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Critical Evaluation of the Long-Term Validity of the Risk/Need Assessment and its Young Offender Typology

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Abstract

Risk and need assessments have become an essential part of managing juvenile offenders by determining each individual's likelihood to recidivate. At the present time, juvenile delinquents in Ontario are assessed by the Ministry of Community and Social Service's Risk/Need Assessment. This instrument was developed and normed in Southern Ontario, yet, applied to Northern Ontario which is unique in its overrepresentation of Native young offenders. The short-term validity of the Risk/Need Assessment was previously evaluated through an examination of 250 young offender's criminal records to determine if they had re-offended within six months following their assessment (Jung, 1996). Analysis revealed that the Risk/Need was robust to ethnicity, gender and criminal status in its prediction of recidivism. This present study examined 195 of these youth to determine if the Risk/Need Assessment could predict recidivism for a longer term, by evaluating their criminal records two years post assessment. All eight of the Risk/Need factors were found to predict overall recidivism for the young offenders, regardless of gender and ethnicity, and certain offence types. Higher rates of recidivism were found to be associated with high scores on the prior and current offences/dispostion factor, high scores on the education/employment factor and low scores on the substance abuse scale. Further, all eight Risk/Need factors were able to differentiate between low risk, moderate risk and high risk offenders. These findings support the contention that the Risk/Need Assessment can adequately identify the level of risk of recidivism for young

offenders. The conclusion can be drawn, therefore, that the Risk/Need Assessment Form can predict recidivism over a two year period and is robust to gender and ethnicity. The implications of these findings are elaborated upon.

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Prevention is obviously the primary factor in reducing crime. After prevention, the second most important factor is strongly encouraging those who have embarked upon a criminal lifestyle to modify their behavior and desist from crime. Risk and need assessments have become an essential part of managing juvenile offenders as mandated by Section 13 of the Young Offenders Act, which indicates that a psychological assessment can be requested for the purposes of rendering a disposition, classification and parole decisions.

Monahan (1985) defines the purpose of risk assessments as twofold; to characterize the risk that an offender will commit violence in the future, and to develop interventions to manage or reduce that risk. By assessing a young offender's risk, probation officers can deliberate upon the most effective case management plan, and are also provided with an indication of the offender's likelihood of re-offending. Since the 1980's, risk assessment tools have gained increasing popularity in the correctional field and have been utilized to predict community supervision levels for parolees, levels of security classification and are incorporated into national parole decisions.

"The process of risk assessment involves scoring an individual on several factors in order to determine the likelihood of recidivism for that individual based on a group of persons with similar characteristics" (p.141 Ashford, & LeCroy, 1988). Determining a "need" involves ascertaining the level of dynamic needs that are involved in the potential for recidivism. These needs address the problems of the offender and identify where to address treatment so the offender can be released back into society. The level of risk then

assists the criminal justice system in determining if it is safe to release an offender into the community. Successful risk and need prediction assist agencies in the allocation of resources to those who need it and ascertain which offenders will be likely to re-offend if released. "That is, given a large number of offenders with a certain set of characteristics, we can reliably predict what percentage will return to prison for a new offense within a few years." (p.27, Zamble, 1989)

Various risk assessment tools have been developed through out the years and are utilized in differing regions and jurisdictions. Although a prominent belief is that if a psychometric instrument is working in one region, it can be utilized in another; this belief is inherently flawed. Risk assessment instruments are often only validated within a certain region with a specific ethnic makeup. Most of the research on juvenile delinquents has, in fact, focused upon white male offenders (Miller, Trapani, Fejes-Mendoza, Eggleston & Dwiggins, 1995). These instruments are then applied to different regions without regard for the changes in ethnic composition, such as aboriginal offenders. Wormith & Goldstone (1984) point out that there can be a loss of predictive accuracy over jurisdictions due to related changes in social, economic and cultural composition.

Not only are these instruments applied to various ethnic groups without being validated, they are also not validated on female offenders. Given the small percentage of female offenders in the criminal justice system, time and financial resources are not allocated to ensure that a risk instrument reliably predicts for gender differences.

Establishing the validity of a risk assessment instrument is essential before its implementation (Ashford & LeCroy, 1988; Wormith & Goldstone, 1984). Once the

validity of an instrument is established, it is also necessary to ensure that the instrument maintains its validity over time. This is particularly true for adolescents.

Adolescence is a time of great change within an individual's life. A young offender who commits a crime may face significant life developments within a short time span resulting in a modified risk to society. By establishing the long-term validity of the Risk/Need Assessment, it ensures that the factors being assessed remain relatively stable for the period of time in which the youth is under the supervision of the province and his or her risk is appropriately assigned for the duration of time. Ashford and LeCroy (1990) also suggest that risk instruments should be validated every two years and should be validated across jurisdictions. Wormith & Goldstone (1984) reiterate previous statements that suggest revalidation of a prediction system every two years and warn against the adoption of schemes devised in other jurisdictions.

In July 1994, the Ministry of Community and Social Services (MCSS) of Ontario implemented the Risk/Need Assessment for Phase 1 Offenders. Only one study has been conducted on the validity of the instrument with aboriginal offenders. Jung (1996) initiated her study due to the over-representation of aboriginal young offenders in Northwestern Ontario where the Risk/Need Assessment was being utilized. Jung (1996) examined the short-term validity of the Risk/Need and found that its Total score and each of the 8 Risk/Need factors were robust to ethnicity, gender and criminal status at a 6-month follow-up with respect to recidivism.

Predicting Recidivism

"Until very recently, the general consensus has been that psychologists, psychiatrists and other mental health professionals possess no special expertise in the

prediction of violence" (Rice & Harris, 1995 p.737). As risk assessments developed, however, and their strengths and weaknesses have been identified each new tool has become a sounder psychometric instrument. The Risk/Need Assessment tool was derived from the Young Offender-Level of Service Inventory (YO-LSI), and the YO-LSI was developed from the Level of Supervision Inventory that is used with adults.

With any risk instrument, revisions and modifications assist in the strengthening of its validity. Modifications are often based upon the extension of a test to a new population or are conducted to build upon the strength of the validity of the test. To establish the validity of the Risk/Need Assessment it is first essential to establish that its predecessors were valid themselves.

The Level of Supervision Inventory (LSI) is the predecessor to numerous risk assessment tools including the Risk/Need Assessment. It was developed in Ontario by Hoge, Andrews, and Leschied through consultation with probation officers and an extensive review of literature (Motiuk, Motiuk, & Bonta, 1992). It is, therefore, both empirically and theoretically based. The LSI is intended to identify to the case manager an offender's risk for committing criminal behavior and the offender's need for clinical services which can assist in any decision making processes for that offender.

The LSI is the standard risk assessment utilized with Ontario's adult male offender population. It is comprised of 58 items that are divided into 11 categories: criminal history, financial, accommodation, companions, alcohol/drug problems, emotional/personal, education/employment, family/marital, leisure/recreation, probation/parole conditions, and attitudes/orientation. A wide range of information is gathered through a standardized interview. This overcomes the fact that file reviews

often fail to examine the dynamic factors in an individual's life, which is important to the understanding of current functioning (Zamble, 1989). It also can be used at any reading level, doesn't require a psychologist and is applicable to all offenders (Bonta & Motiuk 1985).

When developing the LSI, the authors attempted to incorporate many of the strengths of the established risk assessments and to minimize the weaknesses that had been demonstrated. They were successful in building a stronger risk assessment technique with established validity. Loza and Simourd (1994) reported that the LSI has demonstrated acceptable internal consistency (coefficient alpha r=.72), interrater reliability (r=.94), 3 month test-retest temporal stability (r=.80) and convergent validity. Andrews et al. (1986) noted that research favors the predictive criterion validity of risk/need scales over paper and pencil administrations and the mildly superior criterion validity of the LSI total score has been soundly established.

The Level of Supervision Inventory has been extensively researched and found to be valid for classification decisions in the assignment of criminals to prisons or halfway houses. Loza and Simourd (1994) concluded that the LSI is a reliable risk/need instrument for use with federal and provincial offenders. Studies have also shown that the LSI is an empirically supported classification instrument that has a predictive validity with inmates and practical use for classifying inmates for prison and halfway house selection (Motiuk, 1992; Coulson, Ilacquq, Nutbrown, Giulekas, & Cudjoe 1996). Not only is the LSI an effective classification instrument but it has been found to predict offender institutional and program behavior (Bonta, 1989; Bonta & Motiuk, 1985; Motiuk, Motiuk & Bonta, 1992).

One of the greatest strengths of the Level of Supervision Inventory is its ability to predict offender outcomes. Coulson et al. (1996) summarize the L.S.I. validity in its ability to predict "probation failure (Andrews, Bonta, Motiuk & Robinson, 1984; Andrews et al. 1982), halfway house failure (Bonta, 1990; Bonta & Motiuk, 1985, 1990; Motiuk, Bonta & Andrews, 1986) and parole violation (Bonta & Motiuk, 1989, 1990; Motiuk & Bonta)" (p.428). Most importantly, however, the LSI has been found to predict recidivism. Bonta and Motiuk (1985) found that the LSI was predictive of outcome in halfway houses and reincarceration at a one-year follow up. Motiuk et al. (1992) also reported that LSI scores were predictive of recidivism at a 1-year follow up. Andrews et al. (1986) found that pretreatment LSI scores were predictive of correctional outcomes. Further, Coulson et al. (1996) concluded that LSI prediction was better than chance for recidivism at 1 and 2-year follow-up.

The Level of Supervision Inventory has been found to be a psychometrically sound instrument with classification and predictive abilities. It is also robust to gender as established by Coulson et al. (1996), although scores were lower for females than for males on average. LSI scores have also been found to be more predictive of reincarceration than race and were able to predict equally well for Natives and non-Natives (Bonta, 1989). The Level of Supervision Inventory has established its validity and robustness to gender and race that is essential for the Risk/Need Assessment to have firm psychometric ground to build upon.

Another predecessor of the Risk/Need Assessment is the Young Offender-Level of Service Inventory (YO-LSI). It is a modification of the LSI that was developed by

Shields in 1993 for use with 16 to 18 year old offenders, also known as Phase II young offenders. It was developed and has been implemented in southeastern Ontario.

The YO-LSI is composed of 76 quantitative items that fall into 7 categories: criminal history, substance abuse, education/employment, family, peer relationships, accommodations and miscellaneous variables (i.e. attempted suicide, tattoos). This information is gathered through a self-report standardized interview. Motiuk et al. (1992) found that a self-report measure added significantly to the results of a psychometric test battery. This is especially true for evaluations of attitudes and beliefs and can help make a stronger prediction of behavior. Official records can often underestimate because many acts of higher risk cases may never show up on official records (Andrews, 1990). The information collected from the interview is scored on a 2-point scale, similar to the Risk/Need Assessment, and places the offender into one of four categories that range from low to very high.

As with the LSI, the YO-LSI was found to have superior psychometric properties. Shields and Simourd (1991) reported that the YO-LSI is a reliable measure with high inter-observer reliability and high internal consistency in its subcomponents that is congruent with its parent instrument the LSI. They also found that the YO-LSI was able to effectively predict between distinct groups of individuals, predators and non-predators. The YO-LSI has been proven to predict delinquency and recidivism (Whitehall, 1992; Shields, 1993) and to be robust to gender and ethnicity (Shields et al., 1991).

The Risk/Need Assessment was originally titled the Youth Level of Service/Case Management Inventory (YLSI). It was developed for use with Phase I young offenders who range in age from 12 to 15. "The YLSI is a quantitative risk/need assessment

instrument used to classify youth according to their risk of deviant behavior and need for treatment." (Simourd, Hoge, Andrews, & Leschied, 1994, p.449)

It is based on a social learning theory that proposes that people learn their behavior through daily interactions with the environment and the people who surround them. It built upon the notion that as the number and severity of risk need factors increases so does the chances of delinquent behavior. Youth are scored on ten subscales including: delinquent history, education, family finances, family dynamics, parenting, accommodation, leisure and recreation, companions, personality/skills and attitudes/orientation. The YLSI was found to be psychometrically sound and successful in differentiating risk levels with offenders (Simourd et al, 1994). The development of the Risk/Need Assessment built upon the already established sound psychometric quality of the LSI and its subsequent predecessors.

Risk/Need Assessment

The Ministry's Risk/Need Assessment was implemented in the Province of Ontario in 1994 as a modification of the Youth Level of Service/Case Management Inventory. This refinement of the YLSI was based upon a social-psychological approach and the four principles of risk classification: risk, need, responsitivity, and professional discretion. It is both empirically and theoretically based, as is the LSI. It was normed on 320 Phase I young offenders for preliminary validity and reliability. Information for items and factors was based on a second sample of 711 Phase I young offenders. All of these offenders were from the probation offices in Toronto, Ontario.

The final result of these modifications was a six section form, of which one section is composed of 42 items which are divided into eight factors: prior and current

offenses/disposition, family circumstances/parenting, education/employment, peer relations, substance abuse, leisure/recreation, personality/behavior, and attitudes/orientation. These items are scored on a 2-point scale and sum to provide a total risk score and a score on each of the eight factors. This information is gathered through a multi-dimensional approach that includes a semi-structured interview, probation files, custody files and reports from any relevant agencies.

Although the YLSI was found to be psychometrically sound and related to probation and custody outcomes, no published studies have examined the strength of the recent version, the Risk/Need Assessment. One thorough study was conducted to establish the Risk/Need Assessment's validity in northwestern Ontario and to determine if it was robust to gender and race with respect to Native offenders.

Jung (1996) examined the ability of the Risk/Need Assessment to effectively discriminate between delinquents and non-delinquents and recidivists and non-recidivists with 263 northwestern Ontario young offenders and 62 non-delinquent youths. Three hundred and twelve youths were examined at a 6-month follow up to establish if they had offended subsequent to their initial assessment. Jung (1996) reported that the Risk/Need Assessment was able to successfully discriminate between delinquents and non-delinquents by Total score and by seven of its risk/need factors (prior and current offenses excluded). The Total score and all of the eight factors were able to differentiate between recidivists and non-recidivists. This is concurrent with Andrews, Kiessling, Mickus and Robinson (1986) who found that the total LSI score was the single strongest predictor of recidivism when compared to 26 paper and pencil self-report measures. Therefore, the Risk/Need's overall score and subscales are associated with recidivism.

The best predictor of recidivism among the factors was the attitudes and orientation factor. It was effective in distinguishing between delinquents and non-delinquents and recidivists and non-recidivists. Hoge et al. (1994) reported that attitudinal variables play a significant part in the development of delinquency as well as family and peer relations. The second best predictor of recidivism was education and employment difficulties. It was also able to discriminate between delinquents and non-delinquents.

Jung (1996) stated that it was important to study the validity of the Risk/Need Assessment in northwestern Ontario due to its overrepresentation of Natives. Research has indicated that validity of an assessment instrument must be verified in differing regions (Ashford & LeCroy, 1988). Jung established that "northwestern Ontario is a special region within the province in which aboriginal offenders make up a substantially larger percent of the population than the central, southern and southeastern parts of the province" (Jung, 1996, p.30). The Risk/Need Assessment was developed and normed in southeastern Ontario, yet it was applied to all of Ontario. It was essential, therefore, to examine if the Ministry's Risk/Need Assessment could adequately identify delinquent behavior and recidivism in northwestern Ontario.

Jung (1996) found that the Total score could discriminate between Native and non-Native delinquents 29% over chance with Natives scoring higher. There were significant differences between Natives and non-Natives for peer relations, substance abuse, and leisure and recreational activities and these differences were great enough to distinguish between the two groups. Jung noted, however, that these differences may be a cultural bias and do not necessarily indicate that Natives are at a higher risk to re-

offend. Most importantly, the Risk/Need did not assess risk significantly different for Native and non-Native recidivists.

Jung also examined if the Risk/Need was robust to gender. She reported that male and female delinquents did not differ on the Total and eight factors and that the instrument did not predict recidivism differently based on gender. The objectivity of the instrument was, therefore, supported for both genders.

"The results strongly maintain the contention that the instrument is capable of predicting recidivism, with 28% correct classification above chance, in a different region with a disproportionate number of ethnic minorities, thereby supporting that the instrument is a robust measure of risk." (Jung, 1996, p.65) Jung did note that a long-term follow-up of two years should be conducted to establish the long-term validity of the instrument.

Gender and Ethnicity Issues

Given that the majority of offenders are male, little attention is allocated to developing risk instruments that are specific to female offenders. Research on juvenile delinquents has focused primarily on adolescent males; however, females are becoming an increasing force within the realm of juvenile delinquency (Calhoun, Jurgens & Chan, 1993). "While females constitute only a small portion of the total delinquent population, minority status has never justified ignorance of a minority's needs." (Miller, Trapani, Fejes-Mendoza, Eggleston, and Dwiggins, 1995, p.433) Although it may not be necessary to develop gender specific risk assessments, the tools that are presently being utilized are normally not validated with a female population and, therefore, fail to take

into account any gender differences. Assessment techniques may need to be refined, however, to account for these differences in behavior, risks and needs.

Female offenders often have separate and distinct issues resulting in their re-offending (Miller et al., 1995). They experience more episodes of depression, attempt suicide more often and demonstrate lower levels of resilience. Adolescent female offenders experience more sexual abuse and at higher frequencies than their male counterparts which results in them exhibiting inappropriate levels and types of dependency.

Female offenders have also been found to come from distinct family backgrounds. Calhoun et al. (1993) reported a positive correlation between dysfunctional families and juvenile delinquency and that this relationship is stronger for females than males. It has also been reported that female delinquents demonstrated significantly more problems with family relationships and family structuring dimensions (Henggeler, Edwards, & Borduin, 1987; Hoge et al., 1994). A higher level of dysfunction on peer associations and attitudinal dimensions was also demonstrated by female offenders.

Not only do female offenders have unique needs but they also have a distinct relationship with the criminal justice system. It has been reported that female juvenile delinquents commit different types of crimes and receive differential treatment (Miller et al., 1995). Belcourt, Nouwens, and Lefebvre (1993) found an overall recidivism rate of about 22% for female offenders. Canfield (1988), however, found a much higher rate of recidivism with 43% of the women he studied being convicted of a new offense within two years post-release. Parole decisions for women are also based on unique criterion.

They were affected by criminal history, if the woman was older at first conviction and if the woman was serving her first term she was more likely to get parole (Canfield, 1988).

Some research has been conducted into the LSI and its predecessors and their robustness to gender. Shields et al. (1991) examined the LSI and found that it was able to predict between predators and non-predators while being robust to gender and ethnicity. The LSI has also been found to be a valid instrument for assessing recidivism with female offenders (Coulson et al, 1996; Jung 1996). Females were more likely to re-offend if they were younger at time of first adult conviction, had no employment and did not have successful completion of a day parole program. Jung (1996) concluded that the Risk/Need Assessment was robust to gender at a 6-month follow up.

Research has established that female offenders have distinct needs in the criminal justice system and unique risk factors that lead to their re-offending. Although the LSI has been found to be robust to gender and the Risk/Need robust at a 6-month follow-up, long term validity of the Risk/Need Assessment with females should be established to verify that it is addressing the unique risks and needs of female offenders.

It was essential for Jung (1996) to validate the Risk/Need Assessment with Natives not only due to their over-representation in northwestern Ontario but it has also been discovered that Native inmates have unique needs and distinct issues surrounding delinquency. There has been a steady climb of North American Indians and Metis being incarcerated in Canadian federal prisons between 1984 and 1989 (Changes in the Profile of Minority Offenders). In fact, Native people are the single largest ethnic minority group and are over-represented in Canadian correctional institutions (Bonta et al., 1992; O'Neilsen, 1990).

Research has indicated that Native offenders represent a unique subset of the prison population. Bonta et al. (1992) noted that the most common offenses of Natives were property related offenses. O'Neilsen (1990) reported that 73% of Native inmates are incarcerated for violent offenses compared to 60% of non-Natives, and Natives are more frequently involved in incidents of prison violence.

Even though Native people are over-represented in Canadian prisons little research has been conducted into their situation that is often an undesirable one. "The Native American offender is at a disadvantage because of his relative lack of power and influence, negative stereotypes with which he is associated and because of his increased visibility." (Hall & Simkus, 1975, p.203) To overcome this disadvantage, Native people have developed their own support groups including the Native Brotherhood and Sisterhood.

Native inmates have been identified as having special cultural needs within the criminal justice system (Bonta, 1989). Although Native inmates are part of Canadian culture their own culture is very distinct and can often be judged inappropriately in the criminal justice system. Native children's behavior is often misinterpreted as resistance, passive-aggression, opposition, depression or withdrawal even though this behavior is culturally appropriate (Brant, 1990). Native people have learned a whole range of culture specific behaviors that is foreign to many workers in corrections. They engage in conflict suppression through non-interference, non-competitiveness, emotional restraint, and sharing (Brant, 1990). Native people do not want to be perceived as interfering in another individual's decisions. They view this interference as an attempt to be dominant over that person, their life and an infringement upon free will. For example, Native

parents will not enforce their views upon their children. It is up to the child to decide what they wish to do (e.g. whether or not to do homework).

Native people view the suppression of all emotions as positive for self-control (Brant, 1990). This may, however, result in later emotional outbursts. Native youth also learn in the unique method of modeling from older generations to younger. The goals of modeling are to increase a youth's attachment to elders and to foster group cohesion (Brant, 1990). The youth do not learn to question through this model and it, as with emotional suppression, may result in conflict suppression.

Zitzow (1990) studied recidivism in Ojibway youth and found that those youth who spent less time with their family were at a higher risk for involvement in delinquent behavior. He also reported that family drug and alcohol use within Ojibway families was related to higher risk for involvement with the criminal justice system. O'Neilsen (1990) also concluded that alcohol abuse was one of the primary factors for Native incarceration. Bonta (1989), on the other hand, did not find any differences in rate of alcohol offenses and no differentiation on alcohol abuse for Natives as compared to non-Natives.

Native offenders not only demonstrate unique needs, but also unique risks in relation to prison outcome. Harmon and Hann (as cited in Bonta 1989) examined 13,000 adult inmates parole outcomes. The Native portion (N=1,544) had a significantly lower success rate of 55.9% compared to the 66.2% success rate of non-Natives (N=11,287). Verdun-Jones & Muirhead (1979/80) concluded that recidivism is clearly higher among adult Natives then non-Native adults. Bonta et al. (1992) reported five factors which demonstrated significant predictive validity for recidivism with adult Native offenders: offense type (break and enters), prior convictions, prior incarcerations, age at first

conviction, and sentence length. These factors were similar to those for non-aboriginals. Research has concluded that Native offenders are more likely to recidivate than non-Natives and this promotes the idea that the risk assessments being utilized are not adequate for a Native population.

Risk assessment instruments are often not validated on Native offenders and are generalized to them without establishing their robustness. The LSI has researched its robustness to Natives and found positive results. The average LSI score and the prediction of recidivism was the same for Native and non-Native Americans (Bonta, 1989). Alcohol and drug abuse on LSI was found to be predictive of parole violations and reincarceration for Natives, but only reincarceration for non-Natives (Bonta, 1989). Bonta (1989), however, concluded that the LSI scales should be differentially weighted according to race. Jung (1996) examined the LSI's descendent, the Ministry's Risk/Need Assessment and established that it predicted recidivism equally as well for Natives and non-Natives.

As demonstrated in the research, Native inmates possess unique needs and risks that could be misinterpreted by risk assessment instruments. To ensure that these risks and needs are being properly identified it is necessary to evaluate the short and long term robustness and validity of any risk instrument which is being applied to a Native population. Jung (1996) established that the Risk/Need instrument was robust to Native ethnicity at a 6-month follow up and this study intends to examine the long-term robustness of the Risk/Need instrument to a Native population.

Native female offenders are a special consideration to the criminal justice system given their double minority status. Special attention should be allocated to ensure that

risk assessments are adequately tapping the risks and needs of these especially unique offenders. Belcourt et al. (1993) reported that adult Native female offenders were over-represented in the group of women who were re-admitted for committing a new offense 2 years following release from prison, moreover they were over-represented in the group of women who were re-admitted more then once. Their data may suggest that risk assessments may not be adequately measuring the risk that Native female offenders pose.

Jung (1996) established that the Ministry's Risk/Need Assessment was robust to gender and ethnicity at a 6-month follow-up. Long term evaluation of the validity of the instrument with these unique populations is essential to ensure that the Risk/Need continues to address and identify the unique needs and risks of these distinct population. This present study intends to examine if the Risk/Need is still robust to gender and Native ethnicity at a 2-year follow up after the initial Risk/Need Assessment was completed.

Young Offender Typologies

When assigning a risk level to a youth it is essential to not only address the specific needs of the youth but to also holistically evaluate whether a youth will be likely to re-offend. "The ability to identify those juveniles likely to continue their criminal activities would be of great assistance to both the juvenile courts and the programs to which these youth are committed." (Duncan, Kennedy & Patrick, 1995, p. 250) This aim can be achieved through risk assessments and through case identification in typology systems. By identifying risk level of offenders and groups of offenders with similar offence patterns, generalizations can be derived as to a youth's propensity to re-offend and the type of offenses that may be of concern.

One of the first attempts at classifying young offenders was conducted by Hewitt and Jenkins (1946). These researchers gathered information on 500 youth and analyzed 45 variables to create three distinct types of young offenders: the "socialized delinquent" type, the "un-socialized aggressive" type and the "over inhibited" type. Quay (1964) elaborated upon these results by examining the case records of 115 male young offenders and coding them on a 36-item behavior checklist. Analysis revealed a four factor solution with a "socialized-substructural" type, an "un-socialized-psychopathic" type, a "disturbed neurotic" type and "inadequacy-immaturity" type. These systems, although their trends can still be observed, are limited as the stability of the factors utilized creates classification difficulties and there are concerns regarding the adequacy of the assessment checklist utilized to create the typologies (Simourd et al., 1994).

Megargee has developed a typology for both adult and juvenile male offenders. Megargee and Bohn (1977) examined the MMPIs of 1,214 young male offenders and created ten subtypes of delinquents. It is essential to note that although a youth is classified under a subtype, individuals are expected to vary from the stereotypes (Megargee and Bohn, 1977). Group Item is characterized by a lack of any psychopathology. Group Easy compromises 7% of the sample and is classified as psychopathic manipulators. The third subtype is group Baker defined as the neurotic delinquent group. Group Able is the fourth subtype classified by the 4-9 profile that is associated with juvenile delinquency.

Seven percent of the sample falls within Group George and is characterized by a 4-2 profile with a high degree of drug involvement. The sixth subtype, Delta, is hedonistic, amoral with little ability to postpone gratification or control their impulses.

Jupiter group is characterized as property offenders. The eighth subtype is group Foxtrot and this group demonstrates a broad range of problems and difficulties in almost every sphere. Group Charlie is seen as antisocial, misanthropic, bitter, hostile, sensitive to perceived insults and lashing out at others. The final subtype is Group How is characterized by low intellectual ability and educational achievement.

Sorenson and Johnson (1996) note that although the Megargee system has demonstrated validity it appears to be more appropriate for Caucasian than African American inmates. Further, given the MMPI is theoretically based this typology is not solely based upon empirical information.

Sorenson and Johnson (1996) extended upon the Megargee and Bohn system by creating a typology based on MMPI and Jesness Inventory scores. They conducted a cluster analysis on the scores of 191 incarcerated juvenile delinquents from ages 12 to 19 of which the majority were Caucasian (72%) and male (86%). Statistical analysis revealed a five cluster solution. The "Alienated" subtype was represented in patterns of social alienation, sensation seeking and subjective emotional distress. Cluster 2 was termed the "Insecure-Anxious" type due to the indication of social alienation accompanied with anxiety, somatic problems and confusion. The third subtype was characterized by overall distress with 8 out of 10 MMPI scales and 8 out of 11 Jesness Inventory scales being elevated. The exact opposite was found in the "Nondistressed" subtype who demonstrated emotional resiliency with a lack of elevations on any of the scales. The final cluster, the "Angry Suspicious" subtype, was indicative of considerable conflict with authority, suspiciousness, thrill seeking, anger and less subjective distress.

All of these subtypes were found to be similar on demographics, family history and offense histories. A trend was noted, however, for the Insecure-Anxious, Distressed and Non-Distressed to commit more sexual offenses. Alienated individuals reported more attempts to seriously injure others and Distressed and Angry-Suspicious groups also reported a willingness to harm others.

These subtypes can be of great assistance when assigning treatment programs and predicting institutional adjustment (Sorenson & Johnson, 1996). They are lacking, however, in that they do not directly relate to recidivism rates or assist case managers in assessing the level of risk that a youth presents. To be effective in case management, a young offender typology should demonstrate clear patterns of scores or behaviors which are indicative of a level of risk to re-offend and the risk of violence from the offender.

Dembo, Williams, Fagan and Schmeidler (1994) developed a classification model for high risk youth in Florida. They examined 305 youth on mental health risk factors, patterns of substance abuse and delinquent behavior. Cluster analysis results indicated five types within high risk youth: alcohol/marijuana-hashish users, low level delinquents, alcohol/marijuana-hashish/cocaine using non-delinquents, high delinquency cocaine users and heavy cocaine-using non-delinquents. These groups were found to be distinct on numerous factors. The heavy cocaine using non-delinquent group was predominantly female whereas the other four clusters were predominantly male. The low-level delinquents and heavy cocaine using youths were also predominantly African American while the other cluster were predominantly Caucasian.

The high delinquency cocaine using youth had the highest referrals for violent offenses, property misdemeanors and public disorder misdemeanors. This typology is

effective in its ability to predict the types of offenses youth will commit and demonstrate the different risk levels for substance abuse. It can not be generalized, however, to young offenders who are not high risk. For a classification instrument to be effective it needs to have a clinical application by identifying all levels of offenders and their risk to recidivate.

A four-factor model of recidivism was created by Duncan et al. (1995). The researchers examined behavioral and psychometric measures from 129 male youth, ranging in age from 14 to 18, released from a delinquent training school in Florida. A cluster analysis indicated the presence of four factors: Institutional Adjustment (verbal aggression, physical aggression), Antisocial Behavior (arrests, commitments, age first arrested, conduct disorder, crack cocaine selling, drug use), Intellectual Assessment (grade placement, full scale IQ, WRAT-R grade level) and Psychological Distress (MMPI-2 scales 2 and 7). This classification model was able to correctly classify 69.7% of the students with Antisocial Behavior contributing the most to predicting recidivism. This is an effective classification system for case management employees. One major limitation is that numerous instruments are involved in classifying the youth and this wealth of information may not always be available in juvenile correctional facilities.

A typology for classifying young offenders was created for the Youth Level of Supervision Inventory, a predecessor of the Risk/Need, by Simourd et al. (1994). A cluster analysis was conducted on the YLSI scores of 255 juvenile delinquent males and resulted in a five factor solution. The "Low Risk" type comprised 45% of the sample and had all subscores within the low range. A "Generalized High Risk/Need type" was found for 31% of the sample. These youth scored high on the family, attitudes and delinquent

history subscales with slight elevations on the parents, companions, personality and leisure subscales. These youth were described as more serious offenders with histories of a high number of offenses, low ratings of disposition compliance and adjustment. These youth were also the most likely to re-offend.

A third type was termed "Difficulties in the Community". This type was identified by high scores on the leisure and education subscales, moderately high scores on the companions and personality subscales and depressed scores on the parents and family finances subscales. These youth were found to be the most violent but with a low number of offenses and a high probability for recidivism particularly violent recidivism. Seven percent of the sample were typed under "Family and Personal Distress". Violence was the main form of criminal conduct found for these youth who were indicated by elevated scores in the family related areas (family finances, family, education and parents) and the personality subscale. The final type is the "Economically Disadvantaged". This type was elevated on family finances and accommodations. It was composed of 5% of the sample and the youth had high numbers of offenses with low rates of violence. This typology is effective in its ability to predict risk and type of offense based on a singular measure.

Simourd et al. (1994) concluded that their results with the YLSI should be replicated and the viability of their system examined further. Given, however, that the Risk/Need is being utilized with young offenders in the province of Ontario this replication should be conducted upon the Risk/Need for its clinical application. Examination of the typology should also extend it to both genders as well as non-Caucasians. This study intends to examine whether the Risk/Need Assessment can

identify high risk offenders and if an empirical typology can be derived from the Risk/Need Assessment.

Present Study

The present study intends to build upon Jung's conclusions and recommendations by investigating the long-term validity of the Risk/Need Assessment with male and female aboriginal and non-aboriginal offenders at a 2-year follow-up. One confounding issue in the study of juvenile recidivism is that an acceptable follow-up period has not been established (Wormith & Goldstone, 1984). Follow-up periods have ranged in length from 6 months to 18 years.

It is important that a follow-up period is not too short so that higher risk cases have the opportunity to demonstrate their criminal potential (Andrews, 1990). Maintaining a reasonable length for the sake of the researcher is also of concern. One and 2-year follow-ups appear to be the most prominent in examining juvenile recidivism. Certain research findings have emphasized the purpose of the second year in examining recidivism. When examining post treatment recidivism from a therapeutic wilderness program, Castellano and Soderstrom (1992) found that there was a 1-year reduction in delinquency but the reduction effect was not present at a 2-year follow up. Belcourt, Nouwens, & Lefebvre, (1993) examined recidivism among female offenders and found that of those who were readmitted to an institution, two-thirds of the offenses occurred within 2 years post release.

For the purposes of this study, a two-year follow up will be utilized. It is anticipated, given Jung's (1996) results, that the Risk/Need Assessment will maintain its

predictive power at a two-year follow up and will be robust to ethnicity and gender. As described by Jung (1996):

> "For the purposes of the present study, the validity of an instrument is defined as a measure's 'truthfulness' or the degree of the relationship between what the instrument actually measures and what it intends to measure. If the degree of the relationship is high regardless of race or gender, the instrument will measure the risk and needs levels adequately enough to say it measures what it is intended to measure...On the other hand, the predictive validity of an instrument is defined as the relationship between the current measure and the predicted outcome." (p.3)

The present study intends to extend the study conducted by Jung (1996) and establish that her findings will also be true at a long-term follow-up of 2 year. Jung (1996) concluded that the Risk/Need Assessment was able to discriminate between delinquent and non-delinquents, recidivists and non-recidivists and was robust to ethnicity and gender at a 6-month follow up. It also established that the Attitude/Orientation scale was the strongest factor capable of distinguishing between recidivists and non-recidivists. This study hopes to expand on these results by exploring the long term validity of the Risk/Need Assessment. It is hypothesized that the Risk/Need Assessment Scale will predict recidivism up to two years after assessment. Further, the Risk/Need Scale will predict recidivism equally well for young offenders regardless of ethnicity or gender.

The second purpose of this study is to examine if the Risk/Need Assessment is able to identify a typology for high risk youths. This endeavor is exploratory in nature as no other studies have attempted to establish a typology based upon the Risk/Need. However, it is hypothesized that the Risk/Need will produce a cluster analysis similar to the YLSI with a high risk type being identified.

Method

Participants

Jung (1996) collected recidivism data on 250 young offenders under the jurisdiction of the Ministry of Community and Social Services (MCSS). These youth were drawn from the client pool of probation offices in northwestern Ontario over a nine-month period. The MCSS and relevant Ministries and jurisdictions were contacted to gather further recidivism data on these youth. The only requirements to be included in this study were the following two criteria: that the youth remained under the jurisdiction of the Ministry of Community and Social Services or the Ministry of Corrections and continued to reside in the province of Ontario. Of the 250 offenders in Jung's study, two were deceased and information was unavailable on fifty three. It is unclear as to why this high attrittion rate exists, but it is further elaborated upon in the discussion. The remaining 195 youth served as the participants in this study.

At the time of the Risk/Need Assessment conducted by Jung (1996), the average age of the offender was 14.3 years (SD = 1.11; range 12 to 17 years). At the time of this research, the average age of an offender was 19 years (SD = 1.11; range 17 to 21 years). This sample was composed of one hundred and one (51.8%) non-Native offenders and 94 (48.2%) offenders of Native ancestry. Males accounted for 69.2% (135) of the population and females the remaining 30.1% (60). There were 20 female non-Native offenders with an average age of 18.9 (SD = 1.1) and 81 male non-Native offenders with an average age of 19.2 (SD = 1.1). Forty offenders were female and Native with an average age of 18.8 (SD = 1.1) and 54 male Native offenders with an average age of 19 (SD = 1.2).

Materials

The Risk/Need Assessment form (see Appendix A) is composed of 6 sections. Part I is comprised of 42 items that evaluate 8 factors: prior and current offenses/dispositions, family circumstances/parenting, education/employment, peer relations, substance abuse, leisure/recreation, personality/behavior and attitudes/orientation. Part II entails the totaling of each of the sub-scores from each factor.

Each of the items is scored on a 2-point scale where 1 indicates that the item definitely applies and 0 that the item may or does not apply. The total score can range between 0-42 and falls within one of four risk classifications: low 0-8, moderate 9-26, high 27-34, and very high 35-42.

The initial scores and risk classifications were collected by Jung (1996). These Risk/Need Assessments were completed by probation officers as part of the mandatory supervision and case management procedures for probation personnel. Jung (1996) stated that the officers each completed a three-day seminar encompassing a review of the literature, use of the form and its application to case studies, and goal setting.

The Risk/Need assessment collected by Jung (1996) entailed record reviews (criminal, academic and probation), interviews (with the youth and if possible, immediate family members) and report reviews (e.g., Children's Aid Society). The offenders maintained their anonymity through encoding of the assessment forms.

The risk predictor variable for this present study is recidivism and is defined as follows: any conviction for an offense committed up to two years since the Risk/Need assessment was completed. Recidivism was measured by assessing the young offender's

records that reside in the data bank that is available to police officers in the Province of Ontario. The data bank was accessed through the authority of the Police Departments in the City of Thunder Bay and the town of Atikokan. The data bank was accessed by police personnel according to their guidelines.

Procedure

Ethical approval was granted by the Ethics Advisory Committee of Lakehead University (see Appendix B) to proceed with this research. Access to the data was granted through judicial permission in conjunction with the probation supervisors of the District of Thunder Bay and Kenora, to allow the researcher to access the data in a manner that is consistent with the Ministry of Community and Social Services guidelines and the guidelines of the Ministry of the Attorney General respectively.

After these requirements were completed, the Risk/Need Assessments collected by Jung (1996) were turned over to the researcher. The recidivism information was accessed by the Police departments in the City of Thunder Bay and the town of Atikokan through the Provincial data bank of criminal offenses by offenders.

The researcher was finally provided with the Risk/Need Assessment and criminal records of the 195 participants. Each participant's information was reviewed and compiled in varying manners. The Risk/Need total score and each of the eight factor scores were indicated on the Risk/Need Assessment. The total Risk/Need score was utilized to classify each youth within a risk of recidivism category; low (0-8), moderate (9-26), high (27-34), or very high risk (35-42). Each young offender was then assessed to determine if he/she had recidivated in the two years post Risk/Need assessment according to the operational definition. A total recidivism score was calculated for each offender

based on the total number of offenses committed. Each offender's criminal record was also calculated according to five offence types: sex offences, drug and alcohol related offences, assault charges, property offences (including breaking and entering, possession of stolen property) and miscellaneous offences (e.g. mischief, fraud, weapons charges, failure to appear and all other charges).

Results

Preliminary Analysis

All of the analyses were conducted in SPSS for Windows. Prior to analysis, each variable was examined for accuracy of data entry and missing values. Each variable was examined separately for the 195 participants and all data was present.

One significant univariate outlier was found in the recidivism rate and property offences columns. This score was changed to one above the highest score on each variable. The fit between distributions and the assumptions of multivariate analysis was also examined for each variable. Certain variables (attitude factor, offence factor, personality factor, recidivism rate, and all five offense types) were found to be skewed and were transformed to logs for the purposes of analysis.

Several methods were employed for the overall analyses. Two 2X2 ANOVAs were performed on the dependent variables, age and risk category, to examine for gender and ethnicity interaction and main effects. A 2X2 ANOVA was performed on the dependent variable, the overall recidivism rate, to examine for a gender and ethnicity interaction and main effects. A one-way ANOVA was also conducted on the overall recidivism rate to search for differences based on risk category. Five 2X2 ANOVAs were performed with each offence type serving as a dependent variable to examine for a

gender and ethnicity interaction and main effects. Five one-way ANOVAs were performed, with each offence type serving as a dependent variable, to examine for differences based on risk category.

A 2X2 MANOVA searched for any interaction between ethnicity and gender on all eight risk need factors. Eight 2X2 ANOVAs were conducted to examine for any ethnicity and gender interaction on the eight factors and any main effects. Discriminant function analysis was then conducted to further investigate the differences between natives and non-natives and females and males. Eight one-way ANOVAs examined the differences associated with varying risk categories on the eight factors. A linear discriminant function analysis searched and examined the distinctions between the risk categories.

A one way ANOVA was conducted on the dependent variable, the recidivism rate, and the total score to search for the ability of the total risk/need score to predict recidivism. Numerous multiple regressions were performed to examine the extent to which the eight factors could account for the variance in overall recidivism and the variance in the five offence types. These multiple regressions evaluated the subscales on: the total population, the male and female populations, the Native and non-Native population, the four subgroups, and the three risk categories. A canonical correlation was carried out to identify any relationship between the eight factors and the five offence types. Finally, A factor analysis was also conducted on the eight factors to assess for underlying clusters.

Basic Demographics

Data was gathered on 195 young offenders who fell within four groups (see Table 1). At the time of the Risk/Need Assessment conducted by Jung (1996), the average age of the offender was 14.3 years (SD = 1.11; range 12 to 17 years). Approximately, four years has passed since the Risk/Need Assessments were conducted; and therefore, at the time of this research, the average age of an offender was 19 years (SD = 1.11; range 17 to 21 years). One hundred and one (51.8%) of the offenders were non-Native and 94 (48.2%) were of Native ancestry. Males accounted for 69.2% (135) of the population and females the remaining 30.1% (60). There were 20 female non-Native offenders with an average age of 18.9 (SD = 1.1) and 81 male non-Native offenders with an average age of 19.2 (SD = 1.1). Forty offenders were female and Native with an average age of 18.8 (SD = 1.1) and 54 male Native offenders with an average age of 19 (SD = 1.2). Gender F (1,191) = 2.218, p = .138 and ethnicity F (1,191) = .315, p. = .575 were not significantly related to age.

The 195 offenders were divided into the risk categories based on their total Risk/Need score as outlined by the Risk/Need (low risk 0-8; moderate risk 8-26, high risk 27-34; and very high risk 35-42). Eighty four offenders (43%) were in the low risk category with scores ranging from 0 to 8. Ninety nine offenders (51%) had scores ranging from 9 to 26 and were placed in the moderate category. Two offenders had scores within the very high risk range, both scoring 35. They were placed in the high category along with 10 other offenders to total 12 offenders (6%) with scores ranging from 27-35. Both gender, F (1, 191) = .217, p = .642, and ethnicity, F (1,191) = .254, p =.615, were not significantly related to the risk categories.

Table 1

Age of Offenders

	Group					
	Male (n)		Female (n)		Total (n)	
	M	SD	M	SD	M	SD
Native	19.0	1.2 (54)	18.8	1.1 (40)	18.9	1.1 (94)
Non-Native	19.2	1.1 (81)	18.9	1.1 (20)	19.1	4.4 (101)
Total	19.1	1.1 (135)	18.8	1.1 (60)	19	1.1 (195)

Note. Age is given in years.

Recidivism

An examination of recidivism for all of the young offenders indicated that only 11 of the 195 offenders had not recidivated. The overall recidivism rate mean was calculated at 5 offences per offender (SD = 7.2). There was not a significant difference in overall recidivism between Native and non-Native offenders, F (1,191) = .508, p. = .477. There was, however, a significant difference between female and male offenders, F (1,191) = 10.148, p = .002. Male offenders committed more offences with a mean of 5.96 (SD = 8.36) as compared to female offenders with a mean of 2.97 (SD = 2.70). There was not a significant interaction between gender and ethnicity, F (1,191) = .084, p = .773. This is interpreted to mean that recidivism was not determined by the gender and ethnicity combination.

The mean recidivism rate for each of the 5 offence types was calculated for females and males (see Table 2) and natives and non-natives (see Table 3). No significant gender-ethnicity interactions were found. This is interpreted to mean that the occurrence of a specific offence type was not related to a gender and ethnicity combination. However, significantly more property offences were committed by males (M = 3.2; SD = 6.9) than females (M = 1.4; SD = 1.5), F (1,191) = 5.86, p = .016. Significantly more drug offences were also committed by males (M = .23; SD = .47) than females (M = .05; SD = .22), F (1, 191) = 8.028, p =.005. Males (M = 1.7; SD = 2.7) also committed significantly more miscellaneous offences (e.g. mischief, fraud, weapons charges and failure to appear) than females (M = .73; SD = 1.1), F(1,191)=10.073, p=.002. No other significant gender differences were reported. No significant differences were reported for ethnicity.

Table 2

Rates of Recidivism based on Gender

	Group					
	Male		Female		Total	
	M	SD	M	SD	M	SD
recidivism* rate per youth	5.96	8.4	3.97	2.7	5.04	7.2
assault offences	0.74	1.1	0.78	1.1	0.75	1.1
property* offences	3.18	6.9	1.37	1.5	2.62	5.9
sex offences	0.08	.03	0.02	0.1	0.06	0.3
drug* offences	0.23	1.7	0.05	0.2	0.17	0.4
miscellaneous* offences	1.74	2.7	0.73	1.1	1.43	2.4

Note. *significant gender main effect

Table 3

Rates of Recidivism based on Ethnicity

	Group					
	Native		non-Native		Total	
	M	SD	M	SD	M	SD
recidivism rate per youth	4.61	5.3	5.45	8.7	5.04	7.2
assault offences	0.86	1.1	0.65	1.1	0.75	1.1
property offences	2.15	3.2	3.06	7.5	2.62	5.9
sex offences	0.06	0.3	0.06	0.3	0.06	0.3
drug offences	0.15	0.4	0.20	0.5	0.17	0.4
miscellaneous offences	1.39	2.5	1.47	2.3	1.43	2.4

Note. *significant ethnicity main effect

A very important finding in this thesis is that there was a significant difference in recidivism based on risk category, F (2,192) = 18.983, $p < .001$. The greater the risk category the higher the rate of recidivism. The low risk category had 3.4 mean offences (SD = 8.0), the moderate category had 5.5 mean offences (SD = 5.4) and the high risk category had a mean of 12.5 offences (SD = 9.8).

The mean recidivism rate for each of the 5 offence types was calculated for each of the three risk categories (see Table 4). The three risk categories did not differ in their rate of drug offences, F (2, 192) = .4338, p = .649, nor in their rate of sex offences, F (2, 192) = 1.269, p =.2835. The three risk categories, however, did differ significantly in their rate of assault offences, F (2, 192) = 44.06, p <.0001. High risk offenders committed the most assault offences (M = 1.75; SD = 1.4) followed by the moderate risk offenders (M = .91; SD = 1.3) and the least amount of assault offences was committed by the low risk group (M = .43; SD = .70).

High risk offenders committed significantly more property offences than moderate and low offenders, F (2, 192) = 8.67, p =.0002. High risk offenders committed an average of 6.5 property offences (SD =7.5), moderate risk offenders committed an average of 2.5 offences (SD = 3.1) and low risk offenders committed an average of 2.2 property offences (SD = 7.7). The risk categories also significantly differed in their rate of miscellaneous offences (e.g. mischief, fraud, weapons charges and failure to appear), F (2, 192) = 21.56, p <.0001. An average of 4.1 (SD = 3.1) miscellaneous offences were committed by high risk offenders, an average of 1.8 (SD = 2.8) by moderate risk offenders and an average of .57 (SD = .80) by low risk offenders.

Table 4

Rates of Recidivism based on Risk Category

	Group							
	Low Risk		Moderate Risk		High Risk		Total	
	M	SD	M	SD	M	SD	M	SD
recidivism* rate per youth	3.39	8.0	5.54	5.4	12.5	9.8	5.04	7.2
assault* offences	0.43	0.7	0.91	1.3	1.75	1.4	0.75	1.1
property* offences	2.17	7.7	2.54	3.1	6.50	7.5	2.62	5.9
sex offences	0.05	0.3	0.06	0.3	0.17	0.4	0.06	0.3
drug offences	0.17	0.4	0.19	0.4	0.08	0.3	0.17	0.4
miscellaneous* offences	0.57	0.8	1.84	2.8	4.08	3.1	1.43	2.4

Note. *significant risk category main effect

Risk/Need Factors

Gender and Ethnicity. A 2X2 MANOVA searched for an interaction between ethnicity and gender on all eight Risk/Need factors. No significant interaction between gender and ethnicity was found, Pillais (8, 184) = .368, p =.936. A significant main effect, however, was found for gender, Pillais (8, 184) = 3.14, p =.002, and ethnicity, Pillais (8,184) = 2.45, p =.015. This indicated that scores on the factors differed based on gender and ethnicity. The means were calculated on all eight Risk/Need factors for the four groups (see Table 5) for the purposes of comparison.

Eight 2X2 ANOVAs were conducted to examine ethnicity and gender differences on the eight factors (see Table 5). No significant interactions were found between gender and ethnicity on all eight factors. No significant gender or ethnicity main effects were found for the attitude/orientation, the education/employment, the prior and current offences/disposition, and the personality/behavior factors.

Ethnicity. Native and non-native offenders were found to differ on the substance abuse factor, F (1, 191) = 6.91, p =.009, and the peer relations factor, F (1,191) = 6.52, p = .011. Natives offenders (M = 1.1; SD = 1.3) were found to have a higher rate of substance abuse as compared to non-Native offenders (M = .61; SD = 0.89). Native youth (M = 2.05; SD = 1.2) were also found to have greater negative peer relations than non-Native youth (M = 1.6; SD = 1.1).

A linear discriminant function analysis was performed using the eight factors as predictors of ethnicity. One LDF accounted for 100% of the between group variability, Wilks' Lambda = .88, Chi squared (8) = 23.998, p = .0023. The discriminant results indicated that the Native group was located at the positive end of the discriminant

Table 5

Risk/Need Factor Means based on Group

	Group									
	Male				Female				Total	
	Native		non-Native		Native		non-Native			
	M	SD	M	SD	M	SD	M	SD	M	SD
Off	.93	1.2	.80	1.4	.63	1.4	.50	1.1	.77	1.3
Fam*	2.1	1.8	1.6	1.5	2.5	1.9	2.2	1.7	2.0	1.7
Educ	2.7	1.7	2.2	1.7	2.3	1.8	2.1	1.8	2.3	1.7
Peer**	2.1	1.2	1.6	1.1	2.0	1.3	1.7	1.3	1.8	1.2
Sub***	1.0	1.3	.56	.92	1.2	1.2	.85	.75	.85	1.1
Leis*	1.4	1.0	1.1	1.0	1.7	1.1	1.7	1.1	1.4	1.1
Pers	1.6	1.6	1.7	1.8	1.5	1.8	2.1	1.8	1.7	1.7
Att	1.2	1.4	.85	1.2	1.2	1.5	1.4	1.5	1.1	1.4

Note. *=significant gender main effect
**=significant ethnicity main effect
***=significant gender and ethnicity main effects
Dependent Measures (Off-Prior and Current Offences/Disposition; Fam-Family Circumstances/Parenting; Educ-Education/Employment; Peer-Peer Relations; Sub-Substance Abuse; Leis-Leisure/Recreation; Pers-Personality/Behaviour; Att-Attitudes/Orientations)

dimension with a group centroid of .379 and the non-Native group was located at the negative end with a group centroid of -0.407.

The loading matrix of correlations between predictors and the discriminant function concluded that there are five factors that best distinguish between Native and non-Native offenders: substance abuse (.602), peer relations (.522), family circumstances/parenting (.443), leisure/recreation (.401), and education/employment (.295). This discriminant function was able to correctly classify 64.2% of the participants.

Gender. The substance abuse factor not only differed significantly based on ethnicity, but, on gender also, F (1,191) = 4.69, p = .032. Female offenders (M = 1.1; SD =1.1) were found to have a higher rate of substance abuse than male offenders (M = .73, SD = 1.1). A significant gender difference was also found on both the leisure/recreation factor, F (1,191) = 6.85, p = .01, and the family circumstances/parenting factor, F (1,191) = 5.29, p = .023. Females (M =1.7, SD = 1.1) scored significantly higher on the leisure/recreation factor than males (M = 1.2; SD = 1.0) and the family circumstances/parenting factor (females M = 2.4; SD =1.80; males M = 1.8; SD = 1.6).

A linear discriminant function analysis was performed and found that the eight factor accounted for 100% of the between group variability in gender, Wilks' Lamba = .87, Chi squared (8) = 27.16, p = .0007. The discriminant results indicated that the female group was located at the positive end of the discriminant dimension with a group centroid of .587 and the male group was located at the negative end with a group centroid of -.261.

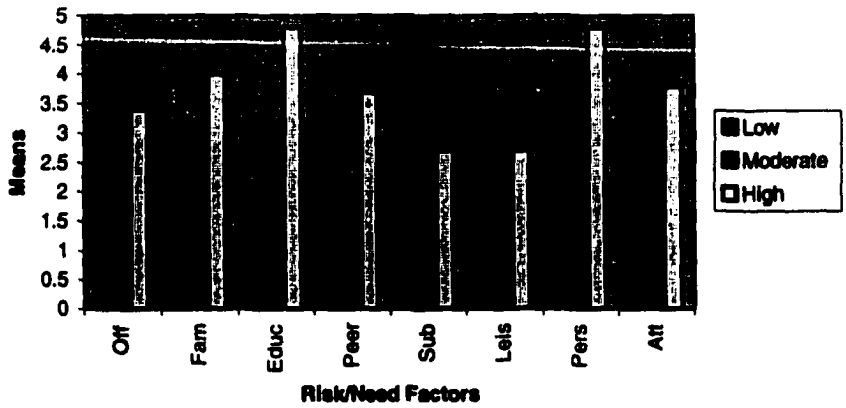
The loading matrix of correlations between predictors and the discriminant function concluded that there are five factors that best distinguish between male and female offenders: prior and current offences/dispositions (-.722), education/employment (-.685), family circumstances/parenting (.551), leisure/recreation (.520) and substance abuse (.489). This discriminant function was able to correctly classify 71.2% of the participants.

Risk Category. Eight one-way ANOVAs were calculated to examine if scores on the Risk/Need factors differed based on the risk category. The means for each of the factors based on risk category were, therefore, compiled (see Figure 1) and compared. All of the eight factors were found to significantly differ based on risk category: prior and current offences/dispositions, F (2, 192) = 48.44, p <.0001; family circumstances/parenting, F (2, 192) = 95.18, p <.0001; education/employment, F (2, 192) = 93.93, p <.0001; peer relations, F (2, 192) = 59.51, p <.0001; substance abuse, F (2, 192) = 44.06, p <.0001; leisure/recreation, F (2, 192) = 80.86, p <.0001; personality/behaviour, F (2, 192) = 101.13, p <.0001; attitudes/orientation, F (2, 192) = 103.95, p <.0001. For all eight factors, the high risk offenders scored the highest, followed by moderate risk and low risk offenders scored the lowest.

A linear discriminant function analysis was performed on the eight factors as predictors of risk category. The first discriminant function accounted for 96% of the between group variability in risk categories, Wilks' Lamba = .19, Chi squared (16) = 314.93, p <.0001. After removal of the first function, there was still a significant association between the eight subscales and risk category, Wilks' Lamba = .87, Chi

Figure 1.

Means of the eight Risk/Need Factors based on Risk Category
(n = 195)



squared (7) = 26.25, p = .0005. This second function accounts for 4% of the between group variability.

The discriminant results indicated that the low risk offenders were located at the negative end of the discriminant dimension with a group centroid of -2.02 and the high risk offenders were located at the positive end with a group centroid of 4.15. The moderate risk group's centroid falls in the middle of the dimension with a group centroid of 1.21.

The loading matrix of correlations between predictors and the discriminant function concluded that high risk offenders scored high on all eight factors, the moderate risk group scored slightly lower and the low risk offenders scored lowest. The correlations between the predictor variables and the first discriminant function are as follows: attitudes/orientation (.546), personality/behaviour (.538), education/employment (.519), family circumstances/parenting (.517), leisure/recreation (.478), peer relations (.411), prior and current offence/dispositions (.346) and substance abuse (.345). These discriminant functions were able to correctly classify 91.3% of the participants (see Table 6).

Predictive Value of Risk/Need Factors

Overall. A one way ANOVA was conducted on the overall risk/need score and the recidivism rate. There was a significant main effect found, F (1, 194) = 38.39, p <.0001. Thus, young offenders who committed more offences had a higher total score. The assumption of homogeneity of variance was sufficiently met, Levene Test F (1, 193) = .518, ns.

Table 6

Percentage of Offenders Correctly Classified in Appropriate Risk Category

Actual Group Membership	Predicted Group Membership From Linear Discriminant Function		
	Low Risk	Moderate Risk	High Risk
Low Risk (n = 84)	97.6% (82)	2.4% (2)	0% (0)
Moderate Risk (n = 99)	11.1% (11)	84.8% (84)	4.0% (4)
High Risk (n = 12)	0% (0)	0% (0)	100% (12)

Note. Percentage of "grouped" cases correctly classified is 91.28%.

The eight factors were able to account for a significant amount of the variance in recidivism rates F (8, 186) = 14.213, $p < .0001$ for all offenders. Combined, they accounted for 36% of the variance in recidivism rates. The education/employment factor, t (186) = 3.159, $p = .0018$, the prior and current offences/disposition factor, t (186) = 6.756, $p < .0001$, and the substance abuse factor, t (186) = -2.910, $p = .0041$ each made a significant unique contribution to the prediction of recidivism rates. Therefore, youth who scored high on the education/employment factor, high on the prior and current offences/disposition factor and low on the substance abuse factor had high rates of recidivism.

The 8 factors were able to account for a significant amount of the variance, 18%, in assault offences, F (8, 186) = 5.19, $p < .0001$. The prior and current offences/disposition factor, t (186) = 3.66, $p = .0003$, was the only scale to make a significant unique contribution to the prediction of assault offences. High scores on this factor correlated with high rates of assault offences. Twenty two percent of the variance in property offences was explained by the eight factors, F (8, 186) = 6.52, $p < .0001$. The prior and current offences/disposition factor, t (186) = 4.9, $p < .0001$, the education/employment factor, t (186) = 2.4, $p = .017$, and the substance abuse factor, t (186) = -2.4, $p = .02$, each made a significant unique contribution to the predicting of the variance in property offences. The incidence of property offences was associated with low scores on the substance abuse factor, high scores on prior and current offences/disposition factor and high scores on the education/employment factor.

Thirty three percent of the variance in miscellaneous offences (e.g. mischief, fraud, weapons charges and failure to appear) was accounted for by the eight factors, F

(8, 186) = 11.59, p <.0001. Significant unique contributions were made by the education/employment factor, t (186) = 2.29, p = .02, the prior and current offences/disposition factor, t (186) = 5.2, p <.0001, the peer relations factor, t (186) = 2.5, p = .015, and the substance abuse factor, t (186) = -2.9, p = .004. High scores on the education/employment factor, the prior and current offences/disposition factor, the peer relations factor and low scores on the substance abuse factor were associated with the occurrence of miscellaneous offences. The eight factors did not account for a significant amount of variance in either drug, F (8, 186) = .753, p =.645, or sexual offences, F (8, 186) = .977, p = .455.

A canonical correlation found that there is a significant relationship between the eight factors and the five offence types, Pillais (40, 930) = 3.01, p <.001. Only one canonical was found to be significant with an R squared value of .46 and significant at F (40,796) = 3.63, p <.001. High scores on all eight factors are associated with higher rates of assault, property, and miscellaneous offences.

After controlling for the eight factors, gender made a significant unique contribution, F change (1, 185) = 5.12, p = .025, to the prediction of recidivism. Risk category did not make a significant unique contribution to the prediction of recidivism after controlling for the eight factors and gender, F change (1,184) = .019, p =.890. Ethnicity also did not make a significant unique contribution after controlling for the eight factors, gender and risk category, F change (1, 183) = .003, p = .957.

Gender. The overall recidivism and five offence types were subjected to multiple regression to examine for gender differences (see Table 7). When only males were assessed, the eight factors had the ability to predict 37.4% of the variance in overall

Table 7

Prediction of Recidivism based on Gender

	Group					
	Male			Female		
	R square	F	Signif F	R square	F	Signif F
recidivism rate per youth	.374	9.43	<.0001*	.349	3.41	.0033*
assault offences	.197	3.87	.0004*	.239	1.99	.0655
property offences	.230	4.71	<.0001*	.179	1.39	.2239
sex offences	.065	1.09	.3765	.200	1.60	.1490
drug offences	.049	0.81	.5957	.085	0.59	.7782
miscellaneous offences	.331	7.81	<.0001*	.414	4.50	.0004*

Note. *the eight subscales predict a significant amount of the variability

recidivism, F (8, 126) = 9.43, p <.0001. Significant unique contributions were made by the prior and current offences/disposition factor, t (126) = 5.74, p <.0001, the substance abuse factor, t (126) = -2.12, p =.036, and the education/employment factor, t (126) = 2.16, p = .033. Higher rates of recidivism were associated with low scores on the substance abuse factor, and high scores on the prior and current offences/disposition factor and the education/employment factor.

When only females were assessed, the eight factors also predicted a significant amount of the variance in overall recidivism (34.9%), F (8, 51) = 3.41, p = .0033. However, for females, none of the factors made a significant unique contribution, thus, only the eight factors together accounted for recidivism. Evidently, given the equivalence in the ability to predict recidivism, the Risk/Need Assessment predicts recidivism equally as well for males as females.

The ability of the eight factors to predict variance in each of the five offence types was also examined separately for each gender. The eight factors were unable to significantly predict sexual offences, F (8, 126) = 1.09, p = .38, and drug offences, F (8, 126) = .809, p = .60 for the male population. They were, however, able to account for a significant amount of the variance in the male population in assault offences (19.7%), F (8, 126) = 3.87, p = .00051, property offences (23%), F (8, 126) = 4.71, p <.0001, and miscellaneous offences (e.g. mischief, fraud, weapons charges and failure to appear) (33.1%) , F (8, 126) = 7.81, p <.0001. The eight factors were only able to significantly account for the variance in miscellaneous offences (41.3%), F (8, 51) = 4.50, p = .0004, for the female population.

Native. The differences in the ability to predict overall recidivism were also examined separately for the Native and non-Native populations (see Table 8). When the Native population was evaluated, it was found that the eight factors were able to account for 31.7% of the variance in overall recidivism, F (8, 85) = 4.93, p <.0001. Significant unique contributions were made by the prior and current offences/disposition factor, t (85) = 4.29, p <.0001, the substance abuse factor, t (85) = -2.15, p = .034, and the education/employment factor, t (85) = 2.15, p = .035. Once again, recidivism was associated with low scores on the substance abuse factor, high scores on the education/employment factor and high scores on the prior and current offences/disposition factor.

The eight factors were also able to account for a significant amount of the variance in overall recidivism for the non-Native population (41.5%), F (8, 92) = 8.17, p < .0001. The prior and current offences/disposition factor, t (92) = 4.5, p < .0001, was the only factor to make a significant unique contribution to the prediction of overall recidivism in non-Native offenders with high scores being associated with recidivism.

The Native and non-Native populations were also examined separately to evaluate the ability of the eight Risk/Need factors to predict variance in the five offence types. For the native population, the eight factors were only able to account for a significant amount of the variance in property offences (20.7%), F (8,85) = 2.77, p =.009, and miscellaneous offences (e.g. mischief, fraud, weapons charges and failure to appear) (36.2%), F (8, 85) = 6.02, p <.0001. When the non-Native population was examined, the eight factors were able to account for a significant amount of the variance in assault offences (26%), F (8,

Table 8

Prediction of Recidivism based on Ethnicity

	Group					
	Native			non-Native		
	R square	F	Signif F	R square	F	Signif F
recidivism rate per youth	.317	4.93	<.0001*	.415	8.17	<.0001*
assault offences	.133	1.63	.1282	.260	4.05	.0004*
property offences	.207	2.77	.0090*	.278	4.27	.0001*
sex offences	.156	1.97	.0601	.098	1.24	.2837
drug offences	.075	0.86	.5500	.046	0.55	.8130
miscellaneous offences	.362	6.02	<.0001*	.425	8.50	<.0001*

Note. *the eight subscales predict a significant amount of the variability

92) = 4.05, p = .0004, property offences (27.8%), F (8, 92) = 4.43, p = .0001, and miscellaneous offences (42.5%), F (8, 92) = 8.50, p <.0001.

Four Groups. Each of the four groups was also examined individually to assess the ability of the eight factors to predict overall recidivism and the five offence types (see Table 9). The eight factors were unable to significantly predict overall recidivism for female non-Native offenders, F (8, 11) = 2.40, p = .09, and female Native offenders, F (8, 31) = 1.17, p = .35. A significant amount of the variance (40.2%) in overall recidivism for male non-Native offenders was accounted for by the eight factors, F (8, 72) = 6.05, p <.0001. The prior and current offences/disposition factor, t (72) = 4.2, p = .0001, made a significant unique contribution to this prediction, with high scores being associated with recidivism.

When male Native offenders were assessed, a significant amount of the variance (40.9%) in overall recidivism was predicted by the eight factors, F (8, 45) = 3.90, p = .0015. Significant unique contributions were made by the prior and current offences/disposition factor, t (45) = 3.8, p = .0004, and the substance abuse factor, t (45) = -2.10, p = .042. Thus, low scores on the substance abuse factor and high scores on the prior and current offences/disposition factor were associated with recidivism for male Native offenders.

The eight factors were unable to significantly predict drug offences for any of the four groups. A significant amount of the variance in sex offences (28.9%) was only able to be predicted by the eight factors for the male Native population, F (8, 45) = 2.30, p = .04. The eight factors were only able to predict a significant amount of the variance in assault offences (26.9%) for male non-Native offenders, F (8, 72) = 3.32, p = .003. The

Table 9

Prediction of Recidivism based on Group Membership

	Group							
	Male				Female			
	Native		non-Native		Native		non-Native	
	R square	F	R square	F	R square	F	R square	F
recidivism rate per youth	.409	3.90**	.402	.605***	.232	1.17	.635	2.39
assault offences	.269	2.07	.269	3.32**	.227	1.13	.414	0.97
property offences	.214	1.53	.290	3.68**	.223	1.11	.633	2.37
sex offences	.289	2.29*	.102	.102	unable to compute		.415	.977
drug offences	.110	.693	.052	.497	.191	.913	unable to compute	
miscellaneous offences	.534	6.45***	.428	6.73***	.485	3.65**	.520	1.49

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

factors were also able to account for a significant amount of the variance in property offences (29%) for male non-Native offenders, F (8, 72) = 3.68, p = .0012. Miscellaneous offences (e.g. mischief, fraud, weapons charges and failure to appear) was the only offence type for which a significant amount of the variance could be accounted for in three groups. Fourty three percent of the variance in miscellaneous offences was accounted for by the eight factors for the male non-Native group, F (8, 72) = 6.73, p < .0001, fourty nine percent of the variance in female Native offenders, F (8, 31) = 3.65, p = .0042 and fifty three percent of the variance in miscellaneous offences for male Native offenders, F (8, 45) = 6.45, p <.0001.

Risk Category. Multiple regressions were calculated to examine the ability of the eight factors to predict overall recidivism and the five offence types for each of the three risk categories (see Table 10). The eight factors were unable to predict overall recidivism for any of the five offence types for the high risk category. For the low risk category, the eight factors were able to account for 19 % of the variance in overall recidivism, F (8, 75) = 2.22, p = .03. The substance abuse factor, t (75) = -2.13, p =.04, and the education/employment factor, t (75) = 2.27, p = .03, each made a significant contribution to the prediction of overall recidivism for low risk offenders. For low risk offenders, therefore, low scores on the substance abuse factor and high scores on the education/employment factor were associated with recidivism. The eight factors were, however, unable to account for a significant amount of the variance in the five offence types for low risk offenders.

Thirty three percent of the variance in overall recidivism was accounted for by the eight factors for the moderate risk category, F (8, 90) = 5.59, p < .0001. A significant

Table 10

Prediction of Recidivism based on Risk Category

	Group					
	Low Risk		Moderate Risk		High Risk	
	R square	F	R square	F	R square	F
recidivism rate per youth	.192	2.22*	.332	5.60***	.638	.661
assault offences	.103	1.07	.149	1.98	.782	1.34
property offences	.138	1.50	.163	2.19*	.739	1.06
sex offences	.149	1.64	.087	1.07	.865	2.40
drug offences	.039	.379	.097	1.21	.729	1.01
miscellaneous offences	.094	.967	.289	4.58***	.605	.574

Note. * = p <.05
** = p <.01
*** = p <.001

unique contribution to the prediction of overall recidivism was made by the prior and current offences/disposition factor, t (90) = 1.97, $p < .0001$, with high scores being associated with recidivism. Further, for the moderate risk category, a significant amount of the variance in property offences (16.3%), F (8, 90) = 2.19, $p = .04$, and miscellaneous offences (e.g. mischief, fraud, weapons charges and failure to appear) (28.9%), F (8, 90) = 4.58, $p = .0001$, was accounted for by the eight factors.

Factor Analysis

Principal factor extraction with varimax rotation was performed on the eight subscales for all participants. One factor was extracted and it accounted for 55.7% of the variance in scores. All eight subscales loaded high on this factor (alpha = .8116). A reliability analysis found that Factor 1 identified a homogeneous set of variables. All of the items correlated well and none of the items would significantly increase the alpha if deleted.

Summary

In summary, the Risk/Need Assessment had demonstrated its ability to predict the probability of recidivism for female and male young offenders, regardless of Native ancestry. The results indicated that as Risk/Need scores increased for male, female, Native and non-Native offenders, so did the probability of re-offending. The Risk/Need was also found to predict property offences, assault offences and miscellaneous offences (e.g. mischief, fraud, weapons charges, failure to appear). In other words, the Risk/Need was able to appropriately identify the occurrence of types of offences. Therefore, the Risk/Need can not only predict the probability of recidivism but also specific offence types. The Risk/Need demonstrated the ability to distinguish between Native and non-

Native offenders, male and female offenders. The Risk/Need was also able to distinguish between the risk level of the offender on all eight factors.

Discussion

In July 1994, the Ministry of Community and Social Services implemented the Risk/Need Assessment in Ontario. This tool was implemented in probation offices all across Ontario, yet, was only normed in Southern Ontario. Previous research has noted, however, that loss of predictive accuracy can occur over jurisdictions due to social, economic and cultural composition (Wormith & Goldstone, 1984). Northwestern Ontario represents a unique cultural composition when compared to the rest of Ontario due to its over-representation of Native young offenders. For this reason, Jung (1996) examined the short-term validity of the Risk/Need with Native and non-Native offenders. She concluded that the Risk/Need was robust to gender, ethnicity and criminal status 6-months post assessment.

One of the limitations cited by Jung (1996) was the time constraints placed upon her research and she suggested a two year follow-up to examine the long-term validity of the Risk/Need. Other studies have also suggested that risk instruments should be validated every two years and across jurisdictions (Goldstone, 1984; Ashford & Lecroy, 1990). This study examined the long-term validity of the Risk/Need Assessment with a sub-population of the participants utilized in Jung's study.

Examination of the recidivism rates of the young offenders found that there were significant differences between genders. Males committed significantly more offences than females. This may be a reflection of this sub-population, however, as research has indicated that gender is not a significant predictor of recidivism (Hoge et al., 1994).

Males were also found to have committed more property offences, drug offences and miscellaneous offences (e.g. mischief, fraud, weapons charges and failure to appear). This is consistent with a study by Miller et al. (1995) that reports that female young offenders commit different types of crimes than males. Gender in this study, therefore, was unique in that it served as a risk variable for recidivism, but was typical in its ability to predict differential behavior in offence types.

No significant difference was found in overall recidivism rates or offence types between the Native and non-Native offenders. Although Native offenders have been found to be over-represented in Canadian prisons (Bonta et al., 1992; O'Neilsen, 1990), this may be a reflection of the negative stereotypes placed upon them (Hall & Simkus, 1975). Native offenders may not necessarily be committing more offences, but just be sentenced more due to their increased visibility in the criminal justice system.

As was predicted, there were significant differences in recidivism rates based on risk category. As the risk level increased for the young offenders so did the probability of re-offending. These results were similar to Jung's (1996) who reported that recidivists scored much high than non-recidivists in all areas of risk and need. Andrews (1989) concluded that the probability of reconviction increases in a regular manner over a two year period with each additional risk factor. Therefore, each risk factor that is indicated on an offender's Risk/Need has a cumulative effect upon the probability of recidivism.

Risk category was also able to find significant differences in the rate of assault offences, property offences and miscellaneous offences (e.g. mischief, fraud, weapons charges, and failure to appear). The probability of each of these offences occurring increased as risk level increase. Although risk category did not differ significantly for

drug and sexual offences this does not mean that the assigned risk level is unable to differentiate for these offences. The inability to find a significant difference is most likely due to the small rate of occurrence for which these offences were reported. Only 10 offenders had committed sexual offences and 31 offenders committed drug offences. The Risk/Need, therefore, fulfills the purpose of a risk assessment for it characterizes the appropriate risk level to predict whether an offender will commit an offence in the future (Monahan, 1981).

The relationship of the Risk/Need factors to gender, ethnicity and risk category were analyzed in this study. This study replicated Jung's (1996) findings that the Risk/Need was able to distinguish between Native and non-Native youth. The eight factors were able to classify 64% of the participants in this study. As were discussed by Jung (1996), Native youth scored significantly higher on the substance abuse scale as compared to non-Native youth and had greater negative peer relations. Although these moderate differences were noted, the Risk/Need has proven to be robust to ethnicity at a two-year follow-up.

This study also replicated Jung's (1996) findings that the eight Risk/Need factors were able to distinguish between male and female offenders. The eight factors were able to correctly classify 71% of the participants. Males and females were found to significantly differ on three of the eight factors. Female offenders were found to have a higher rate of substance abuse and the leisure/recreation factor. Hoge et al. (1994) reported that positive peer relations, good educational achievement and effective use of leisure time serve as protection against recidivism. Evidently, the females in this population were not experiencing these protective situations. Further, female offenders

scored higher on the family circumstances/parenting factor. Calhoun et al. (1993) concluded that the effect of living in a dysfunctional family is stronger for females than for males. The females in this study were obviously not surrounded by the protective factors that would assist in their desistance from crime. Although differences between genders were reported, the long-term robustness of the Risk/Need to gender was established.

In addition to replicating the distinctions that were reported by Jung (1996), the ability of the Risk/Need factors to predict risk category was also assessed. The eight Risk/Need factors were able to correctly classify 91% of the participants. All eight factors distinguished between the three risk categories. All of the eight Risk/Need factors also differed significantly based on the risk category with high risk offenders scoring the highest, moderate risk offenders lower and low risk offenders the lowest.

Not only were the group differences on the Risk/Need factors examined, but, the ability of those factors to predict overall and distinct forms of recidivism was researched. Results indicated that the eight Risk/Need factors were able to account for 36% of the variance in recidivism rates two years post assessment. The factors were also able to predict 18% of the variance in assault offences, 22% of the variance in property offences and 33% of the variance in miscellaneous offences. This is concurrent with research on the LSI, the Risk/Need's predecessor. Motiuk et al. (1992) concluded that the LSI was predictive of reincarceration at a one-year follow-up. Further, Coulson et al. (1996) reported that the LSI had a better than chance prediction of recidivism at 1 and 2 year follow-ups. The Risk/Need Assessment, therefore, is able to predict overall recidivism and specific offence types in young offenders two years post assessment.

The eight Risk/Need factors have been found to predict recidivism equally as well for female and male offenders. Thirty seven percent of the variance in overall recidivism was accounted for in the male population and 34% in the female population. When only the male population was assessed, 19% of the variance in assault offences, 23% of the variance in property offences and 33% of the variance in miscellaneous offences was accounted for by the eight factors. For females, 41% of the variance in miscellaneous offences was accounted for by the Risk/Need factors. These findings extend Jung's (1996), which reported that the Risk/Need did not predict short-term recidivism differently for male and female delinquents. This is also concurrent with previous research that reported that the YO-LSI was robust to gender. This robustness to gender has been transcended to the Risk/Need Assessment.

The Risk/Need Assessment was also found to be robust to ethnicity. Equivalent rates of prediction in overall recidivism were found for the Native population (31.7%) and the non-Native population (41.5%). These results concur with Jung (1996) who concluded that the Risk/Need did not predict short-term recidivism differently based on Native ancestry. The Risk/Need Assessment obviously has taken into consideration any of the unique needs that Native offenders may present with as it is able to adequately predict recidivism regardless of ethnicity. When only Natives were assessed, 20.7% of the variance in property offences were accounted for, and 36.2% of the variance in miscellaneous offences. When non-Native youth were evaluated, 27.8% of the variance in property offences was accounted for, 42.5% for miscellaneous offences and 26% of the variance in property offences. As research has indicated on the Risk/Need's predecessors, this assessment tool is robust to Native ethnicity (Bonta, 1989).

A more in-depth examination of the Risk/Need's predictive ability indicated that the eight Risk/Need factors were able to significantly predict recidivism for male Native offenders (40.9%) and male non-Native offenders (40.2%). Once again, establishing the robustness of the Risk/Need Assessment to gender and ethnicity. The eight factors were unable to predict the female groups, but this is most likely due to the small sample sizes in each of these populations.

The eight Risk/Need factors were also able to predict recidivism based on the risk category of each youth. Nineteen percent of the variance in overall recidivism was accounted for with the low risk offender group and 33% of overall recidivism in the moderate risk category. The sample size of the high risk category (n=12) made prediction impossible. These findings establish the ability of the Risk/Need to predict recidivism for all risk levels of youth. The Risk/Need can, not only identify high risk cases, but the probability of recidivism for youth who are at a low probability of reoffending.

Although all eight factors combined have the highest likelihood of predicting recidivism, three Risk/Need factors were consistently able to make unique contributions to the prediction of overall and specific recidivism: prior and current offences/disposition, education/employment and substance abuse. The prior and current offences/disposition factor seems inherent to risk prediction. By establishing previous trends in a young offender's behavior, future behavior can be measured. Ashford and LeCroy (1990) reported that criminal history variables were the best at predicting recidivism outcomes.

The substance abuse factor measures a young offenders involvement in alcohol and drug use and their involvement in the offender's criminal history. Substance abuse can result in the youth continuing their criminal activity to support their habit. It can also result in impaired decision making processes often resulting in criminal activity.

The education/employment factor assesses a youth's interactions within the classroom environment, the relationship with peers and superiors and level of employment. Interactions within the school environment are often indicative of the overall state of delinquent behavior. Youth who become involve in assault and property offences are normally disruptive within the school environment. Jung (1996) also found that the education/employment factor was influential in discriminating between recidivists and non-recidivists.

These results have established the eight Risk/Need factors are able to predict a significant amount of overall recidivism in young offenders and specific offence types, particularly assault, property and miscellaneous (e.g. mischief, fraud, weapons charges, and failure to appear). The Risk/Need can predict recidivism regardless of ethnicity or gender and can predict the likelihood of recidivism up to two years post assessment.

Although Simourd et al. (1994) were able to develop an empirical typology for young offenders from the Youth Level of Supervision Inventory, a predecessor of the Risk/Need, a factor analysis was unable to find any underlying clusters within this population. The factor analysis revealed one factor onto which all eight of the Risk/Need factors loaded. This demonstrates, however, that each of the Risk/Need factors is essential to the complete prediction of recidivism. Examination of the Risk/Need factor scores did indicate a "Low Risk" type that as described by Simourd et al. (1994) had all

factor scores within the low range. Eleven of the 195 participants (5.6%) had all of their factor scores within the low range. Even though an empirical typology of the Risk/Need was unable to be created, this study demonstrated that the risk categories set out by the Risk/Need Assessment do appropriately categorize and define risk and, therefore, the most important of offenders, high risk offenders, are identified.

Despite the strong findings of this study, there are some significant limitations which need to be noted. The most significant limitation of this study is the attrition from Jung's initial study. It is unclear as to why recidivism data was unavailable on fifty three of the young offenders in Jung's study. The data collection process indicated that these offenders were unable to be located. There is the possibility that these offenders did not re-offend, however, it is unclear at this time why their previous criminal histories would not be accessed either.

As indicated by Jung (1996), this study is unable to account for inter-observer reliability in the Risk/Need Assessments. Any differences between youths on their Risk/Need Assessments are assumed to be valid distinctions in the criteria laid out by the assessment form. The extensive training of the probation officers, as mandated by the Ministry of Community and Social Services, and the fact that these assessments were conducted as part of their case management procedures lends itself, however, to the validity of the assessment.

A third limitation of this study is the fact that only eleven of the 195 youth in this study had not re-offended. Jung (1996) was able to examine the differences between recidivating and non-recidivating youth to provide a more in depth examination of the

short-term validity of the Risk/Need. This study was limited to examining the differences in recidivism in a population that primarily re-offended.

Fourthly, this study was limited by confounding variables that were unknown to the researcher. Given these youth continued criminal histories, it is more than likely that the situation of a plea bargain may have arisen in their dealings with the criminal justice system. Their criminal records may, therefore, not be a true reflection of the criminal activity in which the youth were involved. Further, because the only information researched on these youth is their criminal records, any significant life changes (ie. deaths in the family, drug overdoses, and attempted suicides) are not taken into account.

Further research should be conducted into the long-term validity of the Risk/Need Assessment to overcome some of these limitations. Research could include evaluations of single parole officer caseloads to account for inter-observer reliability. The ability to investigate the differences between recidivating and non-recidivating youth could probably be completed with a larger sample size. Future research should also examine for cultural and regional differences in Risk/Need Assessment scores and recidivism patterns.

Taking the limitations of this study into account, the results still support the long-term validity of the Risk/Need Assessment. No research has previously been conducted into the long-term validity of the Risk/Need nonetheless, these preliminary results indicate that the Risk/Need Assessment is serving its purpose for the Ministry of Community and Social Services all across Ontario. This study extends Jung's (1996) conclusion that the Risk/Need is robust to gender and ethnicity to a two year time frame post assessment. Further, it has been established that the Risk/Need is able to predict

recidivism over a two-year period. Most importantly, the Risk/Need appropriately assigns risk categories to youth and adequately predicts the likelihood of each youth re-offending.

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Appendix A

Risk/Need Assessment Form

Risk/Need Assessment - Intake

Young Offender Name | Date of birth

Part I Assessment of Risks and Needs

1. Prior and current offences/dispositions
a. Three or more prior convictions
b. Two or more prior failures to comply
c. Prior probation
d. Prior custody
e. Three or more current convictions
Total

Comments (include any mitigating/aggravating factors)

Risk Level:
Low (0)
Moderate (1-2)
High (3-6)

Source(s) of Information | Date

2. Family Circumstances/Parenting
a. Inadequate supervision
b. Difficulty in controlling behaviour
c. Inappropriate discipline
d. Inconsistent parenting
e. Poor relations/father-child
f. Poor relations/mother-child
Total

Comments

Strength
Risk Level:
Low (0-2)
Moderate (3-4)
High (5-6)

Source(s) of Information | Date

3. Education/Employment
a. Disruptive classroom behaviour
b. Disruptive schoolyard behaviour
c. Low achievement
d. Problems with peer relations
e. Problems with teacher relations
f. Truancy
g. Unemployment seeking employment
Total

Comments

Strength
Risk Level:
Low (0)
Moderate (1-3)
High (4-7)

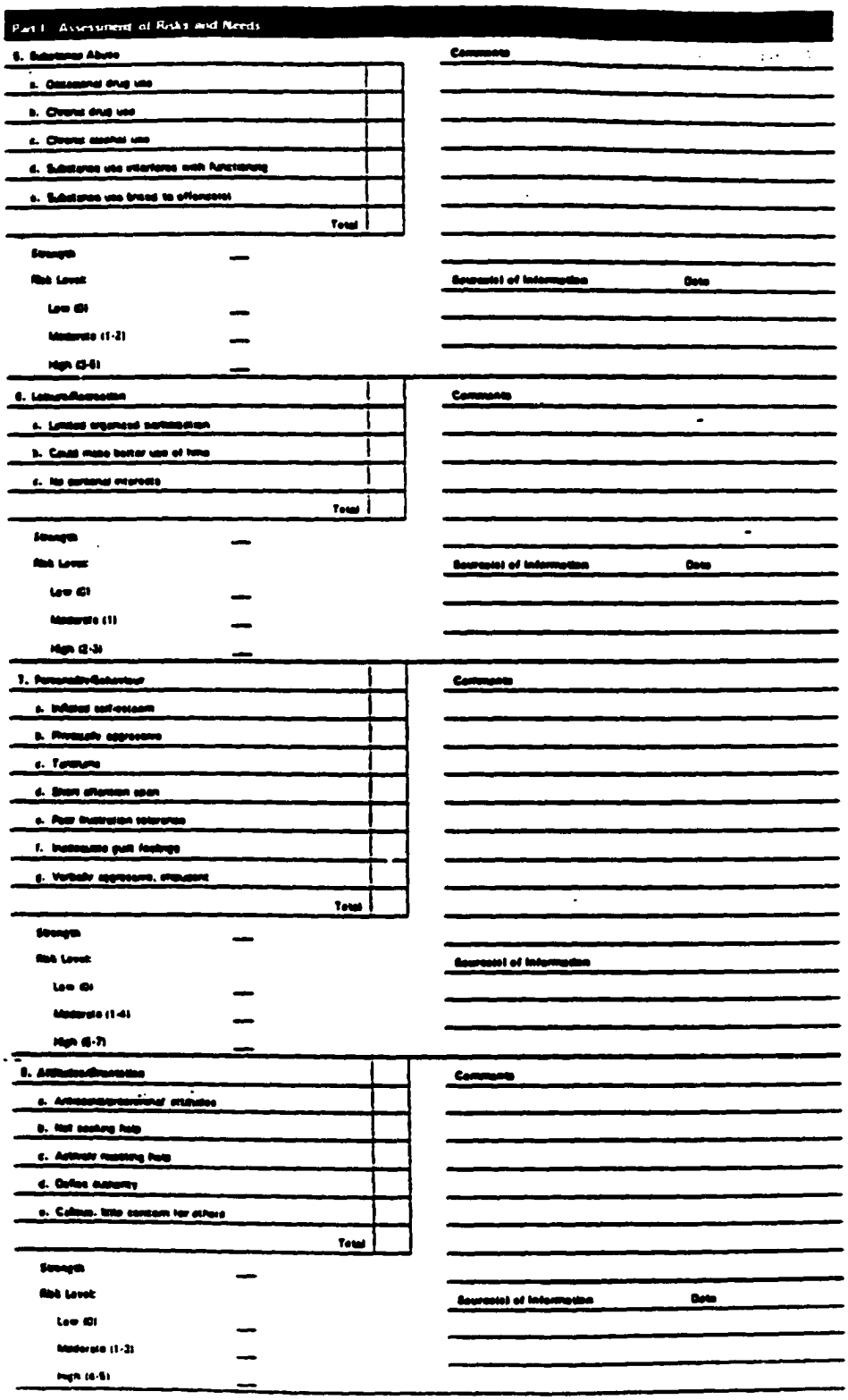
Source(s) of Information | Date

4. Peer Relations
a. Some delinquent acquaintances
b. Some delinquent friends
c. No or few positive acquaintances
d. No or few positive friends
Total

Comments

Strength
Risk Level:
Low (0-1)
Moderate (2-3)
High (4)

Source(s) of Information | Date



Part II Summary of Risk Need Factors (from page 1)

	Prior and Current Offense/ Dispositions	Family Factors	Education	Peer Relations	Substance Abuse	Leisure/ Recreation	Personality	Attitudes/ Orientation	Overall Total
Total									
High Level									___ Low (0-9)
Low									___ Moderate (9-26)
Moderate									___ High (27-34)
High									___ Very High (35-43)

Part III Assessment of Other Needs/Special Considerations

1. Family/Parenting

___ Chronic history of offense(s) ___ Financial/accommodation problems ___ Abusive mother

___ Emotional distress/disturbance ___ Unappropriate parents ___ Significant family trauma

___ Drug-related abuse ___ Cultural/ethnic issues (specify) _____

___ Marital conflict ___ Abusive father ___ Other _____

Comments

2. Youth

___ Health problems ___ Peers outside age range ___ Third party threat

___ Physical disability ___ Depressed ___ History of sexual/physical assault

___ Low intelligence/Developmental delay ___ Low self-esteem ___ History of assault on authority figure

___ Learning disability ___ Inappropriate sexual activity ___ History of weapon use

___ Underachievement ___ Resist/resent structure ___ History of fire setting

___ Poor Problem solving skills ___ Poor social skills ___ History of escapes

___ Victim of physical/sexual abuse ___ Engages in crime ___ Protection issues

___ Victim of neglect ___ Suicide attempts ___ Adverse living conditions

___ Shyness/shyness ___ Diagnosis of psychosis ___ Other _____

Comments (note any special responses / consideration indicating the need for culturally specific services)

Part IV Your Assessment of the Client's General Risk Need Level

___ Low Rationale: _____

___ Moderate _____

___ High _____

___ Very High _____

_____

_____

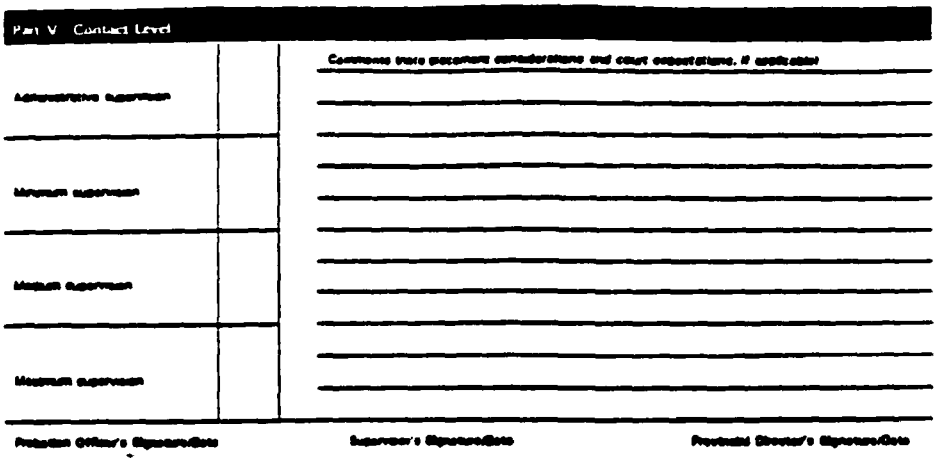
_____

_____

_____

_____

_____



Part V Contact Level

Comments from previous considerations and court expectations, if applicable

Administrative supervision

Minimum supervision

Medium supervision

Maximum supervision

Probation Officer's Signature/Date

Supervisor's Signature/Date

Probation Director's Signature/Date

Part VI Case Management Plan

Goal 1	Means of Achievement
Goal 2	Means of Achievement
Goal 3	Means of Achievement
Goal 4	Means of Achievement

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Appendix B

Letter of Ethical Approval from Lakehead University

LAKEHEAD UNIVERSITY
955 Oliver Road, Thunder Bay, Ontario, Canada P7B 5E1
Office of the President
Telephone (807) 343-8200

Risk/Need 77

12 May 1999

Ms. Shannon Costigas
Department of Psychology
Lakehead University
THUNDER BAY, ONTARIO
P7B 5E1

Dear Ms. Costigas:

Based on the recommendation of the Ethics Advisory Committee, I am pleased to grant ethical approval to your research project entitled: CRITICAL EVALUATION OF THE LONG-TERM VALIDITY OF THE RISK/NEED ASSESSMENT AND ITS YOUNG OFFENDER TYPOLOGY.

Best wishes for a successful research project.

Sincerely,

FREDERICK GILBERT
President

/lw
cc: Dr. E. Rawana, Supervisor