of risk/need items were identified as being present among these individuals. Although generalizations cannot be made of the pattern of results obtained due to the small sample size, it is likely that few items would be endorsed for young people who are not given any substantive diversion placements.

The use of verbal warnings resulted in endorsements for the Attitudes/Orientation and Family/Parenting risk/need items the most frequently. Peer Relations was identified as being present as a risk/need factor for a number of individuals. In approximately 50% of the cases, Leisure and Personality were identified as criminogenic needs. History of Delinquency and School or Employment Problems were each observed in less than half of the cases that were given a verbal warning. Apparently, Substance Abuse did not emerge as a predominant risk factor among individuals who were administered verbal warnings. In light of the pattern of findings for verbal warnings, it can be suggested that this diversion option is appropriate given the criminogenic needs identified.

The participants who were administered formal cautions were identified as possessing criminogenic needs in the areas of attitudes and family predominantly. Peer Relations and Leisure/Recreation emerged as criminogenic needs in slightly less than half of the cases. The remaining areas were not present across enough cases to warrant attention. From this pattern of results a formal warning appears appropriate as only two criminogenic need areas were identified as predominant; moreover, the individuals in this category were deemed low risk overall.

Many criminogenic needs were identified as being present when an agency referral was the extrajudicial measure used. Criminogenic needs that were predominant in

this area were Attitudes, followed by Family, with School and Personality being equally predominant. Leisure and Peer Relations emerged as the next most frequent criminogenic needs. Interestingly, Substance Abuse was not a predominant criminogenic need identified among individuals referred to treatment. Given the magnitude of the overall mean score on the YLS/CMI:SV, participants referred to treatment were higher risk, and given the pattern of findings higher need in many respects. Thus, it is suggested that treatment referral as the extrajudicial measure used appears to be appropriate.

Comparisons among diversion types for each individual risk/need item reveal significant differences across all need areas, with the exception of the Substance Abuse and Attitudes domains. Interestingly, all diversion types were identified as having Attitudes as a criminogenic need; conversely, substance abuse was identified in less than a third of the cases across all diversion options. Interestingly, it appears that individuals given formal cautions in the current study had less prevalent criminogenic needs than individuals who were administered a verbal warning, which is considered less intrusive. In general, it appears that the highest prevalence of risk/need factors was evident for participants referred to treatment and the lowest for no action; hence, the least restrictive alternative appears to be working in the use of extrajudicial measures.

Due to the heterogeneity of services police officers used as referral sources and the small number of participants so referred, it was determined that the four more frequently referred to treatment programs would be examined in two respects (see Table 34). First, descriptive information will be presented on the percentage of low to high risk/need participants that were referred to each program. Next, descriptive data will be presented on the specific needs of participants that were referred to each program.

Table 38 presents the percentage of participants who were referred to four treatment programs used frequently by the Ottawa Police Service as a function of risk/need level measured by the YLS/CMI:SV. Table 39 presents the specific risk/need areas identified for participants referred to Preventive Intervention at the Pre-Court Level Program (PIP), Crossroads, John Howard Society, and Roberts/Smart Centre. Participants were classified as low and high risk based on a median split on the YLS/CMI:SV.

As can be seen, 62.2% of the referrals to PIP consisted of participants classified as lower risk/need. The PIP program was rated as being a moderate intensity treatment program. Thus, it would be expected that participants referred to PIP would be moderate risk. Examining the mean score on the YLS/CMI:SV, it can be suggested that this was indeed the case ($M = 3.84$, $SD = 2.14$). The specific criminogenic need areas identified in Table 39 as being the most prevalent among participants referred to PIP were Attitudes/Orientation, Family/Parenting, and Leisure/Recreation. Peer Relations and School/Employment were identified as the next most frequent need factors among PIP referrals. Need areas that were the least prevalent among PIP referrals were Personality/Behaviour and Substance Abuse. Examining History of Delinquency among participants referred to PIP, it can be seen that the majority of the participants referred to PIP did not have a prior history of conduct problems.

The Crossroads program had an overwhelming 90.7% of its referrals attributed to young people who were classified as high risk/need. The nature of Crossroads is such that it is available to children under the age of 12 who require intensive treatment for serious emotional and behavioural problems. Crossroads was rated in the current study as being a high intensity treatment program. The mean score obtained by participants referred to

Table 38

Percentage of Referrals Across Risk/Need Level

Referral	Risk/need level				χ^2
	Low (<i>n</i> = 259)		High (<i>n</i> = 242)		
	No	Yes	No	Yes	
PIP ^a	49.9	62.2	50.1	37.8	3.81 [†]
Crossroads ^b	56.8	9.3	43.2	90.7	43.65***
John Howard Society ^c	53.6	25.7	46.4	74.3	10.17**
Roberts/Smart Centre ^d	53.1	15.8	46.9	84.2	10.20**

Note. PIP = Preventive Intervention at the Pre-Court Level Program.

^a*n* = 74 referrals. ^b*n* = 54 referrals. ^c*n* = 35 referrals. ^d*n* = 19 referrals.

[†]*p* < .10. ***p* < .01. ****p* < .001.

Table 39

Percentage of Risk/Need Items Present for Participants Referred to PIP, Crossroads, John Howard Society, and Robert/Smarts Centre

YLS/CMJ:SV item	PIP	Crossroads	John Howard Society	Roberts/Smart Centre
History of delinquency	42.5	88.9	84.8	77.8
School/employment problems	51.4	96.3	89.3	88.2
Peer relations	53.4	50.0	84.6	100.0
Substance abuse	20.8	10.5	52.9	63.6
Leisure/recreation	56.6	71.1	62.5	83.3
Personality/behaviour	43.1	98.1	97.0	76.5
Family/parenting	68.9	94.3	82.9	78.9
Attitudes/orientation	89.2	100.0	94.3	94.7
<i>N</i>	74	54	35	19
<i>M</i> (<i>SD</i>)	3.84 (2.14)	5.78 (1.14)	5.37 (1.77)	5.37 (1.61)

Note. PIP = Preventive Intervention at the Pre-Court Level Program.

Crossroads (5.78) indicates that participants would require higher intensity services to address criminogenic needs. The specific needs identified among Crossroads referrals were extensive. All of the individuals referred to Crossroads had Attitudes/Orientation identified as a criminogenic need. Personality/Behaviour and School Problems were also identified as predominant need factors for almost every participant. Family/Parenting emerged as a predominant need among Crossroads referrals as well. Leisure/Recreation was identified as a specific need among 71.1% of the Crossroads referrals. Peer Relations (50.0%) and Substance Abuse (10.5%) were identified as the least frequent need factors among young people referred to Crossroads. It appears that Criminal History (88.9%) was a predominant risk factor among individuals referred to Crossroads.

The John Howard Society (JHS) was rated in the current study as being a moderate intensity treatment program. The mean score obtained by participants referred to JHS (5.37) indicates that participants would require moderate to high intensity services to address criminogenic needs. Referrals to JHS were primarily made among individuals identified as high risk/needs (74.3%) based on a median split on the YSL/CMI:SV. The specific needs that were found to be particularly predominant among JHS referrals were Personality/Behaviour (97.0%) and Attitudes/Orientation (94.3%). School or employment problems (89.3%) were also predominant among referrals. Peer Relations (84.6%) and Family/Parenting (82.9%) were notable need factors among JHS referrals.

Less prevalent criminogenic needs that emerged among participant referrals to JHS were Leisure/Recreation (62.5%) and Substance Abuse (52.9%), although it should be noted that these criminogenic needs were still identified in over 50% of the participants. Clearly, the results demonstrated that individuals referred to JHS possessed

diverse criminogenic needs. In addition, it appears that the preponderance of participants referred to JHS had a preexisting history of delinquency or conduct problems (84.8%).

The final agency that was examined in the current study was the Roberts/Smart Centre (RSC). Notably, the RSC has a number of different programs available ranging from short term crisis intervention to day treatment and residential services. All services offered by the RSC were combined for the purpose of providing descriptive information. In general, it appears that higher risk/need individuals are given referrals to RSC services. The mean total score on the YLS/CMI obtained by referred participants indicates that moderate to high intensity services would be required to address criminogenic needs.

A number of specific needs were identified among individuals referred to RSC services. Interestingly, 100.0% of the individuals referred to the RSC had Peer Relations identified as a criminogenic need. Attitudes (94.7%), School/Employment Problems (88.2%), and Leisure (83.3%) are needs that were also identified as being highly prevalent among referrals. Family, Personality/Behaviour, and Substance Abuse were the least prevalent among RSC referrals, yet they were still observed among a considerable number of individuals. A substantial number of participants referred to RSC services had a prior history of delinquency (77.8%). Given the number of referrals that were obtained for RSC services ($n = 19$), the current study combined all RSC referrals and presented the data as one entity. It is likely that more diversity exists for specific programs within RSC. For instance, it is likely that the Adolescent Substance Abuse Program would require participants to present with different needs (i.e., drug or alcohol problems) than candidates for the residential services (i.e., emotional and behavioural problems).

In summary, the descriptive information on diversion placements showed that each program had a different prevalence of specific needs identified among the referred youths. For example, individuals referred to PIP presented with fewer criminogenic needs than youths who were referred to John Howard Society or RSC. In general, the information on diversion placements indicates that officers used their discretion in a systematic manner particularly when dealing with higher risk/needs young people.

Risk and Need Factors and Recidivism

The final goal of the current study was to explore links between a wide range of risk/need factors and reoffending rates for diverted and charged samples of youths. In addition, the ability of various standardized instruments to predict recidivism among diverted youths and children under the age of 12 was assessed. Each of the objectives and specific predictions will be examined in the following sections after a description of the follow-up coding and outcome measures.

Interrater reliability of follow-up recidivism coding. Recidivism data was coded by a second rater in order to examine interrater reliability of the follow-up coding among 80 cases (see Table 40). Outcome measures included new police incidents, new violent police incidents, new charges, new violent charges, new convictions, and new violent convictions. Each measure was coded for presence or absence and the number of occurrences. Correlation coefficients ranged from .62 for violent convictions to .83 for police incidents and violent police incidents. Cohen's κ estimates ranged from .69 for violent convictions to .90 for violent charges. Overall, the results indicate acceptable levels of interrater reliability for the follow-up coding of recidivism data.

Table 40

Interrater Reliability Estimates for Follow-Up Recidivism Coding

Outcome measure	Pearson's <i>r</i>	Cohen's κ
Police incidents	.83***	.72***
Violent police incidents	.83***	.83***
Charges	.79***	.82***
Violent charges	.75***	.90***
Convictions	.75***	.74***
Violent convictions	.62***	.69***

Note. Number of occurrences were measured using Pearson's *r*. Presence of occurrences were measured using Cohen's κ .

*** $p < .001$.

Descriptive statistics for outcome measures. Recidivism data for all 750 participants were obtained using a computerized police database that records police incidents, charges, and convictions. Data on offending behaviour was collected on the presence or absence of offences and the cumulative sum of all offences until the end of the follow-up period. Recidivism measures included new police incidents, new charges, and new convictions. The total follow-up time (controlling for custody placements) ranged from 100 days to 711 days ($M = 426.01$, $SD = 106.74$). The mean age of the participants at follow-up was 15.98 ($SD = 2.22$).

Table 41 presents descriptive statistics for various recidivism measures for the total sample and across gender. The base rate of reoffending was 43.1% for police incidents and 25.2% for violent police incidents. The base rate of reoffending for charges (27.6%) and violent charges (14.3%) was lower than the comparable rates for police incidents. The lowest base rate of reoffending was for convictions (12.1%) and violent convictions (5.7%). As can be seen, males had significantly higher recidivism rates than females for every outcome measure, with the exception of new convictions.

The mean number of new criminal incidents acquired by the total sample was the largest for new charges (1.35) followed by new police incidents (1.09). The lowest mean number of reoffences was found for violent convictions (.07). Significant differences emerged across gender such that males acquired a higher mean number of new offences than females across all police incidents and charges, and for violent convictions. Overall, the mean time to first new police incident and first new charge was less than a year (267.97 and 341.89, respectively). Males were found to reoffend at a significantly faster rate than females across both outcome measures.

Table 41

Descriptive Statistics for Recidivism Measures

Outcome measure	Total (<i>N</i> = 750)	Females (<i>n</i> = 191)	Males (<i>n</i> = 559)	χ^2/df
Presence of new police incident (%)	43.1	25.7	49.0	31.69***
Presence of new violent police incident (%)	25.2	16.2	28.3	10.94**
Presence of new charge (%)	27.6	18.3	30.8	11.03**
Presence of new violent charge (%)	14.3	7.9	16.5	8.62**
Presence of new conviction (%)	12.1	9.4	13.1	1.76
Presence of new violent conviction (%)	5.7	3.1	6.6	3.19†
Mean number of new police incidents (<i>SD</i>)	1.09 (2.04)	.73 (2.04)	1.21 (2.03)	2.78**
Mean number of new violent police incidents (<i>SD</i>)	.43 (.99)	.28 (.84)	.48 (1.03)	2.67**
Mean number of new charges (<i>SD</i>)	1.35 (3.44)	.81 (2.78)	1.53 (3.62)	2.85**
Mean number of new violent charges (<i>SD</i>)	.31 (.92)	.15 (.58)	.36 (1.00)	3.56***
Mean number of new convictions (<i>SD</i>)	.28 (.98)	.19 (.73)	.31 (1.06)	1.63
Mean number of new violent convictions (<i>SD</i>)	.07 (.32)	.03 (.18)	.09 (.35)	2.80**
Mean time to first police incident (<i>SD</i>)	267.97 (183.64)	311.60 (171.15)	253.06 (185.52)	3.99***
Mean time to first charge (<i>SD</i>)	341.89 (172.68)	362.38 (154.66)	334.89 (178.01)	2.04*

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Comparisons of reoffending rates. A specific prediction of the current study was that reoffending rates would be higher in charged than diverted youths. Support for this prediction can be found in Table 42. As can be observed, the charged participants had significantly higher rates of offending than diversion participants across all outcome measures.

Interestingly, the results showed a pattern such that the charged group obtained higher rates of new charges followed by new police incidents, and violent incidents. Then, as would be expected, further violent charges, convictions, and violent convictions among charged participants were found to have the lowest rates, respectively. Thus, it appears that individuals who were charged for the current incident were more likely to be charged in subsequent dealings with the police rather than being dealt with via extrajudicial measures. In fact, 41.0% of the charged participants were involved in extrajudicial measures after the current incident. The following percentages of charged participants were administered extrajudicial measures during the follow-up period: 32.9% (no action), 15.3% (warning/caution), and 2.8% (referral to treatment agency).

Conversely, the diversion participants had the highest rates for new police incidents and violent police incidents. As the outcome measures became more stringent, the rates of reoffending decreased among the diversion participants. Hence, it appears that the diversion participants were more likely to be dealt with via extrajudicial measures upon subsequent dealings with the police. Indeed, 30.3% of the diversion participants were dealt with via extrajudicial measures. The distribution of extrajudicial measures among diversion participants was as follows: 21.7% (no action), 14.9% (warning/caution), and 4.5% (referral to treatment agency).

Table 42

Reoffending Rates Among Diverted and Charged Samples

Outcome measure	Charged (<i>n</i> = 249)	Diversion (<i>n</i> = 423)	χ^2
Presence of new police incident (%)	56.6	36.9	24.78***
Presence of new violent police incident (%)	32.9	20.3	13.27***
Presence of new charge (%)	59.0	14.2	147.93***
Presence of new violent charge (%)	29.7	7.8	56.24***
Presence of new conviction (%)	28.5	4.7	75.74***
Presence of new violent conviction (%)	13.3	2.4	31.03***

****p* < .001.

In order to determine whether the results would remain significant once controlling for custody placements over the follow-up period a series of one-way ANCOVAs were conducted using total follow-up time (controlling for custodial time) as a covariate. A similar pattern of results was obtained using the mean presence of new occurrences as the dependent variable.

Kaplan-Meier survival analyses were conducted to examine the rate of reoffending among the groups. Using new police incidents as the outcome, the mean survival time for the charged group ($M = 281$, $SE = 17$) was significantly faster than the survival time of the diversion group ($M = 484$, $SE = 14$; Log rank $\chi^2(1) = 48.68$, $p < .001$). Similarly, the charged group reoffended at a significantly faster rate ($M = 381$, $SE = 18$) than the diversion group ($M = 574$, $SE = 13$) when new violent police incidents was used as the outcome, Log rank $\chi^2(1) = 30.80$, $p < .001$ (see Figures R1 and R2 in Appendix R).

Using a more stringent criterion, a similar pattern of results was found. Specifically, the charged group reoffended at a faster rate ($M = 302$, $SE = 16$) than the diversion group ($M = 630$, $SE = 10$) when new charges was the criterion, Log rank $\chi^2(1) = 177.11$, $p < .001$. Using the presence of a new violent charge as the outcome, the charged group was found to recidivate significantly faster ($M = 420$, $SE = 17$) than the diversion group ($M = 665$, $SE = 8$; Log rank $\chi^2(1) = 82.11$, $p < .001$). Survival graphs can be found in Appendix R (see Figures R3 and R4). Thus, the survival analysis results confirmed that the charged group not only has a higher rate of reoffending than the diversion group, but also that the charged group reoffended at a faster rate. Data are presented for the three groups in Appendix R (see Figures R5 and R6). Results confirm that the three groups reoffended at significantly different rates. However, the diversion and under 12 groups

did not reoffend at significantly different rates (new police incidents: Log rank $\chi^2(1) = .68, p = .41$; new violent police incidents, Log rank $\chi^2(1) = .68, p = .41$). The charged group reoffended at a significantly faster rate than the under 12 group for both new police incidents, Log rank $\chi^2(1) = 21.41, p < .001$ and new violent police incidents, Log rank $\chi^2(1) = 6.77, p = .009$.

Table 43 presents the number of new offences using various outcome measures among charged and diversion samples. Two one-way ANCOVAs were conducted using total follow-up time as a covariate. The remainder of the analyses were analyzed using ANOVAs because the covariate was not deemed suitable once the assumptions of ANCOVA were assessed. Consistent with the aforementioned findings, the results showed that the charged group obtained a significantly higher mean number of offences than the diversion group for every outcome measure.

The pattern of findings regarding the rank ordering of means was similar for charged participants, with the exception that there were higher mean numbers of violent charges and convictions than violent police incidents. The pattern among diversion participants was slightly different as well when the frequency of offences was examined. Specifically, the diversion participants had a higher mean number of new charges than violent police incidents.

Reoffending rates were further examined among the participants who were dealt with by police using informal measures. As can be seen in Table 44, the rate of reoffending for new convictions and violent convictions was low across all categories of referrals. Although 50.0% of the individuals that were dealt with by police by no action incurred a new police incident and violent incident, these results must be interpreted with

Table 43

Unadjusted and Adjusted Mean Number of Offences for Charged and Diversion Samples

Outcome measure	Group						<i>F</i>	η^2
	Charged (<i>n</i> = 249)		Diversion (<i>n</i> = 423)					
	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SD</i>)				
No. of new police incidents (PI)	1.55 (2.48)	1.56 (2.10)	.91 (1.85)	.91 (2.10)		14.83***	.02	
No. of new violent PI	.58 (1.11)	.58 (1.01)	.36 (.96)	.36 (1.01)		7.51**	.01	
No. of new charges	2.91 (4.25)	--	.68 (2.85)	--		66.36***	.09	
No. of new violent charges	.66 (1.24)	--	.16 (.69)	--		44.02***	.06	
No. of new convictions	.66 (1.32)	--	.10 (.75)	--		48.26***	.07	
No. of new violent convictions	.17 (.47)	--	.03 (.19)	--		29.29***	.04	

Note. Adjusted means evaluated at mean of covariate total follow-up time = 427.84 days. Dashes represent values that could not be obtained because the covariate was not appropriate for the analysis.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 44

Reoffending Rates Among Participants Involved in Extrajudicial Measures and Referred to Treatment Programs

Outcome measure	Actual diversion used					χ^2	
	No action (<i>n</i> = 4)	Warning (<i>n</i> = 146)	Caution (<i>n</i> = 114)	Treatment program (<i>n</i> = 97)	Don't know (<i>n</i> = 100)		
Presence of new police incident (%)	50.0	34.9	26.3	45.4	40.0	9.42†	
Presence of new violent police incident (%)	50.0	17.8	15.8	28.9	20.0	25.0	9.24†
Presence of new charge (%)	0.0	13.0	11.4	7.2	10.0	17.0	5.36
Presence of new violent charge (%)	0.0	8.2	6.1	4.1	2.5	9.0	3.94
Presence of new conviction (%)	0.0	5.5	2.6	2.1	2.5	6.0	3.79
Presence of new violent conviction (%)	0.0	4.1	0.0	1.0	0.0	3.0	7.53

[†]*p* < .10.

caution due to the low sample size. Examining the reoffending rates for new police incidents and violent incidents, which approached significance in terms of group differences, the highest recidivism rates were obtained by participants who were referred to and actually participated in treatment programs (45.4%). Similarly high rates were obtained for individuals who were referred to treatment programs but did not complete them (37.5%) and for participants who were referred to programs but data could not be obtained to substantiate program participation (40.0%). The lowest recidivism rates were for individuals who were given cautions followed by those who were administered verbal warnings.

Group differences across the remaining outcome measures were nonsignificant, but it was observed that slightly higher rates were obtained for participants referred to treatment programs but data could not substantiate whether the program was completed or not and for participants who were administered verbal warnings. Given the low base rate of new charges and convictions it is difficult to determine valid patterns in the data.

The current study predicted that reoffending rates would be higher for diverted youths who fail to complete assigned treatment programs than those who do. In order to examine this hypothesis individuals referred to programs were separated into four groups. Program completers were those participants who completed the programs to which they were referred to. Other program completers were participants who were referred to a treatment program but completed a different program to which they were not assigned. Program noncompleters did not complete programs to which they were assigned or any other programs. The final group was participants that were assigned to a treatment

program upon referral, but information could not confirm whether the individual completed the assigned program or any others.

As can be seen in Table 45, the results did not confirm the hypothesis that program noncompleters would obtain higher reoffending rates than program completers; however, some caveats must be mentioned with respect to these findings. First, a substantial number of participants (42.8%) were referred to programs but data were unavailable to determine the outcome of the referral. Moreover, program completers were so defined based on available data from police reports, not directly from service providers. An examination of the data reveals similar rates of new police incidents and violent police incidents across program completion. A trend was noted such that participants who completed other programs had higher rates of new charges and new violent charges than the other groups.

Interestingly, the small number of participants who were referred to programs but completed different programs had a significantly higher mean number of new violent police incidents and violent charges than all other groups of participants. Examining this small number of cases specifically, it appears that the program that was actually completed was a lower intensity treatment program, which was not likely suited to their criminogenic needs and risk levels. Hence, the higher numbers of reoffences were likely a result of the use of inappropriate matching of treatment to the participants' risk and need levels.

The recidivism rates among participants who completed Crossroads, PIP, Roberts/Smart Centre, and John Howard Society is presented in Table 46 for descriptive purposes. First, it must be noted that while the Crossroads program is used for children

Table 45

Reoffending Rates Among Program Completers and Noncompleters

Outcome measure	Program completed					χ^2
	Yes		No (<i>n</i> = 56)	Don't know (<i>n</i> = 115)		
	Actual program referred to (<i>n</i> = 94)	Other program (<i>n</i> = 4)				
Presence of new police incident (%)	44.7	50.0	39.3	38.3	1.09	
Presence of new violent police incident (%)	28.7	25.0	21.4	24.3	1.08	
Presence of new charge (%)	6.4	25.0	8.9	17.4	7.17 [†]	
Presence of new violent charge (%)	3.2	25.0	3.6	9.6	6.67 [†]	
Presence of new conviction (%)	2.1	0.0	1.8	6.1	3.21	
Presence of new violent conviction (%)	1.1	0.0	0.0	3.5	3.12	
Mean no. of new police incidents (<i>SD</i>)	1.01 (1.56)	2.75 (4.86)	.91 (1.69)	.90 (1.91)	1.39	
Mean no. of new violent police incidents (<i>SD</i>)	.48 (.94) _a	1.75 (3.50) _b	.29 (.62) _a	.39 (.84) _a	3.43*	
Mean no. of new charges (<i>SD</i>)	.24 (1.58)	2.50 (5.00)	.16 (.57)	.90 (3.89)	1.99	
Mean no of new violent charges (<i>SD</i>)	.03 (.18) _a	1.50 (3.00) _b	.07 (.42) _a	.18 (.66) _a	8.87***	
Mean no. of new convictions (<i>SD</i>)	.02 (.15)	0.0 (0.0)	.02 (.13)	.24 (1.36)	1.38	
Mean no. of new violent convictions (<i>SD</i>)	.01 (.10)	0.0 (0.0)	0.0 (0.0)	.05 (.29)	1.17	

Note. Means with different subscripts differ at $p < .05$ using Bonferroni's correction.

[†] $p < .10$. * $p < .05$. *** $p < .001$.

Table 46
Reoffending Rates Among Participants Who Completed the Most Frequently Referred to Programs

Outcome measure	PIP (<i>n</i> = 18)	Crossroads (<i>n</i> = 26)	JHS (<i>n</i> = 8)	RSC (<i>n</i> = 8)	χ^2/df
Presence of new police incident (%)	38.9	50.0	62.5	50.0	1.32
Presence of new violent police incident (%)	11.1	42.3	50.0	50.0	6.71 [†]
Presence of new charge (%)	11.1	0.0	12.5	25.0	5.64
Presence of new violent charge (%)	11.1	0.0	12.5	12.5	3.30
Presence of new conviction (%)	0.0	0.0	12.5	0.0	6.61 [†]
Presence of new violent conviction (%)	0.0	0.0	12.5	0.0	6.61 [†]
Mean no. of new police incidents (<i>SD</i>)	.78 (1.26) _a	1.08 (1.47)	2.00 (1.93)	2.50 (4.07) _b	1.82
Mean no. of new violent police incidents (<i>SD</i>)	.22 (.65) _a	.73 (1.11) _a	.75 (.89)	1.75 (2.71) _b	2.54 [†]
Mean no. of new charges (<i>SD</i>)	.11 (.32) _a	0.0 (0.0) _a	.25 (.71) _a	3.13 (5.34) _b	4.80**
Mean no of new violent charges (<i>SD</i>)	.11 (.32) _a	0.0 (0.0) _a	.13 (.35)	.75 (2.12) _b	1.91
Mean no. of new convictions (<i>SD</i>)	0.0 (0.0) _a	0.0 (0.0) _a	.13 (.35) _b	0.0 (0.0) _a	2.31 [†]
Mean no. of new violent convictions (<i>SD</i>)	0.0 (0.0) _a	0.0 (0.0) _a	.13 (.35) _b	0.0 (0.0) _a	2.31 [†]

Note. PIP = Preventive Intervention at the Pre-Court Level Program; JHS = John Howard Society; RSC = Roberts/Smart Centre. Means with different subscripts differ at $p < .05$.
[†] $p < .10$. ** $p < .01$.

under the age of 12 in conflict with the law, at the time of the follow-up 46.2% of the sample were older than age 12. While a large percentage of the Crossroads participants were eligible to be charged during the follow-up period, the results showed that none of the participants incurred new charges. Across all programs, the highest recidivism rates were obtained for new police incidents, followed by new violent incidents. Only the JHS participants received new convictions during the follow-up period.

Due to the small sample size, post hoc tests were conducted across groups even though the omnibus *F* tests were not significant. An examination of mean differences showed that the RSC participants obtained significantly higher mean numbers of new police incidents, violent incidents, charges, and violent charges than the other groups, with the exception of JHS on violent police incidents. Overall, it appears that the PIP participants were the most successful while the RSC participants were the least successful in terms of new dealings with the police.

Further information will be assessed regarding reoffence rates and risk/need factors among participants in the following sections. First, the criterion-related validity of the risk/needs instruments will be examined to determine whether the assessment tools are associated with different offence-based criteria.

Criterion-related validity of the YLS/CMI:SV and YLS/CMI. Correlations for the YLS/CMI:SV total score with postdictive and predictive outcome measures are presented in Table 47. Examining the total sample, correlations with the postdictive outcome measures ranged from .10 for prior violent convictions to .44 for prior police incidents. Correlations with predictive outcome measures ranged from .16 for new violent convictions to .31 for new charges. The magnitudes of these correlations ranged from

Table 47

Correlations of YLS/CM:SV Total Score with Outcome Measures

Outcome measure	Total sample (N = 750)	Charged (n = 249)	Diversion (n = 423)	Under 12 (n = 78)	Males (n = 559)	Females (n = 191)
No. of prior police incidents (PI)	.44***	.34***	.44***	.40***	.43***	.45***
No. of prior violent PI	.37***	.26***	.38***	.37**	.35***	.42***
No. of prior charges	.30***	.28***	.19***	--	.31***	.24**
No. of prior violent charges	.28***	.28***	.17**	--	.29***	.22**
No. of prior convictions	.26***	.23***	.16**	--	.28***	.18*
No. of prior violent convictions	.10**	.24***	.03	--	.09*	.18*
No. of new PI	.25***	.15*	.25***	.33**	.23***	.25***
No. of new violent PI	.22***	.17**	.20***	.30**	.19***	.25***
No. of new charges	.31***	.28***	.22***	--	.31***	.29***
No. of new violent charges	.23***	.18**	.15**	--	.21***	.26***
No. of new convictions	.22***	.18**	.12*	--	.20***	.28***
No. of new violent convictions	.16***	.14*	.08	--	.16***	.18*

Note. Dashes represent values that could not be obtained because one of the variables was a constant.
 * $p < .05$. ** $p < .01$. *** $p < .001$.

small to moderate-strong.

When the diversion and charged groups were differentiated, the relationships observed for the charged group were all significant and meaningful in terms of magnitude. Conversely, the YLS/CMI:SV total score was not related to prior or new violent convictions among the diversion group, but the remainder of the correlations were significant and ranged from small to moderate-strong. The charged group obtained stronger correlations than the diverted group for all but four outcome measures (prior and new police incidents and prior and new violent police incidents). The screening instrument was related to prior and new police incidents and prior and new violent police incidents among the under 12 group as well, with all correlations in the moderate and moderate-strong range.

The screening instrument was significantly related to reoffending when the sample was differentiated across gender as well. In general, stronger correlations were obtained for the links between postdictive and predictive outcome measures among females. Across both genders, it was found that the YLS/CMI:SV total score was correlated with postdictive measures of offending and was predictive of recidivism. The magnitude of the associations for males ranged from small to moderate-large, while for females, the correlations ranged from small-moderate to moderate-large.

The YLS/CMI total score was also correlated with various measures of offending. Table 48 does not present correlations for number of prior charges, violent charges, convictions, and violent convictions because the diversion and under 12 participants did not have any formal dealings with the criminal justice system in the past. As can be seen in Table 48, the YLS/CMI was significantly correlated with all postdictive and predictive

outcome measures for the total sample and across the diverted and under 12 groups. In fact, higher correlations were observed for the under 12 group in comparison to the diversion group across all outcome measures that were available, with correlations in the moderate-strong to strong range.

The risk/needs instrument was also significantly related to outcome measures among males and females. It should be noted that although the correlations for the number of new charges and violent charges did not reach significance for females, the magnitude of the associations were considered small to moderate and was consistent with that found among males. Interestingly, the strongest correlations that were observed for the YLS/CMI:SV and outcome were found for females on the number of new police incidents (.68) and violent police incidents (.71).

Overall, the findings indicate that the YLS/CMI, and more importantly, the YLS/CMI:SV were indeed related to a variety of postdictive offence-based criteria and future reoffending across a variety of outcome measures (i.e., police incidents, charges, and convictions). Hence, the obtained results substantiate the criterion-related validity of the YLS/CMI and the YLS/CMI:SV.

Specific correlates of reoffending. Data in Table 48 indicate that the overall risk/need score on the YLS/CMI:SV was associated with offending among charged and diversion samples. It was of further interest to distinguish between specific risk and need factors and recidivism among the two groups. It was hypothesized that criminal history, antisocial attitudes, personality, peer associations, and family problems will constitute the major predictors of reoffending for both groups. A series of MANOVAs

Table 48

Correlations of YLS/CMI Total Score with Outcome Measures

Outcome measure	Total sample (<i>n</i> = 101)	Diversion (<i>n</i> = 80)	Under 12 (<i>n</i> = 21)	Males (<i>n</i> = 70)	Females (<i>n</i> = 31)
No. of prior police incidents (PI)	.41***	.41***	.49*	.41***	.49**
No. of prior violent PI	.45***	.41***	.56**	.49***	.42*
No. of new PI	.44***	.44*	.49*	.38**	.68***
No. of new violent PI	.39***	.39***	.46*	.28*	.71***
No. of new charges	.21*	.26*	--	.24*	.22
No. of new violent charges	.23*	.27*	--	.26*	.22
No. of new convictions	.23*	.26*	--	.29*	--
No. of new violent convictions	.23*	.26*	--	.29*	--

Note. Dashes represent values that could not be obtained because one of the variables was a constant.

* $p < .05$. ** $p < .01$. *** $p < .001$.

were conducted to assess the merit of this hypothesis. Using future police incidents as the recidivism criterion, a MANOVA was conducted using the individual items from the YLS/CMI:SV. For the diversion participants, the overall multivariate result was significant, $F(8, 178) = 9.41, p < .001, \eta^2 = .30$. Univariate results, presented in Table 49, showed that the recidivists scored higher than the nonrecidivists across all items for the diversion group when new police incidents was the criterion. The largest effect sizes were obtained for history of delinquency, school, personality, peer relations, and leisure. Among the charged group, only two significant univariate differences emerged for new police incidents. The recidivists scored higher than the nonrecidivists on history of delinquency and peer relations.

In addition, for the diversion group, the multivariate result was significant on the set of dependent variables using new violent police incidents, $F(8, 178) = 5.87, p < .001, \eta^2 = .21$. Univariate results showed that recidivists scored significantly higher than nonrecidivists on all YLS/CMI:SV scales. The largest mean differences between recidivists and nonrecidivists among diversion participants were for prior history, school, personality, and family. For the charged group, the overall multivariate result was not significant, $F(8, 122) = 1.32, p = .24, \eta^2 = .08$. Examining effect sizes for the univariate results, however, it was found that substance abuse, history, personality, peer relations, and school were the largest discriminators between recidivists and nonrecidivists.

Using new charges as the criterion, a significant multivariate result was obtained for the diversion group, $F(8, 178) = 3.71, p < .001, \eta^2 = .14$. Univariate results presented in Table 50 revealed that recidivists scored significantly higher than nonrecidivists on all YLS/CMI:SV items, with the exception of Leisure/Recreation which failed to reach

Table 49

Mean Scores on the YLS/CM:SV Items for Recidivists and Nonrecidivists among Diversion and Charged Participants using Police Incidents as the Recidivism Criteria

YLS/CM:SV item	Diversion group (<i>n</i> = 423)				Charged group (<i>n</i> = 249)			
	Nonrecidivist	Recidivist	<i>F</i>	η^2	Nonrecidivist	Recidivist	<i>F</i>	η^2
	New police incidents ^a							
History of delinquency	.23 (.42)	.73 (.45)	60.56***	.25	.68 (.47)	.89 (.31)	9.21**	.07
School	.25 (.44)	.74 (.44)	55.41***	.23	.74 (.44)	.81 (.39)	1.01	.01
Peer relations	.35 (.48)	.66 (.48)	19.99***	.10	.91 (.29)	.99 (.12)	4.12*	.03
Substance abuse	.21 (.41)	.43 (.50)	10.90**	.06	.56 (.50)	.70 (.46)	2.81	.02
Leisure	.32 (.47)	.64 (.48)	20.35***	.10	.79 (.41)	.78 (.41)	.01	.00
Personality	.29 (.46)	.68 (.47)	31.29***	.15	.61 (.49)	.78 (.41)	4.60	.03
Family	.55 (.50)	.83 (.38)	17.96***	.09	.88 (.33)	.86 (.34)	.04	.00
Attitudes	.82 (.39)	.95 (.34)	7.01**	.04	.96 (.19)	.97 (.16)	.07	.001
	New violent police incidents ^b							
History of delinquency	.31 (.47)	.79 (.41)	38.27***	.17	.76 (.43)	.92 (.28)	4.55*	.03
School	.34 (.48)	.79 (.41)	32.61***	.15	.74 (.44)	.86 (.35)	2.23	.02
Peer relations	.41 (.49)	.66 (.48)	8.80**	.05	.94 (.25)	1.00 (.00)	2.48	.02
Substance abuse	.26 (.44)	.43 (.50)	4.83*	.03	.59 (.50)	.78 (.42)	.4.65*	.04
Leisure	.40 (.49)	.60 (.50)	5.55*	.03	.80 (.40)	.76 (.44)	.26	.002
Personality	.35 (.48)	.74 (.44)	24.86***	.12	.66 (.48)	.84 (.37)	4.17*	.03
Family	.59 (.49)	.87 (.34)	13.03***	.07	.86 (.35)	.89 (.32)	.21	.002
Attitudes	.84 (.37)	.96 (.20)	4.18*	.02	.97 (.18)	.97 (.16)	.02	.00

Note. *SDs* are in parentheses.

^aFor diversion group, nonrecidivist *n* = 267; recidivist *n* = 156. For charged group, nonrecidivist *n* = 108, recidivist *n* = 141. ^bFor diversion group, nonrecidivist *n* = 337; recidivist *n* = 86. For charged group, nonrecidivist *n* = 167, recidivist *n* = 82.

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

Table 50

Mean Scores on the YLS/CM:SV Items for Recidivists and Nonrecidivists among Diversion and Charged Participants using Charges as the Recidivism Criteria

YLS/CM:SV item	Diversion group (<i>n</i> = 423)				Charged group (<i>n</i> = 249)			
	Nonrecidivist	Recidivist	<i>F</i>	η^2	Nonrecidivist	Recidivist	<i>F</i>	η^2
History of delinquency	.36 (.48)	.83 (.38)	26.34***	.13	.65 (.48)	.90 (.30)	12.80***	.09
School	.39 (.49)	.80 (.41)	18.74***	.09	.69 (.47)	.84 (.37)	3.78	.03
Peer relations	.43 (.50)	.73 (.45)	9.89**	.05	.94 (.24)	.96 (.19)	.28	.002
Substance abuse	.26 (.44)	.50 (.51)	7.03**	.04	.54 (.50)	.71 (.46)	4.02*	.03
Leisure	.43 (.50)	.57 (.50)	1.99	.01	.67 (.47)	.86 (.35)	6.81	.05
Personality	.39 (.49)	.73 (.45)	12.30**	.06	.56 (.50)	.81 (.40)	10.32**	.07
Family	.63 (.48)	.83 (.38)	4.70*	.03	.79 (.41)	.92 (.27)	5.23*	.04
Attitudes	.85 (.36)	1.00 (.00)	5.36*	.03	.94 (.24)	.99 (.11)	2.15	.02
New violent charges ^b								
History of delinquency	.40 (.49)	.81 (.40)	10.73**	.06	.76 (.43)	.92 (.28)	4.55*	.03
School	.42 (.49)	.87 (.34)	13.23***	.07	.76 (.43)	.84 (.37)	1.04	.01
Peer relations	.46 (.50)	.69 (.48)	3.16 [†]	.02	.95 (.23)	.97 (.16)	.41	.003
Substance abuse	.30 (.46)	.31 (.48)	.01	.00	.62 (.49)	.70 (.46)	.84	.01
Leisure	.43 (.50)	.69 (.50)	4.06*	.02	.74 (.44)	.89 (.32)	3.46 [†]	.03
Personality	.41 (.49)	.87 (.34)	13.62***	.07	.65 (.48)	.86 (.35)	6.20*	.04
Family	.65 (.48)	.81 (.40)	1.75	.01	.86 (.35)	.89 (.32)	.21	.002
Attitudes	.86 (.35)	1.00 (.00)	2.58	.01	.96 (.20)	1.00 (.00)	1.62	.01

Note. *SDs* are in parentheses.

^aFor diversion group, nonrecidivist *n* = 363; recidivist *n* = 60. For charged group, nonrecidivist *n* = 102, recidivist *n* = 147. ^bFor diversion group, nonrecidivist *n* = 390; recidivist *n* = 33. For charged group, nonrecidivist *n* = 175, recidivist *n* = 74.

[†]*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

significance but was in the same direction. The largest effect sizes were obtained for prior history followed by school, personality, and then peer relations. For charged participants, the overall multivariate result was significant, $F(8, 122) = 2.22, p < .05, \eta^2 = .13$ for the new charges criterion. Univariate results showed that recidivists scored significantly higher than nonrecidivists on prior history, substance abuse, personality, and family, which were the predominant discriminators between the groups.

The final recidivism measure examined was new violent charges. For diversion participants, the overall multivariate result was significant, $F(8, 178) = 2.79, p = .006, \eta^2 = .11$. Univariate results showed that the recidivists scored significantly higher than the nonrecidivists on prior history, school, leisure, and personality, with peer relations approaching significance. For the charged participants, the overall multivariate result was not significant, $F(8, 122) = 1.36, p = .22, \eta^2 = .08$, however, low power may have contributed to the lack of significance (power = .59). Hence, univariate results were examined and revealed that the recidivists scored significantly higher than the nonrecidivists on prior history, personality, and on leisure, which approached significance.

In summary, it appears that the hypothesis was partially supported. Specifically, results showed that the largest differences between recidivists and nonrecidivists were found among criminal history, school, peer relations, and personality for the diversion group, while for the charged group different risk factors emerged depending on the recidivism criterion examined. Using new police incidents to examine reoffending, the major predictors of recidivism that distinguished between recidivists and nonrecidivists were prior history and peer relations. Using new charges, the largest difference between

recidivists and nonrecidivists was found consistently on history of delinquency and personality. Thus, two of the Big Four (criminal history and personality) were the major predictors for the charged group, while three of the Big Four (criminal history, personality, and peers) emerged as major predictors, in addition to school, for the diversion group, showing partial support for the hypothesis. Interestingly, criminal attitudes emerged for the diversion group with recidivists scoring higher than nonrecidivists across three of the outcome measures, but the magnitude of the effects observed were small in comparison to other predictors (i.e., criminal history).

Prediction using standardized measures. The current study sought to examine the ability of various standardized measures to predict reoffending rates in diverted youths and children under the age of 12 in conflict with the law. Data will also be presented for the charged group where available (i.e., using the YLS/CMI:SV). Recidivism will be examined primarily using new police incidents and violent police incidents as the outcome measures. New charges and violent charges will be presented for charged and diversion groups for specific analyses. The following scales will be used for the following analyses: YLS/CMI:SV total score, YLS/CMI total score, CSS-M total score, HIT total score, JI Asocial Index *T* score, YSR Total Problems *T* score, and the CBCL Total Problems *T* score.

In order to determine whether the standardized measures used in the current study differentiate between recidivists and nonrecidivists, a MANCOVA was conducted using the HIT AR score as a covariate. Recidivism was defined as engaging in any new police incidents; this served as the grouping variable. Results are presented in Table 51 for the total sample and for the under 12 and diversion groups separately.

Table 51

Unadjusted and Adjusted Mean Scores on Assessment Measures for Recidivists and Nonrecidivists

Measure	Nonrecidivists		Recidivists		<i>F</i>	η^2
	Unadjusted <i>M</i>	Adjusted <i>M</i>	Unadjusted <i>M</i>	Adjusted <i>M</i>		
	(<i>SD</i>)	(<i>SD</i>)	(<i>SD</i>)	(<i>SD</i>)		
Total sample ^a						
YLS/CMI:SV	4.09 (2.02)	4.16 (2.02)	5.32 (2.09)	5.21 (2.03)	6.24*	.06
YLS/CMI	10.69 (6.19)	10.90 (6.26)	17.62 (6.61)	17.25 (6.29)	23.54***	.19
CSS-M	22.44 (11.60)	22.88 (13.02)	31.73 (15.60)	30.96 (13.09)	8.81**	.08
HIT	2.81 (.78)	2.86 (.18)	3.28 (.84)	3.19 (.73)	4.65*	.05
JI AI	57.31 (13.66)	58.16 (14.18)	63.95 (17.33)	62.48 (14.26)	2.13	.02
YSR	52.98 (11.17)	53.66 (10.05)	60.38 (10.38)	59.22 (10.10)	7.00*	.07
CBCL	59.36 (10.29)	59.53 (10.18)	64.70 (9.79)	64.42 (10.23)	5.29*	.05
Under 12 ^b						
YLS/CMI:SV	4.92 (1.61)	4.89 (1.37)	6.13 (.84)	6.18 (1.37)	4.34 [†]	.19
YLS/CMI	13.92 (5.65)	13.56 (4.81)	18.37 (6.28)	18.96 (4.83)	6.16*	.26
CSS-M	22.00 (7.27)	21.50 (10.69)	25.13 (16.41)	25.94 (10.71)	.85	.05
HIT	3.36 (1.00)	3.30 (.86)	3.27 (1.09)	3.37 (.87)	.03	.002
JI AI	62.13 (12.16)	61.87 (13.03)	58.88 (15.21)	59.59 (13.05)	.15	.01
YSR	59.08 (12.28)	58.32 (8.62)	57.50 (9.18)	58.73 (8.64)	.01	.01
CBCL	64.62 (11.09)	64.18 (9.59)	67.00 (8.64)	67.70 (9.62)	.66	.04
Diversion ^c						
YLS/CMI:SV	3.88 (2.08)	4.01 (2.12)	5.10 (2.26)	4.89 (2.15)	3.02 [†]	.04
YLS/CMI	9.86 (6.09)	10.08 (6.43)	17.41 (6.79)	17.03 (6.51)	20.48***	.21
CSS-M	22.55 (12.52)	22.99 (13.70)	33.55 (15.16)	32.79 (13.87)	8.95**	.10
HIT	2.66 (.65)	2.74 (.65)	3.29 (.78)	3.16 (.66)	7.69**	.09
JI AI	56.04 (13.84)	57.34 (14.63)	65.34 (17.86)	63.06 (14.81)	2.67	.03
YSR	51.43 (10.44)	52.23 (10.15)	61.17 (10.69)	59.76 (10.27)	9.62**	.11
CBCL	58.02 (9.74)	58.12 (10.10)	64.07 (10.13)	63.89 (10.22)	5.71*	.07

Note. Adjusted means evaluated at mean of covariate HIT AR score = 4.06. YLS/CMI:SV = Youth Level of Service/Case Management Inventory Screening Version; YLS/CMI = Youth Level of Service/Case Management Inventory; CSS-M = Criminal Sentiments Scale-Modified; HIT = How I Think Questionnaire; JI AI = Jesness Inventory Asocial Index; YSR = Youth Self Report; CBCL = Child Behavior Checklist.

^aNonrecidivists: *n* = 64; recidivists: *n* = 37. ^bNonrecidivists: *n* = 13; recidivists: *n* = 8. ^cNonrecidivists: *n* = 51; recidivists: *n* = 29.

[†]*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

Using Wilks' λ , the multivariate results revealed a significant difference between recidivists and nonrecidivists on the set of dependent variables for the total sample, $F(7, 92) = 3.52, p = .002, \eta^2 = .21$. Univariate results showed that the recidivists scored significantly higher than the nonrecidivists on all measures, with the exception of the JI Asocial Index which was not significant but in the same direction. Thus, recidivists had higher risk/needs scores, more deviant criminal attitudes, and behaviour problems than nonrecidivists.

The multivariate result for the under 12 group was not significant, $F(7, 12) = 1.59, p = .23, \eta^2 = .48$. In light of the obtained effect size, which was large, and the observed power (.42), these results would likely have been significant with a larger sample size. Examining the univariate results in Table 51, particularly the effect sizes, shows that only two results were meaningful. Specifically, scores on the YLS/CMI and the screening version were higher for recidivists than nonrecidivists.

For the diversion group, the overall multivariate result was significant, $F(7, 71) = 3.08, p = .007, \eta^2 = .23$, indicating that the groups differed on the set of dependent variables. The univariate results showed that recidivists scored significantly higher than the nonrecidivists on all measures, except the JI AI, which was nonsignificant but in the same direction as the other measures.

Overall, it appears that the YLS/CMI was the most robust instrument across age with the largest effect sizes found for the total sample and the under 12 and diversion samples. The obtained effect sizes for the YLS/CMI were in the moderate-strong range, and was the largest for the under 12 sample ($\eta^2 = .26$). The effect sizes for the screening version were moderate and small-moderate across the total sample and diversion group,

respectively, but was large for the under 12 group ($\eta^2 = .19$). For the total sample, the CSS-M then the YSR emerged as the next most powerful discriminating instruments in comparison to the other instruments. Moderate effect sizes were found for the total sample ($\eta^2 = .08$) and under 12 group ($\eta^2 = .05$) while a moderate-large effect was found for the diversion group ($\eta^2 = .10$). Interestingly, the JI AI did not discriminate between recidivists and nonrecidivists for the total sample or across any of the groups. The YSR and CBCL were found to have small-moderate effects in terms of distinguishing between recidivists and nonrecidivists, with larger effects noted for the diversion than under 12 groups. Small-moderate effects were noted for the HIT among the total sample ($\eta^2 = .05$), with larger effects found for the diversion ($\eta^2 = .09$) than the under 12 group ($\eta^2 = .002$).

Reoffending was also examined using violent police incidents as the criterion. The HIT AR score was not deemed suitable as a covariate. Hence, a MANOVA was conducted to determine whether recidivists differed from nonrecidivists on the set of assessment measures (see Table 52). For the total sample, the results showed that the groups differed significantly on the linear combination of dependent variables, $F(7, 93) = 4.59, p < .001, \eta^2 = .26$.

The univariate results demonstrated significant effects between the groups on every assessment measure with recidivists obtaining higher scores than nonrecidivists. Examination of the effect sizes reveals that the YLS/CMI ($\eta^2 = .23$) followed by the YSR ($\eta^2 = .17$) were clearly the best discriminators of recidivists from nonrecidivists with large effect sizes noted. The remaining instruments obtained moderate-large effect sizes ($\eta^2 = .11$; CSS-M, YLS/CMI:SV, JI AI, CBCL). The HIT was found to have the smallest discriminating power when the total sample was examined ($\eta^2 = .08$).

Table 52

Mean Scores on Assessment Measures for Violent Recidivists and Nonrecidivists

	Nonrecidivists		Recidivists			
Measure	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	η^2
	Total sample ^a					
YLS/CMI:SV	4.12	2.09	5.70	1.73	12.33**	.11
YLS/CMI	11.16	6.43	18.89	5.91	29.76***	.23
CSS-M	22.95	12.28	33.78	15.11	13.56***	.12
HIT	2.84	.82	3.37	.74	8.57**	.08
JI AI	56.64	13.02	68.26	18.14	12.65**	.11
YSR	52.84	10.83	63.52	9.19	20.77***	.17
CBCL	59.28	10.36	66.89	8.34	11.75**	.11
	Under 12 ^b					
YLS/CMI:SV	5.07	1.53	6.17	.98	2.61	.12
YLS/CMI	13.93	5.24	19.83	6.68	4.66*	.20
CSS-M	20.27	7.44	30.50	16.39	4.03 [†]	.18
HIT	3.30	1.01	3.41	1.11	.05	.003
JI AI	58.60	11.61	67.00	15.89	1.82	.09
YSR	57.40	12.32	61.17	6.74	.49	.03
CBCL	64.27	11.17	68.67	6.25	.81	.04
	Diversion ^c					
YLS/CMI:SV	3.88	2.16	5.57	1.89	10.11**	.12
YLS/CMI	10.46	6.55	18.62	5.83	25.39***	.25
CSS-M	23.63	13.19	34.71	15.02	10.17**	.12
HIT	2.72	.74	3.36	.64	12.25**	.14
JI AI	56.14	13.39	68.62	19.08	10.65**	.12
YSR	51.68	10.21	64.19	9.81	23.72***	.23
CBCL	58.02	9.84	66.38	8.91	11.73**	.13

Note. YLS/CMI:SV = Youth Level of Service/Case Management Inventory Screening Version; YLS/CMI = Youth Level of Service/Case Management Inventory; CSS-M = Criminal Sentiments Scale-Modified; HIT = How I Think Questionnaire; JI AI = Jesness Inventory Asocial Index; YSR = Youth Self Report; CBCL = Child Behavior Checklist.

^aNonrecidivists: *n* = 74; recidivists: *n* = 27. ^bNonrecidivists: *n* = 15; recidivists: *n* = 6. ^cNonrecidivists: *n* = 59; recidivists: *n* = 21.

[†]*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

The multivariate test for the under 12 participants was not significant, $F(7, 13) = 1.03$, $p = .45$, $\eta^2 = .36$, but would likely have reached significance with more participants (power = .29). The magnitude of the univariate effects were examined for exploratory purposes. It can be seen that the largest effect sizes were found for the YLS/CMI ($\eta^2 = .20$) followed by the CSS-M ($\eta^2 = .18$), and YLS/CMI:SV ($\eta^2 = .12$).

The multivariate result for the diversion participants indicated that recidivists were significantly different from nonrecidivists on the set of dependent variables, $F(7, 72) = 4.26$, $p = .001$, $\eta^2 = .29$. The univariate results showed that the recidivist group scored significantly higher than the nonrecidivist group on all of the assessment measures. The largest effect sizes, which were large in magnitude, were obtained for the YLS/CMI ($\eta^2 = .25$) and the YSR ($\eta^2 = .23$). The remaining assessment measures were moderate-large in magnitude and ranged from .12 to .14.

Overall, the results substantiate the use of standardized assessment measures for discriminating violent recidivists from nonrecidivists. The YLS/CMI and CSS-M were particularly robust across the different age samples. Interestingly, the JI Asocial Index was successful in distinguishing recidivists from nonrecidivists only for violent reoffending. It was of further interest, then, to determine whether the standardized assessment measures could offer unique contributions to the prediction of reoffending.

Multiple regressions were conducted to predict reoffending from the standardized assessment measures. First, the number of new police incidents was used as the outcome variable and then the results were presented using the number of new violent police incidents as the outcome variable. Stevens (2002) indicates that generally about 15 subjects per predictor are required for a reliable regression equation in the social sciences

(i.e. an equation that will cross-validate well). Thus, the results were only presented for the total sample due to the inadequate n/k ratio for the under 12 and diversion groups. It should be noted that three participants were eliminated from analyses due their standardized residuals being larger than 3.

The simple correlations between the assessment instruments and the outcome measures are presented in Table 53. As can be seen, each assessment measure was significantly correlated with both indices of reoffending. For the new police incidents outcome, the largest correlations were obtained with the YLS/CMI and the CSS-M, which were moderate-large in magnitude. The HIT, JI AI, and YSR demonstrated moderate correlations with new police incidents. The CBCL and YLS/CMI:SV obtained small-moderate associations with reoffending.

A similar pattern of results was observed with new violent police contacts, with slightly lower associations found for the YLS/CMI, CSS-M, and HIT. The YLS/CMI:SV maintained the same relationship across both reoffending outcomes. The most striking finding was that the measures of behavioural functioning obtained higher correlations with the violent outcome.

Two sets of multiple regression analyses were performed. First, all of the assessment measures were entered into the regression equation together to determine overall the unique contributions of each predictor. Second, hierarchical multiple regressions were conducted using each of the risk/need instruments on the first step and the remaining measures on the second step to determine if the latter instruments would add to the prediction of recidivism once the variance in the respective risk/need instrument had been accounted for.

Table 53

Pearson Correlation Coefficients Between Assessment Instruments and Outcome Measures

Measure	No. of new police incidents		No. of new violent police incidents	
	Youth Level of Service/Case Management Inventory Screening Version		Youth Level of Service/Case Management Inventory	
Youth Level of Service/Case Management Inventory	.45***	.44***	.22*	.22*
Criminal Sentiments Scale-Modified	.40***	.38***		
How I Think Questionnaire	.38***	.31**		
Jesness Inventory Asocial Index	.30**	.38***		
Youth Self Report	.28**	.38***		
Child Behavior Checklist	.21*	.31**		

Note. $n = 98$.* $p < .05$. ** $p < .01$. *** $p < .001$.

The multiple regression analysis using the number of police incidents as the dependent variable showed that the overall regression equation was significant, $F(7, 90) = 4.03, p = .001, R = .49, R^2 = .24$ (adjusted $R^2 = .18$). Thus, 24% of the variance in new police incidents was accounted for by the assessment instruments. Tests of the regression coefficients revealed that the YLS/CMI was the only instrument to contribute unique variance to the prediction equation, $t(90) = 2.46, \beta = .48, p = .02$ (see Table 54), with the semipartial correlation being small to moderate in magnitude ($sr = .23$).

Results for the multiple regression using the number of new violent police incidents as the dependent variable revealed that the overall regression equation was significant, $F(7, 90) = 4.20, p < .001, R = .50, R^2 = .25$ (adjusted $R^2 = .19$). Thus, 25% of the variance in new violent police incidents was accounted for by the predictors. Tests of the regression coefficients revealed that only the YLS/CMI, $t(90) = 1.95, \beta = .39, p = .055$, and the JI AI, $t(90) = 1.68, \beta = .21, p = .097$, approached significance in terms of contributing unique variance to the regression equation (see Table 54). Indeed, the largest semipartial correlations were found for the YLS/CMI ($sr = .18$) and the JI AI ($sr = .15$).

In summary, it appears that the combination of assessment instruments predicted recidivism using either the number of new police incidents or the number of new violent police incidents as the dependent variable. It appears that the YLS/CMI was the only instrument to contribute unique variability to the regression equation for new police incidents. Findings for new violent police incidents revealed that the YLS/CMI and the JI AI were the only predictors that were marginally significant in terms of providing unique variance to the regression equation.

Table 54

Summary of Multiple Regression Analyses for Measures Predicting the Number of New Police Incidents and the Number of New Violent Police Incidents (n = 98)

Measure	<i>B</i>	<i>SE B</i>	β
No. of new police incidents			
YLS/CMI:SV	-0.08	0.06	-.17
YLS/CMI	0.07	0.03	.48*
CSS-M	0.006	0.01	.08
HIT	0.17	0.18	.14
JI AI	0.003	0.01	.05
YSR	-0.009	0.01	-.09
CBCL	-0.006	0.01	-.06
No. of new violent police incidents			
YLS/CMI:SV	-0.06	0.04	-.20
YLS/CMI	0.04	0.02	.39 [†]
CSS-M	0.002	0.01	.04
HIT	-0.06	0.11	-.07
JI AI	0.009	0.01	.21 [†]
YSR	0.005	0.01	.08
CBCL	0.004	0.01	.06

Note. $R^2 = .25$ for new police incidents; $R^2 = .24$ for new violent police incidents. YLS/CMI:SV = Youth Level of Service/Case Management Inventory Screening Version; YLS/CMI = Youth Level of Service/Case Management Inventory; CSS-M = Criminal Sentiments Scale-Modified; HIT = How I Think Questionnaire; JI AI = Jesness Inventory Asocial Index; YSR = Youth Self Report; CBCL = Child Behavior Checklist.

[†] $p < .10$. * $p < .05$.

Hierarchical regression analyses were undertaken to determine the incremental validity of adding various assessment instruments to the regression equation once a risk/needs instrument was entered. Results using new police incidents as the dependent variable showed that the overall regression equation was significant with the YLS/CMI:SV entered on the first step, $F(1, 96) = 4.82, p = .03, R = .22, R^2 = .05$ (adjusted $R^2 = .04$). After the additional measures were entered on the second step the regression equation was still significant, $F(6, 91) = 3.51, p = .004, R = .43, R^2 = .19$ (adjusted $R^2 = .13$). Thus, the addition of the CSS-M, HIT, JI AI, YSR, and CBCL to the YLS/CMI:SV accounted for 19% of the variance in new police incidents.

Tests of the regression coefficients revealed that the screening instrument was significant on the first step, but once the additional measures were added to the regression equation only the CSS-M contributed significant unique variance, $t(91) = 2.00, \beta = .26, p = .049$ (see Table 55). The CSS-M ($sr = .19$) and the HIT ($sr = .14$) had the largest semipartial correlations with the outcome, although the result for the HIT did not reach significance.

The results using the number of new violent police incidents showed that the regression equation was significant using the YLS/CMI:SV on the first step, $F(1, 96) = 4.87, p = .03, R = .22, R^2 = .05$ (adjusted $R^2 = .04$). With the measures added on the second step, the regression equation remained significant, $F(6, 91) = 4.14, p = .001, R = .46, R^2 = .21$ (adjusted $R^2 = .16$). Thus, the predictors accounted for 21% of the variance in the dependent variable and this increase in variance (.17) was significant. The tests of regression coefficients revealed that none of the predictors were contributing significant unique variance to the regression equation (see Table 55). It should be noted that the

Table 55

Summary of Hierarchical Regression Analyses for YLS/CMI:SV and Additional Measures Predicting Number of New Police Incidents and Number of New Violent Police Incidents (n = 98)

Measure	<i>B</i>	<i>SE B</i>	β
No. of new police incidents			
Step 1			
YLS/CMI:SV	0.11	0.05	.22*
Step 2			
YLS/CMI:SV	-0.02	0.06	-.04
CSS-M	0.02	0.01	.26*
HIT	0.27	0.18	.21
JI AI	0.003	0.01	.05
YSR	-0.004	0.01	-.04
CBCL	0.004	0.01	.04
No. of new violent police incidents			
Step 1			
YLS/CMI:SV	0.07	0.03	.22*
Step 2			
YLS/CMI:SV	-0.03	0.04	-.09
CSS-M	0.009	0.01	.19
HIT	-0.02	0.11	-.03
JI AI	0.009	0.005	.21 [†]
YSR	0.009	0.01	.14
CBCL	0.008	0.01	.13

Note. $R^2 = .05$ for Step 1; $\Delta R^2 = .19$ for Step 2 ($ps < .05$) for new police incidents. $R^2 = .05$ for Step 1; $\Delta R^2 = .21$ for Step 2 ($ps < .05$) for new violent police incidents. YLS/CMI:SV = Youth Level of Service/Case Management Inventory Screening Version; CSS-M = Criminal Sentiments Scale-Modified; HIT = How I Think Questionnaire; JI AI = Jesness Inventory Asocial Index; YSR = Youth Self Report; CBCL = Child Behavior Checklist.

[†] $p < .10$. * $p < .05$.

largest semipartial correlations were obtained for the CSS-M ($sr = .14$) and the JI AI ($sr = .15$), although they failed to reach significance.

The final set of hierarchical regression analyses were conducted using the YLS/CMI on the first step and the remaining measures on the second step. Using the number of new police incidents as the dependent variable, the results for the overall regression equation on the first step was significant, $F(1, 96) = 22.49, p < .001, R = .45, R^2 = .20$ (adjusted $R^2 = .19$). Adding the measures to the regression equation on the second step was also significant, $F(6, 91) = 4.39, p = .001, R = .47, R^2 = .22$ (adjusted $R^2 = .17$) indicating that the measures were predictive of new police incidents, with 22% of the variance in the dependent variable being accounted for. However, the addition of the measures on the second step only increased the variance by 2.1%, which was not a significant increment in $R^2, F(1, 5) = .49, p = .78$.

Inspection of the tests for regression coefficients in Table 56 revealed that the only significant unique contribution to the regression equation on the second step was from the YLS/CMI, $t(91) = 2.09, \beta = .37, p = .04$, which obtained the largest semipartial correlation with the dependent variable ($sr = .19$). Additional predictors that were not significant, but did contribute a small amount of unique variance to the prediction were the CSS-M ($sr = .06$) and the HIT ($sr = .09$).

The final hierarchical regression analysis was conducted with the number of new violent police incidents as the dependent variable. On the first step, the YLS/CMI was entered into the regression, and it was found to be a significant predictor, $F(1, 96) = 23.25, p < .001, R = .44, R^2 = .20$ (adjusted $R^2 = .19$). Hence, 20% of the variance in violent recidivism was accounted for by the YLS/CMI. With the addition of the other

Table 56

Summary of Multiple Regression Analyses for the YLS/CMI and Additional Measures Predicting the Number of New Police Incidents and the Number of New Violent Police Incidents (n = 98)

Measure	<i>B</i>	<i>SE B</i>	β
No. of new police incidents			
Step 1			
YLS/CMI	0.07	0.01	.45*
Step 2			
YLS/CMI	0.06	0.03	.37*
CSS-M	0.008	0.01	.10
HIT	0.17	0.18	.13
JI AI	0.001	0.01	.02
YSR	-0.009	0.01	-.10
CBCL	-0.006	0.01	-.06
No. of new violent police incidents			
Step 1			
YLS/CMI	0.04	0.01	.44***
Step 2			
YLS/CMI	0.02	0.02	.25
CSS-M	0.003	0.01	.07
HIT	-0.06	0.11	-.08
JI AI	0.007	0.01	.17
YSR	0.005	0.01	.09
CBCL	0.003	0.01	.05

Note. $R^2 = .20$ for Step 1 ($p < .05$); $\Delta R^2 = .23$ for Step 2 ($p = .60$) for new police incidents. $R^2 = .20$ for Step 1 ($p < .05$); $\Delta R^2 = .22$ for Step 2 ($p = .78$) for new violent police incidents. YLS/CMI = Youth Level of Service/Case Management Inventory; CSS-M = Criminal Sentiments Scale-Modified; HIT = How I Think Questionnaire; JI AI = Jesness Inventory Asocial Index; YSR = Youth Self Report; CBCL = Child Behavior Checklist.

* $p < .05$. *** $p < .001$.

measures, the regression equation remained significant, $F(6, 91) = 4.43, p = .001, R = .48, R^2 = .23$ (adjusted $R^2 = .18$). Thus, the predictors accounted for 23% of the variance in violent recidivism. It should be noted that the 3.1% increase in variance for step 2 was not significant, $F(1, 5) = .73, p = .60$.

Tests of the regression coefficients revealed that while the YLS/CMI was significant on the first step, the addition of the other measures on the second step did not result in any significant unique contributions from the predictors (see Table 56). The findings did show that two measures had small unique associations with violent recidivism, holding all other predictors constant. These were the YLS/CMI ($sr = .13$) and the JI AI ($sr = .13$).

In summary, the hierarchical regression analyses showed that the standardized assessment measures did significantly predict recidivism for the number of new police incidents and violent incidents using all of the assessment measures. However, there were few unique contributions provided by the assessment measures. The only instruments that had significant unique contributions to the regression equation, while holding all other variables constant, were the YLS/CMI when it was entered on step 1, and the CSS-M when the YLS/CMI:SV was entered on step 1. Both of these findings were evident using new police incidents as the dependent variables. In effect, these results show that in addition to using a risk/needs measure, only the CSS-M adds unique variance to the prediction.

A number of Kaplan-Meier survival analyses were conducted to compare the predictive power of the YLS/CMI, YLS/CMI:SV, CSS-M, HIT, JI AI, YSR, and CBCL. Each instrument was split at the median and analyses were conducted to compare the

rates of reoffending for low versus higher risk groups. Time to reoffend was examined with respect to new police incidents and new violent police incidents. Table 57 presents the survival analysis results using time to new police incidents as the outcome variable. Results demonstrate that participants scoring in the higher risk categories recidivated at a faster rate than participants scoring in the lower risk categories for every assessment instrument. A similar pattern of findings was observed in Table 58 using time to new violent police incidents as the outcome variable. A graphical representation of the survival curves can be found in Figure 10 to Figure 16.

An interesting observation from the graphs is that there was a fairly large spread between the low and high-risk survival curves for violent police incidents using many of the assessment measures (i.e., YSL/CMI, HIT, JI AI, YSR, CBCL). This finding indicates that individuals scoring higher on the respective instruments reoffend violently at a faster rate than individuals scoring lower on the scales. Overall, it was notable that using low and high-risk categorizations on the assessment instruments resulted in differential survival curves, with the slopes being steepest for the higher risk categorizations.

Data are presented for diversion and under 12 groups in Appendix Q (Tables Q8 to Q11). A similar pattern of results was found with the diversion group, but meaningful results could not be provided for the under 12 group due to the low sample size. The only significant finding for the under 12 group was using the low and high-risk categories on the YLS/CMI:SV, which mirrored the findings just described for the total sample.

Table 57

Kaplan-Meier Survival Analyses with New Police Incidents

	Cases	No. censored	% censored	M	SE	95% CI	Log rank χ^2	p
YLS/CMI:SV								
Low	259	201	77.6	566	15	537-596	53.11	<.0001
High	242	118	48.8	391	20	353-430		
YLS/CMI							18.13	<.001
Low	50	42	84.0	616	30	556-675		
High	51	22	43.1	309	29	251-367		
CSS-M							4.49	.03
Low	51	37	72.6	555	35	486-624		
High	50	27	54.0	394	38	321-468		
HIT							10.76	.001
Low	50	39	78.0	585	33	520-651		
High	51	25	49.0	369	36	298-441		
Jl AI							5.49	.02
Low	53	38	71.70	557	33	491-622		
High	48	26	54.14	391	39	315-467		
YSR							7.13	.008
Low	50	38	76.0	567	35	498-636		
High	51	26	51.0	385	37	314-457		
CBCL							6.19	.01
Low	49	37	75.51	453	23	407-499		
High	52	27	51.92	426	41	344-507		

Table 58

Kaplan-Meier Survival Analyses with New Violent Police Incidents

	Cases	No. censored	% censored	M	SE	95% CI	Log rank χ^2	p
YLS/CMI:SV							44.32	<.0001
Low	259	231	89.2	628	12	604-62		
High	242	163	67.4	487	20	447-526		
YLS/CMI							15.52	.0001
Low	50	45	90.0	653	25	605-701		
High	51	29	56.9	349	30	290-408		
CSS-M							5.33	.02
Low	51	42	82.4	610	31	550-670		
High	50	32	64.0	436	37	363-510		
HIT							11.88	.0006
Low	50	44	88.0	638	28	582-693		
High	51	30	58.8	414	37	342-486		
Jl AI							9.04	0.003
Low	53	45	84.91	624	28	568-680		
High	48	29	60.42	416	39	340-42		
YSR							13.78	.0002
Low	50	45	90.0	650	26	599-701		
High	50	29	56.86	409	37	337-480		
CBCL							10.53	.001
Low	49	34	87.76	496	19	459-533		
High	52	31	59.62	462	42	380-544

Figure 10. Kaplan-Meier survival analyses with low and high-risk groups on the YLS/CMI:SV.

Figure 11. Kaplan-Meier survival analyses with low and high-risk groups on the YLS/CMI.

Figure 12. Kaplan-Meier survival analyses with low and high-risk groups on the CSS-M.

Figure 13. Kaplan-Meier survival analyses with low and high-risk groups on the HIT.

Figure 14. Kaplan-Meier survival analyses with low and high-risk groups on the JI AI.

Figure 15. Kaplan-Meier survival analyses with low and high-risk groups on the YSR Total Problems scale.

Figure 16. Kaplan-Meier survival analyses with low and high-risk groups on the CBCL Total Problems scale.

The final analyses of the current study involved using Receiver Operating Characteristic (ROC) analysis to examine the accuracy of the assessment instruments in predicting recidivism. A benefit of using ROC analysis is that calculating the Area Under the Curve (AUC) for different scales allows for the comparison of predictive accuracy of the various scales controlling for the effects of base rates and selection ratios (Andrews & Bonta, 1998).

Table 59 presents the results from the ROC analyses. First, an examination of the data for the total sample revealed that all of the assessment instruments performed better than chance in predicting recidivism. Second, inspection of the AUC values revealed that the highest AUC was found for the YLS/CMI. Hence, the YLS/CMI was most accurate in predicting new police incidents and new violent police incidents. It should be noted that many of the instruments had acceptable AUCs. The YSR was found to have the highest AUC next to the YLS/CMI across both recidivism outcomes. Interestingly, the AUCs increased when violent recidivism was examined suggesting that the instruments can accurately predict the presence of new violent incidents.

The results for the under 12 group revealed that the YLS/CMI:SV, followed by the YLS/CMI had the highest AUC values, although neither was significantly greater than chance, most likely due to the low sample size. The largest AUCs for violent recidivism were obtained with the risk/needs instruments and the CSS-M. The results for the diversion group also showed that the YLS/CMI was the most effective in predicting new police incidents. The AUCs ranged from .66 (JI AI) to .80 (YLS/CMI). When violent police incidents were examined, the YLS/CMI and the YSR obtained the highest AUC values (.82). The YLS/CMI was significant, but the YSR approached significance.

Table 59

ROC Analyses of Prediction Instruments with Recidivism

Measure	New police incidents		New violent police incidents	
	AUC (SE)	95% CI	AUC (SE)	95% CI
Total sample ($n = 101$)				
YLS/CMI:SV ^a	.68 (.06)**	.57-.79	.72 (.06)**	.61-.83
YLS/CMI	.78 (.05)***	.69-.88	.81 (.05)***	.72-.90
CSS-M	.67 (.06)**	.56-.78	.71 (.06)**	.59-.82
HIT	.68 (.06)**	.57-.79	.70 (.06)**	.59-.81
JI AI	.62 (.06)*	.50-.74	.70 (.07)**	.57-.84
YSR	.70 (.05)**	.59-.80	.78 (.05)***	.69-.88
CBCL	.65 (.06)*	.54-.76	.72 (.06)**	.62-.83
Under 12 group ($n = 21$)				
YLS/CMI:SV ^a	.74 (.11) [†]	.50-.95	.71 (.12)	.48-.93
YLS/CMI	.71 (.11)	.48-.93	.76 (.11) [†]	.54-.99
CSS-M	.50 (.14)	.22-.77	.71 (.13)	.45-.96
HIT	.44 (.13)	.18-.71	.52 (.15)	.23-.80
JI AI	.45 (.13)	.19-.71	.65 (.15)	.36-.94
YSR	.46 (.13)	.20-.71	.61 (.12)	.37-.85
CBCL	.55 (.14)	.29-.82	.59 (.13)	.35-.84
Diversion group ($n = 80$)				
YLS/CMI:SV ^a	.67 (.07) [†]	.54-.80	.72 (.06) [†]	.60-.85
YLS/CMI	.80 (.05) [†]	.69-.91	.82 (.05)*	.73-.92
CSS-M	.71 (.06) [†]	.60-.83	.71 (.06) [†]	.59-.84
HIT	.75 (.06) [†]	.63-.86	.76 (.06) [†]	.65-.86
JI AI	.66 (.07) [†]	.53-.79	.71 (.08) [†]	.55-.86
YSR	.75 (.06) [†]	.63-.86	.82 (.05) [†]	.71-.92
CBCL	.68 (.06) [†]	.55-.80	.75 (.06) [†]	.63-.87
Charged group ($n = 249$)				
YLS/CMI:SV	.60 (.04)**	.53-.67	.58 (.04)*	.51-.66

Note. YLS/CMI:SV = Youth Level of Service/Case Management Inventory Screening Version; CSS-M = Criminal Sentiments Scale-Modified; HIT = How I Think Questionnaire; JI AI = Jesness Inventory Asocial Index; YSR = Youth Self Report; CBCL = Child Behavior Checklist.

^aTotal sample $n = 750$; under 12 group $n = 78$; diversion group $n = 423$.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

It is notable that for violent recidivism among the diversion participants, it appears that all of the assessment measures obtained acceptable AUC values, ranging from .71 to .82. The significant results obtained for the charged group revealed that the YLS/CMI:SV predicted better than chance for new police incidents and violent police incidents. Moreover, the magnitude of the AUCs suggests that the screening instrument was accurate in predicting recidivism for the charged group.

In summary, the recidivism findings indicate that the assessment measures used in the current study were indeed effective in predicting recidivism. The YLS/CMI was particularly effective in predicting new police incidents and violent incidents. As expected, the YLS/CMI:SV demonstrated predictive validity and was robust across different age and gender groups and using a number of different recidivism outcomes. The findings of the current study lend support to the use of the YLS/CMI:SV in the assessment of risk and needs and to predict recidivism. Moreover, more specialized assessment tools, examining areas such as criminal attitudes, personality, and behavioural pathology, appear useful in the prediction of recidivism among young people.

Discussion

The general purpose of the current study was to assess risk and need factors and service use in a sample of youths diverted from the criminal justice system at the precharge stage. As well, an examination of risk/needs and service use in children too young to be charged that have come into conflict with the law was of interest. The current findings shed light on the importance of the new *YCJA*, which aims to deal with the offending behaviour of young people outside of the formal youth justice court system. The results of this study have implications for how police officers deal with young people in conflict with the law, and children under the age of criminal responsibility.

Psychometric properties of risk/needs instruments

The first goal of the current study was to evaluate the psychometric properties of the Youth Level of Service/Case Management Inventory (YLS/CMI) and the Youth Level of Service/Case Management Inventory Screening Version (YLS/CMI:SV), which are two standardized instruments for assessing risk and needs in young people. While psychometric data is currently available on the YSL/CMI (see Hoge & Andrews, 2002), the reliability and validity of the screening version have not been established. Results from the current study confirm that the YSL/CMI and the YLS/CMI:SV are internally consistent.

Interrater reliability of the YLS/CMI total score and subscale scores was found to be acceptable. The Offence History subscale of the YLS/CMI could not be calculated due to the sample used in the current study. All of the participants were either currently involved in diversion or under the age of criminal responsibility; hence, they had no prior convictions or custodial dispositions from which to score the history subscale.

The interrater reliability estimate for the YSL/CMI:SV total score was acceptable; however, the interrater reliability estimates of the individual items were quite variable ranging from .00 (Personality/Behaviour) to .83 (Education). In part, the results observed with the screening instrument were due to constant scores among the raters for particular items; hence estimates could not be calculated. This was the case for the Peer Relations and the Attitudes/Orientation items, which were scored consistently across one set of coders using one category (i.e., present).

The obtained results for the screening version were likely due to two factors, one being the small sample size used for reliability purposes. Thus, further research should be conducted on the interrater reliability of the YLS/CMI:SV using a larger number of cases. The second involves the method of obtaining the second set of ratings. The interrater reliability of the YLS/CMI:SV was obtained by collecting duplicate forms that were submitted for the same youth's case among various police officers. In contrast, the interrater reliability of the YSL/CMI was obtained by having one interviewer score all of the instruments and then a second individual coded 10% of the cases.

In assessing the construct validity of the YLS/CMI:SV it was necessary to correlate the individual items with the respective subscales on the parent instrument. The correlations ranged from .25 for Attitudes/Orientation to .78 for Substance Abuse. The low correlations obtained between the two measures can be accounted for in part by the training of police officers and the specific officers collecting the data, as some were more willing to collect the relevant information than others. For example, some cases were discarded because all of the items were omitted by the coder, which indicates that either the individual could not obtain the information directly from the youth or other collateral

source due to noncompliance, or the individual was not willing to ask the relevant questions and do the pertinent background check using the computerized police database that was at officers' disposal. The issue regarding training will be discussed in more detail in the limitations section. Support was garnered, however, for the construct validity of the risk/needs instruments by moderate to strong correlations that were found with established measures that have previously been shown to correlate with criminal behaviour.

The current study found that the YLS/CMI and YLS/CMI:SV correlated with postdictive offence-based criteria and the measures were successful in predicting recidivism using a variety of outcome criteria across a number of statistical methods. Hence, support was found for the predictive validity of the risk/needs measures. In summary, the available data suggest that the psychometric properties of the screening instrument are adequate, although additional psychometrics should be gathered using different samples to enhance the generalizability of the findings.

Patterns of Risk and Need Factors and Specific Indicators of Functioning among Youths

A second goal of the current study was to present descriptive data on the pattern of risks and needs among youths involved in diversion and children in conflict with the law under the age of 12. One purpose for determining the overall risk of these individuals and identifying their specific needs was so that a general picture could be obtained from this sample of youths who at the time of the study were candidates for services in the Ottawa area. Moreover, by determining criminogenic needs that are most abundant among this sample, suggestions can be made for the creation of services to address these

needs or resources could be reallocated to preexisting agencies to be able to handle the magnitude of youths presenting with specific problems.

The data from the current study showed that the diversion group presented with predominant risk/need factors in the areas of attitudes/orientation, family circumstances/parenting, and peers. Less prevalent risk/need factors among this group were history of delinquency/conduct problems and current school or employment problems. It should be noted that history of delinquency as measured by the YLS/CMI:SV was a better indicator of prior conduct problems than the YLS/CMI due to the less stringent criteria that were required to measure history in the screening tool. The results demonstrated that the diversion group was classified as predominantly moderate risk overall, and moderate/high risk in terms of leisure/recreation, attitudes/orientation, peers, personality/behaviour, and education/employment when risk/need level was examined.

Using more specific measures of attitudes, personality, and behavioural functioning, the current study found that the diversion participants harboured attitudes, values, and beliefs related to criminal activity in general. Moreover, negative attitudes were evident towards the criminal justice system, with tolerance for breaking the law, and identification with criminally oriented individuals. Borderline-clinical scores were obtained among the diversion participants with respect to self-serving cognitive distortions across both overt and covert domains. More specifically, the participants displayed clinical levels of the minimizing/mislabeling cognitive distortions. Moreover, borderline-clinical levels of cognitive distortions were found for the opposition-defiance, lying, and stealing behaviours.

The current study hypothesized that clinical levels of pathology would be observed using personality assessment. The personality profiles of diverted youths revealed that the majority of youths were classified as either MP (23.9%) or NA (22.5%); however, only the MP subtype was considered above average (i.e., mildly problematic). Individuals scoring in the deviant range on the MP subtype tend to be manipulative, conning, and callous in extreme cases (Jesness, 2000).

Results from the personality scales did not reveal clinical levels of pathology as hypothesized; rather, diversion participants were slightly above average on the Social Maladjustment, Immaturity, Autism, Alienation, and Asocial Index scales. Individuals classified as SM and AI tend to harbour attitudes that go against social norms. High scores on Autism are indicative of a tendency to distort reality, while high scores on Alienation reflect distrust of authority figures (Jesness, 2000). In essence, these personality characteristics could serve as treatment targets or responsivity factors while addressing criminogenic needs.

In terms of diverted youths' behavioural functioning, the findings from the current study confirmed the hypothesis that clinical levels of pathology would be evident on behavioural measures. However, the severity of the behavioural problems differed depending on which informant's data was examined. From the parents' perspectives, diverted youths were displaying borderline clinical symptoms overall, and externalizing symptoms in the clinical range. Moreover, symptoms were noted in the borderline clinical range for rule-breaking behaviours and conduct problems. From the youths' perspectives, borderline clinical levels of pathology were only noted for externalizing symptoms when a global assessment of functioning was examined. Using more refined

examinations of behavioural functioning in the nonclinical, borderline clinical, and clinical ranges revealed pathology in a number of areas across parent and youth informants.

Notable percentages of diversion participants were displaying behavioural symptoms in the clinical range on the total problems, externalizing, and total competence summary scales on the CBCL. Moreover, youths were most likely to display clinical levels among the rule-breaking and aggressive behaviour syndrome scales and the oppositional defiant problems and conduct problems DSM-oriented scales. A similar pattern of findings was observed from the youths' perspectives.

As expected, the current study found the presence of comorbid problems among the diversion participants. Indeed, using a narrow definition of comorbidity, it was found that 21.3% of the sample displayed co-occurring externalizing and internalizing symptoms, as rated by the parent, while 13.8% were observed to have comorbid problems when the youth rating was examined. A broader definition increased these figures to 36.3% and 22.5% for parent and youth ratings, respectively. When the individual symptom scales were examined, the results showed that a third of the participants obtained two or more clinical ratings on the CBCL while 21% were noted using the YSR. The obtained results are indeed cause for concern, as research suggests that a pattern of externalizing and internalizing problems is more predictive of future antisocial behaviour than externalizing problems alone (see Ledingham, 1999).

A different pattern of functioning emerged for children under the age of 12. This group presented not only with a variety of risk/need factors, but also with more severe

pathology on specific measures of functioning. The most prominent risk/need factors that emerged for the under 12 group were attitudes/orientation, family circumstances/parenting, and personality/behaviour. Further criminogenic need areas that were prevalent among this group were school problems, leisure/recreation, and history of delinquency/conduct problems. Antisocial peers and substance abuse were the least frequent risk/need factors to be identified among the under 12 participants. Interestingly, the under 12 participants were classified predominantly as moderate/high in terms of risk/need levels. Hence, the following need factors that were identified would likely require clinical attention: personality/behaviour, education, attitudes/orientation, and leisure/recreation. More specific measures of attitudes, personality, and behaviour were also used to examine the level of pathology among the under 12 group.

Children under the age of 12 who have been in conflict with the law demonstrated attitudes conducive to criminal activity in general, and more specifically, they maintained negative attitudes towards the criminal justice system, they identified with criminal individuals, and they maintained a tolerance for violating the law. In terms of self-serving cognitive distortions measured by the HIT, the under 12 group scored in the clinical range on all summary scores (overt and covert), every cognitive distortion scale and across every behavioural referent category (physical aggression, lying, stealing).

The personality profiles of the under 12 group revealed that individuals were classified predominantly as NA subtypes, with MP being the next most common subtype. The NA subtype was in fact the only subtype classified as above average, or mildly problematic, among the under 12 participants. The neurotic, acting out subtype is characterized by behaviour problems in school, negative attitudes towards authority, and

high self-reported delinquency (Jesness, 2000). The under 12 group was classified slightly above average on the autism and alienation personality scales and above average on the social maladjustment scale and asocial index. Clearly, the personality profile of the under 12 group is consistent with an antisocial orientation. Some of the observed characteristics can be targeted in treatment, such as attitudes, while other traits can serve as responsivity factors; for example, the NA subtype is characterized by above average verbal aptitude, thus treatment would need to be consistent with the skills and abilities of individuals with this orientation.

The findings also showed that the under 12 group displayed clinical levels of pathology on the CBCL in terms of the total problems, externalizing, and total competence summary scales. Moreover, clinical classifications were observed for rule-breaking behaviour and aggressive behaviour syndrome scales and oppositional defiant problems and conduct problems on the DSM-oriented scales. While the youths' ratings of their own behaviour was not as severe as that of their parents, clinical classifications were noted for externalizing problems, attention problems, aggressive behaviour, oppositional defiant problems, and conduct problems.

In terms of comorbid problems, the findings revealed that 33% of the under 12 participants had co-occurring internalizing and externalizing problems, as determined by parent ratings. The figure was lower when the youths rated themselves (14%). Using a broader definition of comorbidity, 57% of the sample was shown to display concomitant internalizing and externalizing symptomatology as reported by parents. Youths' reports increased slightly to 19%. Overall, these findings indicate that the under 12 group was displaying high levels of behavioural pathology and comorbid symptoms.

In summary, the severity of problems displayed by the under 12 group is clearly a cause for concern. Particularly when one considers the age at which these symptoms are becoming evident. The descriptive data on criminal history showed that many of the under 12 participants began engaging in criminal behaviour, and violent incidents, at an early age (under age 10) and at a higher frequency than the other groups involved in the study (i.e., diversion and charged). Hence, the under 12 group appears unique from the diversion group in that the former presents as not only higher risk and with a variety of needs, but also with more severe criminogenic needs and emotional and behavioural pathology.

Comparisons among the risk/need factors for the diversion and under 12 participants revealed that the diverted youths were lower risk overall in comparison to the younger age group. Moreover, the results showed that the under 12 group presented with more diverse needs than the diversion group. In fact, the results showed that a higher percentage of the participants in the under 12 group displayed the presence of needs across the school, leisure, personality, family, and attitudes/orientation domains than the diversion participants. Conversely, the diversion group was identified as presenting with predominant needs on the peer relations domain and a higher percentage of diversion participants in comparison to the under 12 participants endorsed substance abuse as a need factor.

The current results support the hypothesis that diverted youths would display more needs related to antisocial peers than children under the age of 12. The current study also hypothesized that children under age 12 would display more needs related to the family domain than the diversion participants. Partial support was found for the

hypothesis when examining the presence/absence of this risk/need factor. However, an examination of the magnitude of the risk level for the associated mean scores revealed that the groups were in fact not significantly different on the family risk/need factor.

Comparisons among Diverted and Charged Youths

One would expect youths who have already been involved with the formal criminal justice system to display a pattern of risk and need scores that would differentiate them from youths who do not have as extensive dealings in this regard. Youths who have been diverted at the precharge stage, by nature, were expected to not have been involved in the criminal justice process in the past. Indeed, diversion was considered a way of making youths accountable for their actions without exposing them to the formal justice system. One of the goals of the current study was to examine differences in empirically established risk and need factors among diverted and charged youths.

As hypothesized, the findings showed that the charged youths were indeed higher risk than the diversion youths. As well, the results showed that a higher percentage of charged youths than the diversion youths had criminogenic need factors identified as being present. Consistent with prior research (Andrews & Bonta, 1998), the charged group had two of the 'Big Four' risk/need factors present. Specifically, attitudes and peers emerged as the most prominent risk/need factors followed by family and education/employment. For the diversion group, three of the 'Big Four' emerged as prominent risk/need factors: antisocial attitudes, peers, and personality/behaviour. Family was also identified as a prominent risk/need factor among the diversion participants.

The differential pattern in risk/need factors among the two groups can be explained, in part, by the extensive histories displayed by individuals who have been charged. In comparison to the diverted youths, the charged participants in the current study were significantly more likely to have been charged and convicted in the past and they started criminal acts at an earlier age. It can be suggested, then, that the charged participants were more likely to have been exposed to deviant peers at an earlier age than the diverted youths. In effect, this may have contributed to more engrained criminal attitudes. The charged youths would then be more likely to be spending time with substance abusing individuals, abusing substances themselves with peers, spending leisure time with them, and to be spending less time with prosocial family members or other positive influences. Indeed, antisocial peers was deemed to be a current risk/need factor among 98% of the charged individuals.

Considering that antisocial peers and antisocial attitudes are major risk factors related to criminal conduct (Andrews & Bonta, 1998), it was not surprising that the charged participants had higher risk/need scores overall, and on each item of the instrument, as attitudes can have a powerful influence on other aspects of one's behaviour. Indeed, PIC-R places special emphasis on the 'interpersonal' in the model of criminal conduct.

Service Use among Youths

The fourth goal of the current study was to present descriptive data on past and current service use by youths. In the current sample, it can be estimated that up to 36% of the diversion youths and 57% of the under 12 youths had comorbid internalizing and externalizing symptoms. One would expect that a high percentage of participants in the

current study would have either sought services in the past, as externalizing problems can typically start in early childhood (Burns et al., 2001), or that a high proportion of youths would be receiving services currently in order to address emotional and behavioural problems that are of sufficient magnitude to cause clinical concern.

The results of the current study regarding prior service use showed that the diversion and under 12 groups did not differ with respect to the percentage of participants using services ever or in the last year. It should be noted, however, that 71% of the under 12 group, and 61% of the diversion group did use services, either outpatient, residential, or school, in their lifetime. The predominant types of services used among both groups were outpatient and school based services. Moreover, the majority of the services used appeared to have occurred within the last year. Examining the number of services used it was found that the under 12 group (2.81) had used a higher mean number of services than the diversion group (1.48). Again, it appears that the services used were primarily from services accessed within the last year for both the under 12 (2.38) and diversion (1.01) groups. This was likely a result of coming to the attention of the Ottawa Police Service, who served as a referral agent to a variety of treatment programs in the community.

The current findings are somewhat higher than those of Kataoka et al. (2001), whom showed that 51% to 58% of offenders received some type of specialty services in the past. Moreover, the results of the present study were also higher than those of Stouthamer-Loeber, Loeber, Van Kammen, and Zhang (1995), which found that 41% of offending males' parents had ever sought help for their children's problems.

It was hypothesized in the current study that a higher incidence of using school services rather than mental health or criminal justice services would be found. The results

partially supported this hypothesis. The data showed that a higher incidence of service use was achieved for the school sector in comparison to the criminal justice setting. However, contrary to expectations, a larger percentage of participants used mental health services rather than school services.

Given the high number of participants that were observed with comorbid symptoms, it was of interest to determine whether the type of services were at least matched to individuals' risk and need levels. It was predicted that higher levels of service use would be exhibited by higher risk/need youths. This hypothesis was indeed confirmed by the results found in the current study. Seventy eight percent of high risk/need youths had ever used services and 76.5% had used services in the past year in contrast to 48.0% of the low risk/need participants who had ever used services or 36.0% of low risk/need participants who had used services in the past year.

A related question of interest was to determine whether different service use patterns were exhibited by youths with more severe emotional and behavioural problems. Consistent with the risk/need level hypothesis, it was expected that youths with more severe emotional and behavioural problems would be more likely to have accessed services in the past than youths with less severe emotional and behavioural pathology. The findings confirmed this hypothesis, as it was found that participants with clinically identified total behaviour problems, and internalizing and externalizing behaviour problems were more likely to use services in the past, particularly outpatient services, and a higher mean number of services were used than individuals with less severe emotional and behavioural pathology.

It should be noted that for total problems that were clinically identified, 89% of participants received any services in the past, with 83% receiving services in the last year. Moreover, for clinically identified externalizing problems, 87% of participants had used services in the past, with 81.5% of the services being sought in the last year. A similar pattern was obtained for internalizing problems that were clinically identified: 78.1% of participants used services in the past, with 71.9% of services being sought in the last year. It seems likely, then, that participants in the current study had a higher incidence of service use due to the method in which the sample was obtained. It is likely that lower numbers would be achieved using different samples of youths. The findings are promising, however, in that youths who are clearly in need of services were receiving some form of help. The services offered to young people who were in conflict with the law and offered services by the Ottawa Police Service will be examined next.

Of the individuals in the current study who were involved in extrajudicial measures, in 0.8% of the cases no action was taken, a warning was issued in 29.3% of the cases, formal cautions were issued to 23.4% of the participants, and referrals to treatment agencies were offered to 46.3% of the individuals. In 0.2% of the cases the decision made by the police officer was unknown. The combination of these results with what was found regarding the proportion of individuals seeking help for clinically identified problems indicates that the majority of participants were *potentially* receiving services from the Ottawa Police Service. A substantial number of participants, however, appear to be receiving services from additional sources, as it was determined that 83% of the clinically identified participants were receiving services within the last year.

A more detailed examination of the data revealed that only 32.9% of the total referrals to community agencies were completed (106 out of 322 referrals). Crossroads received the most referrals that were actually completed followed by PIP. Less than half of the referrals to JHS, ARC, the Juvenile Firesetters Program, David Smith Centre, Youth Justice Committee, school based counselling, YSB, and the Elizabeth Fry Society actually resulted in completion.

A number of factors were likely responsible for the lack of service utilization on the part of parents and youths. In a review of the literature, Hoge (2001b) developed a model of factors associated with service use that may affect the likelihood that a youth will access mental health services. The model posits that a number of child factors (e.g., nature and severity of disorder and functional impairment, age, gender, ethnic group, cognitive, physical, social competencies), family/parent factors (e.g., SES, education, cultural values), and services factors (e.g., nature of the service, mission/goals, geographic accessibility, type of client served) interact to influence individuals' beliefs about treatment and service use. Future research should examine these factors in more detail to determine why parents and youths fail to access services that they have been referred to.

The diversion placements in the current study were analyzed to determine whether there was a relationship between type of referral and risk/need levels. The results showed that a higher percentage of the high risk/need group, as identified using the YLS/CMI or YLS/CMI:SV, was referred by police officers to community treatment programs (82.4% and 64.7%, respectively). However, a smaller percentage of

participants identified as high risk/needs by the YLS/CMI and YLS/CMI:SV, actually completed the programs to which they were referred (59.2% and 39.0%, respectively).

A promising finding of the current study was that of those individuals receiving services, the level of intensity of services matched the programs referred to and those actually used. These findings are consistent with the risk principle of case classification (Andrews & Bonta, 1998). Specifically, this theoretical principle posits that higher risk cases should receive more intensive services while lower risk cases should receive less intensive services or no services at all. It appears then, that police officers were making accurate decisions regarding the types of services to refer young people to, at least with respect to the level of risk/needs and behavioural and emotional pathology that were exhibited, and the level of intensity of services that youths should be referred to. The use of a standardized measure, such as the YLS/CMI:SV, then would serve to reinforce this practice and enhance police officers' abilities to make correct determinations of risk and determine which services to refer youths to based on criminogenic needs.

The diversion placements were also examined with respect to the types of risk/need items that were present. The results showed that individuals who were given warnings and cautions presented with few criminogenic needs, whereas participants who were referred to treatment presented with a much higher variety of criminogenic needs. This combination of findings is important due the possibility of a treatment by risk interaction. Specifically, if low risk individuals are placed in high intensity treatments their risk level could actually increase. Conversely, high risk individuals that are placed in low intensity treatment programs are likely to have their risk increased due to the inappropriate matching of risk level to treatment intensity (Andrews & Bonta, 1998).

Thus, it appears that police officers are giving lower risk individuals lower intensity diversion options (i.e. warnings and cautions) while reserving the higher intensity treatments for the higher risk cases.

Four specific treatment programs (PIP, Crossroads, JHS, Roberts/Smart Centre) were examined in the current study due to the high number of referrals provided by the Ottawa Police Service. In general, the results showed that individuals referred to these programs presented with a number of different risk/needs to which the treatment programs appeared adequate to address. Further research would be required to examine the appropriateness of each program more specifically using the Correctional Program Assessment Inventory (CPAI; Hoge, Leschied, & Andrews, 1997).

Risk and Need Factors and Recidivism

The final goal of this study was to explore links between risk/need factors and reoffending rates among diverted and charged samples. It was hypothesized that criminal history, antisocial attitudes, personality, and peer associations (the Big Four) and family problems would constitute the major predictors of reoffending for both charged and diversion groups. The results showed partial support for this hypothesis.

Specifically, the results showed that the largest differences between recidivists and nonrecidivists were found for criminal history, school, peer relations, and personality for the diversion group, while for the charged group a different pattern of findings was noted depending on which recidivism criterion was used. Using new police incidents, history of delinquency emerged as the dominant predictor; however, using new charges, the largest difference between recidivists and nonrecidivists was found on history of offending and personality. Thus, consistent with previous empirical findings and theories

of delinquency (Andrews & Bonta, 1998), two of the Big Four (criminal history and antisocial personality) were the major predictors for the charged group, while three of the Big Four (criminal history, antisocial personality, and peers) were the major predictors for the diversion group.

A surprising finding that emerged in the current study was that among the diversion participants recidivists scored higher than nonrecidivists on the criminal attitudes item of the YLS/CMI:SV on three of the four outcome measures, yet no differences were noted among the charged participants. It is suggested that individuals who participated in diversion may not have the ingrained criminal attitudes that were evident among the charged group due to their less varied criminal backgrounds.

Another prediction of the current study was that the charged youths would obtain higher recidivism rates than the diverted youths. The findings clearly supported this hypothesis. Moreover, the survival analysis results showed that the charged participants also reoffended at significantly faster rates than the diversion participants.

It was of interest to determine whether program participation had an influence on recidivism rates. A specific hypothesis in this regard was that participants who completed the programs to which they were assigned would obtain higher reoffending rates than youths who failed to complete assigned programs. The findings of the current study did not support this hypothesis. In fact, the results showed that the highest reoffending rates were obtained for the individuals who completed some form of program versus completing no programs at all. The undetermined category obtained similarly high recidivism rates.

First, it should be mentioned that a number of cases could not be verified in terms of program completion; thus data were unavailable. It is possible that different findings would have emerged with more complete data on program completion. Moreover, it can also be suggested that participants may not have been matched to the programs they were referred to based on their predominant criminogenic needs. While the current data provide a general picture of risk and need areas for groups of youths, it would be more useful to examine whether the treatment programs were matched for each specific individual based on his or her identified criminogenic needs and based on the characteristics of the programs. Again, the use of an assessment tool, such as the CPAI would be useful in this regard.

Finally, the current study sought to determine whether a number of standardized assessment measures would be useful in the prediction of recidivism among diverted youths and youths too young to be charged. The results showed clear support for the use of the YLS/CMI, and the associated YLS/CMI:SV across all indices of predictive accuracy. It appears that each instrument used in the current study was able to discriminate between recidivists and nonrecidivists, with the exception of the JI AI when a dichotomous categorization was attempted. Examination of the regression data, however, revealed that a significant amount of variance could be explained using the combination of assessment measures, even though none of the measures provided unique contributions to the prediction of reoffending, with the exception of the YLS/CMI, and potentially the JI AI when violent police incidents were examined.

Interestingly, when a series of hierarchical regressions were conducted using the YLS/CMI:SV risk/needs assessment on the first step and including the additional

measures on the second step it was found that the CSS-M was the only predictor to contribute unique variance to the regression equation, holding all other variables constant, when the number of new police incidents was the criterion. Moreover, the JI AI approached significance, in terms of providing a unique contribution to the regression equation when the number of violent police incidents was the outcome variable.

A different pattern was evident, however, when the YLS/CMI was used on the first step of the regression analysis. The results showed that the risk/needs instrument was the only unique contributor to the regression equation using police incidents as the outcome. However, the semipartial correlations obtained for the CSS-M and HIT suggest that they too were contributing a small amount of unique variance. Although the results were nonsignificant they are still of practical value. The combination of results for the recidivism data indicates the need to use multiple informants (e.g., YSR and CBCL) and multitrait assessments of specific risk/need factors in addition to a broad based risk/needs assessment instrument, in order to obtain the best prediction of recidivism. The results using the low/high risk categorizations indicate that individuals in the higher risk categories do indeed recidivate at a faster rate. Hence, it is suggested that such categorizations be used in order to obtain the best predictive accuracy.

The final data presented in this study could be considered one of the truest measures of predictive accuracy because of the ability of ROC analysis to control for selection ratios and base rates. The obtained findings indicate that all of the assessment measures were accurate in predicting recidivism. However, the YLS/CMI, YLS/CMI:SV, and YSR appeared particularly robust, obtaining high AUCs across police incidents and violent police incidents. Indeed, every measure that was used in the current study could

serve to provide useful information not only in the prediction of reoffending, but also in the guiding of treatment services for young people.

Theoretical Links and Implications

The present findings lend support to a number of theories of delinquency. Consistent with the general personality and social psychological approach criminal history, antisocial attitudes, and personality emerged as consistent risk/need factors among the groups. Peer relations was a predominant risk factor for the diversion group, which is consistent with this theory, but it was not found to be prevalent among the under 12 group. The current findings, thus, lend support to theories relating to the absence of peers in the early years when examining risk factors among child delinquents, such as Patterson et al.'s (1991) coercion theory and Catalano and Hawkins' (1996) social development model.

Based on the characteristics observed with the under 12 group, it is suggested that the under 12 group in the current study resembles Thornberry and Krohn's (2001) precocious offenders or early onset offenders defined by interactional theory. As well, given the current findings, it is suggested that the under 12 group may be comparable to the life-course persistent offenders identified in Moffitt's theory (1993, 1997). Moreover, it can be suggested that the under 12 group may be early starters identified by Patterson and colleagues' theory (Patterson et al., 1991). It appears likely, then, that the diversion group in the current study consists of a combination of the early starter/life course persistent offenders and the late starter/adolescence limited offenders identified among these theories.

Although the current study did not directly assess the viability of each theory, it is apparent that certain characteristics of the child delinquents observed are similar to various developmental theories of criminal behaviour. Future research should incorporate indicators of the aforementioned theories to test their viability and further develop theories on child delinquents with a larger sample of youths too young to be charged.

Implications

The results of the current study suggest that the YLS/CMI:SV could be a useful tool among police officers who are required to make decisions regarding the use of extrajudicial measures. In effect, a screening of risk/need factors can be conducted and then decisions can be made regarding the appropriate extrajudicial measure to use. The instrument can also be used to guide decisions regarding the types of services that youths can be referred to in order to appropriately target the criminogenic needs of youths.

Overall, the findings indicate that diverted youths and children under age 12 were displaying a number of criminogenic needs that would require clinical attention. Thus, the criminogenic need areas identified in the current study (e.g., criminal attitudes, behavioural pathology, personality) should serve as potential treatment targets for youths in order to reduce the risk of future reoffending. Use of the YSL/CMI:SV and specialized assessment tools, such as the YLS/CMI, CBCL, and CSS-M, could be useful to monitor changes in functioning which could then be used to revise treatment plans. Since changes in risk/need scores have been linked with future recidivism (Andrews & Bonta, 1998) treatment plans and intensities can then be monitored to accommodate such fluctuations.

An important policy implication of the current findings is that risk/needs assessment could serve a role in the extrajudicial measures process. Essentially, it could

be mandated in the *YCJA* that all police officers across the country that deal with cases involving youths must complete a screening of the young person's risk and need levels. In this way, police forces across the country would be using a standardized way of assessing young people for the purpose of aiding in the decision of which extrajudicial measure to implement and, more specifically, which service to refer the young person to based on his or her identified criminogenic needs. Thus, if needed, police officers could justify their decision making regarding the use of extrajudicial measures because their decisions would be based on a reliable and valid measure of risk and need factors.

Caution should be noted, however, with the implementation of the screening tool for risk assessment purposes only. It must be recognized that the use of the YLS/CMI:SV, particularly at the precharge stage, would *not* be appropriate to serve the purpose of deciding which young people to charge or not charge based on identified risk levels since the instrument was designed to be a service-oriented tool and there is potential for misuse (D. A. Andrews & R. D. Hoge, April 30, 2004, personal communication).

In section 4 of the *YCJA* (Department of Justice Canada, 2003), the principles governing extrajudicial measures indicate that extrajudicial measures allow for effective and timely interventions focused on correcting offending behaviour (paragraph b), and that they are presumed to be adequate to hold first-time, non-violent offenders accountable (paragraph c). Moreover, in the objectives of extrajudicial measures it is suggested that they should be designed to respect the rights and freedoms of young persons, and be proportionate to the seriousness of the offence (paragraph e). In light of the current findings, it is suggested that the principles of the *YCJA* be modified to specify

that extrajudicial measures are presumed to be adequate to address offending behaviour of young people that have been identified as high risk and high needs. Thus, the focus of extrajudicial measures would be on risk/need levels instead of the seriousness of the offence.

The results for the current study also point to the need to have a unified system for dealing with the offending behaviour of children under the age of criminal responsibility. In the Ottawa area, police officers were able to directly refer children under the age of 12 to existing services designed specifically to address moderate and high risk/needs children (e.g., Crossroads). However, the ability of police officers in different cities to refer children under the age of 12 to various programs is limited due to the lack of funds in smaller cities for such services, and the inability of police officers to know who to refer. Thus, at the very least it would also be beneficial to have a common policy among police forces at the municipal levels across Canada for dealing with criminal behaviour among child offenders.

Currently, it is the task of the child welfare system to deal with criminal behaviour of children under the age of 12. Unfortunately, the various child welfare systems deal with offending behaviour of children under age 12 in different ways depending on which province a young person resides in. It would be useful, then, to have a new policy that is consistent across every province in the country that would suggest how the child welfare system would address the criminal behaviour of children under the age of 12. A system could be implemented whereby referrals from parents, teachers, and police officers, for example, could be sent to an intake center, which would then determine the course of action for the young person. The YLS/CMI:SV could be used to

guide decisions at this point regarding the types of services to which these young people could be referred.

Another policy implication of the current results is that with the advent of the *YCJA* and the push towards the use of extrajudicial measures, resources need to be allocated to programs for young people in conflict with the law. Equally important is the allocation of funds to programs designed for children under the age of 12 who are not eligible for extrajudicial measures. While it is technically the responsibility of the child welfare system to address offending behaviour of children under the age of 12, resources are usually not devoted to this cause. Since diverted youths, and child delinquents more specifically, obtained clinical levels of pathology on a number of indicators of cognition and behavioural and emotional functioning services are necessary to address these needs. Although young people were referred to existing treatment programs through the police, it was apparent that participation rates were not acceptable. Thus, resources must also be devoted to determining what the barriers are to service use and methods must be undertaken to address these areas.

Limitations

A number of limitations were identified in the current study. Evidently, police officer training is an issue that must be addressed as a limitation in the present study. Bonta et al. (2001) note that a basic prerequisite for the administration of risk-needs scales is to have some interviewing skills. While the SROs, YID officers, and some investigators did have preexisting training and experience in interviewing young people, there were police officers who did not receive training in this area. Bonta et al. (2001) also recommend that managers attend the training since this helps them better understand

what their staff will be doing and the reasons for the new classification procedures.

Many, but not all, senior managers attended training sessions in the current study.

As well, Bonta et al. (2001) suggest that enough time must be devoted to allow staff to be reasonably skilled and confident in administering the risk-needs instrument. To complete a risk-needs instrument such as the YLS/CMI they suggest that training be completed over 2-3 days (i.e., more time is required when training includes some basic interviewing skills). In the current study, training for the screening version was conducted over the period of half an hour to an hour due to the large number of officers that were required to be trained (approximately 80). Usually, the training was conducted in groups of 3 to 10, and some training was conducted on an individual basis when an officer changed platoons or units.

During the training session used in the current study, police officers were introduced to risk/needs theory and research, and the scoring and content of each item was discussed. Bonta et al. (2001) indicate that training sessions must include practice test administrations (preferably using videotaped offender interviews) and after viewing videotaped interviews, participants can practice scoring, ask questions and refine their skills. It is suggested that future research be conducted using more in-depth training of individuals with the techniques suggested by Bonta and colleagues. Bonta et al. further suggest that the training program must include a follow-up session, such as booster training sessions. Thus, future training with the screening inventory should incorporate booster sessions to ensure the quality of data collection. In this way, scoring errors and the number of missing items could be reduced.

It is likely that the quality of the data obtained in the current study was also a function of police officers' attitudes and orientations towards extrajudicial measures. Research has shown that service-oriented police advocate the use of discretion to help solve social problems, while legalistic police oppose discretion because it interferes with their duty to enforce the law in an equitable manner (Wortley, 2003). It would have been useful to measure police attitudes to determine if they were related to the type and quality of information that was obtained. This area could be examined in future research.

A further limitation includes the timing of the data collection from the police officers. The screening inventories were supposed to be delivered to the primary investigator after a case was sufficiently handled, but in many cases officers failed to complete the measures at that time so they were required to go back to their cases several months after dealing with the youths. Thus, retrospective recollection of the data may have been erroneous. As well, the current findings regarding program completion were limited because indirect measures were obtained through police reports. It would have been desirable to obtain direct assessments of program completion and success. Finally, a larger number of under 12 participants would have been preferable in order to increase the generalizability of the findings.

Future Directions

In addition to previous suggestions for future studies, a number of additional research directions are offered. First, more research is warranted on child delinquents, particularly so that programs can be designed to address their vast needs. Additional studies should also be conducted on the diversion process to determine whether specific individuals are being referred to programs based on their identified criminogenic needs.

The YLS/CMI:SV requires additional research to establish the psychometric properties using additional samples of offenders. In its present state, however, it appears useful as a screening of risk and need levels in young people. An examination of protective factors would have also been beneficial as strength factors can serve as building blocks for therapeutic purposes. Future studies examining protective factors and the use of extrajudicial measures would be useful to determine how young people's strengths can be incorporated into the diversion process and what influence protective factors may have on samples of differing ages and developmental levels. Finally, reassessments of the various measures would have been useful to determine if changes in scores were associated with changes in recidivism.

The results of the current study lend support to the need to provide services to young people in conflict with the law. Various standardized tools can be useful in assessing risk and need areas and in determining the appropriate course of action. Treatment and early prevention efforts must be stressed and further developed in collaborated systems. Thus, the child welfare system, police, and service providers must share information and pull together resources to address the needs of youths in order to adequately deal with offending behaviour. By targeting the criminogenic needs of young people in this way, society can address not only the well being of the public, but also of individual young people who are in dire need of help.

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Appendix A

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

THE YOUTH LEVEL OF SERVICE/CASE MANAGEMENT INVENTORY
ROBERT D. HOGE & D. A. ANDREWS, CARELTON UNIVERSITY

Name	Date of Birth

Part I – Assessment of Risk and Needs

<p>1. Prior and Current Offences/Dispositions</p> <p>a. Three or more prior convictions ☐</p> <p>b. Two or more failures to comply ☐</p> <p>c. Prior probation ☐</p> <p>d. Prior detention ☐</p> <p>e. Three or more current convictions ☐</p> <p style="text-align: right;">Total _____</p> <p>Risk Level:</p> <p>Low (0) ☐</p> <p>Moderate (1-2) ☐</p> <p>High (3-5) ☐</p>	<p>Comments (include mitigating and aggravating factors)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Source(s) of information</p> <p>_____</p> <p>_____</p> <p>_____</p>
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<p>2. Family Circumstances/Parenting</p> <p>a. Inadequate supervision ☐</p> <p>b. Difficulty in controlling behavior ☐</p> <p>c. Inappropriate discipline ☐</p> <p>d. Inconsistent parenting ☐</p> <p>e. Poor relations/father-child ☐</p> <p>f. Poor relations/mother-child ☐</p> <p style="text-align: right;">Total _____</p> <p>Strength ☐</p> <p>Risk Level:</p> <p>Low (0-2) ☐</p> <p>Moderate (3-4) ☐</p> <p>High (5-6) ☐</p>	<p>Comments</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Source(s) of information</p> <p>_____</p> <p>_____</p> <p>_____</p>
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<p>3. Education/Employment</p> <p>a. Disruptive classroom behavior ☐</p> <p>b. Disruptive behavior on school property ☐</p> <p>c. Low achievement ☐</p> <p>d. Problems with peers ☐</p> <p>e. Problems with teachers ☐</p> <p>f. Truancy ☐</p> <p>g. Unemployed/not seeking employment ☐</p> <p style="text-align: right;">Total _____</p> <p>Strength ☐</p> <p>Risk Level:</p> <p>Low (0) ☐</p> <p>Moderate (1-3) ☐</p> <p>High (4-7) ☐</p>	<p>Comments</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Source(s) of information</p> <p>_____</p> <p>_____</p> <p>_____</p>
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Part I – Assessment of Risk and Needs (Continued)**4. Peer Relations**

- a. Some delinquent acquaintances ☐
- b. Some delinquent friends ☐
- c. No or few positive acquaintances ☐
- d. No or few positive friends ☐

Total _____**Strength** ☐**Risk Level:**Low (0-1) ☐Moderate (2-3) ☐High (4) ☐**Comments**

Source(s) of information

5. Substance Abuse

- a. Occasional drug use ☐
- b. Chronic drug use ☐
- c. Chronic alcohol use ☐
- d. Substance abuse interferes with life ☐
- e. Substance use linked to offense(s) ☐

Total _____**Strength** ☐**Risk Level:**Low (0) ☐Moderate (1-2) ☐High (3-5) ☐**Comments****6. Leisure/Recreation**

- a. Limited organized activities ☐
- b. Could make better use of time ☐
- c. No personal interests ☐

Total _____**Strength** ☐**Risk Level:**Low (0) ☐Moderate (1) ☐High (2-3) ☐**Comments**

Source(s) of information

7. Personality/Behavior

- a. Inflated self-esteem ☐
- b. Physically aggressive ☐
- c. Tantrums ☐
- d. Short attention span ☐
- e. Poor frustration tolerance ☐
- f. Inadequate guilt feelings ☐
- g. Verbally aggressive, impudent ☐

Total _____**Strength** ☐**Risk Level:**Low (0) ☐Moderate (1-4) ☐High (5-7) ☐**Comments**

Source(s) of information

Part I – Assessment of Risk and Needs (Continued)**8. Attitudes/Orientation**

- a. Antisocial/procriminal attitudes
 b. Not seeking help
 c. Actively rejecting help
 d. Defies Authority
 e. Callous, little concern for others

☐
☐
☐
☐
☐
Comments

Total**Strength**☐**Risk Level:**

- Low (0)
 Moderate (1-3)
 High (4-5)

☐
☐
☐
Source(s) of information

Part II – Summary of Risk/Need Factors (from pages 1 to 3)

	Prior and Current Offences	Family	Education	Peers	Substance Abuse	Leisure and Recreation	Personality and Behavior	Attitudes and Orientation	Overall Total of Scores
Scores									
Low									
Moderate									
High									

Overall Total
☐
☐
Low (0-8)**Moderate (9-22)**
☐
☐
High (23-34)**Very High (35-42)****Part III – Assessment of Other Needs/Special Considerations****1. Family/Parents**

- ☐ Chronic History of Offences
☐ Emotional Distress/Psychiatric
☐ Drug-Alcohol Abuse
☐ Marital Conflict

- ☐ Financial/Accommodation Problems
☐ Uncooperative Parents
☐ Cultural/Ethnic Issues
☐ Abusive Father

- ☐ Abusive Mother
☐ Significant Family Trauma
 (Specify) _____
☐ Other

Comments**2. Youth**

- ☐ Health Problems
☐ Physical Disability
☐ Low Intelligence/Developmental Delay
☐ Learning Disability
☐ Underachievement
☐ Problem Solving Skills
☐ Victim of Physical/Sexual Abuse
☐ Victim of Neglect
☐ Shy/Withdrawn

- ☐ Peers Outside Age Range
☐ Depressed
☐ Low Self Esteem
☐ Inappropriate Sexual Activity
☐ Racist/Sexist Attitudes
☐ Poor Social Skills
☐ Engages in Denial
☐ Suicide Attempts
☐ Diagnosis of Psychosis

- ☐ Third Party Threat
☐ History of Sexual/Physical Assault
☐ History of Assault on Authority Figures
☐ History of Weapon Use
☐ History of Fire Setting
☐ History of Escapes
☐ Protection Issues
☐ Adverse Living Condition
☐ Other

Comments (Note any special responsivity considerations including the need for culturally specific services)

Part IV – Your Assessment of Juvenile’s General Risk/Need Level

- Reasons:**

Part V – Contact Level

- □ □ □

Comments (Note placement considerations and court expectations, if applicable)

Supervisor's Signature/Date

Part VI – Case Management Plan

Means of Achievement

Means of Achievement

Means of Achievement

Means of Achievement

Appendix B

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

**YOUTH LEVEL OF SERVICE/CASE MANAGEMENT INVENTORY (YLS/CMI)
SCREENING VERSION
ROBERT D. HOGE & D. A. ANDREWS, CARLETON UNIVERSITY**

This short version of the YLS/CMI is designed to provide an initial screening of risk and need levels in young people for purposes of determining whether a more thorough assessment is appropriate. Completion of the instrument will normally be based on a file review and interviews with the youth, a parent, and collateral sources.

Items 1 through 6 require a No (N), Yes (Y), or Omit (O) (not relevant or inadequate information) response. Items 7 and 8 are based on a rating format using the following scale: **0: A satisfactory situation, with no (or little) need for improvement; 1: A relatively satisfactory situation, with some room for improvement evident; 2: A relatively unsatisfactory situation with a need for improvement; 3: A very unsatisfactory situation with a very clear and strong need for improvement.**

In calculating the total score, score 1 point for each "yes" answer and either 1, 2, or 3 points for questions 7 and 8.

1. History of delinquency/conduct disorders
Score yes if there are two or more prior adjudications and/or a documented history of earlier conduct/behavioral problems.	N Y O
2. Current school or employment problems
Score yes if the youth is exhibiting serious behavioral or achievement problems in school; is suspended or expelled; also score if out-of-school and not employed or not seeking employment.	N Y O
3. Some criminal friends
Score yes if the youth has some friends who have a history of delinquency or are currently exhibiting conduct problems or antisocial attitudes.	N Y O
4. Alcohol/drug problems
Score yes if the youth is frequently or chronically using drugs and/or alcohol; drugs/alcohol affecting school, work, social life, etc.	N Y O
5. Leisure/recreation
Score yes if the youth is <u>not</u> engaged in organized or otherwise positive leisure time activities; few interests; poor use of time.	N Y O
6. Personality/behavior
Score yes if the youth exhibits serious personality or behavioral problems (e.g., physical/verbal aggression; short attention span; hyperactive; poor controls).	N Y O
7. Family circumstances/parenting
0 indicates a very positive and supportive family/parenting situation, while 3 indicates a very poor situation (e.g., abuse, frequent conflicts, inadequate supervision).	0 1 2 3
8. Attitudes/orientation
0 indicates that the youth exhibits a very positive and prosocial attitude/value system, while 3 indicates an extreme antisocial and procriminal attitude/value system.	0 1 2 3

TOTAL SCORE _____

Note: scores may range from 0 to 12; higher risk/need scores may indicate the need for a more thorough assessment.

Appendix C

Criminal Sentiments Scale-Modified

Confidential Questionnaire

Directions: Read each statement carefully and decide how you feel about it. Circle A if you agree with the statement or D if you disagree with the statement. If you are undecided or cannot make up your mind about the statement, circle U. Remember, there are no right or wrong answers.

CRIMINAL SENTIMENTS SCALE-MODIFIED**LAW**

1. Pretty well all laws deserve our respect.	A U D
2. It's our duty to obey all laws.	A U D
3. Laws are usually bad.	A U D
4. The law is rotten to the core.	A U D
5. You cannot respect the law because it's there only to help a small and selfish group of people.	A U D
6. All laws should be obeyed just because they are laws.	A U D
7. The law does not help the average person.	A U D
8. The law is good.	A U D
9. Law and justice are the same thing.	A U D
10. The law makes slaves out of most people for a few people on the top.	A U D

Law Total: _____

COURTS

11. Almost any jury can be fixed.	A U D
12. You cannot get justice in court.	A U D
13. Lawyers are honest.	A U D
14. The crown often produces fake witnesses.	A U D
15. Judges are honest and kind.	A U D
16. Court decisions are pretty well always fair.	A U D
17. Pretty well anything can be fixed in court if you have enough money.	A U D
18. A judge is a good person.	A U D

Court total: _____

POLICE

19. The police are honest.	A U D
20. A cop is a friend to people in need.	A U D
21. Life would be better with fewer cops.	A U D
22. The police should be paid more for their work.	A U D
23. The police are as crooked as the people they arrest.	A U D
24. Society would be better off if there were more police.	A U D
25. The police almost never help people.	A U D

Police total: _____

TOLERANCE FOR LAW VIOLATIONS

26. Sometimes a person like me has to
break the law to get ahead in life. A U D
27. Most successful people broke the law
to get ahead in life. A U D
28. You should always obey the law, even
if it keeps you from getting ahead in life. A U D
29. Its OK to break the law as long
as you don't get caught. A U D
30. Most people would commit crimes if
they wouldn't get caught. A U D
31. There is never a good reason to
break the law. A U D
32. A hungry man has the right to steal. A U D
33. It's OK to get around the law as long
as you don't actually break it. A U D
34. You should only obey those laws
that are reasonable. A U D
35. You're crazy to work for a living if
there's an easier way, even if it
means breaking the law. A U D

TLV total: _____

IDENTIFICATION WITH CRIMINAL OTHERS

36. People who have broken the law have
the same sorts of ideas about life as me. A U D
37. I prefer to be with people who obey
the law rather than people who break
the law. A U D
38. I'm more like a professional criminal
than the people who break the law now
and then. A U D
39. People who have been in trouble with
the law are more like me than people
who don't have trouble with the law. A U D
40. I have very little in common with
people who never break the law. A U D
41. No one who breaks the law can be my
friend. A U D

ICO total: _____

CSS TOTAL: _____

Appendix D

Service Assessment for Children and Adolescents

Service Assessment for Children and Adolescents

This survey will ask you some questions about any treatment or help your son/daughter may have received for problems with his/her behaviour, feelings, or drugs or alcohol. Please place a check mark in the boxes below and report the age at which your child used a particular service if appropriate.

Has your son/daughter ever stayed **overnight** at any of the following:

	Ever?			Age First Used	In last year?		
	No	Yes	Don't Know		No	Yes	Don't Know
1. Hospital for problems with drugs or alcohol, behaviours, or feelings	☐	☐	☐	___	☐	☐	☐
2. Drug or alcohol treatment center	☐	☐	☐	___	☐	☐	☐
3. Residential treatment center	☐	☐	☐	___	☐	☐	☐
4. Group home	☐	☐	☐	___	☐	☐	☐
5. Foster home	☐	☐	☐	___	☐	☐	☐
6. Detention center/Prison or jail	☐	☐	☐	___	☐	☐	☐
7. Emergency shelter for problems with behaviours or feelings	☐	☐	☐	___	☐	☐	☐
8. Other: describe _____	☐	☐	☐	___	☐	☐	☐

Has your son/daughter ever received **outpatient help (not overnight)** from any of the following:

	Ever?			Age First Used	In last year?		
	No	Yes	Don't Know		No	Yes	Don't Know
9. Community mental health center or other outpatient mental health clinic	☐	☐	☐	___	☐	☐	☐
10. Professional like a psychologist, psychiatrist, social worker, or family counsellor not part of a service or clinic already mentioned	☐	☐	☐	___	☐	☐	☐
11. Partial hospitalization or day treatment program	☐	☐	☐	___	☐	☐	☐
12. Drug or alcohol center	☐	☐	☐	___	☐	☐	☐
13. Therapist or counsellor or family preservation worker who came to your home	☐	☐	☐	___	☐	☐	☐
14. Emergency room for problems with behaviours or feelings	☐	☐	☐	___	☐	☐	☐
15. Pediatrician or family doctor for problems with behaviours or feelings	☐	☐	☐	___	☐	☐	☐
16. Probation or juvenile corrections officer or a court counsellor	☐	☐	☐	___	☐	☐	☐
17. Priest, Minister or Rabbi for problems with behaviours or feelings	☐	☐	☐	___	☐	☐	☐
18. Healer/Shaman/Spiritualist	☐	☐	☐	___	☐	☐	☐
19. Acupuncturist/Chiropractor	☐	☐	☐	___	☐	☐	☐
20. Crisis hotline	☐	☐	☐	___	☐	☐	☐
21. Any self-help groups like Alcoholics Anonymous or peer counselling	☐	☐	☐	___	☐	☐	☐
22. Respite Care Provider	☐	☐	☐	___	☐	☐	☐

Has your son/daughter ever received any **school services** such as:

	Ever?			Age First Used	In last year?		
	No	Yes	Don't Know		No	Yes	Don't Know
23. Being placed in a special school for students with problems with behaviours or feelings	☐	☐	☐	___	☐	☐	☐
24. Being placed in a special classroom for problems with behaviours, feelings, drugs or alcohol	☐	☐	☐	___	☐	☐	☐
25. Getting special help (such as tutoring or training) in the regular classroom for problems with behaviours or feelings	☐	☐	☐	___	☐	☐	☐
26. Other counselling or therapy in school, related to problems with behaviours, feelings, or drugs or alcohol	☐	☐	☐	___	☐	☐	☐

Appendix E

Services Accessed by Youth Measure

Services Accessed by Youth

Services accessed (check all that apply):

Current referral(s) by the Ottawa Police Service:

Actual Services Completed:

1. ☐ Warning
2. ☐ Formal Caution
3. ☐ City of Ottawa Recreation Programs
4. ☐ Juvenile Firesetters Program
5. ☐ Ottawa Police Youth Centre (Boys & Girls Club of Ottawa)
6. ☐ Project Early Intervention
7. ☐ CHEO (Psych./Outpatient/Inpatient)
8. ☐ Crossroads Treatment Centre – day treatment
9. ☐ Crossroads – residential care
10. ☐ Crossroads – intensive services program
11. ☐ Regional Children’s Mental Health Centre (Royal Ottawa Hospital)
12. ☐ School Based Counselling Service
13. ☐ David Smith Centre
14. ☐ John Howard Society
15. ☐ Mediation
16. ☐ Preventive Intervention at the Pre-court Level (PIP – Boys & Girls Club)
17. ☐ Alternative Response in Communities: Project Cura (ARC)
18. ☐ Robert/Smarts Centre Secure Treatment
19. ☐ Robert/Smarts Centre Crisis Intervention
20. ☐ Robert/Smarts Centre Mental Health Residential Program
21. ☐ Robert/Smarts Centre Day Treatment
22. ☐ Robert/Smarts Centre A.S.A.P.
23. ☐ Voluntary Monitoring Program
24. ☐ Youth Justice Committee
25. ☐ Wraparound
26. ☐ Dispute Resolution Centre
27. ☐ Elizabeth Fry Society
28. ☐ Elizabeth Fry Society Shoptheft Program
29. ☐ Rideauwood Addictions Family Services
30. ☐ Youth Services Bureau
31. ☐ Mobile Crisis Unit (YSB)
32. ☐ Maison Fraternite
33. ☐ Centre Psycho Sociale
34. ☐ Other (Specify): _____
35. ☐ Don’t know

None

When is your child scheduled to start the program(s) he or she was referred to?

How long will your child be required to participate in the program(s)?

Level of Intensity of Services Referred To: ☐ low intensity ☐ moderate intensity ☐ high intensity

Level of Intensity of Services Actually Completed: ☐ low intensity ☐ moderate ☐ high ☐ don't know

Appendix F

Recidivism Measure

Subject Number: _____

Follow-up Data Coding

Group: ☐ Under 12 = 0 ☐ Diversion = 1 ☐ Comparison = 2 ID Number: _____

Date of Program Completion/Release to Community: _____ (d, m, y) Court Date: _____

Date of Follow-up: _____ (d, m, y) Time to First Police Contact: _____ (days)

Time to Charge or Censoring: _____ (days)

New Police Contacts: ☐ No ☐ Yes Violent Incident(s): ☐ No ☐ Yes

of New Police Contacts: _____ # of New Incidents: _____ # of New Violent Incidents: _____

Contact Type 1: _____ Date (d, m, y) (, ,) Contact Type 2: _____ Date (d, m, y) (, ,)

Contact Type 3: _____ (, ,) Contact Type 4: _____ (, ,)

Contact Type 5: _____ (, ,) Contact Type 6: _____ (, ,)

Contact Type 7: _____ (, ,) Contact Type 8: _____ (, ,)

Contact Type 9: _____ (, ,) Contact Type 10: _____ (, ,)

New Charges: ☐ No ☐ Yes Violent Charge(s): ☐ No ☐ Yes

of New Charges: _____ # of New Violent Charge(s): _____

Laid Date 1: _____ Occ. Date (d, m, y) Laid Date 2: _____ Occ. Date (d, m, y)

Charge Type 1: _____ (, ,) Charge Type 2: _____ (, ,)

Laid Date 3: _____ Laid Date 4: _____
Charge Type 3: _____ (, ,) Charge Type 4: _____ (, ,)Laid Date 5: _____ Laid Date 6: _____
Charge Type 5: _____ (, ,) Charge Type 6: _____ (, ,)Laid Date 7: _____ Laid Date 8: _____
Charge Type 7: _____ (, ,) Charge Type 8: _____ (, ,)Laid Date 9: _____ Laid Date 10: _____
Charge Type 9: _____ (, ,) Charge Type 10: _____ (, ,)New Convictions: ☐ No ☐ Yes Violent Conviction(s): ☐ No ☐ Yes

of New Convictions: _____ # of New Violent Convictions: _____

Conviction T1: _____ Date (d, m, y) (, ,) Conviction T2: _____ Date (d, m, y) (, ,)

Conviction T3: _____ (, ,) Conviction T4: _____ (, ,)

Conviction T5: _____ (, ,) Conviction T6: _____ (, ,)

Conviction T7: _____ (, ,) Conviction T8: _____ (, ,)

Conviction T9: _____ (, ,) Conviction T10: _____ (, ,)

Criminal Incidents After First Recidivistic Event Until the End of the Follow-Up Period:New Police Contacts: ☐ No ☐ Yes Violent Incident(s): ☐ No ☐ Yes

of New Police Contacts: _____ # of New Incidents: _____ # of New Violent Incidents: _____

Contact Type 1: _____ Date (d, m, y) _____ Contact Type 2: _____ Date (d, m, y) _____

Contact Type 3: _____ Contact Type 4: _____

Contact Type 5: _____ Contact Type 6: _____

Contact Type 7: _____ Contact Type 8: _____

Contact Type 9: _____ Contact Type 10: _____

New Charges: ☐ No ☐ Yes Violent Charge(s): ☐ No ☐ Yes

of New Charges: _____ # of New Violent Charge(s): _____

Laid Date 1: _____ Occ. Date (d, m, y) _____ Laid Date 2: _____ Occ. Date (d, m, y) _____
Charge Type 1: _____ Charge Type 2: _____Laid Date 3: _____ Laid Date 4: _____
Charge Type 3: _____ Charge Type 4: _____Laid Date 5: _____ Laid Date 6: _____
Charge Type 5: _____ Charge Type 6: _____Laid Date 7: _____ Laid Date 8: _____
Charge Type 7: _____ Charge Type 8: _____Laid Date 9: _____ Laid Date 10: _____
Charge Type 9: _____ Charge Type 10: _____New Convictions: ☐ No ☐ Yes Violent Conviction(s): ☐ No ☐ Yes

of New Convictions: _____ # of New Violent Convictions: _____

Conviction T1: _____ Date (d, m, y) _____ Conviction T2: _____ Date (d, m, y) _____

Conviction T3: _____ Conviction T4: _____

Conviction T5: _____ Conviction T6: _____

Conviction T7: _____ Conviction T8: _____

Conviction T9: _____ Conviction T10: _____

Further Departmental Discretion: ☐ No ☐ Yes Further Diversion: ☐ No ☐ Yes
Further Postcharge Diversion (AM): ☐ No ☐ Yes Date of Postcharge AM: _____

of incidents where departmental discretion resulted in no action: _____
 # of incidents where departmental discretion resulted in diversion: _____
 # of diversion incidents where warning or formal caution given: _____
 # of diversion incidents where referral is made to treatment agency: _____
 # of postcharge diversion incidents: _____

Diversion referral to treatment agency type 1: _____

Diversion referral to treatment agency type 2: _____

Diversion referral to treatment agency type 3: _____

Diversion referral to treatment agency type 4: _____

Diversion referral to treatment agency type 5: _____

New CCJS Status Type 1:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 1 Appropriate?: ☐ Yes ☐ No

CCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 1:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges;
 Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4

New Incident Type 1 Role Code: _____

New CCJS Status Type 2:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 2 Appropriate?: ☐ Yes ☐ No

CCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 2:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges;
 Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4

New Incident Type 2 Role Code: _____

New CCJS Status Type 3:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 3 Appropriate?: ☐ Yes ☐ No

CCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 3:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges;
 Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4

New Incident Type 3 Role Code: _____

New CCJS Status Type 4:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 4 Appropriate?: ☐ Yes ☐ NoCCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 4:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges; Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4

New Incident Type 4 Role Code: _____

New CCJS Status Type 5:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 5 Appropriate?: ☐ Yes ☐ NoCCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 5:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges; Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4

New Incident Type 5 Role Code: _____

New CCJS Status Type 6:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 6 Appropriate?: ☐ Yes ☐ NoCCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 6:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges; Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4

New Incident Type 6 Role Code: _____

New CCJS Status Type 7:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 7 Appropriate?: ☐ Yes ☐ NoCCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 7:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges; Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4

New Incident Type 7 Role Code: _____

New CCJS Status Type 8:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3

New CCJS Status Type 8 Appropriate?: ☐ Yes ☐ NoCCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 8:

- ☐ Charged (CCC) = 1

- ☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

- ☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges; Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4
 New Incident Type 8 Role Code: _____

New CCJS Status Type 9:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 9 Appropriate?: ☐ Yes ☐ NoCCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 9:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges; Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4
 New Incident Type 9 Role Code: _____

New CCJS Status Type 10:

- ☐ Charged (CCC) = 1
☐ Charged (PON) = 2
☐ Alternative Measure = 3
☐ Departmental Discretion = 4
☐ Complainant Won't Lay Charges = 5
☐ Inactive = 6
☐ Founded Not Cleared = 7
☐ Accused Less Than 12 Years Old = 8
☐ Accused Involved in Other Cases = 9
☐ Other = 10 (Specify: _____)

New CCJS Status Type 10 Appropriate?: ☐ Yes ☐ NoCCJS Status based on Target Youth?: ☐ Yes ☐ No

Appropriate New CCJS Status Type 10:

- ☐ Charged (CCC) = 1
☐ Alternative Measure/Dpt. Discretion = 2
☐ Other (Complainant Won't Lay Charges; Inactive; Founded Not Cleared; Other Cases) = 3
☐ Accused Less Than 12 Years Old = 4
 New Incident Type 10 Role Code: _____

New CCJS Status Charged (CCC): _____
 # New CCJS Status Charged (PON): _____
 # New CCJS Status Alternative Measure: _____
 # New CCJS Status Departmental Discretion: _____
 # New CCJS Status Complainant Won't Lay Charges: _____
 # New CCJS Status Inactive: _____
 # New CCJS Status Founded Not Cleared: _____
 # New CCJS Status Accused Less Than 12 Years Old: _____
 # New CCJS Status Accused Involved in Other Cases: _____
 # New CCJS Status Other: _____

New CCJS Status Appropriate Charged (CCC): _____
 # New CCJS Status Appropriate Alternative Measure/Departmental Discretion: _____
 # New CCJS Status Appropriate Other: _____
 # New CCJS Status Appropriate Accused Less Than 12 Years Old: _____
 New Runaways/Missing Incidents: ☐ No ☐ Yes # of New Missing Incidents: _____

Amount of Time Detained or in Custody (before first recidivistic event): _____ (days)
 Amount of Time Detained or in Custody (after first recidivistic event): _____ (days)

Age at Follow-Up: _____ (years)

Appendix G

Script for Police Officer Information and Training Session

Script for Police Officers

Which police officers will be asked to volunteer to participate in collecting information for the study?

- Police officers dealing with youth cases that result in the laying of a charge. This includes Youth Intervention/Diversion Unit Officers, School Resource Officers, Frontline Patrol Officers, Neighbourhood Officers, investigators, and CADO unit Officers.
- Police officers dealing with youth cases that result in diversion (i.e., informal warning, formal caution, referral to community service) instead of charging. This includes Youth Intervention/Diversion Unit Officers, Frontline Patrol Officers, School Resource Officers, Neighbourhood Officers, investigators, and CADO unit officers.
- Since this study is voluntary, officers can choose to not participate or they can withdraw from the study at any time without penalty. Any information that is collected in this study from police officers will be confidential, which means that parents and children won't be told of officers' responses.

How long do officers need to help with the study?

- I would like to gather information on 200 youths in the diversion group, 50 youths under the age of 12, and 200 youths in the charged group.
- I am estimating that it will take four months to be able to achieve these numbers. So if the study starts at the beginning of February, then officers who volunteer to participate will be asked to collect information until the end of May.
- Towards the end of the fourth month, if there is not an adequate number of cases, officers who have volunteered will be asked to extend their participation by another month.

Appendix H
Telephone Script

Telephone Script

Hello, my name is Jennifer van de Ven from the Department of Psychology at Carleton University. I am conducting a study for my doctoral thesis with the Ottawa Police Service on youth that have come into contact with the law and have been offered diversion as an alternative to being charged. The Police department referred me to you because your son/daughter was recently involved in an incident that came to the attention of the police. The reason I am calling is to get volunteers to participate in my study. Are you available at the moment to talk about the study? (if yes, continue; otherwise set up another time to call). I want you to know that all the information that you and your child give me, including information you give me by phone, are strictly confidential.

The study will involve the participation of you and your son/daughter. The study involves looking at risk and need factors related to the criminal activity of youths that are involved in the diversion process. The types of services that your son/daughter was recently referred to by the police, as part of the diversion process, will also be surveyed. The services that your child has used in the past because of problems he/she may have been experiencing will be examined as well. Further information will be collected about your child's attitudes, behaviour, and personality. At a later date, I will be collecting information from the Ottawa Police Service to determine whether your child becomes involved in future criminal activity.

Do you have any questions at this point? (if no, continue)

Another aspect of the study involves comparing risk and need factors of youths who have participated in diversion to youths who have been charged. The study will also compare the reoffending rates of the two groups. It is hoped that through the process of diversion, these youths will be less likely than charged youths to reoffend.

You and your son/daughter's participation will involve coming to the closest police center to where you live, which is located on _____, at your earliest convenience. I would like to interview your son/daughter and to have him/her fill out some questionnaires, which will take approximately two hours, while you fill out two questionnaires in a separate room, which should take you about 30 minutes to complete. In the interview I will ask your child questions regarding his/her school behaviour, peer relations, personality, behaviour, family circumstances, attitudes, and if any, use of substances such as alcohol or drugs. Your participation and your son/daughter's participation are voluntary, so either of you can withdraw from the study at any time without penalty. After I have assessed your son/daughter, I will give you an information sheet with more information about the study.

(If referred to a treatment program in the community) During the follow-up period of 4 to 8 months from now I would like to contact you again by telephone for a few minutes to ask about your child's participation in the program. If you choose not to answer questions at this point, you are still free to withdraw from the study without penalty.

This study will be helpful to the police so that they can determine whether the appropriate treatment services in the community are available to youth based on youths' particular risk and need factors. This study will also be beneficial to families like yours, and the community, because the diversion process can hopefully help to reduce crime by referring children to the appropriate treatment services.

Would you and your son/daughter be willing to participate in this study? (if yes, continue; otherwise thank parent for their time). Once again, the closest police center to where you live is located on _____. What day and time would be most convenient for us to meet? Would it be okay for me to call you the day before our meeting to confirm? When is the best time to call on that date?

Thank you for your time. I look forward to meeting you and your son/daughter on _____ (date).

Appendix I

Informed Consent Form for Parent

Informed Consent Form

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Title of study: Assessment of Risk and Need Factors and Service Use in Diverted Youth

Research personnel: The following people are involved in this research project and may be contacted at any time: Jennifer van de Ven (Principle Investigator, 520-2600, ext. 1415); Dr. R. Hoge (Faculty Sponsor, 520-5773). Should you have any ethical or other concerns about this study then please contact Dr. M. Gick, Chair, Carleton University Research Ethics Committee for Psychological Research, 520-2600, ext. 2664) or Dr. K. Matheson (Chair, Dept. of Psychology, 520-2600, ext. 2648).

Purpose: The purpose of this study is to examine the factors associated with the criminal behaviour of youths that have been diverted from the criminal justice system, and to survey placements to which youth are diverted. Youths who are involved in diversion will be compared to a group of charged youths on factors related to criminal behaviour and on future offending behaviour. It is hoped that this study will help to determine the best way for police to help youths that come into contact with the law.

Task requirements: First, you will be requested to answer questions about your child's recent involvement in the diversion process. Then you will be given questionnaires to complete on your child's behaviour and past use of services. While you are completing the questionnaires, your child will be interviewed in a separate room and then asked to fill out a number of questionnaires measuring attitudes, behaviour, and personality. If your child was referred to a treatment program in the community, in 4 to 8 months, you will be contacted by telephone for a few minutes by the primary researcher to answer questions about your child's participation in the treatment program.

Duration and locale: In total, the assessment should take approximately two hours. Testing will take place at the closest police center to where you live.

Potential risk/discomfort: There are no potential physical risks in this study, but some of the information will involve personal and sensitive questions. You and your child can choose not to answer specific questions, or withdraw at any time without penalty.

Anonymity/confidentiality: The data collected in this study are confidential. All data are coded such that your name and your child's name are not associated with the data. In addition, the coded data are made available only to the researchers associated with this study. In some situations, the researcher must break the confidentiality agreement. If child abuse or neglect is known or strongly suspected, the researcher is required by law to notify the Children's Aid Society. If a participant is believed to be a threat to

himself/herself or to others, the investigator may have to notify the appropriate authorities.

Right to withdraw: Your child's and your participation in this study are completely voluntary. At any time during the study, you and your child have the right to not answer any questions or to withdraw from the study without penalty.

Signatures

I have read the above form and understand the conditions of participation for my child and myself. My child's and my own participation in this study are voluntary, and if for any reason, at any time, we wish to leave the experiment we may do so without having to give an explanation and with no penalty whatsoever. Furthermore, I am also aware that the data gathered in this study are confidential and anonymous with respect to the personal identity of my child and myself. My signature indicates that I agree to participate in the study and that I agree to allow my child to participate in the study.

Participant's Name: _____ Participant's Signature: _____
Researcher's Name: _____ Researcher's Signature: _____

Date: _____

Appendix J

Informed Consent Form for Child/Youth

Informed Consent Form

The purpose of an informed consent is to make sure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide enough information so that you have the chance to decide whether you wish to participate in the study.

Title of study: Assessment of Risk and Need Factors and Service Use in Diverted Youth

Research personnel: The following people are involved in this research project and may be contacted at any time: Jennifer van de Ven (Principle Investigator, 520-2600, ext. 1415); Dr. R. Hoge (Faculty Sponsor, 520-5773). If you have any concerns about this study then your parents can speak to Dr. M. Gick, Chair, Carleton University Research Ethics Committee for Psychological Research, 520-2600, ext. 2664) or Dr. K. Matheson (Chair, Dept. of Psychology, 520-2600, ext. 2648).

Purpose: The purpose of this study is to look at the reasons why youths commit crime. This study will look at these reasons by talking to youths that are involved in diversion. When a person does something that is against the law, instead of being charged by the police, a person who is involved in diversion is given a different choice, like going to a program in the community. Another goal of this study is to look at the programs that youth are diverted to. Youths who are involved in diversion will be compared to a group of youths that were charged by the police. The two groups will be compared on the factors that explain why they committed crimes. The two groups will also be compared to see if they commit more crimes later on. This study will hopefully help police to decide the best way to help youths that do things that are against the law.

Task requirements: You will be asked questions by the research person about how you act in school, with your friends, and at home. You will also be asked to answer questions on paper that look at your personality and how you think and act.

Duration and locale: The questions that you will be asked to answer should take about two hours. Testing will take place at the closest police center to where you live.

Potential risk/discomfort: There are no potential physical risks in this study, but some of the information will involve personal and sensitive questions. You can choose not to answer specific questions, or withdraw at any time without penalty.

Anonymity/confidentiality: The data collected in this study are confidential; this means that nobody except for the research people will know your answers to the questions. All of the information you give to the researcher is coded so that your name cannot be matched with your information. The researchers doing this study are the only people that can see your coded information. In some situations, the researcher must break the confidentiality agreement. If child abuse or neglect is known or strongly suspected, the researcher is required by law to notify the Children's Aid Society. If a participant is

believed to be a threat to himself/herself or to others, the investigator may have to notify the appropriate authorities.

Right to withdraw: Your participation in this study is totally voluntary. At any time during the study, you have the right to not answer any questions or to leave the study without penalty.

Signatures

I have read the above form and understand the conditions of my participation. My participation in this study is voluntary, and if for any reason, at any time, I wish to leave the experiment I can do this without having to give an explanation and with no penalty. I also know that the information collected in this study cannot be matched with my name. My signature shows that I agree to participate in the study.

Participant's Name: _____ Participant's Signature: _____
Researcher's Name: _____ Researcher's Signature: _____

Date: _____

Appendix K
Treatment Intensity Ratings

Treatment Intensity Ratings

Current referral(s) by the Ottawa Police Service:

Level of Treatment Services:

	low intensity	moderate intensity	high intensity
1.	☒	☐	☐ Warning
2.	☒	☐	☐ Formal Caution
3.	☒	☐	☐ City of Ottawa Recreation Programs
4.	☒	☐	☐ Juvenile Firesetters Program
5.	☒	☐	☐ Ottawa Police Youth Centre (Boys & Girls Club of Ottawa)
6.	☐	☒	☐ Project Early Intervention
7.	☐	☐	☒ CHEO (Psych./Outpatient/Inpatient)
8.	☐	☐	☒ Crossroads Treatment Centre – day treatment
9.	☐	☐	☒ Crossroads – residential care
10.	☐	☐	☒ Crossroads – intensive services program
11.	☐	☐	☒ Regional Children's Mental Health Centre (Royal Ottawa Hospital)
12.	☐	☒	☐ School Based Counselling Service
13.	☐	☐	☒ David Smith Centre
14.	☐	☒	☐ John Howard Society
15.	☒	☐	☐ Mediation
16.	☐	☒	☐ Preventive Intervention at the Pre-court Level (PIP – Boys & Girls Club)
17.	☐	☒	☐ Alternative Response in Communities: Project Cura (ARC)
18.	☐	☐	☒ Robert/Smarts Centre Secure Treatment
19.	☐	☐	☒ Robert/Smarts Centre Crisis Intervention
20.	☐	☐	☒ Robert/Smarts Centre Mental Health Residential Program
21.	☐	☒	☐ Robert/Smarts Centre Day Treatment
22.	☐	☒	☐ Robert/Smarts Centre A.S.A.P.
23.	☒	☐	☐ Voluntary Monitoring Program
24.	☒	☐	☐ Youth Justice Committee
25.	☒	☐	☐ Wraparound
26.	☒	☐	☐ Dispute Resolution Centre
27.	☐	☒	☐ Elizabeth Fry Society (i.e., anger management, life skills, conflict resolution)
28.	☒	☐	☐ Elizabeth Fry Society Shoptheft Program
29.	☐	☐	☒ Rideauwood Addictions Family Services
30.	☐	☒	☐ Youth Services Bureau
31.	☒	☐	☐ Mobile Crisis Unit (YSB)
32.	☐	☒	☐ Maison Fraternite
33.	☐	☐	☒ Centre Psycho Sociale
34.	☒	☐	☐ 2 low intensity services
35.	☐	☒	☐ 1 low intensity service & 1 moderate intensity service
36.	☐	☒	☐ 2 moderate intensity services
37.	☐	☐	☒ 1 moderate intensity service & 1 high intensity service

Appendix L

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

**YOUTH LEVEL OF SERVICE/CASE
MANAGEMENT INVENTORY (YLS/CMI)
INTERVIEW GUIDE**

**Robert D. Hoge, Ph.D., C.Psych.
Carleton University**

Client name: _____
DOB: _____
Referral: _____
Interviewer: _____
Date: _____

Criminal and Disposition History

1. I'm going to ask you some questions about why you are involved with the police this time.

1.1. What crime(s) were you involved in?

1.2. Tell me about the circumstances of the crime. (Who were you with; did you plan this action)

1.3. How do you feel now about the crime? What about the victim(s)?

2. I would also like to ask you some questions about things you might have done before.

2.1. How old were you when you first got into trouble? What did you do?

2.2. Have you ever been involved with the police before this?

2.3. Have you ever been convicted of a crime before?

2.4. Have you been on probation? Have you been in custody?

2.5. [If probation or custody] Have you ever participated in programs, counselling or any other kind of treatment while on probation or in custody? Can you tell me what they involved?

Family Circumstances/Parenting

3. Who are you living with now? How long have you been there? [If not living with parents, probe history of living arrangements].
4. I am going to ask you some questions about your parents (or guardians).
 - 4.1. How do you feel you get along with your mother/father/guardian? How would you describe your relationship with them?
 - 4.2. Are there are lot of rules at home? Do you think they are fair?
 - 4.3. How tough are you parents about enforcing the rules?
 - 4.4. What do your parents do when you break the rules? How do they discipline you?
 - 4.5. Do you have brothers/sisters? How do you get along? Is there much fighting at home?
 - 4.6. How do your Mom and Dad get along?
 - 4.7. Do you Mom and Dad work? What do they do? Is the family income adequate?
 - 4.8. Anything else you would like to tell me about your home life?

Education/Employment

5. Are you in school right now? Are you working?
6. [For those in school] I'm now going to ask you some questions about school.
 - 6.1. How well are you doing in your school work? Have you been doing better (or worse) recently?
 - 6.2. What subjects do you like; which ones do you not like?
 - 6.3. Have you ever been assessed by a psychologist or special education teacher? Do you know what the result was?
 - 6.4. Have you had any trouble in school over the past year or so? Have you been suspended or expelled? Have your parents been called to the school because of problems?

- 6.5. How well have you been getting along with your teachers and with other students?
- 6.6. Do you skip school?
- 7. Are you working now? Is it part-time or full-time?
- 8. How well do you like the job? How do you get along with supervisors/managers?
- 9. [If not working or in school] Are you looking for work? What efforts have you made?

Peer Relations

- 10. I would like to know a little about your friends, the people you hang out with.
 - 10.1. Who are your best friends at present?
 - 10.2. Are you involved in a relationship at the moment? Can you tell me something about this individual?
 - 10.3. Are there other people that you consider friends?
 - 10.4. Have any of your friends been involved with the police? Have any been arrested?
 - 10.5. Do your friends use drugs?
 - 10.6. Are you a member of a gang? Do you know gang members?

Substance Abuse

- 11. I would like to ask some questions about your use of alcohol:
 - 11.1. Do you drink beer, wine, or any other alcoholic drink? When did you first drink alcohol?
 - 11.2. How much do you drink? If you get drunk, how do you act?
- 12. Now I would like to ask you some questions about drug use.
 - 12.1. Do you use drugs such as marijuana, cocaine, ecstasy, etc.? When did you begin and how much do you now use?
 - 12.2. Do you usually use drugs when you are by yourself or with friends?
- 13. Do you think that your drinking or drug use is a problem? Do your parents worry about your use of these substances?

14. Do you think your criminal activity is related to drug or alcohol use?
15. Would you like to get some help to stop drinking or drug use?

Leisure/Recreation

16. Are you a member of any clubs, organizations or sports teams at school or in the community? Do you enjoy these activities? Would you like to be more involved in these activities?
17. What are the kinds of things that really interest you (sports, hobbies, etc.)? Are there new things you would like to learn?

Personality/Behaviour

18. How do you feel about yourself? Do you generally feel good about things? Are you sometimes disappointed in yourself?
19. Do you get angry about things? What kinds of things make you especially angry?
20. How do you usually react when you are angry? Do you often get into fights?
21. Do you feel that you are easily frustrated or do you think you are pretty easygoing?
22. Do you have trouble concentrating? Have you ever been told that you have a problem with concentration or with attention?
23. How do you usually feel when you do something wrong? Do you feel bad when you hurt someone?
24. Do you ever feel very anxious or depressed? How often do you have these feelings?
25. Do you feel that you are good at planning things or do you tend to do things on the spur of the moment?
26. Are there things bothering you at the moment about friends, your school, your family, etc.?

Attitudes, Values, Beliefs

27. How do you feel about the crimes you committed (or were alleged to have committed)? Do you have feelings about the victims of the crimes?
28. Do you think you were treated fairly by the police, the court, etc.? Are most people treated fairly by the police and the courts?

- 29. [If has received a disposition] How do you feel about your sentence?
- 30. Do you think that people who do not break the law are better than those that do?
- 31. Do you think you are treated fairly by your parents? Do you think you should obey their rules?
- 32. What about school? Do you think people are treated fairly by teachers and other staff?

Other Needs/Special Considerations

Current Family/Parent(s)

(Note: Repeat questions 33 to 41.1 only if the parent(s) or legal guardians who raised the youth are different from the parents or legal guardians who are currently responsible for the youth)

- 33. Now I want to spend some more time talking about your parents (or legal guardians) and family.
 - 33.1. To your knowledge has anyone in your family (your mother or father, brother or sisters) been in trouble with the law?
 - 33.2. What happened? Was anyone arrested? What were they arrested for?
 - 33.3. Did they go to court?
 - 33.4. How often did this happen?
- 34. Do you know if either of your parents had any health problems?
 - 34.1. Has either of your parents seen a doctor or counsellor to deal with these problems?
 - 34.2. Have either of your parents ever complained of being depressed or upset and didn't feel like they could deal with it?
 - 34.3. Have they ever been hospitalized or on medication?
- 35. Does either of your parents drink alcohol? Now or over the last two years?
 - 35.1. How often do they drink?
 - 35.2. How do they act toward you when they drink?
 - 35.3. Has alcohol contributed to any problems for your parent(s); for you?

- 35.4. Does either of your parents use drugs? Now or over the last two years?
- 35.5. What types of drugs?
- 35.6. How often do your parents use drugs?
- 35.7. How do they act toward you when they use?
- 35.8. Has drug use contributed to any problems for your parent(s); for you?
- 35.9. Has either of your parents received any treatment?
- 36. How well would you say your parents get along?
 - 36.1. Do they ever disagree with each other? What happens when they disagree?
 - 36.2. Do they call each other names, threaten each other, throw things, hit or in any other way try to harm each other?
 - 36.3. Have the police ever had to come to your home because of fighting?
 - 36.4. How safe do you feel in the home?
- 37. Does your family have any serious financial problems (e.g., has difficulty paying for rent or buying food)?
 - 37.1. Have you noticed if money is a problem for your parents?
 - 37.2. Do they ever worry about how they are going to pay the bills? Buy you things?
 - 37.3. Do they ever worry about paying rent?
 - 37.4. Do they like where they live and feel good about staying there?
- 38. How did your parents react when you got into trouble with the police?
 - 38.1. How do they feel about your current situation? (involvement in diversion)
 - 38.2. Was your mom/dad willing to talk to the police to work on a plan to ensure that you do not get into trouble with the law again?

39. How do your parents feel about the legal system (police, judges, laws, lawyers)? Do they think it is fair?
- 39.1. Are you aware of any reason why your parents would not be willing to meet with me or someone from the police department?
40. Has your father (stepfather) been physically abusive to you or others in the family; that is, hitting or smacking you or other members of the family? sexual abuse? emotional abuse?
- 40.1. (In case of **physical abuse**) Can you tell me about the nature of the abuse, for example, was it a slap or a punch?
- 40.2. How often did this occur?
- 40.3. When was the last time that this occurred?
- 40.4. What is the name of the perpetrator? (if father/stepfather not the perpetrator)
- 40.5. Can you tell me where this person lives and what their phone number is?
- 40.6. (In case of **sexual abuse**) Can you tell me about the nature of the abuse, for example, were you touched somewhere that made you feel uncomfortable or were you made to do something of a sexual nature that made you feel uncomfortable?
- 40.7. How often did this occur?
- 40.8. When was the last time that this occurred?
- 40.9. What is the name of the perpetrator? (if father/stepfather not the perpetrator)
- 40.10. Can you tell me where this person lives and what their phone number is?
- 40.11. (In case of **emotional abuse**) Can you tell me about the nature of the abuse, for example, were you made to feel rejected, isolated, ignored, or corrupted?
- 40.12. How often did this occur?
- 40.13. When was the last time that this occurred?
- 40.14. Has your mother (stepmother) been physically abusive to you or others in the family; that is, hitting or smacking you or other members of the family? sexual abuse? emotional abuse?

- 40.15. (In case of **physical abuse**) Can you tell me about the nature of the abuse, for example, was it a slap or a punch?
- 40.16. How often did this occur?
- 40.17. When was the last time that this occurred?
- 40.18. (In case of **sexual abuse**) Can you tell me about the nature of the abuse, for example, were you touched somewhere that made you feel uncomfortable or were you made to do something of a sexual nature that made you feel uncomfortable?
- 40.19. How often did this occur?
- 40.20. When was the last time that this occurred?
- 40.21. (In case of **emotional abuse**) Can you tell me about the nature of the abuse, for example, were you made to feel rejected, isolated, ignored, or corrupted?
- 40.22. How often did this occur?
- 40.23. When was the last time that this occurred?
41. Have you ever been neglected by your parents, in terms of food or clothing, or providing for your personal well-being or safety?
- 41.1. How often did this occur?
- 41.2. When was the last time that this occurred?
42. Do you have a recent history of involvement with the Department of Youth and Family Services (Children's Aid Society) or do you have an open case with DFYS?
43. Over the last year are you aware of any family crisis or serious problems facing the family?
- 43.1. Has anything happened that really made your parents sad, upset, or angry? (this might include a serious illness or death in the family, family break up or similar problems)

Youth

44. Do you have any health problems?
45. Do you have any physical problems that get in the way of living?

46. While at school have you ever been referred for an academic assessment?
- 46.1. Do you know of the results of the assessment?
- 46.2. Have you ever been referred to a special class?
47. Have you ever been diagnosed as having a learning disability – like Attention Deficit Disorder or Dyslexia?
48. Would you say your grades in school have been pretty much what you are capable of getting- or do you think you could do much better if you tried?
49. When you are faced with problems or a difficult situation, how do you respond; how do you handle these situations?
50. Do you see yourself, generally, as being shy or withdrawn, or do you find it pretty easy to be with other people and feel comfortable with them?
51. Are most of your friends and people you hang out with about your age or not?
52. Have you ever been diagnosed as having depression? Have you ever gone to see a doctor or someone who said you were depressed?
- 52.1. Do you feel that you are experiencing depression lately, over the last few weeks and months?
53. Now I am going to say some statements that I would like you to respond to by saying whether you strongly disagree, disagree, agree, or strongly agree to the statements. In case you forget, the possible responses are written down on this piece of paper. Youth gets an X if answers include three or more of the following:
Strongly disagree/agree to:
53.1. Generally, I'm satisfied with myself
53.2. I am able to do things as well as most people
Strongly agree/agree to:
53.3. I wish I could have more respect for myself
53.4. I feel useless at times
53.5. I don't feel I have much to be proud of
54. Are you sexually active? If yes, how old were you when you became sexually active?
- 54.1. How many partners have you had?
- 54.2. Is there something you are intimate with right now?
- 54.3. Who made the decision to have sex? Was it consensual (did you both agree)?

- 54.4. Was either of you concerned about safe-sex?
- 54.5. What precautions did you and your partner take?
- 54.6. Has anyone ever rejected your sexual advances? How did you react?
- 55. Are you aware of having negative attitudes or feelings toward persons who are of a different cultural, racial or ethnic background than yourself?
 - 55.1. Are you aware of having negative attitudes or feelings toward persons of the opposite gender- (girls, women/boys, men)?
- 56. Would you say that you relate well and communicate well with other people or not?
- 57. Do you feel responsible for or guilty about any of your actions that have led to your involvement with the police in the current incident or do you feel, basically, that you've done nothing wrong?
 - 57.1. Do you ever worry about finishing school?
 - 57.2. Do you ever worry about drug and alcohol use?
- 58. Have you ever seen a psychologist or psychiatrist either for a psychological evaluation or psychological treatment or counselling? (Look for evidence that the youth is actively psychotic – signs of hallucinations and delusions, etc.)
 - 58.1. Do you have any problems with seeing or hearing things?
- 59. Do you have any concerns about your safety or protection when you are in your neighbourhood?
- 60. Have you ever been arrested for physically or sexually assaulting someone?
- 61. Have you ever been in trouble for assaulting or fighting with a person in authority (e.g., teacher, police officer, probation officer, corrections officer)?
- 62. Have you ever been arrested on a weapons charge?
- 63. Did you ever start a fire?
 - 63.1. Have you ever been arrested for starting or attempting to start a fire?
- 64. Would you consider the place where you live as safe?

Is there anything else you would like to discuss with me? Are there any questions you would like to ask?

Appendix M
Debriefing Form

Debriefing

The purpose of this study was to look at the risk and need factors associated with the criminal behaviour of youths that have been diverted from the criminal justice system, and to survey community placements to which youth are diverted. This study will examine the types of treatment programs to which youth have been referred to by police officers to see if the factors targeted in the programs correspond to the risk and need factors that were identified in the study. Another purpose of this study was to compare the risk and need factors and reoffending rates of youths that have been diverted to youths that have been charged.

Research has shown that an offender's future risk of criminal behaviour can be reduced if the appropriate treatment services are delivered. Specifically, for the high-risk offender, we need intensive service whereas for the low-risk offender, minimal or no intervention is sufficient to reduce the likelihood of committing future crimes; this is called the risk principle. In addition, treatment must focus on dynamic attributes of the offender that, when changed, are associated with changes in the probability of recidivism; these attributes are called criminogenic needs. Thus, according to the need principle, treatment must target criminogenic needs in order to reduce the risk of recidivism. Studies also indicate that treatment programs that are delivered in a style and mode that is consistent with the ability and learning style of the offender will be most effective; this is the basis of the responsivity principle. The most effective treatments include behavioural, social learning, and cognitive behavioural styles of service. Finally, research has demonstrated that the effects of appropriate treatment are more pronounced in community rather than institutional settings.

In order to determine the most effective treatment services for a particular case, it is necessary to assess risk and need factors, as was done in the present study. The risk/need factors that were assessed in this study included previous and current offences/dispositions, family and parenting, education, peer relations, substance abuse, leisure and recreational activities, personality and behaviour, and attitudes. If the results show that the treatment was targeted appropriately for diverted youths, then this will hopefully translate into reducing the amount of crime committed by these individuals and the associated costs to society.

The results of this study also will be useful for police officers that deal with youths in the field. Officers must essentially conduct risk assessments of youths and then decide on an appropriate course of action, such as charging or diverting the youth. If police officers use risk and need information in making their decisions, this can reduce the amount of time that will be needed to deal with a particular youth in the future. This would be the case if the youth's risk to reoffend were reduced through referral and participation in appropriate services. As well, the results of this study may help the Ottawa Police Service to determine if there are gaps in the services that are available to youths who are committing crimes and effective services can be recommended if appropriate. It is hoped that this study will help to determine the best way for police to help youths that come into contact with the law. Knowledge of risk and need factors and promising assessment tools can guide future research with young children and can be useful for police officers to help youths stay out of trouble with the law.

Your family's time and participation in this research are greatly appreciated! If you have any questions or comments about this research, then please feel free to contact Jennifer van de Ven (Principle Investigator, 520-2600, ext. 1415) or Dr. R. Hoge (Faculty Sponsor, 520-5773). Should you have any ethical or other concerns about this study then please contact Dr. M. Gick, Chair, Carleton University Research Ethics Committee for Psychological Research, 520-2600, ext. 2664) or Dr. K. Matheson (Chair, Dept. of Psychology, 520-2600, ext. 2648). If you are in need of further resources from the Ottawa Police Service please contact L. Logue (Youth Coordinator, 236-1222, ext. 5342), S. Brown (Staff Sergeant, 236-1222, ext. 5346), or A. Sadaka (Sergeant, 236-1222, ext. 5499). Additional resources that may be helpful for you or your child include: 24 Hour Distress Lines: Distress Center 238-3311; Counselling Services: Family Service Center of Ottawa 725-3601, Catholic Family Service of Ottawa 233-8478, Jewish Family Services of Ottawa 722-2225, Centre Psychosociale Pour Enfants et Familles d'Ottawa 789-2240; Community Information Center of Ottawa 241-4636; Children's Aid Society 747-7800; Parent's Help Line (24 hours) Toll Free 1-888-603-9100; Kid's Help Phone (24 hours) Toll Free 1-800-668-6868.

Appendix N

Letter of Permission from the Ottawa Police Service

November 26, 2001

Sir / Madame,

Re: Jennifer van de Ven
Dissertation Prospectus
Research Partnership with Ottawa Police Service

Please be advised that the Ottawa Police Service is pleased to grant Ms. J. van de Ven permission to conduct a research initiative with our Youth Intervention / Diversion Unit, which will form the basis of her doctoral dissertation. The research phase is set to commence in January 2002 and terminate in June 2003.

We look forward to working with Ms. van de Ven throughout this initiative. Should you have any questions, please feel free to contact one of the following persons:

Staff Sergeant Scott Brown	236-1222,	extension 5346
C. Louise Logue	236-1222,	extension 5342
Sergeant Atallah Sadaka	236-1222,	extension 5499

Sincerely,

Dr. Gail Johnson
Director Corporate Planning

Working together for a safer community
La sécurité de notre communauté, un travail d'équipe

Appendix O
Age Distributions by Group

Figure O. Age distributions at the time of the current incident for under 12, diversion, and charged groups.

Note. Age range for under 12 group = 6.27-11.96. Age range for diversion group = 12.01-17.99. Age range for charged group = 12.15-17.99.

Appendix P

Normative Data for the YLS/CMI: SV and YLS/CMI

Age 12 to 17 Sample

Data in Tables P1 to P9 are based on $n = 184$ females and $n = 488$ males.

Table P1

Total Score on YLS/CMI:SV

Raw Score	Percentile	
	Males	Females
8	100.0	100.0
7	86.7	90.2
6	68.0	78.3
5	50.2	65.8
4	36.9	53.8
3	26.6	44.6
2	18.0	37.0
1	9.8	19.6
0	3.5	10.3
<i>M</i>	5.00	4.01
<i>SD</i>	2.28	2.56

Table P2

YLS/CMI:SV History of Delinquency/Conduct Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	35.8	52.8
<i>M</i>	.64	.47
<i>SD</i>	.48	.50

Table P3

YLS/CMI:SV Current School or Employment Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	34.3	53.6
<i>M</i>	.66	.46
<i>SD</i>	.48	.50

Table P4

YLS/CMI:SV Some Criminal Friends

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	20.2	36.4
<i>M</i>	.80	.64
<i>SD</i>	.40	.48

Table P5

YLS/CMI:SV Alcohol/Drug Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	53.4	61.7
<i>M</i>	.47	.38
<i>SD</i>	.50	.49

Table P6

YLS/CMI:SV Leisure/Recreation

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	33.8	43.0
<i>M</i>	.66	.57
<i>SD</i>	.47	.50

Table P7

YLS/CMI:SV Personality/Behaviour

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	36.4	47.8
<i>M</i>	.64	.52
<i>SD</i>	.48	.50

Table P8

YLS/CMI:SV Family Circumstances/Parenting

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	19.7	28.7
<i>M</i>	.80	.71
<i>SD</i>	.40	.45

Table P9

YLS/CMI:SV Attitudes/Orientation

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	6.7	13.4
<i>M</i>	.93	.87
<i>SD</i>	.25	.34

Under 12 Sample

Data in Tables P10 to P18 are based on $n = 7$ females and $n = 71$ males.

Table P10

Total Score on YLS/CMI:SV

Raw Score	Percentile	
	Males	Females
8	100.0	100.0
7	97.2	100.0
6	84.5	100.0
5	56.3	71.4
4	32.4	71.4
3	21.1	42.9
2	15.5	42.9
1	8.5	28.6
0	2.8	28.6
<i>M</i>	4.82	3.43
<i>SD</i>	1.91	2.15

Table P11

YLS/CMI:SV History of Delinquency/Conduct Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	31.0	71.4
<i>M</i>	.69	.29
<i>SD</i>	.43	.49

Table P12

YLS/CMI:SV Current School or Employment Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	23.5	50.0
<i>M</i>	.76	.50
<i>SD</i>	.43	.55

Table P13

YLS/CMI:SV Some Criminal Friends

Raw Score	Percentile	
	Males	Females
1	100.0	0.0
0	59.2	100.0
<i>M</i>	.41	0.0
<i>SD</i>	.50	0.0

Table P14

YLS/CMI:SV Alcohol/Drug Problems

Raw Score	Percentile	
	Males	Females
1	100.0	0.0
0	96.2	100.0
<i>M</i>	.04	0.0
<i>SD</i>	.19	0.0

Table P15

YLS/CMI:SV Leisure/Recreation

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	34.0	0.0
<i>M</i>	.66	1.00
<i>SD</i>	.48	0.0

Table P16

YLS/CMI:SV Personality/Behaviour

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	18.2	57.1
<i>M</i>	.82	.43
<i>SD</i>	.39	.54

Table P17

YLS/CMI:SV Family Circumstances/Parenting

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	7.4	28.6
<i>M</i>	.93	.71
<i>SD</i>	.26	.49

Table P18

YLS/CMI:SV Attitudes/Orientation

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	5.6	28.6
<i>M</i>	.94	.71
<i>SD</i>	.23	.49

Data in Tables P19 to P31 are based on $n = 78$. Data are not presented for each gender due to the small number of females ($n = 2$) in the under 12 interview sample.

Table P19

YLS/CMI Total Risk/Need Score

Raw Score	Percentile
31+	100.0
30	95.2
29	95.2
28	95.2
27	95.2
26	95.2
25	95.2
24	95.2
23	95.2
22	85.7
21	85.7
20	85.7
19	76.2
18	66.7
17	61.9
16	57.1
15	57.1
14	42.9
13	42.9
12	38.1
11	19.0
10	14.3
9	9.5
8	4.8
7	4.8
6	4.8
5	4.8
4	4.8
3	4.8
2	4.8
1	4.8
0	4.8
<i>M</i>	15.62
<i>SD</i>	6.15

Table P20

YLS/CMI Prior and Current Offences

Raw Score	Percentile
0+	100.0
<i>M</i>	0.0
<i>SD</i>	0.0

Table P21

YLS/CMI Family Circumstances/Parenting

Raw Score	Percentile
6	100.0
5	95.2
4	90.5
3	76.2
2	61.9
1	38.1
0	4.8
<i>M</i>	2.33
<i>SD</i>	1.56

Table P22

YLS/CMI Education/Employment

Raw Score	Percentile
6+	100.0
5	90.5
4	61.9
3	52.4
2	19.0
1	9.5
0	4.8
<i>M</i>	3.62
<i>SD</i>	1.60

Table P23

YLS/CMI Peer Relations

Raw Score	Percentile
4	100.0
3	90.5
2	90.5
1	47.6
0	42.9
<i>M</i>	1.29
<i>SD</i>	1.31

Table P24

YLS/CMI Substance Abuse

Raw Score	Percentile
2+	100.0
1	90.5
0	90.5
<i>M</i>	.19
<i>SD</i>	.60

Table P25

YLS/CMI Leisure/Recreation

Raw Score	Percentile
3	100.0
2	81.0
1	33.3
0	19.0
<i>M</i>	1.67
<i>SD</i>	1.02

Table P26

YLS/CMI Personality/Behaviour

Raw Score	Percentile
7	100.0
6	85.7
5	71.4
4	47.6
3	23.8
2	4.8
1	4.8
0	4.8
<i>M</i>	4.57
<i>SD</i>	1.69

Table P27

YLS/CMI Attitudes/Orientation

Raw Score	Percentile
4+	100.0
3	95.2
2	71.4
1	23.8
0	14.3
<i>M</i>	1.95
<i>SD</i>	1.07

Table P28

YLS/CMI Total Strengths

Raw Score	Percentile
1	100.0
0	95.2
<i>M</i>	.05
<i>SD</i>	.22

Table P29

YLS/CMI Total Other Needs

Raw Score	Percentile
13+	100.0
12	95.2
11	95.2
10	85.7
9	81.0
8	76.2
7	71.4
6	61.9
5	57.1
4	52.4
3	33.3
2	23.8
1	9.5
0	9.5
<i>M</i>	5.57
<i>SD</i>	3.60

Table P30

YLS/CMI Other Needs: Family

Raw Score	Percentile
4+	100.0
3	90.5
2	81.0
1	47.6
0	19.0
<i>M</i>	1.62
<i>SD</i>	1.20

Table P31

YLS/CMI Other Needs: Youth

Raw Score	Percentile
9+	100.0
8	95.2
7	81.0
6	76.2
5	76.2
4	61.9
3	52.4
2	38.1
1	14.3
0	9.5
<i>M</i>	3.95
<i>SD</i>	2.73

Diversion Sample

Data in Tables P32 to P40 are based on $n = 146$ females and $n = 277$ males.

Table P32

Total Score on YLS/CMI:SV

Raw Score	Percentile	
	Males	Females
8	100.0	100.0
7	94.6	93.8
6	81.2	84.2
5	66.1	74.7
4	50.9	61.6
3	39.7	54.1
2	29.2	45.2
1	15.9	24.7
0	6.1	13.0
<i>M</i>	4.16	3.49
<i>SD</i>	2.31	2.49

Table P33

YLS/CMI:SV History of Delinquency/Conduct Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	50.7	60.0
<i>M</i>	.49	.40
<i>SD</i>	.50	.49

Table P34

YLS/CMI:SV Current School or Employment Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	46.2	64.2
<i>M</i>	.54	.36
<i>SD</i>	.50	.48

Table P35

YLS/CMI:SV Some Criminal Friends

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	38.2	43.1
<i>M</i>	.62	.57
<i>SD</i>	.49	.50

Table P36

YLS/CMI:SV Alcohol/Drug Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	69.2	68.9
<i>M</i>	.31	.31
<i>SD</i>	.46	.47

Table P37

YLS/CMI:SV Leisure/Recreation

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	47.3	51.1
<i>M</i>	.53	.49
<i>SD</i>	.50	.50

Table P38

YLS/CMI:SV Personality/Behaviour

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	43.7	56.1
<i>M</i>	.56	.44
<i>SD</i>	.50	.50

Table P39

YLS/CMI:SV Family Circumstances/Parenting

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	26.4	33.3
<i>M</i>	.74	.67
<i>SD</i>	.44	.47

Table P40

YLS/CMI:SV Attitudes/Orientation

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	9.9	16.3
<i>M</i>	.90	.84
<i>SD</i>	.30	.37

Data in Tables P41 to P53 are based on $n = 29$ females and $n = 51$ males in the diversion interview sample.

Table P41

YLS/CMI Total Risk/Need Score

Raw Score	Percentile	
	Males	Females
28+	100.0	100.0
27	98.0	100.0
26	98.0	96.6
25	98.0	96.6
24	98.0	96.6
23	96.1	86.2
22	94.1	82.8
21	92.2	75.9
20	86.3	75.9
19	82.4	72.4
18	78.4	72.4
17	68.6	62.1
16	66.7	58.6
15	66.7	58.6
14	56.9	58.6
13	51.0	58.6
12	49.0	58.6
11	45.1	55.2
10	39.2	51.7
9	35.3	51.7
8	33.3	48.3
7	19.6	41.4
6	19.6	37.9
5	13.7	31.0
4	7.8	27.6
3	3.9	17.2
2	3.9	17.2
1	2.0	10.3
0	2.0	3.4
<i>M</i>	12.96	11.97
<i>SD</i>	6.39	8.74

Table P42

YLS/CMI Prior and Current Offences

Raw Score	Percentile	
	Males	Females
0+	100.0	100.0
<i>M</i>	0.0	0.0
<i>SD</i>	0.0	0.0

Table P43

YLS/CMI Family Circumstances/Parenting

Raw Score	Percentile	
	Males	Females
6	100.0	100.0
5	92.2	93.1
4	90.2	93.1
3	80.4	75.9
2	72.5	69.0
1	41.2	62.1
0	9.8	24.1
<i>M</i>	2.14	1.83
<i>SD</i>	1.63	1.81

Table P44

YLS/CMI Education/Employment

Raw Score	Percentile	
	Males	Females
6+	100.0	100.0
5	96.1	96.6
4	90.2	93.1
3	74.5	62.1
2	54.9	55.2
1	33.3	55.2
0	21.6	37.9
<i>M</i>	2.29	2.0
<i>SD</i>	1.71	2.0

Table P45

YLS/CMI Peer Relations

Raw Score	Percentile	
	Males	Females
4	100.0	100.0
3	66.7	72.4
2	66.7	69.0
1	23.5	31.0
0	11.8	20.7
<i>M</i>	2.31	2.07
<i>SD</i>	1.36	1.46

Table P46

YLS/CMI Substance Abuse

Raw Score	Percentile	
	Males	Females
5	100.0	100.0
4	100.0	96.6
3	94.1	82.8
2	90.2	75.9
1	78.4	72.4
0	66.7	58.6
<i>M</i>	.71	1.14
<i>SD</i>	1.19	1.66

Table P47

YLS/CMI Leisure/Recreation

Raw Score	Percentile	
	Males	Females
3	100.0	100.0
2	82.4	82.8
1	39.2	44.8
0	15.7	27.6
<i>M</i>	1.63	1.45
<i>SD</i>	.96	1.09

Table P48

YLS/CMI Personality/Behaviour

Raw Score	Percentile	
	Males	Females
6+	100.0	100.0
5	96.1	86.2
4	76.5	79.3
3	68.6	62.1
2	54.9	58.6
1	37.3	58.6
0	21.6	31.0
<i>M</i>	2.45	2.24
<i>SD</i>	1.93	2.28

Table P49

YLS/CMI Attitudes/Orientation

Raw Score	Percentile	
	Males	Females
4+	100.0	100.0
3	100.0	96.6
2	88.2	89.7
1	54.9	55.2
0	13.7	34.5
<i>M</i>	1.43	1.24
<i>SD</i>	.88	1.12

Table P50

YLS/CMI Total Strengths

Raw Score	Percentile	
	Males	Females
4+	100.0	100.0
3	100.0	96.6
2	98.0	93.1
1	96.1	89.7
0	88.2	72.4
<i>M</i>	.18	.48
<i>SD</i>	.56	.99

Table P51

YLS/CMI Total Other Needs

Raw Score	Percentile	
	Males	Females
17+	100.0	100.0
16	98.0	100.0
15	98.0	100.0
14	98.0	100.0
13	98.0	96.6
12	96.1	96.6
11	96.1	93.1
10	96.1	93.1
9	96.1	93.1
8	92.2	93.1
7	86.3	93.1
6	86.3	82.8
5	80.4	79.3
4	68.6	69.0
3	60.8	58.6
2	45.1	44.8
1	35.3	27.6
0	13.7	20.7
<i>M</i>	3.55	3.59
<i>SD</i>	3.45	3.44

Table P52

YLS/CMI Other Needs: Family

Raw Score	Percentile	
	Males	Females
5+	100.0	100.0
4	100.0	96.6
3	100.0	93.1
2	92.2	86.2
1	80.4	82.8
0	41.2	55.2
<i>M</i>	.86	.86
<i>SD</i>	.92	1.33

Table P53

YLS/CMI Other Needs: Youth

Raw Score	Percentile	
	Males	Females
14	100.0	100.0
13	98.0	100.0
12	98.0	100.0
11	98.0	100.0
10	98.0	100.0
9	96.1	100.0
8	96.1	96.6
7	96.1	93.1
6	88.2	93.1
5	86.3	89.7
4	78.4	79.3
3	68.6	69.0
2	64.7	58.6
1	43.1	48.3
0	21.6	20.7
<i>M</i>	2.69	2.52
<i>SD</i>	2.87	2.44

Charged SampleData in Tables P54 to P62 based on $n = 38$ females and $n = 211$ males.

Table P54

Total Score on YLS/CMI:SV

Raw Score	Percentile	
	Males	Females
8	100.0	100.0
7	76.3	76.3
6	50.7	55.3
5	29.4	31.6
4	18.5	23.7
3	9.5	7.9
2	3.3	5.3
1	1.9	5.3
0	1.9	5.3
<i>M</i>	6.10	6.00
<i>SD</i>	1.71	1.74

Table P55

YLS/CMI:SV History of Delinquency/Conduct Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	16.0	26.3
<i>M</i>	.84	.74
<i>SD</i>	.37	.45

Table P56

YLS/CMI:SV Current School or Employment Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	17.9	11.8
<i>M</i>	.82	.88
<i>SD</i>	.39	.33

Table P57

YLS/CMI:SV Some Criminal Friends

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	.50	15.8
<i>M</i>	1.00	.84
<i>SD</i>	.07	.37

Table P58

YLS/CMI:SV Alcohol/Drug Problems

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	31.9	36.0
<i>M</i>	.68	.64
<i>SD</i>	.47	.49

Table P59

YLS/CMI:SV Leisure/Recreation

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	18.9	17.2
<i>M</i>	.81	.83
<i>SD</i>	.39	.38

Table P60

YLS/CMI:SV Personality/Behaviour

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	26.9	17.6
<i>M</i>	.73	.82
<i>SD</i>	.45	.39

Table P61

YLS/CMI:SV Family Circumstances/Parenting

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	10.8	10.8
<i>M</i>	.89	.89
<i>SD</i>	.31	.32

Table P62

YLS/CMI:SV Attitudes/Orientation

Raw Score	Percentile	
	Males	Females
1	100.0	100.0
0	2.4	2.6
<i>M</i>	.98	.97
<i>SD</i>	.15	.16

Appendix Q

Additional Tables from Results Section

Table Q1

Descriptive Statistics and Internal Consistency Estimates of Assessment Measures

Measure	<i>M</i>	<i>SD</i>	Cronbach's
			α
CSS-M Total	25.84	13.88	.90
Law, Courts, Police	13.18	8.91	.88
Tolerance for Law Violations	8.17	4.84	.77
Identification with Criminal Others	4.37	2.60	.58
HIT Questionnaire Total	2.98	.83	.95
HIT Overt	3.03	.92	.92
HIT Covert	2.94	.85	.92
Self-Centered	2.90	.91	.84
Blaming Others	3.05	.85	.78
Minimizing/Mislabeling	3.16	.96	.85
Assuming the Worst	2.78	.90	.86
Opposition-Defiance	3.23	.82	.78
Physical Aggression	2.83	1.13	.91
Lying	3.30	.93	.83
Stealing	2.61	.92	.88
Anomalous Responding	4.22	.70	.70
Child Behavior Checklist	49.96	30.58	.96
<i>Competence Scales</i>			
Total Competence	35.01	10.09	.73
Activities	8.39	2.90	.67
Social	5.93	2.24	.54
School	3.54	1.46	.61
<i>CBCL/6-18 Empirically Based Scales</i>			
Total Problems	61.32	10.39	.96
Externalizing Problems	65.81	11.70	.93
Internalizing Problems	56.50	11.46	.89
Anxious/Depressed	4.71	4.14	.81
Withdrawal/Depressed	3.50	2.85	.70
Somatic Complaints	2.11	2.72	.78

Measure	<i>M</i>	<i>SD</i>	Cronbach's
			α
Social Problems	3.76	3.72	.80
Thought Problems	2.16	3.08	.79
Attention Problems	6.74	4.92	.87
Rule-Breaking Behavior	9.59	6.15	.85
Aggressive Behavior	13.73	9.71	.94
Other Problems	3.60	2.95	.60
<i>CBCL/6-18 DSM-Oriented Scales</i>			
Affective Problems	3.42	3.59	.79
Anxiety Problems	2.03	2.17	.69
Somatic Problems	1.52	2.06	.76
Attention Deficit/Hyperactivity Problems	5.45	3.87	.83
Oppositional Defiant Problems	5.32	3.23	.87
Conduct Problems	10.84	6.93	.88
Youth Self Report (YSR)	6.61	26.69	.94
<i>Competence Scales</i>			
Total Competence	37.00	9.12	.68
Activities	8.62	2.75	.61
Social	6.79	2.09	.46
<i>YSR Empirically Based Scales</i>			
Total Problems	55.69	11.41	.96
Externalizing Problems	61.76	12.55	.91
Internalizing Problems	51.68	12.38	.90
Anxious/Depressed	4.38	4.40	.82
Withdrawal/Depressed	3.35	2.77	.67
Somatic Complaints	3.58	3.63	.81
Social Problems	3.82	3.65	.78
Thought Problems	3.11	3.89	.81
Attention Problems	6.16	4.33	.84
Rule-Breaking Behavior	8.82	5.72	.83
Aggressive Behavior	11.73	7.51	.90
Other Problems	3.73	3.13	.69

	Cronbach's		
Measure	<i>M</i>	<i>SD</i>	α
<i>YSR DSM-Oriented Scales</i>			
Affective Problems	4.33	4.57	.83
Anxiety Problems	1.94	2.18	.68
Somatic Problems	2.43	2.67	.79
Attention Deficit/Hyperactivity Problems	5.26	3.62	.80
Oppositional Defiant Problems	4.59	2.82	.81
Conduct Problems	9.40	5.97	.86
Jesness Inventory			
<i>Personality Scales</i>			
Social Maladjustment (SM)	58.87	16.72	.89
Value Orientation (VO)	52.92	10.96	.86
Immaturity (Imm)	55.99	10.55	.74
Autism (Au)	57.39	9.45	.70
Alienation (Al)	58.38	11.69	.81
Manifest Aggression (MA)	50.24	12.09	.86
Withdrawal-Depression (Wd)	43.46	10.72	.80
Social Anxiety (SA)	39.70	11.12	.62
Repression (Rep)	48.55	12.63	.47
Denial (Den)	48.51	10.70	.93
Asocial Index (AI)	59.74	15.36	NA
<i>Subtype Scales</i>			
Undersocialized, active (AA)	49.13	13.09	.93
Undersocialized, passive (AP)	45.46	12.05	.91
Conformist (CFM)	46.61	12.77	.80
Group-oriented (CFC)	54.39	10.23	.82
Pragmatist (MP)	56.40	11.51	.73
Autonomy-oriented (NA)	56.99	13.64	.81
Introspective (NX)	46.72	10.52	.85
Inhibited (SE)	52.98	11.59	.89
Adaptive (CI)	51.46	11.87	.78

Measure	<i>M</i>	<i>SD</i>	Cronbach's <i>α</i>
Service Assessment for Children and Adolescents			
Ever	.63	.48	.68
Residential	.15	.36	.45
Outpatient	.50	.50	.41
School	.34	.48	.30
Last Year	.56	.50	.59
Residential	.11	.31	.42
Outpatient	.42	.50	.55
School	.32	.47	.24

Note. *n* = 101.

Table Q2

Unadjusted and Adjusted Mean Scores on the YLS/CMI Subscales across Groups

YLS/CMI Subscale	Group			
	Under 12 (<i>n</i> = 21)		Diversion (<i>n</i> = 80)	
	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SE</i>)	Unadjusted <i>M</i> (<i>SD</i>)	Adjusted <i>M</i> (<i>SE</i>)
Family	2.33 (1.56)	2.48 (.34)	2.03 (1.69)	1.99 (.17)
Education	3.62 (1.60)	3.74 (.37)	2.19 (1.82)	2.16 (.19)
Peers	1.29 (1.31)	1.32 (.30)	2.23 (1.40)	2.22 (.15)
Substance Abuse	.19 (.60)	.21 (.28)	.86 (1.38)	.86 (.14)
Leisure	1.67 (1.02)	1.70 (.22)	1.56 (1.00)	1.56 (.11)
Personality	4.57 (1.69)	4.67 (.43)	2.37 (2.05)	2.35 (.22)
Attitudes	1.95 (1.07)	2.02 (.21)	1.36 (.97)	1.34 (.11)

Note. Adjusted means evaluated at mean of covariate HIT Anomalous Responding score = 4.22.

Table Q3

Correlation Matrix for YSR and CBCL Summary Scores and YSR Syndrome and DSM-Oriented Scales

YSR Scale	CBCL TP	CBCL EXT	CBCL INT	CBCL TC	YSR TP	YSR EXT	YSR INT	YSR TC
Syndrome Scale								
AD	.25*	.08	.46***	-.18	.64***	.37***	.80***	-.21*
WD	.39***	.26**	.51***	-.19	.78***	.50***	.83***	-.20*
SC	.37***	.21*	.48***	-.10	.63***	.35***	.70***	-.10
SP	.37***	.28**	.33**	-.12	.76***	.54***	.56***	-.16
ThP	.37***	.25*	.33**	-.09	.74***	.42***	.55***	.05
AP	.58***	.45***	.42***	-.34***	.82***	.66***	.53***	-.32**
RB	.39***	.44***	.12	-.35***	.62***	.73***	.36***	-.38***
AB	.66***	.58***	.47***	-.38***	.83***	.84***	.48***	-.41***
OP	.22*	.10	.16	.10	.59***	.39***	.45***	.17
DSM-Oriented Scale								
AffP	.38***	.27**	.45***	-.17	.73***	.50***	.76***	-.18
AnxP	.19	.00	.41***	-.17	.58***	.28**	.68***	-.16
SomP	.39***	.23*	.48***	-.08	.58***	.33**	.65***	-.10
AdhP	.61***	.47***	.39***	-.23*	.78***	.66***	.47***	-.20*
OdP	.64***	.56***	.42***	-.37***	.79***	.79***	.46***	-.39***
CP	.55***	.54***	.29**	-.42***	.75***	.87***	.41***	-.47***

Note. YSR = Youth Self Report; CBCL = Child Behavior Checklist; TP = Total Problems; EXT = Externalizing; INT = Internalizing; TC = Total Competence; AD = Anxious/Depressed; WD = Withdrawn/Depressed; SC = Somatic Complaints; SP = Social Problems; ThP = Thought Problems; AP = Attention Problems; RB = Rule-Breaking Behavior; AB = Aggressive Behavior; OP = Other Problems; AffP = Affective Problems; AnxP = Anxiety Problems; SomP = Somatic Problems; AdhP = Attention Deficit/Hyperactivity Problems; OdP = Oppositional Defiant Problems; CP = Conduct Problems; $n = 101$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table Q4

Correlation Matrix for YSR and CBCL Summary Scores and CBCL Syndrome and DSM-Oriented Scales

CBCL Scale	CBCL TP	CBCL EXT	CBCL INT	CBCL TC	YSR TP	YSR EXT	YSR INT	YSR TC
Syndrome Scale								
AD	.64***	.37***	.85***	-.26**	.42***	.26*	.53***	-.08
WD	.70***	.48***	.83***	-.34**	.44***	.22*	.48***	-.14
SC	.52***	.31***	.68***	-.24*	.23*	.08	.25*	-.10
SP	.77***	.59***	.65***	-.36***	.49***	.43***	.35***	-.10
ThP	.65***	.45***	.55***	-.21*	.37***	.24*	.28**	.03
AP	.84***	.68***	.60***	-.39***	.51***	.47***	.22*	-.20*
RB	.64***	.73***	.30**	-.33**	.44***	.54***	.17	-.19
AB	.89***	.84***	.59***	-.46***	.54***	.60***	.26**	-.31**
OP	.69***	.49***	.49***	-.21*	.35***	.32**	.25*	-.08
DSM-Oriented Scale								
AffP	.73***	.52***	.75***	-.40***	.52***	.37***	.52***	-.21*
AnxP	.56***	.30**	.77***	-.20	.34***	.19	.45***	-.04
SomP	.48***	.30**	.62***	-.22*	.23*	.07	.24*	-.11
AdhP	.87***	.75***	.58***	-.36***	.46***	.44***	.19	-.17
OdP	.87***	.81***	.56***	-.44***	.53***	.56***	.27**	-.30**
CP	.80***	.86***	.42***	-.43***	.55***	.70***	.22*	-.28**

Note. YSR = Youth Self Report; CBCL = Child Behavior Checklist; TP = Total Problems; EXT = Externalizing; INT = Internalizing; TC = Total Competence; AD = Anxious/Depressed; WD = Withdrawn/Depressed; SC = Somatic Complaints; SP = Social Problems; ThP = Thought Problems; AP = Attention Problems; RB = Rule-Breaking Behavior; AB = Aggressive Behavior; OP = Other Problems; AffP = Affective Problems; AnxP = Anxiety Problems; SomP = Somatic Problems; AdhP = Attention Deficit/Hyperactivity Problems; OdP = Oppositional Defiant Problems; CP = Conduct Problems; $n = 101$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table Q5

Correlation Matrix for Syndrome and DSM-Oriented Scales of the YSR and CBCL

Scale	CBCL Syndrome Scale										CBCL DSM-Oriented				
	AD	WD	SC	SP	ThP	AP	RB	AB	OP	AffP	AnxP	Somp	AdhP	OdP	CP
YSR Syndrome Scale															
AD	.54***	.37***	.21*	.20*	.10	.09	.02	.14	.04	.46***	.49***	.21*	.06	.16	.07
WD	.52***	.50***	.17	.30**	.24*	.27**	.23*	.26**	.22*	.50***	.40***	.18	.22*	.25*	.26*
SC	.42***	.38***	.45***	.28**	.29**	.16	.07	.27**	.29**	.36***	.42***	.45***	.16	.26*	.17
SP	.28**	.25*	.08	.47***	.27**	.25*	.11	.34**	.17	.24*	.23*	.09	.21*	.29**	.31**
ThP	.33**	.33**	.10	.41***	.40***	.34**	.23*	.28**	.30**	.38***	.23*	.10	.32**	.23*	.28**
AP	.31**	.38***	.20*	.38***	.30**	.67***	.43***	.51***	.38***	.47***	.20*	.18	.61***	.54***	.50***
RB	.14	.23*	-.13	.19	.15	.34***	.70***	.35***	.13	.37***	.04	-.11	.30**	.38***	.57***
AB	.38***	.32**	.23*	.55***	.30**	.49***	.39***	.74***	.31**	.41***	.30**	.26*	.50***	.66***	.69***
OP	.17	.25*	-.001	.24*	.33**	.19	.23*	.08	.32**	.19	.11	-.03	.12	.09	.16
YSR DSM-Oriented Scale															
AffP	.46***	.39***	.16	.24*	.21*	.23*	.25*	.28**	.21*	.57***	.33**	.17	.22*	.29**	.27**
AnxP	.47***	.30**	.20*	.17	.12	.12	-.001	.07	.02	.34**	.49***	.18	.06	.12	.01
Somp	.39***	.36***	.46***	.30**	.27**	.15	.07	.30**	.31**	.31**	.39***	.48***	.17	.26**	.19
AdhP	.29**	.38***	.22*	.42***	.40***	.68***	.50***	.54***	.45***	.47***	.18	.22*	.67***	.55***	.53***
OdP	.33**	.33**	.20*	.45***	.28**	.53***	.50***	.68***	.29**	.44***	.23*	.23*	.52***	.68***	.68***
CP	.30**	.24*	.02	.47***	.22*	.42***	.52***	.61***	.24*	.37***	.22*	.04	.41***	.55***	.72***

Note: YSR = Youth Self Report; CBCL = Child Behavior Checklist; AD = Anxious/Depressed; WD = Withdrawn/Depressed; SC = Somatic Complaints; SP = Social Problems;

ThP = Thought Problems; AP = Attention Problems; RB = Rule-Breaking Behavior; AB = Aggressive Behavior; OP = Other Problems; AffP = Affective Problems; AnxP = Anxiety Problems; Somp = Somatic Problems; AdhP = Attention Deficit/Hyperactivity Problems; OdP = Oppositional Defiant Problems; CP = Conduct Problems; $n = 101$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table Q6

Descriptive Statistics for the CBCL among Diversion and Under 12 Groups

Scale	Group	
	Under 12 (<i>n</i> = 21)	Diversion (<i>n</i> = 80)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Total Problems	65.52 (10.06)	60.21 (10.24)
Externalizing	71.67 (9.19)	64.27 (11.85)
Internalizing	59.76 (9.52)	55.64 (11.82)
Total Competence	33.52 (9.52)	35.40 (10.26)
Activities	41.43 (9.73)	39.60 (9.36)
Social	34.81 (8.28)	40.03 (7.95)
School	35.76 (8.58)	40.94 (9.21)
Syndrome Scale		
Anxious/Depressed	59.57 (7.45)	57.63 (8.81)
Withdrawn/Depressed	61.14 (7.81)	59.01 (7.97)
Somatic Complaints	57.19 (8.44)	56.41 (7.83)
Social Problems	62.76 (8.46)	57.40 (8.39)
Thought Problems	56.14 (7.99)	55.44 (7.85)
Attention Problems	63.43 (10.70)	59.50 (9.62)
Rule-Breaking Behavior	69.24 (7.70)	66.57 (9.52)
Aggressive Behavior	75.24 (14.90)	64.24 (12.68)
DSM-Oriented Scale		
Affective Problems	59.67 (7.74)	57.97 (8.78)
Anxiety Problems	57.81 (7.47)	56.54 (7.67)
Somatic Problems	58.19 (8.97)	56.20 (8.06)
Attention Deficit/Hyperactivity Problems	62.38 (9.91)	58.81 (8.33)
Oppositional Defiant Problems	69.24 (10.25)	62.29 (10.20)
Conduct Problems	74.33 (9.21)	67.59 (9.58)

Note. Mean *T* scores are provided.

Table Q7

Descriptive Statistics for the YSR among Diversion and Under 12 Groups

Scale	Group	
	Under 12 (<i>n</i> = 21)	Diversion (<i>n</i> = 80)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Total Problems	58.48 (10.98)	54.96 (11.47)
Externalizing	65.33 (12.83)	60.82 (12.39)
Internalizing	51.14 (11.08)	51.82 (12.75)
Total Competence	35.90 (10.58)	37.29 (8.74)
Activities	39.67 (8.62)	39.53 (8.47)
Social	37.76 (10.09)	41.96 (7.79)
Syndrome Scale		
Anxious/Depressed	55.14 (7.25)	55.26 (7.58)
Withdrawn/Depressed	56.05 (7.45)	55.11 (6.92)
Somatic Complaints	57.38 (9.04)	56.59 (8.05)
Social Problems	60.43 (9.53)	55.39 (7.32)
Thought Problems	55.29 (7.60)	54.26 (7.20)
Attention Problems	61.33 (12.28)	57.60 (10.28)
Rule-Breaking Behavior	60.57 (10.50)	63.67 (9.75)
Aggressive Behavior	70.52 (14.44)	60.75 (10.45)
DSM-Oriented Scale		
Affective Problems	56.57 (8.05)	55.99 (8.40)
Anxiety Problems	53.33 (5.63)	53.41 (5.59)
Somatic Problems	58.33 (10.08)	56.80 (8.20)
Attention Deficit/Hyperactivity Problems	58.67 (9.55)	56.91 (7.84)
Oppositional Defiant Problems	64.48 (9.50)	59.39 (9.44)
Conduct Problems	70.10 (12.93)	65.08 (10.04)

Note. Mean *T* scores are provided.

Table Q8

Kaplan-Meier Survival Analyses with New Police Incidents among the Under 12 Group

	Cases	No. censored	% censored	M	SE	95% CI	Log rank χ^2	p
YLS/CMI:SV							4.24	.04
Low	28	23	82.1	484	27	430-537		
High	50	29	58.0	424	33	359-490		
YLS/CMI							3.38	.07
Low	8	7	87.5	522	17	490-555		
High	13	6	46.2	332	39	256-408		
CSS-M							.14	.71
Low	14	8	57.1	408	44	322-494		
High	7	5	71.4	396	48	302-489		
HIT							.24	.63
Low	6	4	66.7	427	69	293-562		
High	15	9	60.0	377	34	311-444		
Jl AI							.02	.90
Low	12	7	58.3	413	48	320-507		
High	9	6	66.7	385	42	302-468		
YSR							.25	.62
Low	9	6	66.7	453	43	368-537		
High	12	7	58.3	393	51	293-494		
CBCL							.22	.64
Low	6	4	6.7	396	48	301-490		
High	15	9	60.0	406	44	320-492		

Table Q9

Kaplan-Meier Survival Analyses with New Police Incidents among the Diversion Group

	Cases	No. censored	% censored	M	SE	95% CI	Log rank χ^2	p
YLS/CMI:SV							53.44	<.001
Low	213	178	77.1	563	16	532-594		
High	192	89	46.3	369	22	325-413		
YLS/CMI							15.26	.0001
Low	42	35	83.3	611	34	544-678		
High	38	16	42.1	292	36	223-362		
CSS-M							6.12	.01
Low	37	29	78.4	579	41	498-659		
High	43	22	51.2	378	41	297-458		
HIT							13.14	.0003
Low	44	35	79.6	591	35	522-661		
High	36	16	44.4	331	45	243-420		
JI AI							7.20	.007
Low	41	31	75.61	572	38	498-646		
High	39	20	51.28	369	44	282-455		
YSR							7.67	.006
Low	41	32	78.1	572	40	494-651		
High	39	19	48.7	366	43	281-450		
CBCL							7.13	.008
Low	43	33	76.7	454	25	405-504		
High	37	18	48.7	397	51	297-497		

Table Q10

Kaplan-Meier Survival Analyses with New Violent Police Incidents among the Under 12 Group

	Cases	No. censored	% censored	M	SE	95% CI	Log rank χ^2	p
YLS/CMI:SV							5.32	.02
Low	28	25	89.3	508	24	461-554		
High	50	32	64.0	444	34	378-511		
YLS/CMI							1.31	.25
Low	8	7	87.5	485	53	381-588		
High	13	8	61.5	364	40	284-443		
CSS-M							.81	.37
Low	14	11	78.6	459	42	376-542		
High	7	4	57.1	352	58	239-465		
HIT							.46	.50
Low	6	5	83.3	470	65	344-597		
High	15	10	66.7	378	37	304-451		
J1 AI							.13	.72
Low	12	9	75.0	445	48	351-539		
High	9	6	66.7	376	49	279-472		
YSR							1.81	.18
Low	9	8	88.9	491	47	398-583		
High	12	7	58.3	393	51	293-494		
CBCL							.58	.45
Low	6	5	83.3	428	44	341-515		
High	15	10	66.7	415	47	323-506		

Table Q11

Kaplan-Meier Survival Analyses with New Violent Police Incidents among the Diversion Group

	Cases	No. censored	% censored	M	SE	95% CI	Log rank χ^2	p
YLS/CMJ:SV							38.70	<.0001
Low	231	206	89.2	627	13	602-653		
High	192	131	68.2	484	23	438-530		
YLS/CMJ							14.70	.0001
Low	42	38	90.5	656	26	606-707		
High	38	21	55.3	323	37	261-404		
CSS-M							4.39	.04
Low	37	31	83.8	615	36	545-685		
High	43	28	65.1	437	41	356-517		
HIT							13.51	.0002
Low	44	39	88.6	641	30	583-699		
High	36	20	55.6	381	46	291-472		
JL AI							10.20	.001
Low	41	36	87.8	639	30	579-698		
High	39	23	59.0	401	44	314-487		
YSR							12.01	.0005
Low	41	37	90.2	651	29	595-707		
High	39	22	56.4	396	34	311-481		
CBCL							11.05	.0009
Low	43	38	88.4	497	20	458-537		
High	37	21	56.8	434	52	333-534		

Appendix R

Survival Graphs from Results Section

Figure R1. Kaplan-Meier survival analysis for charged and diversion participants with time to first police incident as the outcome.

Figure R2. Kaplan-Meier survival analysis for charged and diversion participants with time to first violent police incident as the outcome.

Figure R3. Kaplan-Meier survival analysis for charged and diversion participants with time to charge as the outcome.

Figure R4. Kaplan-Meier survival analysis for charged and diversion participants with time to violent charge as the outcome.

Figure R5. Kaplan-Meier survival analysis with time to first police contact as the outcome.
 Note. Mean survival time: under 12 = 465, diversion = 484, charged = 281. Survival graphs are significantly different, Log rank $\chi^2 = 57.81$, $p < .001$.

Figure R6. Kaplan-Meier survival analysis with time to new violent police incidents as the outcome.
 Note. Mean survival time: under 12 = 489, diversion = 574, charged = 381. Survival graphs are significantly different, Log rank $\chi^2 = 32.33$, $p < .001$.