PREDICTING RECIDIVISM OF ABORIGINAL YOUTH OFFENDERS: A LOOK AT

AN ESTABLISHED RISK ASSESSMENT TOOL AND CULTURALLY-SPECIFIC

PREDICTORS

by

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Predicting recidivism of Aboriginal youth offenders: A look at an established risk

assessment tool and culturally-specific predictors.

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The application of standard risk assessment tools with Aboriginal youth offenders

has been a highly controversial practice. Criticisms are premised on the fact that risk/need

tools are largely founded on the social and historical experiences of non-Aboriginal

offenders. In turn, scholars and practitioners have recommended the use of culturally-

specific risk/need factors considering Aboriginal culture and the unique context of

Aboriginal people in Canada. The current project consists of two studies designed to

contribute to our understanding of these concerns. Study 1 examined the predictive

validity (both discrimination and calibration) of the YLS/CMI with both Aboriginal and

non-Aboriginal youth offenders. Results found that although the YLS/CMI provides

adequate discrimination for Aboriginal offenders (AUCs from .555 to .606), it

underestimates the absolute recidivism rates of low and moderate risk Aboriginal youth

compared to non-Aboriginal youth. Study 2 explored the utility of PSRs as sources of

culturally-specific information and examined the predictive validity of those factors

included. Results indicate that although a number of culturally-specific factors predicted

re-offending, particularly family breakdown and community variables, PSRs are an

inconsistent source of this information. Overall, the findings suggest that the predictive

validity of the YLS/CMI with Aboriginal offenders may be improved with increased

focus on family breakdown and home community. Implications and next steps for both

practice and research are discussed.

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Introduction

In 2013/2014, Aboriginal[1] youth offenders accounted for 41% of youth admitted to custody or community supervision in Canada and yet, Aboriginal youth only represented 7% of the Canadian youth population (Correctional Services Program, 2015). The management of this overrepresented group of offenders, like all others in Canada, requires the use of risk/need assessment tools that assist in managing their risk in humane and effective ways and support the provision of treatment to prevent re-entry into the criminal justice system. The utility of risk/need assessment tools is, however, contingent on the inclusion of risk/need factors that have demonstrated predictive validity for the populations with which they are used. Unfortunately, there is a paucity of research examining the prediction of risk for Aboriginal youth offenders.

The application of commonly-used risk/need assessment tools to Aboriginal offenders is frequently criticized. These criticisms are premised on the fact that risk/need tools are largely founded on the social and historical experiences of non-Aboriginal offenders, calling their relevancy to Aboriginal offenders into question. In turn, scholars and practitioners have recommended the use of culturally-specific risk/need factors considering Aboriginal culture and the unique context of Aboriginal people in Canada that may provide a more comprehensive understanding of the needs of these offenders (e.g., Allan & Dawson, 2004; Heckbert & Turkington, 2001). However, little is known

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[1] Aboriginal is meant to denote First Nation, Métis, and Inuit people in Canada. There are considerable differences among these subgroups (e.g., history in Canada, traditions, languages) and it is not assumed that these differences are not important in the management and treatment of these offenders. However, the term Aboriginal is used throughout this document given that few risk-related studies discuss or investigate the differences between tribes/groups and statistics are often presented for Aboriginal/non-Aboriginal people.

about the predictive validity of factors specific to Aboriginal offenders, such as strength

of cultural identity, dislocation from Aboriginal community, or intergenerational effects

of residential school. Given that Aboriginal people are considerably younger than non-

Aboriginal people in Canada[2], and that Aboriginal youth represent 18.2% of the

Aboriginal population (Statistics Canada, 2013a), it is important that the offending

behaviour of this large segment of the population is better understood, especially given

the consequences of early engagement in antisocial behaviour (e.g., dropping out of

school, employment difficulties; De Li, 1999; Janosz, Le Blanc, Boulerice, and

Tremblay, 1997) and their overrepresentation in the criminal justice system. The goal of

the present research is to examine the predictive validity of a commonly used risk

assessment tool for youth, the Youth Level of Service/Case Management Inventory

(YLS/CMI; Hoge & Andrews, 2002), and culturally-specific risk factors[3] for Aboriginal

youth offenders using provincial Pre-Sentence Reports (PSRs). The purpose and utility of

offender risk assessment will first be discussed, followed by a review of the historical and

social experiences of Aboriginal people in Canada, which inform culturally-specific

factors and criticisms levied against conventional risk assessment tools. Lastly, the

application of risk assessment tools to Aboriginal offenders and the current evidence

supporting culturally-specific factors will be examined.

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[2] For example, the median age of Aboriginal people is 28 compared to 41 for non-Aboriginal people (Statistics Canada, 2013a).

[3] The term 'culturally-specific risk factors' refers to factors unique to Aboriginal people (e.g., involvement in culture, spiritual support) as well as contextual factors that disproportionately impact Aboriginal people (i.e., involvement in residential schools, foster care placements). It is important to note that these contextual factors are associated with a history of colonization and marginalization and do not *represent* Aboriginal culture. The two are merely considered together as a way of exploring factors that may be associated with risk for Aboriginal youth, which have largely been ignored (or ruled-out) in the general risk prediction literature.

Offender Risk Assessment

      Predicting risk to re-offend. Risk assessment has become an important task in the management of offenders at nearly every stage in the criminal justice system. For youth offenders, risk assessments are often used prior to arrest, pre-adjudication, and in sentencing after a conviction and are often designed to inform decisions related to sentencing, offender management, and treatment provision (Hoge, 2002). The purpose and format of risk assessment measures, however, have differed over the years, with assessment tools falling into four generations (Andrews, Bonta, & Wormith, 2006; Hannah-Moffat & Maurutto, 2003). The first generation of risk assessments consisted primarily of unstructured professional judgments of an offender's probability of offending. This allowed a practitioner to judge the importance and relevance of any factors in predicting the offender's behaviour. A more structured approach was later developed, termed structured professional judgment, which provided a list of factors to consider; however, it continued to leave the final risk rating (e.g., low, medium) to the discretion of the professional (e.g., the Structured Assessment for Violence Risk in Youth [SAVRY]; Borum, Bartel, & Forth, 2002).

      The second generation of risk assessments were developed based solely on an item's empirical link to recidivism, often including primarily static, or unchangeable, factors, such as prior offences (e.g., STATIC-99; Hanson & Thornton, 1999). The third generation consisted of risk assessments that were empirically based but included dynamic, or changeable, factors (e.g., antisocial attitude) that could be amenable to treatment (e.g., Psychopathy Checklist: Youth Version [PCL-YV]; Forth, Kosson, & Hare, 2003). Finally, the fourth generation of assessments include both dynamic and

static factors and are designed to inform case planning and supervision in addition to predicting risk for offending (e.g., YLS/CMI; Hoge & Andrews, 2002). With each new generation of risk assessment came changes in predictive ability. Meta-analyses have shown that first generation assessments often demonstrate weak validity in predicting general recidivism (mean $r = .12$) compared to second generation risk tools, which often demonstrate strong predictive ability (mean $r = .42$; Andrews et al., 2006). Third generation scales often do a little worse than second (mean $r = .36$) and fourth generation scales (mean $r = .41$; Andrews et al., 2006).

Most current risk assessments are often developed using both static and dynamic risk factors. Static risk factors are historical, unchangeable variables that are considered impervious to treatment. Some static factors include age, prior offences, gender, or criminal record of family members. Dynamic risk factors are those that are changeable and can be targeted by interventions, such as antisocial attitudes, procriminal peers, and current substance use. Given their amenability to treatment and influence on risk, they are often termed criminogenic needs. Over the course of the risk assessment generations, meta-analyses have identified eight risk/need factors, including dynamic and static items, that are particularly predictive of re-offending. These factors, termed the *Central Eight* by Andrews and Bonta (2010), include Criminal History, Education/Employment, Family/Marital, Leisure/Recreation, Substance Use, Antisocial Peers, Antisocial Attitude, and Antisocial Personality Pattern. Meta-analyses have consistently shown that these eight risk/need factors are significant predictors of recidivism for youth offenders (e.g., Andrews et al., 2012; Cottle, Lee, & Heilbrun, 2001) and a combination of these risk

factors are often found in most risk assessment tools for youth, such as the SAVRY,

PCL: YV, and YLS/CMI.

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

most widely used risk assessment scales for youth in Canada is the YLS/CMI (Hoge &

Andrews, 2002) or its variants[4] (Level of Service: Saskatchewan Youth Edition [LSI-

SK]; Andrews, Bonta, & Wormith, 2001). The YLS/CMI includes 42 risk items that map

directly onto all eight of the Central Eight risk/need factors and was adapted from the

adult version, the Level of Service Inventory (LSI; Andrews, Bonta & Wormith, 2004).

This measure is based on a General Personality and Cognitive Social Learning (GPCSL)

theory of criminal behaviour, which explains offending through social learning and the

individual's balancing of costs and benefits of criminal behaviour (Andrews & Bonta,

2010). Engagement in offending behaviour is, therefore, seen as a result of perceived

greater rewards for that behaviour compared to non-offending acts, in addition to relevant

interpersonal (e.g., negative peers, dysfunctional family) and personal (e.g., antisocial

personality, negative attitudes) factors.

The YLS/CMI is designed to assess a youth's level of risk, their criminogenic

needs, and assist in case planning and supervision (Hoge & Andrews, 2002). Items in the

YLS/CMI are summed to create subscale scores (for all Central Eight) and a final total

score is yielded, placing the youth in one of four risk categories (i.e., low, medium, high,

very high) that correspond to differing probabilities of offending. The ability of the

YLS/CMI to significantly predict offending has been demonstrated through several meta-

analyses (e.g., Olver, Stockdale, & Wormith, 2009) and across types of offenders (e.g.,

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[4] The Level of Service: Saskatchewan Youth Edition (LSI: SK) was adapted for use in
Saskatchewan, Canada.

general, violent, female; e.g., Olver, Stockdale, & Wong, 2012) and settings (e.g., community, custody; e.g., Holsinger, Lowenkamp, & Latessa, 2006; McKinnon, 2004). However, given that the YLS/CMI, and the Central Eight risk/need factors more generally, have been identified through research using primarily Caucasian males, their applicability to other offender groups has been questioned. Their use with Aboriginal offenders has been specifically criticized given their unique historical and social history in Canada.

Aboriginal History in Canada

      Early years. There have been accounts of Aboriginal people inhabiting the length and breadth of North American land as early as 11,000 years ago [Royal Commission on Aboriginal Peoples (RCAP), 1996]. For thousands of years, various Aboriginal groups governed themselves and lived relatively independently until approximately the 1400s, when the population of Aboriginal people was estimated to be approximately 500,000, when Europeans (predominantly from Holland, France, and Britain) began to move to North America in increasing numbers (RCAP, 1996). As a result, oral agreements – later codified in written treaties – were quickly needed to distinguish how each society would live independently in shared space. With Aboriginal people at an advantage given their experience with the land, cooperative relationships based on the trading of technologies, material goods, and natural resources developed. Aboriginal people's established patterns of livelihood remained intact and were considered strengths throughout the 1500s, especially with the Europeans' need for allies in cases of war and assistance in this new land (Richardson, 1993; Truth and Reconciliation Commission of Canada, 2015). However, over time, differences in belief systems and values created tension. Although

Aboriginal people were considered autonomous political entities, by the 1630's European missionaries made attempts to convert the Aboriginal people to Christianity and sought to impose a number of socio-economic conditions that were more consistent with European traditions. These attempts only served to solidify disparate views of land ownership and use, lifestyle, and political structure (RCAP, 1996).

A widespread war between Aboriginal people and Europeans, focused on unresolved grievances held by Aboriginal people, led to the need of the European governments to formally re-establish positive relations with Aboriginal people. The Royal Proclamation of 1763 cemented the rights of Aboriginal people to retain possession of their lands but ultimately considered these lands as part of British territories (RCAP, 1996). A reinterpretation of international law, a notion termed *terra nullius,* led the British to claim sovereign ownership over North American soil. Citing the ostensible backward and 'uncivilized' nature of Aboriginal people, European colonizers claimed this land was still considered 'undiscovered' (RCAP, 1996; Richardson, 1993). By presenting the Aboriginal system of hunting and gathering according to need as less developed and less advanced than the extensive political and legal systems established in Europe, the British Crown justified the appropriation of North American land but granted Aboriginal people the right to stay unless the Aboriginal residents willingly ceded the land to others (Richardson, 1993).

Assimilation (1800 to 1951). By the late 1700's, the process of assimilation by the Europeans became more focused. Epidemics originating from Europe, such as smallpox, had significantly reduced the population of many Aboriginal tribes over the years, resulting in the weakening of Aboriginal communities and increased pressure to

conform from the quickly growing British population (Patridge, 2010; Truth and Reconciliation Commission of Canada, 2015). With expanding European settlements, Aboriginal land was quickly being sold or inhabited by squatting Europeans, where intensive agriculture and market economies were prioritized (Richardson, 1993; Truth and Reconciliation Commission of Canada, 2015). Policies meant to 'civilize' and assimilate Aboriginal people to the ways of Christian, non-Aboriginal traditions were developed with the goals of assisting them in adopting, and therefore complying with, the new economic and political structures. Notably, this was done through treaties that led to the creation of reserves to encourage Aboriginal people to cease mobility and maintain a permanent residence consistent with European lifestyle (RCAP, 1996). Unfortunately, issues slowly arose with the institutionalization and outcome of treaties. Most treaties were agreed upon orally, however, both parties were required to sign a written document composed by the British. Given the often limited knowledge of English by Aboriginal people, this led to differing perceptions of the tenets of treaty terms. Moreover, it has been argued that Europeans often intentionally deluded their Aboriginal counterparts in the terms of the treaties (RCAP, 1996).

In addition to issues with the process of treaty formation, the British Crown was often unable to fulfill promises it made through treaties. All treaties maintained that the Crown would not interfere with the ways of life of Aboriginal people and would protect, for example, their unique right to fish and hunt on their land (RCAP, 1996). However, the Crown was often not in a position to confirm these rights given the public right to fish in navigable waters and, therefore, this term was not guaranteed nor enforced. As the Crown was unable to govern over many facets of treaties, this often led to the neglect of

Aboriginal rights despite the requirement that Aboriginal people uphold their end of the agreement.

One of the most substantial attempts at assimilation occurred in 1849 with the development of residential schools (The Assembly of First Nations, 1994). These boarding schools, funded by the government but run by churches, were built in every province after Confederation, save for Prince Edward Island, New Brunswick, and Newfoundland, and designed to distance the children from the perceived negative effects of traditional Aboriginal culture, language, and upbringing (Patridge, 2010; Truth and Reconciliation Commission of Canada, 2015). Rather than focus on the provision of basic European education, such as math and science skills, school days were often focused on Christian instruction and the completion of chores, such as kitchen work and farming (Patridge, 2010; RCAP, 1996; Truth and Reconciliation Commission of Canada, 2015). The structure of the schools was inherently, and intentionally, at odds with Aboriginal culture. For example, although Aboriginal culture is lived by the natural cycles of days, months, and seasons, the children's days in the residential schools were strictly regimented and organized by bells noting when to change tasks, emphasizing the importance of time keeping (The Assembly of First Nations, 1994). The impact of these schools on Aboriginal children was not, however, restricted to the destruction of Aboriginal culture as intended by the government. Given a lack of adequate funding, the schools were often poorly maintained and the basic needs of the children were often not met, including adequate food, clothing, and medical services[5] (RCAP, 1996; Truth and

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[5] For example, in 1907, the chief medical officer for the department overseeing the schools reported a mortality rate, attributable to preventable disease, of 24% for children in residential schools (RCAP, 1996)

Reconciliation Commission of Canada, 2015). Additionally, instances of physical, emotional, and sexual abuse were commonplace within these schools, which were well known to the supervising churches and the Department of Northern Affairs and National Resources throughout the school's history (Patridge, 2010; RCAP, 1996; The Assembly of First Nations, 1994; Truth and Reconciliation Commission of Canada, 2015). Despite the immediate consequences caused by residence in these schools, including poor health, lack of education, and experiences of severe abuse, residential schools were in use until approximately 1984 (RCAP, 1996).

Other somewhat less observable attempts at assimilation were targeted more specifically at Aboriginal adults. In 1876, the first Indian Act was passed, governing reserves and band status as well as putting into place the first official policy considering Aboriginal people a ward of Canada. While the Indian Act was said to provide some protection to First Nations, such as making Indian lands exempt from taxation or seizure for debts, its initial, and later amended, policies maintained power over Aboriginal affairs firmly in the hands of parliament. This act failed to acknowledge any previous treaties between the two groups and allowed the government to independently make decisions on Aboriginal political structures, land holding patterns, and resources (RCAP, 1996). Along with legislation imposing restrictions on Aboriginal policies, the Indian Act governed Aboriginal rights at an individual level. With the Indian Act, status Indian men could not lose their status save for through enfranchisement[6], however, Indian women who married non-Indian men were no longer considered Indian nor were their children. This Act also eventually led to involuntary enfranchisement where a board of examiners could

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[6] Where an Aboriginal person over the age of 21 and considered of 'good character' could discard their status as Indian and be entitled to non-Aboriginal rights.

enfranchise any Aboriginal person without their permission, thereby dissolving their

Aboriginal status. Parliament was also given the power to lease reserve land, without

permission, held by disabled Aboriginals, widows, orphans, or other Aboriginals who

could not cultivate their land.

In addition to land and status rights, the Indian Act also targeted Aboriginal

cultural activities. Aboriginal traditions were not only considered as obstacles to the

civilizing mission, but could be considered as criminal behaviour by parliament in some

cases. For example, after an amendment to the Indian Act in 1884, any Aboriginal caught

engaging in or assisting in Tamanawas dances, a type of initiation ritual, could receive a

jail term of 2 to 6 months if convicted. Increasingly restrictive changes were made to the

Indian Act over the years, eventually preventing Aboriginal people from participating in

any traditional practices, such as Sundance ceremonies, Powwows, or sweat lodges,

speaking their native language(s), obtaining higher education, voting, working off

reserves, or consuming alcohol (RCAP, 1996; Richardson, 1993).

Slow attempts at integration (1951 to present). As changes to the Indian Act

continued over the years, a joint committee was appointed to review and revise the Act

that had slowly become increasingly more discriminative. The 1951 revisions essentially

restored the Indian Act to its 1876 status, whereby Aboriginal people were granted more

rights but kept overall power and decision-making with parliament. For example,

Aboriginal peoples were permitted to engage in traditional ceremonies again, however,

parliament still retained the right to expropriate Aboriginal land without consent (RCAP,

1996). With these revisions also came an Indian registry where those who wanted official

Indian status, and the federal benefits that accompany it, must formally register as an

Indian, keeping the definition of Indian and band membership strictly in non-Indian hands. In 1981, Bill C-31 was enacted to make alterations to the Indian Act, reinstating the Aboriginal status to those who had previously lost it and correcting any included violations of the Canadian Charter of Rights and Freedoms. This was the last significant amendment to the Indian Act as used today.

Despite attempts at correcting discriminatory policies, the consequences of a history of marginalization and colonization have been well established (RCAP, 1996; Urban Aboriginal Task Force, 2007). Aboriginal people in Canada experience, for example, lower employment rates than non-Aboriginals (e.g., Usalcas, 2011), increased poverty and lower levels of education (e.g., LaPraire, 2002), widespread substance use problems (e.g., Moore, 2003; Trevethan et al., 1999) and overrepresentation in the criminal justice system (e.g., Mann, 2009). In light of these consequences, remedial steps have slowly been taken to restore Aboriginal rights and culture. One prominent example of attempts to restore the power imbalance is the creation of the territory of Nunavut, which was established in 1993 through Inuit political activism. The Cree agreements with Hydro Quebec, which allow Hydro Quebec restricted access to Aboriginal land in exchange for funding to support cultural and economic development, is another example of steps taken to preserve Aboriginal culture and rights. Within the criminal justice system, Aboriginal-specific treatment facilities in institutions, such as healing lodges, have been developed in several provinces in an effort to address the unique needs of Aboriginal offenders (Aung, 2006; Correctional Service Canada, 2013). Similarly, special courts, such as Gladue courts, have been integrated into the traditional justice system to ensure that Aboriginal-specific information is considered when sentencing

Aboriginal offenders (Aboriginal Legal Services of Toronto, no date; Anand, 2000). Additionally, programs to assist Aboriginal people in gaining employment, such as the Aboriginal Labour Force Development Circle (2014), and social support (including food and clothing banks), such as the Toronto Council Fire Native Cultural Centre (no date), have been developed to assist Aboriginal people in overcoming some of the obstacles to improving their circumstances. Canada has been slowly moving in the direction of nation-to-nation negotiations that were once the foundation of the relationship between Aboriginal people and European settlers (RCAP, 1996). While this means greater self-governance and jurisdiction over Aboriginal affairs, the long-standing Aboriginal goal of consideration as a third order of government, along with both Federal and Provincial systems, remains distant.

Risk Assessment with Aboriginal Offenders

The application of existing risk assessment measures. Despite the popularity and widespread use of risk assessment measures with offenders, the applicability of commonly used risk assessment tools to Aboriginal offenders has been highly criticized. These criticisms have largely stemmed from the well-established and consistent finding that Aboriginal offenders are over-represented within the criminal justice systems of Canada, Australia, and New Zealand, as Aboriginal people in these three countries share a similar, though not identical, history. Given the role of risk assessment tools in sentencing, custody security ratings, community release, and supervision conditions, the application of existing risk assessment measures that may be inaccurate and discriminative is problematic.

One of the most prominent arguments against the use of conventional risk assessment measures with Aboriginal offenders is that those that are developed using a clear theoretical model, such as the YLS/CMI, are often based largely on constructs developed using non-Aboriginal offenders (e.g., psychopathy, antisocial attitudes; Allan & Dawson, 2004; Maynard, Branko, Brendan, Leon, & Terry, 1999). Therefore, the theories of criminal behaviour that inform these assessments are founded on the general experiences and circumstances of non-Aboriginal, primarily Caucasian, offenders. It is argued that the application of these risk tools to Aboriginal offenders, therefore, creates a cultural bias in the estimation of risk as it fails to consider factors unique to Aboriginals (e.g., spiritual identity; Maynard et al., 1999). In other words, as individual risk scores, and therefore treatment needs, are often derived by what an individual offender has in common with an aggregate population, it is argued that the development of a risk tool using primarily Caucasian offenders to which an Aboriginal is compared improperly captures their risk (Hannah-Moffat & Maurutto, 2010). The fact that Aboriginal offenders often score high on risk assessment tools (i.e., at high risk of re-offending; e.g., Mann, 2009) that exclude culturally-specific items, items that are argued to be more important to Aboriginal offending, is considered evidence of this bias. It has been suggested that this perceived high risk status, in turn, provides significant disadvantages, or "unjustifiable differential treatment" (Canadian Human Rights Commission, 2003), to Aboriginal offenders, as consideration as high risk within criminal justice systems is often tied to increased incarceration and conditions, reduced liberties, longer sentences, and limited treatment opportunities (Mann, 2009; Martel, Brassard, & Jaccoud, 2011). It is, therefore, argued that increasing the security level and length of time Aboriginal offenders spend in

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custody with the lack of provision of adequate treatment leads to an overrepresentation of Aboriginals in the criminal justice system (Martel et al., 2011).

As some studies have demonstrated that Aboriginal offenders have significantly higher absolute recidivism rates than non-Aboriginal offenders (e.g., Bonta, LaPrairie, & Wallace-Capretta, 1997; Hann & Harman, 1993), it has also been suggested that these Aboriginal offenders are truly at a higher risk of re-offending and that the use of nonrepresentative risk factors does not necessarily *explain* their offending or high risk status (e.g., Martel et al., 2011). It has been proposed that Aboriginal history in Canada, which exposes them to many known risk factors, accounts for their high risk status on risk assessment tools (Hannah-Moffat, 2013; Martel et al., 2011). By providing a decontextualized understanding of Aboriginal history and its influence on offending behaviour, it is argued, then, that these standard risk assessment tools are creating individual risk scores based on systemic factors (Hannah-Moffat & Maurutto, 2010; Martel et al., 2011). Martel and colleagues (2011) argue that, given their increased scores on risk assessments (arguably due to systemic factors), the 'aboriginality' of these offenders is perceived to increase their risk. Despite claims by proponents of general offender theories, race/ethnicity then becomes important in the prediction of risk and it is argued that the ability of risk assessment measures to identify accurate treatment targets for these offenders is limited.

Despite these criticisms, standard risk assessment tools and factors are regularly applied to Aboriginal offenders and have, in many cases, accurately predicted offending with this offender group. Recently, Gutierrez, Wilson, Rugge, and Bonta (2013) conducted a meta-analysis examining the predictive validity of the Central Eight

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risk/need factors with Aboriginal offenders. Using 49 independent Aboriginal samples (N = 57,315) primarily from Canada, they found that all eight risk constructs (i.e., Criminal History, Employment/Education, Family/Marital, Leisure/Recreation, Procriminal Associates, Substance Abuse, Procriminal Attitudes, Antisocial Personality Pattern), which are incorporated into many risk assessment measures, significantly predicted general and violent recidivism equally well for youth and adult Aboriginal offenders. However, when the predictive validity of the Central Eight for Aboriginal offenders was compared to that of non-Aboriginal offenders (N = 204,977), results indicated that three of the eight risk/need factors were worse predictors for Aboriginal offenders. Specifically, Criminal History, Substance Abuse, and Antisocial Personality Pattern predicted general recidivism[7] with less accuracy for Aboriginal offenders than for non-Aboriginal offenders.

Given that items within the Central Eight constructs vary in how they are measured, Wilson and Gutierrez (2014) conducted a follow-up meta-analysis of the predictive validity of the Level of Service Inventory (LSI; the adult equivalent to the YLS/CMI) and its subscales to examine the accuracy of the Central Eight when measured consistently. They identified 12 studies using 16 independent Aboriginal samples (N = 21,807) that assessed the predictive validity of the LSI and found that all eight subscales, which mimic the Central Eight, as well as the total LSI score significantly predicted both general and violent recidivism. However, consistent with Gutierrez and colleagues (2013), when compared to non-Aboriginal offenders (N = 42,515), results indicated that,

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[7] No differences were found for violent recidivism.

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using the more conservative random effects results, 5[8] of 8 subscales and the total LSI

score predicted recidivism better for non-Aboriginal offenders. In order to further

examine this finding, the authors used a large sample of Aboriginal and non-Aboriginal

offenders (i.e., Wormith and Hogg, 2012) to examine the calibration of the LSI (i.e., the

degree to which the LSI accurately estimates the absolute recidivism rates). They found

that although the LSI appeared to predict recidivism equally well for Aboriginal and non-

Aboriginal offenders scoring medium or higher, the LSI underestimated the recidivism

rates of Aboriginal offenders scoring low. Therefore, Aboriginal offenders scoring in the

0 - 10 range appeared to re-offend at a higher rate than expected according to the LSI.

The authors proposed several explanations for this finding, one of which is that this

under-classification may be due to the failure of the LSI to incorporate culturally-specific

factors on which low-scoring Aboriginal offenders may score high (e.g., loss of native

language).

In addition to the LSI, studies have also shown that other risk assessment

measures significantly predict recidivism with Aboriginal offenders, including the

Statistical Information on Recidivism Scale (SIR; Nafekh & Motiuk, 2002); the

Community Risk/Needs Assessment (CRNA; British Columbia Corrections Branch

2004); and, the Static-99 (Babchishin, Blais & Helmus, 2012). Specifically for youth

offenders, the YLS/CMI, and its variants, has been shown to significantly predict

offending for Aboriginal youth by accurately distinguishing between recidivists and non-

recidivists (e.g., Gossner & Wormith, 2007; Jung & Rawana, 1999; Rector, Wormith, and

Banka, 2007). For example, Olver, Stockdale, and Wormith (2009) conducted a meta-

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[8] These subscales included Criminal History, Education/Employment, Companions, Alcohol/Drugs, and Procriminal Attitude.

analysis examining the predictive validity of various risk assessment tools for youth offenders. They found that, summarizing five studies using 860 youth Aboriginal offenders, the YLS/CMI total score yielded a weighted correlation (r) of .35 in predicting general offending for Aboriginal youth offenders, which was not significantly different from its ability with non-Aboriginal youth offenders. They were unable to meta-analytically examine violent recidivism as only two studies had been conducted to date (i.e., McKinnon, 2004; Stockdale, 2008), both of which found that the YLS/CMI significantly predicted violent recidivism for Aboriginal youth offenders. Since that meta-analysis in 2009, only a few individual studies evaluating the YLS/CMI have been completed with Aboriginal youth (e.g., Olver, Stockdale, & Wong, 2012; Thompson & McGrath, 2012).

Olver, Stockdale, & Wong (2012) examined the files of 167 youth offenders (104 Aboriginal offenders) who had received a community forensic assessment or treatment services in Saskatoon, Saskatchewan between 1996 and 2004. They found that not only did the total YLS/CMI score significantly predict general [Area Under the Curve (AUC) = .77 or r = .47] and violent (AUC = .76 or r = .45) recidivism for Aboriginal youth, it predicted general recidivism significantly better for Aboriginal than non-Aboriginal youth (AUC = .52 or r = .04). They also found that all subscales, save for Family/Parenting and Personality/Behaviour, were significant predictors of general recidivism (AUCs ranging from .58 to .76) and that all subscales but Family/Parenting, Companions, and Leisure/Recreation significantly predicted violent recidivism for Aboriginal youth offenders (AUCs ranging from .56 to .74). Thompson and McGrath (2012) examined the predictive validity of the Australian adaptation of the YLS/CMI(-

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AA)[9] with a large sample of Australian youth offenders ($N = 3568$, of which 1053 were Aboriginal) in both the community and custody. They found that although the YLS/CMI-AA was significantly able to predict general offending[10] one-year later for Indigenous offenders ($r = .17$ or AUC = .60), offenders in the low or medium risk groups had significantly higher absolute recidivism rates than equivalent non-Aboriginal Australian offenders in the same groups (53% vs. 38.1% low risk recidivated, 66.6% vs. 55.6% medium risk recidivated). These calibration results from Thompson and McGrath (2012) indicating that the YLS/CMI-AA under-predicted the recidivism rates of low and medium scoring offenders are similar to those found with adult offenders and the LSI (Wilson & Gutierrez, 2014). One of the only other studies found examining the calibration of this risk tool was conducted by Luong (2007), who examined a sample of 193 youth offenders ($n = 133$ Aboriginal) from two large cities in Saskatchewan. They tested the Level of Service: Saskatchewan Youth Edition (LSI:SK) (Andrews et al., 2001), which was developed based on the LSI, similarly to the YLS/CMI, but differs in that it includes a greater number of items (45 compared to 42 for YLS/CMI), 13 of such items are scored on a 4-point scale (all YLS/CMI items are dichotomous), and the risk categories have different cut-offs. They initially found that Aboriginal youth in the moderate risk category had higher recidivism rates compared to moderate non-Aboriginal youth; however, when controlling for length of follow-up, this finding disappeared. Despite the importance of accurate risk categories in the case management process, no

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[9] The Australian Adaptation differs from the original YLS in the language used, the number of total items (47), the inclusion of additional items (e.g., homelessness), the order of items, differing operational definitions of items, and a greater number of strengths (Thompson & Pope, 2005).

[10] They did not investigate violent recidivism or the predictive validity of subscales.

studies found have yet examined the calibration of the YLS/CMI with Aboriginal youth offenders in Canada.

Despite evidence of predictive validity, many argue that simply validating existing risk assessment tools on Aboriginal populations does not assist in understanding important factors in the criminal behaviour of Aboriginals, as these risk assessments remain based primarily on Caucasian theories of crime (Hannah-Moffat, 2013). Although the scales may predict recidivism, this task does not investigate other factors potentially more important to Aboriginal offending and risk reduction attempts.

Culturally-specific factors. The purported utility of culturally-specific factors in risk assessment is premised on the belief that Aboriginal history, values, and practices create important differences between Aboriginals and non-Aboriginals (e.g., Heckbert & Turkington, 2001; LaPrairie, 1995; Martel et al., 2011). These differences have been linked to two similar but distinct types of factors. The first considers differences attributable to culture that are believed to be unique and specific to Aboriginal offenders, such as strength of Aboriginal identity and knowledge of native language. The second type of factor considers contextual determinants that are systemically related to Aboriginal history, but not necessarily unique to this offender group. These may be risk factors that also predict recidivism for non-Aboriginal offenders, but are a result of a history of marginalization and colonization for Aboriginal offenders. For example, fewer educational opportunities exist for Aboriginals residing on a reserve (RCAP, 1996), increasing the likelihood of many residents failing to attain a high school diploma. Failing to complete high school is a risk factor commonly applied to non-Aboriginal offenders, however, given the opportunity for education in mainstream society, the cause

can often be tied to a youth's lack of interest in school, issues with peers, or difficulty getting along with teachers. We may be able to predict recidivism for Aboriginal and non-Aboriginal offenders using the same factor, but its conceptual relationship to offending would be different (e.g., Webb, 2011). Additionally, considering context includes factors that have not typically demonstrated a strong relationship to offending for non-Aboriginal offenders (i.e., non-criminogenic needs) but may in fact be more important in predicting and addressing Aboriginal offending given their history, such as individual experiences of abuse. It is primarily these cultural and contextual differences that are argued to better explain (or assist in explaining) Aboriginal offending behaviour and, in turn, may serve as more appropriate treatment targets than those used for non-Aboriginal offenders.

Although the predictive utility of culturally-specific factors has not yet been empirically tested using a prospective design, these factors have been discussed in a largely qualitative manner. In fact, the history of Aboriginal people in Canada has already been assumed to be related to their offending behaviour through *R v. Gladue* (1999). In 1999, through the trial of an Aboriginal woman named Jamie Tanis Gladue, the Supreme Court of Canada provided the first interpretation of section 718.2(e) in the *Criminal Code of Canada,* which instructs judges to pay particular attention to the circumstances of Aboriginal offenders when sentencing. The Supreme Court clarified the method of analysis for deciding on an appropriate sentence by requiring judges to consider the unique systemic or background factors that may have led to the offending behaviour of Aboriginal offenders as well as consider alternative types of sentences given these factors. Specifically in *R v. Gladue,* judges are instructed to consider the unique systemic

or background factors which have contributed to the offender's position before the court, including discrimination, poverty and poor living conditions, substance use, community fragmentation, lack of educational and employment opportunities, and experiences of dislocation (*R v. Gladue,* para. 67). The need for consideration of these factors when sentencing Aboriginal offenders was reiterated in 2012 in *R v. Ipeelee*. *R v. Gladue* considers these factors important in conceptualizing the offending history of Aboriginal offenders, with some arguing that the consideration of these factors should be applied throughout the criminal justice system (e.g., Native Counselling Services of Alberta, 2003). However, the utility of some of these same factors in statistically predicting future offending and, furthermore, their assistance in reducing this risk through treatment has not been examined in the extant literature.

One of the most widely discussed risk, or protective, factors for Aboriginal offenders is identification with their culture. It has been argued that a strong Aboriginal identity and sense of connectedness to spirituality serves to prevent engagement in criminal behaviour, increases the seeking of resources to remain crime-free, and increases resilience [e.g., Aboriginal Administration of Justice Offences Research Project (AAJO), 2012a; Maynard et al., 1999). Conversely, it has been suggested that confusion in an Aboriginal person's identity could lead to the development of negative cognitions and antisocial attitudes that increase their risk for offending (e.g., Maynard et al., 1999). This argument considers that Aboriginal offenders with a weak sense of identity struggle between lacking support from Aboriginal communities and having intrinsically different values compared to non-Aboriginal mainstream society, therefore, creating a sense of isolation from both cultures (e.g., Marie, 2010).

The loss of native language has also been considered a form of proxy for loss of culture, as with the loss of language comes the loss of ability to communicate with parents, communities, and Elders. Given the story-telling nature of Aboriginal culture, it has been suggested that this greatly, and negatively, influenced the identity of Aboriginal adults and youth (Partridge, 2010). Interviews with Aboriginal offenders provide some support for the role of identity in offending. Heckbert and Turkington (2001) interviewed 68 Aboriginal offenders who had remained crime-free for two or more years and found that 76% reported that finding their cultural identity as an Aboriginal and engaging in cultural activities assisted them in remaining crime-free. Similarly, Gideon (2013), who interviewed 36 Aboriginal offenders in a Canadian institution, found that many Aboriginal offenders interviewed noted that if they were taught about their culture as a child, they would not have been as likely to commit crime. Involvement in cultural activities has also been acknowledged as important for Aboriginal offenders by front-line justice workers. For example, the Aboriginal Administration of Justice Offences Research Project (AAJO, 2012b) interviewed 122 probation officers in the province of Alberta and found that 79% of those interviewed noted that programming addressing Aboriginal culture and spirituality assist offenders in remaining crime-free and healing the harm caused by previous injustices. Additionally, the AAJO interviewed 150 Aboriginal offenders currently or previously on community supervision in Alberta and 17% indicated that involvement in culture-based healing programs, ceremonies and relationships with an Elder assisted them while on probation (AAJO, 2012a).

Ferrante (2013) used data from the 2002 National Aboriginal and Torres Strait Islander Social Survey from Australia to retrospectively examine the relationship

between common and culturally-specific factors and previous arrests. Although Ferrante (2013) found that the most predictive factors were gender (being male; Odds Ratio [OR] = 4.47), high-risk alcohol use in the past 12 months (OR = 2.17), and substance misuse (ever misused a non-alcoholic substance, OR = 2.59), retaining a strong cultural identity significantly reduced an individual's likelihood of having ever been arrested (OR = .89). Cultural identity, in this case, was considered strong if three of the four following factors were present: 1) knowledge of an indigenous language, 2) identification with clan, tribal, or language group, 3) recognition of homelands, and 4) attendance at a cultural event in the past 12 months. However, given the retrospective nature of this design, it could be that engagement in criminal behaviour resulted in weaker cultural ties rather than weak identity leading to offending.

The ability of residential school survivors to raise the proceeding generations of children has also been argued to be directly related to the criminal behaviour of Aboriginal offenders. Mals, Howells, Day, and Hall, (2000) interviewed 14 Aboriginal informants from Australia (e.g., members of Aboriginal Policy and Services Division of the Ministry of Justice, Aboriginal facilitators of Skills Training and Aggression Control Programs) to assist in gaining information related to Aboriginal offending. The informants explained that violence appeared to be a common resolution technique for these Aboriginal offenders as this was modeled for them as they grew up. It is argued that the transference of 'good' parenting skills from one generation to the next was disrupted with the removal of children from homes to be placed in residential school (Partridge, 2010). Additionally, through their experiences in residential schools, these children were taught to exert authority through control and abuse. Therefore, their own attempts at

raising children were marked by this behaviour and the use of violence to resolve issues became a normative response (Homel, Lincoln, & Herd, 1999; Partridge, 2010; RCAP, 1996). This use of violence and abuse to meet personal needs is, as the argument goes, reflected in their increased violent offences (e.g., Corrado & Cohen, 2002; Mann, 2009; Queensland Government, 2010). In Ferrante's (2013) investigation of risk factors for Aboriginal residents of Australia, she examined the predictive validity of having been from the "stolen generation," a process in Australia similar to that of residential schools in Canada, whereby Aboriginal children were taken from their homes by the government and placed into church-run institutions (Homel et al., 1999). Ferrante (2013) found that being or having a relative from the stolen generation was significantly related to having a criminal record (OR = 1.35).

One contextual factor often cited as important for Aboriginal youth is their involvement in the foster care system. The negative impact of out of home placements on children has been widely discussed, including higher incidences of preventable death, respiratory problems, pregnancy, and alcohol and drug abuse (Cook, 1991; Morley & Kendall, 2006). Additionally, studies have shown that children in care are more likely to engage in antisocial behaviour than those who are not in care (e.g., Cusick, Courtney, Havlicek, & Hess, 2011; Davis, 2009; Jonson-Reid & Barth, 2000). The reasons for this relationship have been tied to both the increased number of risk factors for youth prior to care placement as well as unique risks associated with foster care, such as multiple placements (e.g., Corrado, Freedman, & Blatier, 2011). These risks apply to all children in the foster care system. However, the sheer number of Aboriginal youth found within this system has led to the recognition that this systemically affects this group of people.

In 2011, 48.1% of children in foster care under age 14 in Canada were Aboriginal, despite Aboriginal people only representing 4.3% of Canada's population (Statistics Canada, 2013a). Put another way, 3.6% of Aboriginal children in Canada were foster children, with only 0.3% of non-Aboriginal children in foster care. Another factor that further distinguishes the experiences of Aboriginal youth in foster care is that in many cases, these youth are not placed in Aboriginal homes (e.g., Richardson & Nelson, 2007). They are often placed with Christian families with no prior knowledge of Aboriginal languages or spirituality, mirroring the experiences of residential school (RCAP, 1996; Richardson & Nelson, 2007). It has been suggested that this cross-cultural fostering or adoption of Aboriginal youth often severs their ties to their own cultural and spiritual background while creating a disconnect to the family/community they are legally considered a part of, a position termed 'cultureless' (RCAP, 1996, Marie, 2010). This then increases the difficulty with which these youth develop a cultural/spiritual identity, as previously discussed (Richardson & Nelson, 2007).

Another contextual variable that has been hypothesized to be linked to the offending behaviour of Aboriginal people is residence on a reserve. Reserves in Canada have been associated with high rates of substance use and criminal behaviour, poor infrastructure, and a lack of institutional resources (e.g., job placement centres, medical facilities) (Anaya, 2014; Brzozowski, Taylor-Butts, & Johnson, 2006; Cranny & Moles, 2001; Jacklin, 2009). Additionally, it has been argued that offenders returning to these environments experience difficulties making substantial changes to their behaviour and thinking patterns as their prior offending behaviour can often be supported by the environment (Gideon, 2013). Residence on a reserve has also been argued to impact the

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predictive validity of actuarial risk tools. Scholars have argued that the environment in which an Aboriginal offender lives shapes their expression of Aboriginal identity and culture (Archambeault, 2003); therefore, it may be expected that common risk factors will be less predictive for those who are less integrated in off-reserve, mainstream society.

A factor that has recently been investigated with Aboriginal offenders is the role of prior sexual, verbal/emotional or physical abuse in criminal behaviour. For non-Aboriginal offenders, previous experiences of abuse are often found to be minimal predictors of re-offending compared to the Central Eight (e.g., $r = .06$ compared to $r = .17$ respectively; Gendreau, Little, & Goggin, 1996). However, the Gutierrez and colleagues (2013) meta-analysis found that for Aboriginal offenders, internalizing emotional problems and a history of victimization (as defined by the LSI) were just as predictive of re-offending as approximately five of the Central Eight risk factors. The authors suggested that, given the high rates of violence and abuse experienced by Aboriginal people in their home lives and through foster care (e.g., LaPrairie, 1995), their repeated exposure to these circumstances may play a larger, and racially unique, role in their offending. For example, Yessine and Bonta (2009) compared 439 Aboriginal and non-Aboriginal youth offenders on probation and found that a dysfunctional family life significantly increased the odds of chronic criminal behaviour for Aboriginal youth but not for non-Aboriginal youth. However, previous abuse is rarely taken into consideration when predicting offending and determining treatment targets.

Despite the fact that few of these factors have been empirically linked to recidivism, their importance and/or utility has been relatively accepted among some

criminal justice agencies, both as criminogenic need factors and responsivity factors (i.e.,

ways to enhance responsiveness to treatment). For example, since the mid 1990's, the

Correctional Service of Canada (CSC) has offered programming specific to Aboriginal

offenders such as healing lodges and culturally-specific interventions (CSC, 2000).

Additionally, Queensland Corrective Services in Australia offers culturally-specific

treatment programs to Aboriginal offenders targeting general offending, sex offending,

and violence (Queensland Government, 2010). Canadian provincial justice systems have

also begun to offer Aboriginal programming to Aboriginal youth offenders, such as the

Community Council Diversion Program in Toronto, Ontario (Aboriginal Legal Service of

Toronto, no date). The provision of some of these services as targeting criminogenic

needs relies on the assumption that central to the reasons for Aboriginal offending is

impairments in cultural identity (e.g., Marie, 2010). Therefore 'cultural wholeness'

(Martel et al., 2011) or the embracing of Aboriginal culture is expected to assist in

lowering the risk of re-offending for these Aboriginal offenders. Unfortunately, the

degree to which culture and contextual factors contribute to the statistical prediction of

recidivism is unknown.

Purpose of Present Study

The present project includes two studies. The first, Chapter 1, assessed whether

the YLS/CMI accurately predicts recidivism for Aboriginal youth offenders compared to

its ability with non-Aboriginal offenders. To examine this objective, YLS/CMI subscale

and total score and recidivism data were gathered from Aboriginal and non-Aboriginal

youth offenders to examine how well it a) discriminates between recidivists and non-

recidivists (discrimination) and b) estimates absolute recidivism rates (calibration). The

second study, Chapter 2, investigated how well culturally-specific factors (e.g., involvement in cultural activities, residence on a reserve) reported in sentencing reports written by probation officers predict recidivism for Aboriginal youth offenders using a key criterion approach. This was examined by coding Ontario Pre-sentence Reports (PSRs) for Aboriginal youth offenders and gathering follow-up re-offence rates for a two-year period. In Ontario, the responsibility of gathering cultural information in line with the Gladue principles has been absorbed by the MCYS and their probation officers (POs) when writing PSRs. Therefore, this study is accessing one of the few available sources for culturally-specific information in the manner in which they are being considered by criminal justice practitioners.

CHAPTER 1: STUDY 1

Research Question

1) Does the YLS/CMI significantly predict recidivism for Aboriginal youth offenders?

2) Does the YLS/CMI predict recidivism equally well for Aboriginal youth offenders as it does for non-Aboriginal offenders?

Hypotheses

Based on previous literature examining the effectiveness of the YLS/CMI with Aboriginal youth offenders as well as studies looking at the LSI with Aboriginal adults, this study tests the following hypotheses:

1) The YLS/CMI total score and subscales will significantly predict recidivism for Aboriginal offenders by accurately distinguishing between recidivists and non-recidivists.

2) The YLS/CMI total score will predict recidivism similarly for Aboriginal youth offenders as it does for non-Aboriginal youth offenders.

3) A number of YLS/CMI subscales will predict recidivism for Aboriginal youth with less accuracy than for non-Aboriginal offenders.

4) The YLS/CMI will under-predict the absolute recidivism rates of Aboriginal youth offenders who score in the low and medium range.

Methodology

Sample

The Aboriginal sample consisted of all male Aboriginal youth offenders who were assessed using the YLS/CMI upon release to the community (from custody or on

community supervision) in the province of Ontario between 2008 and 2010. As the

purpose of this study was to investigate the effectiveness of the YLS/CMI as it is

currently used in practice, the inclusion criteria did not include any restrictions on age of

youth. This yielded a sample of 839 Aboriginal youth. One thousand and thirty-eight

non-Aboriginal male offenders who met the same criteria were randomly selected from

the same calendar years and the same province. Therefore, the total sample size consisted

of 1877 youth. The majority of the non-Aboriginal sample consisted of individuals who

identified as White ($n = 914$, 88%), with only 79 (7.6%) identifying as Black, 5 (0.5%)

identifying as Southeast Asian, 5 (0.5%) identifying as West Asian/Arabic, 4 (0.4%)

identifying as South Asian, 4 (0.4%) identifying as East Asian, 2 (0.2%) identifying as

Hispanic, and 25 (2.4%) classified as Other.

Measures

      Risk/Need assessment. The Youth Level of Service/ Case Management

Inventory (YLS/CMI; Hoge & Andrews, 2002) is designed to assess risk and need factors

of youth offenders. This actuarial risk assessment tool considers only empirically-

validated risk factors and provides a link between criminogenic needs and the

development of a case plan.

      The YLS/CMI comprises seven parts. Part One consists of 42 risk/need items

organized into eight categories: prior/current offenses, family circumstances/parenting,

education/employment, peer relations, substance abuse, leisure/recreation,

personality/behaviour, and attitudes/orientation consistent with the Central Eight

risk/need factors (Hoge & Andrews, 2002). In Part Two, the risk/need factors are

summed and summarized, resulting in a Total Risk/Need score. Total Risk/Need scores

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fall into one of four categories of overall risk based on a normative sample of youth offenders: Low (0-8), moderate (9-22), high (23-34), and very high (35-42) (Hoge & Andrews, 2002). These overall risk levels reflect the likelihood of the youth re-offending in the future. Part Three allows for the consideration of other factors potentially relevant to the development of a case plan (e.g., escape history). Parts Four to Seven allow the assessor to use discretion in assigning risk level, specify the contact level (e.g., medium supervision), outline targets of service according to need areas, and review progress. An updated version of the YLS/CMI (YLS/CMI 2.0) was released approximately five years ago (Hoge & Andrews, 2010). No changes were made to the risk/need items in Part One, but it includes a larger normative sample ($N = 15,000$), modified coding instructions, and the inclusion of gender-specific responsivity considerations in Part Three.

Previous research with youth offenders has demonstrated the psychometric integrity of the YLS/CMI. Rowe (2002) investigated the internal consistency of the YLS/CMI and reported good estimates for the total score (alpha coefficient [α] of.91) as well as the YLS/CMI subscales (α= ranging from .60 to .82, with a median value of .72). Marczyk, Heilbrun, Lander, and DeMatteo (2003) examined the inter-rater agreement for the assessment tool and reported an intraclass correlation coefficient (ICC) of .82 for a single rater and .89 for the average of the two raters for the total score, based on 95 assessments independently coded by both raters.

The YLS/CMI has also demonstrated good construct validity, with results indicating moderate to high correlations with other assessment measures (Poluchowicz, Jung, & Rawana, 2000; Schmidt, Hoge, & Robertson, 2002). For example, using the file information of 408 young offenders, Rowe (2002) reported a correlation of .82 between

the total YLS/CMI score and the Psychopathy Checklist: Youth Version (PCL: YV; Forth, Kosson, & Hare, 2003). Moderate to high correlations were also presented for the Childhood & Adolescent Taxon Scale (Quinsey, Harris, Rice & Cormier, 1998), Disruptive Disorder Rating Scale (Barkley & Murphy, 1998), and the Conduct Disorder Symptom Scale (Barkley & Murphy, 1998). Additionally, Jung and Rawana (1999) provided support for criterion validity, as they found that the YLS/CMI was able to significantly predict whether a youth had a prior criminal history using youth offenders and a sample of high school students.

As discussed in the Introduction, the predictive validity of the Total YLS/CMI Risk/Need score and individual subscales has been demonstrated on a number of samples (Costigan & Rawana, 1999; Gossner & Wormith, 2007; Holsinger, Lowenkamp, & Latessa, 2006; Jung & Rawana, 1999; Olver, Stockdale, & Wormith, 2009; Rowe, 2002; Schmidt, Campbell, & Houlding, 2011). For example, Schmidt, Campbell, and Houlding (2011) followed a group of male adolescent offenders for 10 years and reported that the YLS/CMI total score was a strong predictor of nonviolent offences (AUCs = .73) and a moderate predictor of violent recidivism (AUCs = .65). The predictive validity of the subscales demonstrated weak to strong predictive accuracy, ranging from AUCs of .52 (Substance Abuse) to .74 (Attitudes/Orientation).

As the predictive validity of the YLS/CMI was being investigated, the tallied Total YLS/CMI score was used in the current study rather than the final risk rating that may have included overrides (e.g., total score indicated moderate risk but assessor overrode the risk rating to high).

Recidivism. Recidivism was defined as any post-index conviction occurring in the community, including those incurred in either the youth or adult justice systems. Recidivism was coded from provincial government records. The following recidivism information was coded for each case: date of new conviction(s), nature of most serious new offence, sentence type, and sentence length. Recidivism was coded to include and exclude technical violations (e.g., Fail to Appear, Fail to Comply) as not all youth were supervised in the community and, therefore, present a lower risk of detection for re-offending. Therefore, recidivism was coded 4 ways: 1) General including technical violations, 2) Violent including technical violations, 3) General excluding technical violations, and 4) Violent excluding technical violations. Violent recidivism included any sexual recidivism. Although the YLS/CMI was not designed to predict sexual recidivism (Hoge & Andrews, 2002), given that this tool is mandated by the province of Ontario for use with all offenders, even those with a sexual index offence, and is used to identify criminogenic needs and case planning for all, the current study tests this tool in the manner in which it is being used in practice (i.e., to predict any recidivism). A fixed follow-up period of three years was used. Any time in custody post-PSR was incorporated into the calculation of time at risk. See Appendix A for coding guidelines for the criminal offences from Public Safety and Emergency Preparedness Canada (Bonta & Yessine, 2006).

Procedure

A research proposal was presented to the Ministry of Children and Youth Services (MCYS) and approval was granted to conduct research in Youth Justice Services. Specifically, permission was granted to gain support from MCYS Youth Justice Services

and be provided with the archival data, which was retrieved by the MCYS's statistics supervisors. Additionally, ethics approval, particularly as it relates to Chapter 9 (Research Involving the First Nations, Inuit, and Métis Peoples of Canada) of the 2nd edition of the Tri-Council Policy Statement (TCPS; Government of Canada, 2010), was granted by Ryerson University.

Archival data were retrieved from files kept by the Ministry of Children and Youth Services (MCYS) and the Ministry of Community Safety and Correctional Services (MCSCS) to investigate the predictive validity of the YLS/CMI for Aboriginal compared to non-Aboriginal youth offenders. The total and subscale YLS/CMI scores assessed upon release from custody and/or intake to probation were retrieved from the electronic files of all sampled offenders. Demographic and offence information for each youth was also gathered, including age, type of index offence(s), index sentence and length, and time at risk. Recidivism was then coded from the date they were released into the community up until the retrieval date of March 31, 2015.

In order to ensure confidentiality, all youth in the study were given identification numbers that cannot be directly linked to their name or offence. These numbers were used for data analysis purposes and, therefore, follow-up information was not associated with their names.

Statistical Analysis

All of the data were entered into an SPSS database and cleaned for quality assurance purposes. The data were first screened for data entry errors and values falling outside the expected ranges. The means and standard deviations for all continuous variables also were checked and appeared reasonable. Variables were then examined for

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missing values. As data were gained directly from the MCYS electronic system, there was little missing data; there was only one youth for which index offence data was not available (which is denoted in the relevant table).

Descriptive statistics were reported and differences compared for both Aboriginal and non-Aboriginal samples, including age, nature of index offence, index sentence, recidivism rates, and YLS/CMI total and subscale scores. In order to examine the discrimination of the risk tool, area under the receiver operating characteristic (ROC area or AUC) was used to assess the predictive accuracy of the YLS/CMI (both total and subscale scores) for both Aboriginal and non-Aboriginal youth offenders. AUC represents the probability that, when randomly selecting an offender who recidivates and one who does not, the YLS/CMI can accurately assign a higher probability of risk to the recidivist (Mossman, 2013). Therefore, it is the relationship between true positives, or those who the YLS/CMI correctly classified as at high risk of recidivating, and false positives, or those who the YLS/CMI incorrectly classified as high risk of recidivating. An AUC value of 1.0 indicates complete accuracy and a value of .50 indicates predictions no better than chance (Mossman, 2013). Although no clear guidelines have been established, AUC values between .65 and .70 may be considered moderate and values above .70 as large (Douglas & Reeves, 2010; Rice & Harris, 2005). This index of predictive accuracy was chosen above other indices (e.g., correlation coefficients, Cohen's D) as it is less influenced by base rates (Rice & Harris, 2005; Mossman, 2013) and higher base rates of offending have been found for Aboriginal compared to non-Aboriginal offenders (e.g., Bonta, LaPrairie, & Wallace-Capretta, 1997; Hann & Harman, 1993), including within this study.

AUCs and 95% confidence intervals were calculated for each subscale and the

total score for both Aboriginal and non-Aboriginal offenders for both general and violent

recidivism (including and excluding technical violations) for the fixed 3-year follow-up.

Differences in magnitude of the AUC values between the two independent offender

samples were assessed by conducting z- tests using the following formula recommended

by Hanley & McNeil (1982): $z = (AUC_1 - AUC_2)/ \sqrt{(SE_1 + SE_2^2)}$, where AUC_1 and AUC_2

are the AUC values for Aboriginal and non-Aboriginal offenders respectively, and SE_1

and SE_2 are the respective standard errors.

The E/O index (Gail & Pfeiffer, 2005; Helmus, Thornton, Hanson, & Babchishin,

2012; Rockhill, Byrne, Rosner, Louie, & Colditz, 2003) was used to assess how well the

YLS/CMI estimates the observed recidivism rates of Aboriginal youth offenders. The

E/O index allows for a direct comparison between the expected recidivism rates (E; based

on the non-Aboriginal youth offenders) to the observed recidivism rates (O; with

Aboriginal youth offenders) and is calculated by dividing the expected number of

recidivists (E) by the observed number (O; Method M_0 from Viallon, Ragusa, Chavel-

Chapelon, & Bénichou, 2009) for each YLS/CMI risk category (i.e., low, moderate, high,

very high). This permits an investigation of whether Aboriginal youth offenders are re-

offending at similar rates as expected by the YLS/CMI according to risk category. If the

expected number of recidivists perfectly matches the observed number, the E/O index

will be 1. E/O values less than 1 indicate that the expected number is less than the

observed whereas E/O values greater than 1 mean that the expected number is greater

than the observed. The 95% confidence intervals for the E/0 index were calculated

following Rockhill and colleagues (2003) using the Poisson variance for the logarithm of the observed number of cases (O):

$$95\%\text{CI}(E/O) = (E/O)\exp(\pm1.96\sqrt{1/O})$$

Ninety-five percent confidence intervals that do not include 1 indicate significant differences between the observed and expected numbers in each risk category (Viallon et al., 2009). The E/O index was calculated for all risk categories for both general and violent recidivism including and excluding technical violations using the fixed 3-year follow-up.

Results

Sample Descriptives

The current sample includes 1877 youth offenders, consisting of 839 Aboriginal youth offenders and 1038 non-Aboriginal youth offenders. Table 1 provides a comparison of Aboriginal and non-Aboriginal youth on type and nature of index offence, type and length of index sentence, and age. Significant differences were found for all variables, save for average length of time served ($t(364) = .816$, $p = .415$, two-tailed), as both subgroups sentenced to a period of custody served an average of approximately 85 days. A higher proportion of non-Aboriginal youth were significantly more likely to commit a violent index offence compared to non-Aboriginal youth, $x^2(1) = 10.669$ p = .001. Therefore, as expected, a significant difference was found for index offence type, $x^2(9) = 118.561$, p < .001, and an examination of the standardized residuals indicates that non-Aboriginal offenders had a significantly higher proportion of index drug offences, liquor and traffic offences, and sexual offences, whereas Aboriginal offenders had a higher proportion of probation/parole violations and drinking offences.

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Table 1

Index Offence Details and Age for Aboriginal and non-Aboriginal subgroups (N = 1877)

	Subgroups		
	Aboriginal	Non-Aboriginal	
Variables	(*n* = 839)	(*n* = 1038)	x^2
	n(%)	*n*(%)	
Most Serious Index Offence[a]			108.397***
Against Person (non-sexual)	295 (35.2)	382 (36.8)	
Against Property	342 (40.8)	352 (33.9)	
Drug Offences	25 (3.0)	88 (8.5)	
Drinking Offences	11 (1.3)	0 (0)	
Liquor & Traffic Offences	1 (0.1)	21 (2.0)	
Against Public Order	13 (1.6)	14 (1.3)	
P&P Violation	78 (9.3)	37 (3.6)	
Sexual Offence	13 (1.3)	61 (5.9)	
Weapons Offence	42 (5.0)	69 (6.6)	
Other (e.g., traffic offence, false fire alarm)	18 (2.1)	14 (1.3)	
Nature of Index Offence[a]			10.669**
General/Non-violent	488 (58.2)	526 (50.7)	
Violent	350 (41.8)	512 (49.3)	
Index Sentence			74.349***
Youth Conditional Discharge	80 (9.5)	198 (19.1)	
Youth Probation Order	498 (59.4)	649 (62.5)	
Youth Deferred Custody Order	36 (4.3)	31 (3.0)	
Youth Community Service Order	4 (0.5)	11(1.1)	
Youth Custody Order with Probation to Follow	132 (15.7)	112 (10.8)	
Youth Custody Order without Probation to Follow	89 (10.6)	37 (3.6)	
	M(SD)	M(SD)	*t*
Age	17.00 (1.61)	16.83 (1.39)	2.611*
Average length of community supervision (days)	383.61 (170.19)	479.55 (232.55)	-8.776***
Average length of time served (days)	89.66 (86.39)	82.89 (63.92)	.816

[a] Index offence information was missing for one Aboriginal youth.
****p* < .001. ***p* < .01. * *p* < .05.

Significant differences also were found between subgroups for index sentence,

x^2(5) = 74.349, p < .001, as non-Aboriginal youth were more likely to be sentenced to a

conditional discharge and Aboriginal youth were more likely to be sentenced to custody. Non-Aboriginal youth were sentenced to longer periods of community supervision compared to Aboriginal youth, $t(1509) = -8.776$, $p < .001$, two-tailed. Lastly, the Aboriginal youth were slightly, yet significantly older than the non-Aboriginal group, $t(1875) = 2.611$, $p = .009$, two-tailed.

Differences in YLS/CMI subscale and total scores between Aboriginal and non-Aboriginal subgroups are presented in Table 2. Aboriginal offenders scored significantly higher than non-Aboriginal offenders on all subscales and the total score, with differences in points ranging from 0.278 (Education/Employment) to 1.05 (Criminal History) and 4 and half points for the total score. This finding was also consistent when examining the proportion of each sample falling within each risk category, $x^2(3) = 118.917$, $p < .001$ (two-tailed) (see Table 3). Both subgroups had the largest proportion of youth fall within the moderate risk category; however, an examination of the standardized residuals indicates that there was a significantly higher proportion of non-Aboriginal youth in the low risk category ($p < .001$) and a significantly higher proportion of Aboriginal youth within both the high ($p < .001$) and very high ($p = .003$) risk categories.

Table 2

Mean (Standard Deviation) for the YLS/CMI total and subscale scores by Aboriginal and non-Aboriginal subgroups

| YLS/CMI Total/Subscales | Subgroups | | Differences between subgroups | |
| | Aboriginal ($n = 839$) | Non-Aboriginal ($n = 1038$) | | |
	M (SD)	M (SD)	t-test	Point Difference
Criminal History	1.65 (1.78)	0.60 (1.15)	15.488***	1.05
Family Circumstances/ Parenting	2.54 (1.76)	1.94 (1.65)	7.635**	0.60
Education/Employment	2.77 (1.86)	2.49 (1.88)	3.204***	0.28
Peer Relations	2.21 (1.18)	1.71 (1.14)	9.305***	0.50
Substance Abuse	2.19 (1.53)	1.33 (1.38)	12.786***	0.86
Leisure/Recreation	1.60 (0.92)	1.21 (0.93)	9.175***	0.40
Personality/Behaviour	2.42 (1.94)	2.03 (1.80)	4.522***	0.39
Attitudes/Orientation	1.43 (1.43)	0.96 (1.21)	7.838***	0.48
Total Score	16.83 (8.97)	12.27(7.63)	11.892***	4.56

Note. Positive point difference between subgroups indicates higher score for Aboriginal youth.
***$p < .001$. **$p < .01$.

Table 3

Proportion of Offenders in Each Risk Category According to Aboriginal and Non-Aboriginal Subgroups

| Risk Category | Subgroup | | x^2 |
| | Aboriginal $n = 839$ | Non-Aboriginal $n = 1038$ | |
	n(%)	n(%)	118.917***
Low	169 (20.1)	378 (36.4)	
Moderate	520 (62.0)	611 (58.9)	
High	120 (14.3)	41 (3.9)	
Very High	30 (3.6)	8 (0.8)	

***$p < .001$.

Lastly, recidivism rates for both samples were compared. As previously

described, recidivism was coded as all offences, both including and excluding technical

violations, for a 3-year fixed follow-up period for all youth. Table 4 presents the general

and violent recidivism rates of both the Aboriginal and non-Aboriginal samples.

There were significant differences in recidivism rates between subgroups found for both general and violent recidivism including and excluding technical violations. Aboriginal youth had higher recidivism rates for general offending including technical violations ($x^2(1) = 45.437$, $p < .001$) and violent offending including technical violations ($x^2(1) = 22.321$, $p < .001$). Specifically, Aboriginal youth had a general recidivism rate of 36.9% and a violent recidivism rate of 15.3%, whereas non-Aboriginal youth had general and violent recidivism rates of 22.7% and 8.3% respectively. This trend of higher recidivism rates for Aboriginal youth was also found for general ($x^2(1) = 43.625$, $p < .001$) and violent ($x^2(1) = 24.791$, $p < .001$) recidivism when excluding technical violations. Of note for both subgroups, rates of violent recidivism appear to increase when excluding technical violations, as any post-violation re-offending within the 3-year timeframe is included, which increases the capturing of violent recidivism after a breach conviction.

Table 4

General and Violent Recidivism Rates for Three-Year Follow-Up According to Subgroup

	Subgroup		x^2
	Aboriginal	Non-Aboriginal	
	$n = 839$	$n = 1038$	
Including Technical Violations	n(%)	n(%)	
General/Any			45.437***
Yes	310 (36.9)	236 (22.7)	
No	529 (63.1)	802 (77.3)	
Violent[a]			22.321***
Yes	128 (15.3)	86 (8.3)	
No	711 (84.7)	952 (91.7)	
Excluding Technical Violations			
General/Any			43.625***
Yes	282 (33.6)	209 (20.1)	
No	557 (66.4)	829 (79.9)	
Violent[a]			24.791***
Yes	139 (16.6)	93 (9.0)	
No	700 (83.4)	945 (91.20	

[a] including sexual
***$p < .001$

Discrimination of the YLS/CMI

The first research question addressed whether the YLS/CMI significantly predicts recidivism for Aboriginal youth offenders. Table 5 presents the results of the AUC analyses examining the predictive validity of the YLS/CMI for both Aboriginal and non-Aboriginal youth offenders for general recidivism including technical violations. Results indicate that seven of the eight subscales and the YLS/CMI total score significantly predicted recidivism for Aboriginal youth offenders. For example, for the total score, the significant AUC value for the Aboriginal youth indicates that a randomly selected recidivist would have a 61% chance of having a higher YLS/CMI total score than a randomly selected non-recidivist (AUC = .606, $p < .001$, 95% CI of [0.567, 0.645]).

Although it was hypothesized that all subscales would significantly distinguish between recidivists and non-recidivists, the Substance Use subscale was not a significant predictor for Aboriginal offenders in this sample. For non-Aboriginal offenders, all eight subscales and the total score significantly distinguish between recidivists and non-recidivists.

Results presented in Table 5 also partly address whether the YLS/CMI predicts recidivism equally well for Aboriginal youth compared to non-Aboriginal youth. Results suggest that the YLS/CMI predicts general recidivism including technical violations equally well for both groups, as no significant differences in AUC values were found for any subscales or the total score.

Table 5

Predictive Accuracy of the YLS/CMI by Aboriginal and non-Aboriginal Subgroups for General Recidivism Including Technical Violations

| | Subgroups | | | |
| | Aboriginal ($n = 839$) | | Non-Aboriginal ($n = 1038$) | |
Subscale/Total Score	AUC	95% CI	AUC	95% CI
Criminal History	.541*	[.500, .582]	.585***	[.542, .629]
Family Circumstances/ Parenting	.617***	[.578, .656]	.621***	[.580, .662]
Education/Employment	.581***	[.541, .621]	.631***	[.591, .671]
Peer Relations	.554*	[.514, .594]	.585***	[.544, .627]
Substance Abuse	.527	[.486, .568]	.565**	[.522, .608]
Leisure	.575***	[.536, .614]	.570**	[.528, .612]
Personality/Behaviour	.597***	[.557, .636]	.649***	[.609, .688]
Attitudes/Orientation	.593***	[.554, .633]	.596***	[.554, .639]
Total Score	.606***	[.567, .645]	.657***	[.616, .697]

Note. Bolded subscales/total score denotes a significant difference between Aboriginal and non-Aboriginal offenders for that domain.
***$p < .001$. **$p < .01$. * $p < .05$.

When examining general recidivism excluding technical violations, a slightly different picture emerges (see Table 6). Only five of eight subscales provide significant predictors of recidivism for Aboriginal youth offenders, as the Criminal History, Peer

Relations, and Substance Use subscales do not significantly predict recidivism. The total

YLS/CMI score does significantly predict general recidivism excluding technical

violations with this group. For non-Aboriginal offenders, all eight subscales and the total

score significantly distinguish between recidivists and non-recidivists. When examining

differences in predictive validity between the two subgroups, results from Table 6

indicate that only the Criminal History subscale and the total score predict significantly

better for non-Aboriginal offenders compared to Aboriginal offenders, $z = -2.06$, $p =$

.039, two-tailed, and $z = -2.14$, $p = .032$, two-tailed, respectively. Consistent with results

from analyses utilizing general recidivism including technical violations, despite lack of

significant differences, effect sizes remain larger for non-Aboriginal compared to

Aboriginal youth for all subscales and the total score.

Table 6

Predictive Accuracy of the YLS/CMI by Aboriginal and non-Aboriginal Subgroups for
General Recidivism Excluding Technical Violations

	Subgroups			
	Aboriginal ($n = 839$)		Non-Aboriginal ($n = 1038$)	
Subscale/Total Score	AUC	95% CI	AUC	95% CI
Criminal History	.524	[.482, .566]	.588***	[.543, .633]
Family Circumstances/ Parenting	.608***	[.568, .647]	.624***	[.581, .667]
Education/Employment	.566**	[.526, .607]	.621***	[.579, .663]
Peer Relations	.535	[.495, .576]	.585***	[.541, .629]
Substance Abuse	.511	[.469, .553]	.566**	[.522, .611]
Leisure	.553*	[.513, .593]	.559*	[.514, .604]
Personality/Behaviour	.590***	[.549, .631]	.647***	[.605, .689]
Attitudes/Orientation	.579***	[.538, .619]	.592***	[.548, .637]
Total Score	.586***	[.546, .627]	.652***	[.608, .695]

Note. Bolded subscales/total score denotes a significant difference between Aboriginal and non-Aboriginal offenders for that domain.
***$p < .001$. **$p < .01$. * $p < .05$.

When examining violent recidivism, a pattern emerges that appears less consistent with that hypothesized. For both violent recidivism including technical violations (see Table 7) and excluding technical violations (see Table 8), only Family Circumstances/Parenting, Personality/Behaviour, and the total score significantly predict recidivism for Aboriginal youth; all other subscales do not significantly distinguish between recidivists and non-recidivists. For non-Aboriginal youth, four of eight subscales are significant predictors of violent recidivism including technical violations and five of eight subscales are significant predictors of violent recidivism excluding technical violations; the total score significantly predicts for both forms of recidivism for these non-Aboriginal youth. For both forms of recidivism (Table 7 and Table 8), only the Personality/Behaviour subscale predicts significantly differently between the two subgroups (violent including technical violations: $z = -2.16$, p = .03, two-tailed; violent excluding technical violations: $z = -2.33$, $p = .02$, two-tailed), as all other subscales predict recidivism equally well (or poorly, in some cases).

Table 7

Predictive Accuracy of the YLS/CMI by Aboriginal and non-Aboriginal Subgroups for Violent Recidivism Including Technical Violations

| | Subgroups | | | |
| | Aboriginal (*n* = 839) | | Non-Aboriginal (*n* = 1038) | |
Subscale/Total Score	AUC	95% CI	AUC	95% CI
Criminal History	.531	[.476, .585]	.559	[.493, .625]
Family Circumstances/ Parenting	.582**	[.529, .634]	.581*	[.515, .647]
Education/Employment	.521	[.467, .575]	.591*	[.527, .655]
Peer Relations	.538	[.486, .589]	.544	[.478, .609]
Substance Abuse	.507	[.449, .564]	.501	[.437, .564]
Leisure	.534	[.481, .587]	.503	[.438, .568]
Personality/Behaviour	.561*	[.508, .614]	.655***	[.593, .717]
Attitudes/Orientation	.541	[.487, .595]	.592*	[.525, .659]
Total Score	.555*	[.502, .608]	.613**	[.550, .676]

Note. Bolded subscales/total score denotes a significant difference between Aboriginal and non-Aboriginal offenders for that domain.
***p < .001. **p < .01. * p < .05.

Table 8

Predictive Accuracy of the YLS/CMI by Aboriginal and non-Aboriginal Subgroups for Violent Recidivism Excluding Technical Violations

| | Subgroups | | | |
| | Aboriginal (*n* = 839) | | Non-Aboriginal (*n* = 1038) | |
Subscale/Total Score	AUC	95% CI	AUC	95% CI
Criminal History	.540	[.487, .592]	.568*	[.504, .632]
Family Circumstances/ Parenting	.583**	[.532, .633]	.596**	[.533, .659]
Education/Employment	.530	[.477, .582]	.610***	[.549, .671]
Peer Relations	.536	[.486, .586]	.557	[.494, .620]
Substance Abuse	.514	[.459, .570]	.514	[.452, .575]
Leisure	.543	[.493, .594]	.517	[.455, .579]
Personality/Behaviour	.566*	[.515, .617]	.664***	[.604, .724]
Attitudes/Orientation	.544	[.491, .596]	.614***	[.549, .679]
Total Score	.563*	[.512, .614]	.633**	[.572, .694]

Note. Bolded subscales/total score denotes a significant difference between Aboriginal and non-Aboriginal offenders for that domain.
***p < .001. **p < .01. * p < .05.

Calibration of the YLS/CMI

In addition to examining the discrimination of the YLS/CMI to assess whether it predicts recidivism equally well for Aboriginal offenders as it does for non-Aboriginal offenders, the calibration of the tool, specifically its ability to accurately estimate absolute recidivism rates, was explored. In order to facilitate interpretation, the E/O index was reversed to present the O/E index, as the observed rate of recidivism was consistently higher than the expected rate (based on the non-Aboriginal offenders) in nearly all risk categories. Therefore, O/E values less than 1 indicate that the expected number is greater than the observed, whereas O/E values greater than 1 indicate that the expected number is smaller than the observed. As explained previously, O/E values of 1 indicate no difference between the two. Given the small number of non-Aboriginal youth in the very high category ($n = 8$, refer to Table 3), the high and very high risk categories were collapsed.

Table 9 and Figure 1 present the calibration results using the O/E index for general recidivism including technical violations. Compared to non-Aboriginal youth in equivalent categories, the Aboriginal youth in the low and moderate risk categories were 80% and nearly 50%, respectively, more likely to re-offend. For example, based on the percentage of non-Aboriginal youth who re-offended in the low risk category, the YLS/CMI predicted that only 25 Aboriginal youth would recidivate; however, 45 youth did so. Given that the 95% CIs for the O/E index for those in the high/very high risk categories passed through 0, there was no significant differences in absolute recidivism rates found for offenders in this collapsed risk category. As hypothesized, these results indicate that the YLS/CMI under-predicts re-offending for Aboriginal youth scoring low

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and moderate; it appears to be accurately estimating absolute recidivism rates for those scoring in the high/very high categories, O/E = .90, 95% CI [.66, 1.14].

These findings were nearly identical when examining general recidivism excluding technical violations (see Table 10, Figure 2). Aboriginal youth in the low and moderate risk categories had significantly higher recidivism rates than those predicted by the YLS/CMI used with non-Aboriginal youth, O/E = 1.91, 95% CI [1.61, 2.21] and O/E =1.53, 95% CI [1.38, 1.68] respectively. No differences were found between the estimated and observed recidivism rates for the high/very high risk category.

Table 9

Comparing General Recidivism Rates Including Technical Violations by Risk Category Using the O/E Index

Risk Category	Aboriginal Recidivists *n* (%)	Non-Aboriginal Recidivists *n* (%)	O/E	95% CI
Low	45 (26.6)	55 (14.6)	**1.80**	[1.51, 2.09]
Moderate	196 (37.7)	156 (25.5)	**1.47**	[1.33, 1.61]
High/Very High	69 (46.0)	25 (51.0)	.90	[0.66, 1.14]
Total sample	310 (36.9)	236 (22.7)		

Note. Percentages in round brackets represent the percentage of individuals in the respective risk category who re-offended. O/E indices in bold are significantly different than 1.
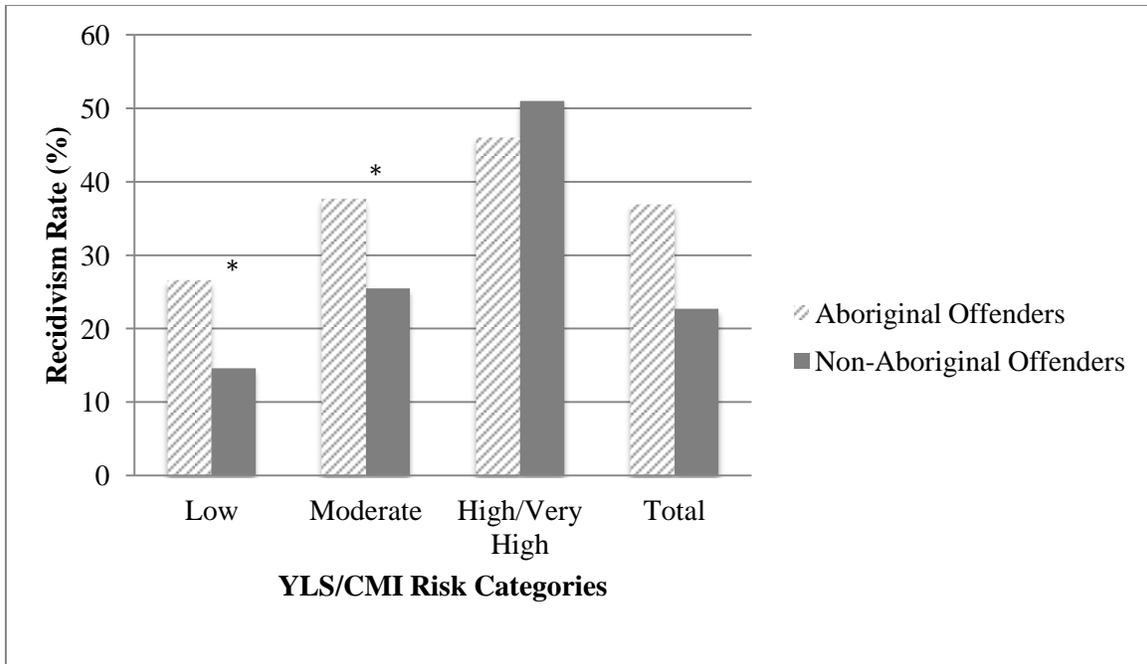
Figure 1. Comparing general recidivism including technical violations rates by risk category and aboriginal status. Asterisk above columns denote a statistically significant difference.

Table 10

Comparing General Recidivism Rates Excluding Technical Violations by Risk Category Using the O/E index

Risk Category	Aboriginal Recidivists *n* (%)	Non-Aboriginal Recidivists *n* (%)	O/E	95% CI
Low	44 (26)	51 (13.5)	**1.91**	[1.61, 2.21]
Moderate	178 (34.2)	136 (22.3)	**1.53**	[1.38, 1.68]
High/Very High	60 (40)	22 (44.9)	.90	[0.65, 1.15]
Total	282 (33.6)	209 (20.1)		

Note. Percentages in round brackets represent the percentage of individuals in the respective risk category who re-offended. O/E indices in bold are significantly different than 1.
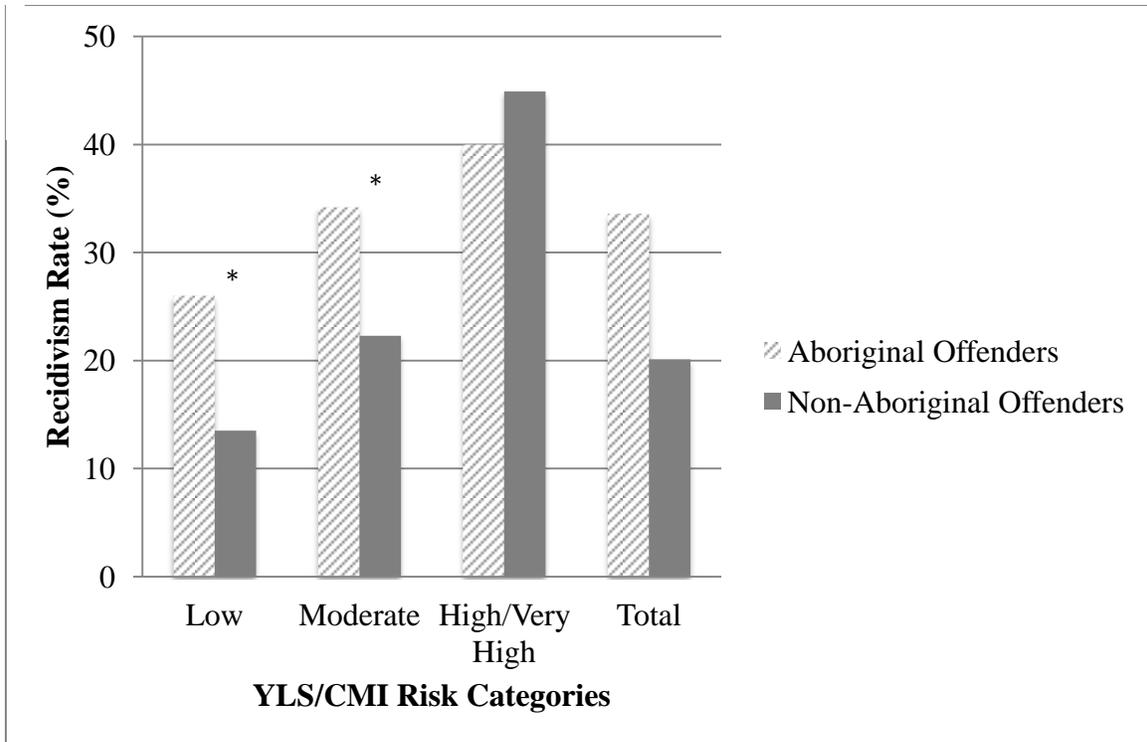
Figure 2. Comparing general recidivism rates excluding technical violations by risk category and aboriginal status. Asterisk above columns denote a statistically significant difference.

        This same pattern was found when examining violent recidivism (see Tables 11 and 12). For violent recidivism including and excluding technical violations, low scoring Aboriginal youth re-offended at twice the rate than was expected. Compared to their non-Aboriginal counterparts, Aboriginal offenders in the moderate category were approximately 75% more likely to re-offend violently regardless of whether technical violations were considered. Similarly to the general recidivism results, Aboriginal and non-Aboriginal youth in the high/very high risk categories were reconvicted at similar and non-significantly different rates.

Table 11

Comparing Violent Recidivism Rates Including Technical Violations by Risk Category Using the O/E Index

	Aboriginal Recidivists	Non-Aboriginal Recidivists		
Risk Category	*n* (%)	*n* (%)	O/E	95% CI
Low	20 (11.8)	22 (5.8)	**2.0**	[1.56, 2.44]
Moderate	83 (16.0)	56 (9.2)	**1.73**	[1.51, 1.95]
High/Very High	25 (16.7)	8 (16.3)	1.0	[0.61, 1.39]
Total Sample	128 (15.3)	86 (8.3)		

Note. Percentages in round brackets represent the percentage of individuals in the respective risk category who re-offended. O/E indices in bold are significantly different than 1.
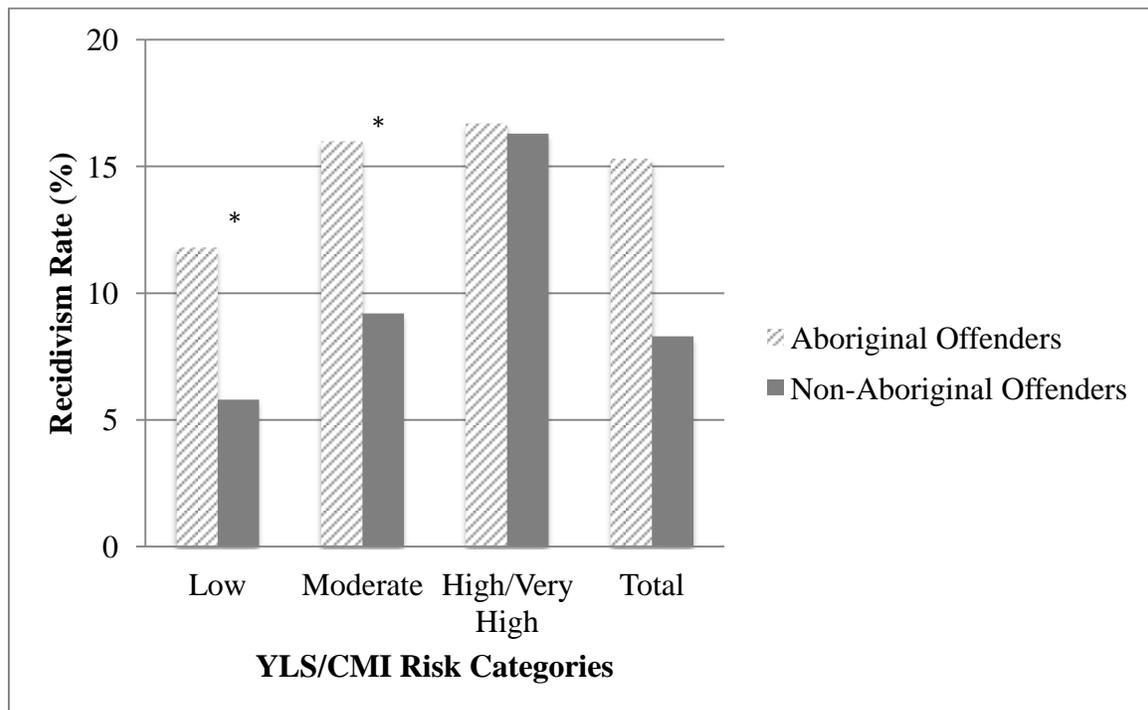
Figure 3. Comparing violent recidivism rates including technical violations by risk category and aboriginal status. Asterisk above columns denote a statistically significant difference.

Table 12

Comparing Violent Recidivism Rates Excluding Technical Violations by Risk Category Using the O/E Index

Risk Category	Aboriginal Recidivists n (%)	Non-Aboriginal Recidivists n (%)	O/E	95% CI
Low	20 (11.8)	23 (6.1)	**2.0**	[1.56, 2.44]
Moderate	91 (17.5)	60 (9.8)	**1.78**	[1.57,1.99]
High/Very High	28 (18.7)	10 (20.4)	.90	[0.53, 1.27]
Total	139 (16.6)	93 (9.0)		

Note. Percentages in round brackets represent the percentage of individuals in the respective risk category who re-offended. O/E indices in bold are significantly different than 1.
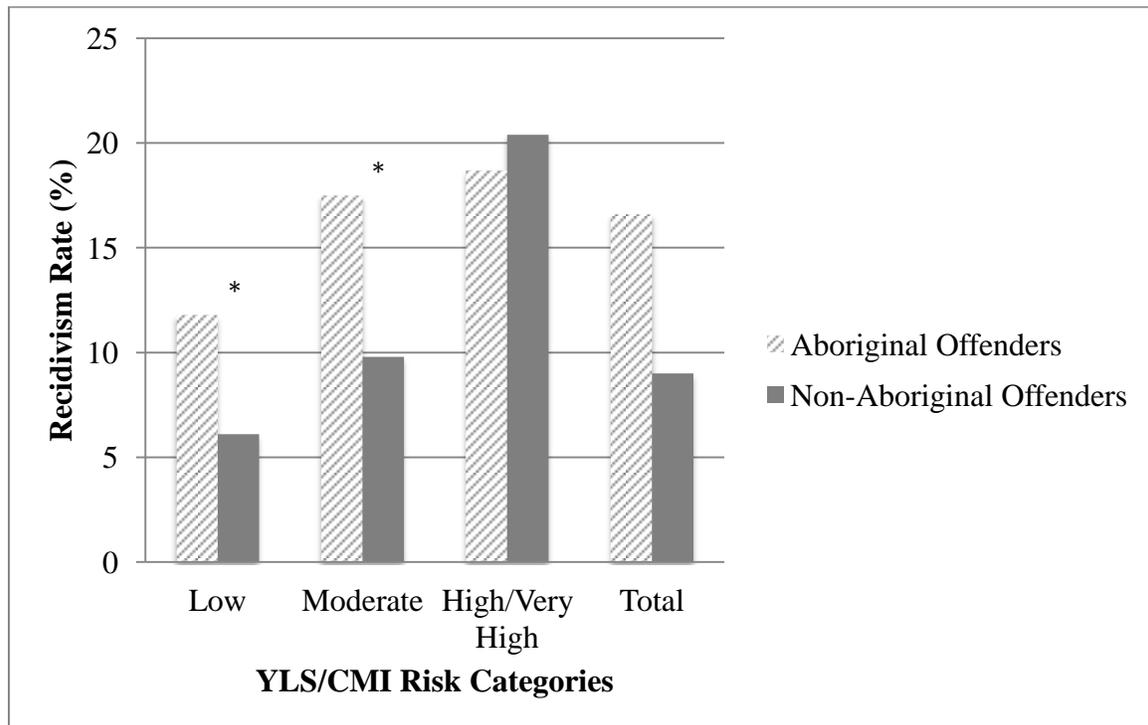

Figure 4. Comparing violent recidivism rates excluding technical violations by risk category and aboriginal status. Asterisk above columns denote a statistically significant difference.

CHAPTER 2: STUDY 2

Research Questions

1) Do culturally-specific factors predict recidivism for Aboriginal youth offenders?

2) Do culturally-specific factors provide incremental predictive validity to the YLS/CMI?

Hypotheses

Given theoretical discussions, correlational and retrospective studies examining culturally-specific factors, and research investigating the predictive ability of the YLS/CMI with Aboriginal youth offenders, the following hypotheses are made for this exploratory study:

1) A number of culturally-specific factors will significantly predict re-offending; however, there is little evidence to suggest which factors will be better predictors.

2) Culturally-specific factors will add incremental predictive validity to the YLS/CMI.

3) An interaction effect between YLS/CMI and residence on a reserve will be significant, indicating lower predictive validity of the YLS/CMI for those residing on a reserve.

Methodology

Sample

The final sample consists of 292 male, Aboriginal youth for whom a Pre-Sentence Report (PSR) was written between 2008 and 2010 in Ontario and who received a period of community supervision for their index offence. Initially, 391 PSRs were sent to the author to be coded prior to receiving any criminal justice data (e.g., index sentence,

recidivism). Upon receiving data related to the index offence and recidivism from the

MCYS, it became apparent that the author received PSRs for youth offenders who were

sentenced to a period incarceration for their index offence, and, therefore, were not

eligible for inclusion in the study due to a lack of follow-up period. This resulted in 292

PSRs remaining, from which culturally-specific factors were coded, excluding the 30

PSRs used for developing the coding manual (described below).

Measures

      Risk/Need assessment. See Chapter 1.

      Pre-sentence reports. In Ontario, a PSR, often written by a PO, is required for

youth offenders prior to the determination of a custodial sentence or an adult sentence.

Additionally, a judge may request a PSR to obtain additional information about a youth

offender prior to any sentencing (Ministry of Children and Youth Services, 2006). The

purpose of the PSR is to provide relevant background information to the judge to assist in

sentencing. If the youth offender identifies as Aboriginal, POs are also required by

MCYS policy to include information pertinent to the youth's unique heritage and

circumstances (MCYS, 2006). A youth offender is identified as of Aboriginal descent by

self-disclosure, disclosure by a family member, or previous identification in the youth's

file. Prior to the completion of the PSR, POs are required to complete a risk/need

assessment, using the YLS/CMI, to assist in identifying relevant factors contributing to

the offending behaviour and provide treatment recommendations. In order to gain a more

complete description of the youth and their life circumstances, it is also expected that

POs contact individuals involved in the life of the youth for additional information (e.g.,

parents, teachers) for the purpose of completing the PSR.

Culturally-specific factors. Culturally-specific factors were coded from PSRs using a coding manual developed for this study by the author (see Appendix B). Given that PSRs are written by different POs throughout the province, it was expected that there would be a degree of variability across reports in the perceived relevance of factors and the manner in which cultural factors were discussed. Although POs are encouraged to include specific information about Aboriginal offenders they deem relevant, MCYS policy requires that the PSRs address the following factors (MCYS, 2006):

· marginalization

· residential school attendance and that of family members

· racism

· chronic substance abuse in the home community

· family and community breakdown

· isolation

· community relocation

· dislocation from an Aboriginal community

· adoption and/or other involvement with the child welfare system

· interest in culture and culturally-specific resources

In addition to the factors listed above, when consulting with the MCYS to develop the coding manual, the MCYS indicated that the following factors are often reported in PSRs for Aboriginal youth (personal communication with P. Wheeler on May 31, 2013):

· loss of identity, culture, ancestral knowledge

· whether the youth has been abused and by whom (including sexual, emotional, verbal, physical, and spiritual)

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·   who comprises the offender's support network: spiritual, cultural, family,

community

The coding manual, including demographic information, was developed based on

the above factors as well as culturally-specific factors identified by *R v. Gladue* and the

Aboriginal literature more generally, in the event that these are discussed in the PSRs.

Additionally, once the PSRs were received by the author, a random sample of 10 PSRs

(8%) completed each year (e.g., 2008 - 2010) were coded and used to formally

operationalize the risk factors in the coding manual (Cooper, Hedges, & Valentine,

2009), as access to these PSRs was not permitted prior to MCYS approval. As these 30

reports served as a variable construction sample, they were not be included in the

analyses. Prior to any formal coding, the final coding manual was reviewed by Dr. David

Day and Dr. Scott Clark (who was initially a member of the supervisory committee) and

any recommended changes were made.

Table 13 presents the 23 factors that were included in the coding manual and a

brief definition of each. The coding manual and associated coding rules are presented in

Appendices B and C, respectively.

Table 13

Description of Culturally-Specific Variables in Coding Manual

Factor	Brief Definition[11]
Language	Knowledge of native language
Reserve	Currently residing on a reserve
ReserveEver	The youth has resided on a reserve in their history
MIZ	Metropolitan Influence Zone of their current residence (see below for more detail). Coded

---

[11] All Risk Factors are coded as Yes(1) or No(0) unless otherwise specified.

	as Census Metropolitan Zone (CMZ), Census Agglomeration (CA) or Strong, Moderate, Weak, and No metropolitan influence
ResSchool	A family member has attended a residential school. Specify which family member(s)
Racism	Experienced racism associated with their Aboriginal heritage
CAS	Involvement of Children's Aid Society (CAS) with family (past or current)
OutHome	The youth has been in formal out-of-home care (excluding adoption)
FamBreak1	The youth was raised by 3 or more individuals/families
FamBreak2	Youth's parents are no longer together
FamBreak3	Problematic substance use in home (by any family member(s) excluding youth)
FamBreak4	Any violence in home or experience of abuse by youth (excluding violence caused only by youth)
FamBreak5	Parent ever in jail
FamBreak6	Attempt/Suicide of a family member (by blood or legal union)
CWB	The Community Well-Being (CWB) Index assesses quality of youth's municipality based on education, employment rate, etc. (see below for more detail). Values range from 0 – 100.
Identity	Identification with an Aboriginal Group/First Nation/clan/tribe
Interest	Expressed interest in learning about culture
Culture	Attendance in a cultural ceremony in past 12 months (e.g., feast, smudging, powwow)
Activity	Engagement in traditionally Aboriginal-centred activity in last 12 months (e.g., traditional spring hunt, beadwork, participation at a Friendship Centre)
Knowledge	Lacks ancestral knowledge
ABassociates	Time spent with other Aboriginal

	adults/youth outside family (excluding through treatment provision)
SupportS	Received spiritual support in the past 3 months from an Elder, parent, or grandparent
PrevTreat	Previous involvement in restorative/ culturally-specific intervention

After excluding variables with large amounts of missing data, specifically greater than 50% missing responses, most risk factors were organized into two broad constructs, Cultural Involvement and Family Breakdown. Consistent with past research (Ferrante, 2012; Broadhurst, 2002; Homel et al., 1999), an indicator of degree of cultural involvement was derived using several risk factors. Cultural involvement ('Involvement') included Language, Culture, Activity, SupportS, and PrevTreat. Scores on each (either 0 or 1) were added to create a total score out of 5. Family Breakdown ('FamilyBreak') was coded similarly using CAS, OutHome, FamBreak1, FamBreak2, FamBreak3, and FamBreak4. Community variables were captured by the individual factors of Reserve, CWB, and MIZ. The remaining variables were not included in the analyses due to missing data (to be discussed in the Data Screening section).

Statistics Canada developed the Metropolitan Influenced Zone (MIZ) categories as a way to provide a detailed geographic identity for municipalities that fall outside the Census Metropolitan Zones (CMZ) or Census Agglomerations (CA) (Statistics Canada, 2013b). CMZs and CAs are municipalities that have populations of at least 100,000, with at least 50% or 10% living in the core of the municipality (CMZ and CA, respectively). Examples of CMZs in Ontario include Toronto and Barrie and examples of CAs include North Bay and Sarnia. Each municipality in each province is assigned a census MIZ

category depending on the degree of influence that the closest Census Metropolitan Zone (CMZ) or Census Agglomeration (CA) has on the municipality and its proportion of working population that commutes to the CMZ or CA. Degree of influence is coded as Strong, Moderate, Weak, and No metropolitan influence, listed in decreasing level of influence, and Statistics Canada provides data for all municipalities in Canada.

The Community Well-Being (CWB) Index was also used to assess the well-being of the municipality [Aboriginal Affairs and Northern Development Canada (AANDC), 2015]. The CWB index is designed to measure the socio-economic well-being of communities in Canada, both Aboriginal (First Nation and Inuit) and non-Aboriginal. The Index is generated using Canadian Census of Population data and comprises four indicators: education (high school/university completion rates); labour force activity (employment and labour force participation rates); income (income per capita); and housing (housing quality and quantity). The 2011 indices were used for the current study, as these represent the closest estimates to the time at which the PSRs were written ($M = $ 2009) and there were few changes in the gap between First Nation and non-Aboriginal communities between 2006 (last year it was completed) and 2011 (AANDC, 2015). CWB indices range from $0 - 100$, with higher scores representing greater socio-economic well-being.

Recidivism. Recidivism was defined as a post-index conviction occurring in the community in either the youth or adult justice systems, similar to Chapter 1. As all youth were sentenced to a period of community supervision and, therefore, each is placed at a similar risk of detection, recidivism excluded any technical violations. This was done to investigate the relationship between culturally-specific factors and new offences, rather

than capture non-compliance with added conditions. Recidivism was coded using a 2-year fixed follow-up period. The following recidivism information was coded for each case: date of new conviction(s); type (e.g., against person) and nature of most serious new offence (e.g., violent); sentence type; and sentence length.

Procedure

The archived PSRs were sent by each MCYS Ontario region to the writer in hard copy to be coded using the coding manual discussed previously. If more than one PSR was sent for a youth, the most recent PSR was chosen for coding and only historical/static information was gathered from the other PSR(s). In order to ensure confidentiality, all youth in the study were given identification numbers that cannot be directly linked to their name or offence. These numbers were used for data analysis purposes and, therefore, follow-up information was not associated with their names. In addition to the information from the PSRs, total and subscale YLS/CMI scores (completed within eight weeks of PSR completion), index offence, length and type of index disposition, and recidivism for this sample were gathered from the electronic files sent by PESAR. All PSRs were coded prior to receiving any information on recidivism, and therefore, the coders (i.e., primary coder and secondary coder used for inter-rater reliability [IRR]) were blind to recidivism. Twelve practice coding cases (i.e., PSRs) were randomly selected and used to train the second coder (DD) for inter-rater reliability (Cooper, Hedges, & Valentine, 2009). IRR was based on 18% ($n = 71$) of the original 392 PSRs received, as recommended by Lacy and Riff (1996). These 71 PSRs were randomly selected following the 12 practice cases. As well, to identify and correct any potential coder drift, IRR was assessed at three time points over a 4.5-month period.

Approximately every six weeks, a random sample of approximately 24 PSRs were identified and coded by both raters, and the raw coding was then entered into an SPSS data file. Consensus in coding was then achieved between both coders and the author continued coding PSRs independently. Inter-rater reliability statistics were run after all inter-rater files were coded. To assess the inter-rater reliability of descriptive and risk variables, Cohen's Kappa values were employed for all categorical variables ($k = 24$). The Kappa values for the variables ranged from .42 to 1.0 with a median value of .81, which is considered in the excellent range (Fleiss, 1981). The only value below .60 was the variable identifying the educational level of the youth (Kappa = .42). This variable was only used for descriptive purposes.

Data Screening

The data were first screened for data entry errors and values falling outside the expected ranges. The means and standard deviations for all continuous variables also were checked and appeared reasonable. Variables were then examined for missing values. Given the exploratory nature of this study, the coding manual was developed broadly in an attempt to capture a range of possible factors. Unsurprisingly, there was a large amount of missing data across many of the factors. In fact, of the 292 PSRs included, no case had information available for every factor included in the coding manual to be used in the statistical models (i.e., excluding basic demographic and index offence-related data). Of the 23 included variables, 100% of the cases had missing values for two or more variables. Table 14 presents data on the proportion of missing data for the included variables.

Table 14

Proportion of Missing Data by Variable (N = 292)

Variable	Present n (%)	Missing n (%)
Language*	280 (95.9)	12 (4.1)
Reserve*	292 (100)	0 (0)
ReserveEver*	258 (88.4)	34 (11.6)
MIZ*	292 (100)	0 (0)
CWB*	292 (100)	0 (0)
ResSchool	50 (17.1)	242 (82.9)
Racism	17 (5.8)	275 (94.2)
CAS*	271 (92.8)	21 (7.2)
OutHome*	263 (90.1)	29 (9.9)
FamBreak1*	265 (90.8)	27 (9.2)
FamBreak2*	283 (96.9)	9 (3.1)
FamBreak3*	274 (93.8)	18 (6.2)
FamBreak4*	258 (88.4)	34 (11.6)
FamBreak5	91 (31.2)	201 (68.8)
FamBreak6	25 (8.6)	267 (91.4)
Identity	115 (39.4)	177 (60.6)
Interest	108 (37.0)	184 (63.0)
Culture*	188 (64.4)	104 (35.6)
Activity*	190 (65.1)	102 (34.9)
Knowledge	119 (40.8)	173 (59.2)
ABassociates	105 (36.0)	187 (64.0)
SupportS*	160 (54.8)	132 (45.2)
PrevTreat*	214 (73.3)	78 (26.7)
YLSscore*	209 (71.6)	83 (28.4)
General Recidivism*	292 (100)	0 (0)
Violent Recidivism*	292 (100)	0 (0)

Note. Variables with an asterisk denote those with less than 50% missing data.

The way in which missing data were dealt with was contingent on the cause or explanation for the missing data; therefore, the nature and pattern of missing data were explored. As recommended by Garson (2015), only variables with 50% or less of missing values were explored, as variables with greater than 50% are considered unreliable and, therefore, were excluded from any further analysis. This is also consistent with results of simulation studies exploring the impact of missing data and missing data management

strategies (e.g., Graham & Schafer, 1999), as few have been tested with more than 50-60% missing data and results for those with 50% missing data have demonstrated positive results that maximize power and minimize bias using Multiple Imputation (to be discussed further below). This threshold of 50% resulted in eight variables being excluded from the analyses. Variables with less than 5% missing values were also excluded from further exploration (although remained in the statistical models), as such a low proportion is unlikely to bias results regardless of the cause of the missingness (Tabachnick & Fidell, 2013).

The first step in identifying the ways to address missing data is to identify if the missing data are Missing Completely At Random (MCAR). Unfortunately, given that all the variables of interest with missing values, save for one, are binary, Little's MCAR test cannot be performed, as this requires primarily continuous variables (Tabachnick & Fidell, 2013). Therefore, each variable of interest was dichotomized by missing status (i.e., coded 1 if data are missing and 0 if data are present) (Garson, 2015; Graham, 2009). Chi-square analyses were then completed to test whether the two groups (missing versus present) differed significantly on any variable in the model, including the outcome variable (Garson, 2015; Graham, 2009). Results indicated that the missing data demonstrated a systematic pattern, thereby violating the Missing Completely At Random assumption. For example, missingness in ReserveEver ($x^2(3) = 16.752$, $p = .002$) and total YLS/CMI score ($x^2(3) = 16.359$, $p = .001$) were found to be significantly related to location in Ontario where the PSR was completed; Activity ($x^2(1) = 16.499$, $p < .001$), SupportS ($x^2(1) = 12.424$, $p = .001$), and PrevTreat ($x^2(1) = 10.686$, $p = .001$) were significantly related to whether the PSR included a specific section on Aboriginal History

and Circumstances; ReserveEver ($x^2(1) = 20.678$, $p < .001$), Outhome ($x^2(1) = 14.763$, $p < .001$), CAS ($x^2(1) = 3.908$, $p = .018$) Fambreak1 ($x^2(1) = 7.824$, $p = .005$), Fambreak3 ($x^2(1) = 5.045$, $p = .025$), and Fambreak4 ($x^2(1) = 11.762$, $p = .001$) were significantly related to whether the report was a Stand Down report[12], rather than full PSR; lastly, Culture ($x^2(1) = 3.296$, $p = .041$) and Activity ($x^2(1) = 4.573$, $p = .032$) were significantly related to the most serious index offence (i.e., general or violent). None of the variables' missingness was found to be significantly associated with the dependent variable (i.e., cases with missing data did not have significantly higher or lower recidivism rates). These variables appear to have missing values primarily related to the information-gathering practices. This is unsurprising, given that, despite guidelines set out by the MCYS, probation offices and officers appear to have significant discretion as to what is included in each PSR. Therefore, the missing data appears to be Missing At Random (MAR).

Given that the data appear to be MAR, Multiple Imputation (MI) for managing the missing data was chosen above other methods (e.g., Single Imputation, listwise deletion, expectation maximization) to assist in managing identified bias. For example, if the data are MAR, rather than MCAR, listwise deletion incorporates this bias into the results, in addition to resulting in lower power and increased chance of Type II error (false negative) due to larger standard errors (Garson, 2015; Graham, 2009). MI is currently considered the most appropriate method to manage missing data that are considered MAR, as it includes appropriate random error into the imputation process and, therefore, provides more robust and unbiased parameters (Allison, 2002).

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[12] Stand Down reports are PSRs that provide an update to a previously completed PSR; therefore, they often contain fewer background details.

Data imputation estimates what the value of the missing variable would have been based on the subject's other observed data and the observed data of other subjects presenting similarly to the given subject. As multiple imputation was chosen, rather than single imputation, generating these estimates was done several times, thereby generating multiple datasets in which missing values have been imputed. This method then iteratively analyses datasets with each simulated value substituted in turn (Garson, 2015). Generating multiple imputations brings stability to the estimates and, by pooling the estimates when running statistical analyses, such as logistic regression, both the within-imputation and between-imputation variance can be incorporated (Allison, 2002; Allison, 2000; Garson, 2015).

IBM SPSS Statistics 22.0 Multiple Imputation function was used, which utilizes the Markov Chain Monte Carlo method. As recommended by Schafer & Graham (2002), all variables to be included in the statistical analyses were included in the imputation model, including the dependent variable. Given the large amount of missing data, 40 imputations were completed in order for results to converge and power to be maintained (Garson, 2015; Graham, Olchowski, & Gilreath, 2007). Linear and logistic regression estimation techniques were used according to the variable type requiring imputation (e.g., YLS/CMI total score and CAS involvement, respectively). All statistical models that follow will report the results based on the pooled estimates.

After MI was completed, the data were assessed for adherence to assumptions associated with logistic regression. Although logistic regression makes no assumptions about the distribution of predictor variables, a number of other assumptions apply (Tabachnik & Fidell, 2013). The presence of univariate outliers was first checked for the

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two continuous variables (i.e., YLS/CMI and CWB). No univariate outliers were identified through a visual inspection of box plots, stem and leaf plots, and probability plots. Although logistic regression makes no assumptions about the linear relationship between predictor variables, it is assumed that the relationship between continuous predictors and the logit transform of the dependent variable is linear. The Box-Tidwell approach, outlined by Hosmer amd Lemeshow (2000), was used to assess this assumption. The Box-Tidwell approach assesses whether the interactions between the continuous predictors and their natural logarithm are significant. The interaction term was not significant for the YLS/CMI total score ($w(1)= .132$, $p = .716$) or CWB ($w(1) = .277$, $p = .599$); therefore, the linearity assumption was met.

The data were then assessed for multicollinearity, which indicates whether two or more variables are highly correlated. A correlation matrix with all variables was examined for high, significant relationships among the variables. The only relationship that exceeded a phi correlation coefficient of .80 was whether the youth currently resides on a reserve (Reserve) and CWB. Tolerance was then assessed to see if the variables are significantly highly associated with the others. Tolerance values ranged from .088 (CWB) to .703 (Fambreak2). Tolerance values below .1 or .2 are considered problematic. The only two variables that fell below 0.2 were CWB (.088) and Reserve (.115); however, as multicollinearity provides few problems if the only goal of analysis is prediction rather than model building (Tabachnick & Fidell, 2013), both variables were retained. Aside from CWB and Reserve, tolerance values indicated that the relationships between the other variables did not appear to be problematic. Independence of errors was assumed based on the research design. A priori sample size determination for

multivariate logistic regression suggests a sample size between 119[13] and 175[14], which is well below the current sample size.

Statistical Analysis

Descriptive statistics were assessed and reported, including personal variables (e.g., Aboriginal group), community variables (e.g., MIZ), MCYS variables (e.g., region in Ontario), and index offence variables (e.g., most serious index offence). Additionally, the average YLS/CMI total score and the recidivism rate for each risk predictor were presented.

Predictive validity. Given the categorical nature of the dependent variable (i.e., recidivism), multivariate logistic regression was used to assess how well the culturally-specific factors predict recidivism for Aboriginal offenders. Logistic regression allows the prediction of which category a person is likely to belong to (e.g. recidivist versus non-recidivist) given a variable of interest (e.g., involvement in culture) (Kleinbaum, Kupper, Nizam, & Muller, 2008). Therefore, logistic regression provides an odds ratio for each predictor. Odds ratios greater than 1 indicate that as the predictor increases (e.g., from 0 [absent] to 1 [present), the odds of the event occurring (i.e., recidivism) increases. Values less than 1 indicate that as the predictor increases, the odds of the event occurring decreases. Values of exactly 1 indicate that the predictor has no influence on the event occurring. Prior to beginning analyses, assumptions related to logistic regression were verified and addressed when needed (see Data Screening).

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[13] According to Green (1991) using $104 + k$, with k representing the number of individual predictors, alpha = .05, and power = .80.
[14] According to Miles and Shevlin (2001), based on the inclusion of 15 predictors and expecting a small-medium effect (based on results from Ferrante, 2013), alpha = .05, and power = .80.

In order to explore the first research question addressing if individual culturally-specific risk factors predict offending, the first logistic regression model included all risk predictors as the independent variables with general recidivism as the dependent measure. Given the exploratory nature of the study and the lack of evidence suggesting greater predictive ability of some predictors over others, the backward, stepwise method was chosen for inclusion of predictors into the logistic regression model to assess their relationship to recidivism after two years. The backward method was used as it reduces the likelihood of suppressor effects (Fields, 2009), with an entry level of $p < .15$ and an exit level of $p < .20$ as recommended by Tabachnik and Fidell (2013) in order to ensure entry of variables with coefficients different from zero and reduce likelihood of a Type II error. This model was then run using violent recidivism as the dependent variable. Given concern with bias associated with single-item measures of experiences, aggregated risk variables were also examined for their relationship with general and violent recidivism. In this case, the enter method (rather than the stepwise method) was used as there were only two aggregated risk variables examined (i.e., Involvement and FamilyBreak).

The second research question explored whether culturally-specific risk factors provide incremental predictive validity to the YLS/CMI. Therefore, for models five through eight, hierarchical blockwise entry was used to enter the YLS/CMI into the first block, followed by the individual culturally-specific predictors or aggregate factors (i.e., Involvement and FamilyBreak) found to be significant in the previous logistic regression model in the second block, with any general recidivism as the dependent measure. This was then repeated for violent recidivism. Lastly, the degree to which residing on a reserve impacts the predictive validity of the YLS/CMI was examined. Specifically, this involved

testing whether an interaction existed between Reserve and YLS/CMI. Similarly to the last analyses, the YLS/CMI was entered into the first block, Reserve was entered into the second block, and the interaction term (Reserve*YLS/CMI) was entered into the third block. This model was repeated for both general and violent recidivism.

No corrections (e.g., Bonferroni) were made for multiple comparisons of predictor variables in logistic regression. Given the exploratory nature of this research and the growing emphasis on the contribution of effect sizes for meta-analysis rather than statistical significance within individual studies and criticisms associated with seeking the "truth" provided by testing the null hypothesis (e.g., Rothman, 1990), a Type II error (whereby an effect is missed when actually present) may impede future investigation of specific culturally-specific factors. Additionally, given that the need for replication is widely appreciated in the risk assessment literature and the use of statistical significance has been criticized generally (e.g., Carver, 1993; Cohen, 1994), the benefits provided by these corrections are questionable.

Results

Sample Descriptives

The study sample comprises 292 male, Aboriginal youth offenders from the province of Ontario. Table 15 provides demographic and index offence-related information for the sample. Included youth ranged in age from approximately 12 to 22 years, with a mean age of 16.8 years[15]. Most youth's most serious index conviction was for an against-person (non-sexual) offence, with most of the sample committing a violent

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[15] Thirteen youth were 19 years or older. If a youth is already involved with the MCYS at the time of their index offence, their current youth Probation Officer is appointed to complete their PSR, even if they are being charged as an adult, accounting for why some youth exceeded age 18.

index offence. All youth were sentenced to a period of community supervision for their

index offence, which ranged from 60 days to 823 days, with a mean of 412.5 days (i.e.,

1.13 years). Most youth were residing with one or both of their biological parents at the

time of PSR completion and the majority reported to a probation office located in the

Northern region of Ontario. Only 46.6% of PSRs included in the study included a section

specifically addressing Aboriginal history and circumstances. Nearly 75% of included

youth had completed grade 8, with approximately 46% having this been their last grade

completed. The mean Involvement score, derived from responses on 5 predictors, was

1.43 (SD = 1.280) and Cronbach's alpha (α) = .60. The mean FamilyBreak score, derived

from responses on 6 predictors, was 3.82 (SD = 1.76) and it demonstrated an acceptable

level of internal consistency, α = .75. The average YLS/CMI score was 19.4, which falls

within the Moderate Risk range. In fact, 11% of youth were considered Low Risk ($n =$

32), 53.4% of youth were considered Moderate Risk ($n = 156$), 29.8% were considered

High Risk ($n = 29.8$), and 5.8% were considered Very High Risk ($n = 17$).

Table 15

Demographic and Index Offence Information for Sample and PSRs

Variables	Aboriginal Youth Offenders (N = 292)
	$n(\%)$
Most Serious Index Offence	
Against Person (non-sexual)	132 (45.2)
Against Property	77 (26.4)
Against Property with Violence	11 (3.8)
Drug Offences	9 (3.1)
Liquor & Traffic Offences	1 (0.3)
Against Public Order and Peace	5 (1.7)
P&P Violation	31 (10.6)
Sexual Offence	15 (5.1)
Weapons	11 (3.8)
Other (e.g., traffic	0 (0)

offence, false fire alarm)

Nature of Index Offence	
General	123 (42.1)
Violent	169 (57.9)
Residential Circumstances[a]	
Biological Parent(s)	128 (43.8)
Adoptive Parent(s)	2 (0.7)
Extended Family	27 (9.2)
Foster Care/Group Home	22 (7.5)
Incarcerated	85 (29.1)
Other (e.g., alone, with friends)	27 (9.2)
Last Grade Completed	
Grade 7 or under	29 (9.9)
Grade 8	135 (46.2)
Grade 9	38 (13.0)
Grade 10	29 (9.9)
Grade 11	11 (3.8)
Grade 12	2 (0.7)
Any University/College	2 (0.7)
Missing Information	46 (15.8)
Ontario Region for MCYS	
North	185 (63.4)
East	13 (4.5)
West	71 (24.3)
Central	23 (7.9)
Aboriginal-section in PSR	
Yes	136 (46.6)
No	156 (53.4)
	M(SD)
Age	16.89 (1.53)
Average length of community supervision (days)	410.93 (200.37)
Cultural Involvement	1.43 (1.280)
Family Breakdown	3.82 (1.76)
YLS/CMI Total Score[b]	19.41 (8.87)

[a] One PSR did not provide information for this variable.
[b] Represents pooled mean and standard deviation post-imputation.

The majority of Aboriginal youth were identified as First Nation (79.5%), followed by Metis (1.7%), and Inuit (0.3%). Fifty-four (18.5%) PSRs did not provide information on group identity. Of those who were identified as First Nation, information on tribe was not reported for 63.8%. When information was provided, youth were

associated with 18 unique tribes; the most common were Cree ($n =24$, 10.3%) and Ojibwe ($n = 23$, 9.9%), with all others associated with 10 or fewer youth. One-hundred and seven (36.6%) youth resided on a reserve at the time of PSR completion or immediately prior to any pre-sentence custody; however, 60.3% were reported as ever having resided on a reserve. The sample resided on 49 unique reserves all over Ontario at the time of PSR completion, with the greatest number of youth residing in Wikwemikong and Pikangikum with nine youth (8.4%) each. The remaining reserves had between one and six youth residing at that location.

The Metropolitan Influenced Zones (MIZ) and the Community Well-Being (CWB) Index were also coded based on the youth's current residence or residence immediately preceding pre-sentence custody. Seventy-four youth resided in a Metropolitan Area (25.3%), with 20.2% residing in a Census Agglomeration, 3.1% residing in a municipality with Strong influence, 8.9% in a Moderate influence municipality, 23.3% in a Weak municipality, and 19.2% in a municipality with No Metropolitan Influence. In fact, all municipalities that have No Metropolitan Influence are reserves. The Community Well-Being (CWB) Index was also used to assess quality of municipality. The CWB for the current municipalities ranged from 40 to 90, with a mean of 73.39. The mean CWB value for reserves included in the current study was 59.5 (SD = 9.98), and the mean value for non-reserves was 81.4 (SD = 2.78).

Lastly, table 16 and 17 provide a breakdown of culturally-specific risk factors by general and violent recidivism, respectively. The general and violent recidivism rates of the group were high, at 58.9% and 31.8%, respectively.

Table 16

Relationship Between Categorical Culturally-specific Factors and General Recidivism at Two Years

Risk Factors		General Recidivism		Total
		No	Yes	
		n(%)	*n*(%)	
Language				
	No	103(39.9)	155(60.1)	258
	Yes	17(50)	17(50)	34
Reserve	No	75(40.5)	110(59.5)	185
	Yes	45(42.1)	62(57.9)	107
CAS	No	43(46.7)	49(53.3)	92
	Yes	77(38.5)	123(61.5)	200
OutHome	No	75(50.3)	74(49.7)	149
	Yes	45(31.5)	98(68.5)	143
FamBreak1	No	73(50.0)	73(50.0)	146
	Yes	47(32.2)	99(67.8)	146
FamBreak2	No	24(57.1)	18(42.9)	42
	Yes	96(38.4)	154(61.6)	250
FamBreak3	No	40(55.6)	32(44.4)	72
	Yes	80(36.4)	140(63.6)	220
FamBreak4	No	52(42.6)	70(57.4)	122
	Yes	68(40.0)	102(60.0)	170
Culture	No	87(40.5)	128(59.5)	215
	Yes	33(42.9)	44(57.1)	77
Activity	No	50(39.1)	78(60.9)	128
	Yes	70(42.7)	94(57.3)	164
SupportS	No	97(38.5)	155(61.5)	252
	Yes	25(62.5)	15(37.5)	40
PrevTreat	No	89(42.4)	121(57.6)	210
	Yes	31(37.8)	51(62.2)	82
Total		120(41.1)	172(58.9)	292

Table 17

Relationship Between Categorical Culturally-specific Factors and Violent Recidivism at Two Years

Risk Factors		Violent Recidivism		Total
		No	Yes	
		n(%)	*n*(%)	
Language				
	No	177(68.6)	81(31.4)	258
	Yes	22(64.7)	12(35.3)	34
Reserve	No	128(69.2)	47(30.8)	185
	Yes	71(66.4)	36(33.6)	107
CAS	No	67(72.8)	25(27.2)	92
	Yes	132(66.0)	68(34.0)	200
OutHome	No	113(75.8)	36(24.2)	149
	Yes	86(60.1)	57(39.9)	143
FamBreak1	No	109(74.7)	37(25.3)	146
	Yes	90(61.6)	56(38.4)	146
FamBreak2	No	31(73.8)	11(26.2)	42
	Yes	168(67.2)	82(32.8)	250
FamBreak3	No	54(75.0)	18(25.0)	72
	Yes	145(65.9)	75(34.1)	220
FamBreak4	No	81(66.4)	41(33.6)	122
	Yes	118(69.4)	52(30.6)	170
Culture	No	143(66.5)	72(33.5)	215
	Yes	56(72.7)	21(27.3)	77
Activity	No	88(68.8)	40(31.3)	128
	Yes	111(67.7)	53(32.3)	164
SupportS	No	161(67.6)	77(32.4)	238
	Yes	38(70.4)	16(29.6)	54
PrevTreat	No	143(68.1)	67(31.9)	210
	Yes	56(68.3)	26(31.7)	82
Total		199 (68.2)	93 (31.8)	292

Predictive Validity

The first research question addresses whether culturally-specific factors predict recidivism for Aboriginal youth offenders. This question was investigated by examining the predictive validity of the individual risk factors as well as the aggregated risk categories (i.e., Involvement, FamilyBreak). Table 18 presents the results of the first logistic regression model, using the backward stepwise method, examining the ability of the included risk factors to predict general recidivism. Results indicate that when adjusting for the influence of all risk items, only three of 13 factors were found to significantly predict general re-offending. The Hosmer-Lemeshow test revealed a good fit of the model to the data, $x^2(4) = 1.849$, $p = .763$, and the test of the overall model was significant, $x^2(3) = 33.993$, $p < .001$. These findings indicate that youth who experienced the presence of problematic substance use in the family home (FamBreak3) were nearly 3 times more likely to be reconvicted compared to those without problematic substance use in home. The odds of being reconvicted were also 2.24 times greater for those youth who experienced a formal out-of-home placement, such as foster care, compared to those who did not. Lastly, those youth who received spiritual support in the past 3 months were more than 4 times less likely to be reconvicted compared to those who did not receive such support.

Table 18

Summary of Logistic Regression Analyses (Backwards Method) Predicting General Recidivism as a Function of Individual Culturally-Specific Factors

Predictor	β	SEβ	p	Odds Ratio	95% CI for Odds Ratio
FamBreak3	1.103	.292	.000	3.01***	1.70, 5.34
OutHome	.808	.259	.002	2.24**	1.35, 3.73
SupportS	-1.428	.382	.000	0.24***	.113, .507

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

For violent recidivism, 4 risk factors were revealed as significantly related to reconviction using logistic regression (see Table 19). The Hosmer-Lemeshow test revealed a good fit of the model to the data, $x^2(8) = 8.474$, $p = .389$, and the test of the overall model was significant, $x^2(6) = 32.302$, $p < .001$. Similar to general recidivism, youth who experienced an out-of-home placement were more than twice as likely to be reconvicted and those who received spiritual support were 3.38 times less likely to be reconvicted. The community in which the youth resided also appeared to impact violent recidivism, as the odds of reconviction were 5 times greater for those youth who resided on a reserve at the time of index arrest compared to those who did not. Similarly, lower values on the CWB index resulted in a slight increase in risk of violent reconviction, as each decrease in CWB value was associated with a 1.05 increase in odds of violent reconviction.

Table 19

Summary of Logistic Regression Analyses (Backwards Method) Predicting Violent Recidivism as a Function of Individual Culturally-Specific Factors

Predictor	β	SEβ	*p*	Odds Ratio	95% CI for Odds Ratio
Reserve	1.622	.578	.005	5.06**	1.63, 15.72
OutHome	.800	.278	.004	2.23**	1.29, 3.84
SupportS	-1.220	.470	.009	.295**	.117, .742
CWB	-.078	.022	.000	.925***	.887, .965

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

The aggregated risk categories were then examined using the enter method. Table 20 presents the results of the logistic regression model predicting general recidivism using Involvement and FamilyBreak. The test of the overall model was significant, $x^2(2) = 15.382$, $p < .001$, and the Hosmer-Lemeshow test revealed a good fit of the model to the data, $x^2(8) = 7.287$, $p = .506$. Only FamilyBreak was found to be a significant

predictor of general recidivism, as each 1-point increase on FamilyBreak increased risk

of re-conviction by 1.25. Involvement in culture did not significantly predict recidivism.

Table 21 provides the results when examining violent recidivism. Although

Involvement did not significantly predict recidivism, FamilyBreak was associated with

increased risk of violent reconviction. The Hosmer-Lemeshow test revealed a good fit of

the model to the data, $x^2(8) = 7.014$, $p = .535$; however, the overall model was not found

to be significant, $x^2(2) = 5.657$, $p = .059$.

Table 20

Summary of Logistic Regression Analyses Predicting General Recidivism as a Function of Aggregated Culturally-Specific Factors

Predictor	β	SEβ	p	Odds Ratio	95% CI for Odds Ration
Involvement	-.064	.109	.555	.94	.76, 1.16
FamilyBreak	.221	.071	.002	1.25**	1.09, 1.43

**$p < .01$.

Table 21

Summary of Logistic Regression Analyses Predicting Violent Recidivism as a Function of Aggregated Culturally-Specific Factors

Predictor	β	SEβ	p	Odds Ratio	95% CI for Odds Ration
Involvement	-.049	.113	.662	.95	.76, 1.19
FamilyBreak	.151	.075	.043	1.16*	1.01, 1.35

* $p < .05$.

The second research question addressed whether culturally-specific factors

provide incremental predictive validity to the YLS/CMI. As previously described in the

Methodology section, the first hierarchical logistic regression model addressing this

question involved entering the YLS/CMI total score into the first block, followed by all

individual culturally-specific factors found to be significant in the previous analyses.

Table 22 presents the results of this model predicting general recidivism. In the first step,

a test of the YLS/CMI total score revealed that it significantly predicted recidivism (β = .041, p < .05). In the second step, FamBreak3, OutHome, and SupportS were added as predictors. OutHome (β = .587, p < .05) and FamBreak3 (β = .646, p < .05) were found to significantly predict recidivism incrementally to the YLS/CMI total; no incremental effects were found for SupportS. In order to facilitate interpretation of these findings, the predicted probabilities of both steps were saved and examined using ROC analyses. These findings indicate that the predictive validity of the YLS/CMI corresponds to an Area Under the Curve (AUC) value of .623 (p < .001, 95% CI of [0.559, 0.688]), which increased to AUC = .664 (p < .001, 95% CI of [0.601, 0.727]) when the three individual culturally-specific factors are added to the model.

Unsurprisingly, this finding was supported when examining the incremental predictive validity of the Family Breakdown aggregated risk factor to the YLS/CMI total score for general recidivism (Table 23). Similarly to above, the YLS/CMI total score was entered into the first step, followed by FamilyBreak. FamilyBreak was found to significantly add incremental predictive validity to the YLS/CMI total score, β = .181, p = .012. When examining the predicted probabilities of this second step, ROC analysis indicates that the predictive validity of the YLS/CMI total score increases from AUC = .623 to AUC = .646 (p < .001, 95% CI of [.582, .709] when FamilyBreak is also considered.

The incremental predictive validity of individual culturally-specific risk factors were then examined as they relate to violent recidivism (Table 24). The YLS/CMI total score was found to be significantly related to recidivism in Step 1, β = .040, p < .01. In the second step, three of four culturally-specific factors were found to add incremental

predictive validity to the YLS/CMI: CWB (β = -.088, $p < .001$), OutHome (β = .753, p = .006), and Reserve (β = 1.65, p = .006). SupportS did not provide incremental predictive validity to the model. When examining the predicted probabilities, these findings produce an AUC value of .584 (p =. 021, 95% CI of [0.511, 0.657]) when only the YLS/CMI total score is in the model, increasing to AUC = .704 ($p < .001$, 95% CI of [0.640, 0.768]) when CWB, OutHome, Reserve, and SupportS were added. The ability of the FamilyBreak aggregated risk factor to add predictive validity to the YLS/CMI total score was then examined (Table 25). Results indicated that there was no significant increase in predictive validity when FamilyBreak was added in the second step, β = .119, p = .121.

Lastly, the degree to which residing on a reserve impacts the predictive validity of the YLS/CMI was examined. This involved testing an interaction effect between the YLS/CMI total score and Reserve to evaluate whether the ability of the YLS/CMI to predict offending is contingent on residence. Table 26 presents the results of the model including both main and interaction terms predicting general recidivism. Unsurprisingly, in the first step, the YLS/CMI was found to be significant, β = .054, $p < .001$. In the second step, Reserve was added as a predictor and did not significantly predict general recidivism, β = .110, p = .67. In the third step, the interaction term (YLS/CMI*Reserve) was entered and was also not found to be significant (β = -.050, p = .10). These results indicate that the predictive validity of the YLS/CMI total score for general recidivism did not differ according to residence on a Reserve.

The same pattern emerged when examining violent recidivism (see Table 27). Unsurprisingly, the YLS/CMI total score was a significant predictor in step 1, β = .040, p = .006. Reserve was entered as a predictor in the second step and was found to add

incremental predictive validity, $\beta = .664$, $p = .04$. In the third step, both the YLS/CMI

total score and Reserve remained significant; however, the interaction term was not, $\beta = -.064$, $p = .13$. Therefore, although residing on a Reserve added predictive validity to the

YLS/CMI total score, the predictive ability of this risk tool was not contingent on a

youth's residence.

Table 22

Incremental Predictive Validity of Individual Culturally-specific Risk Factors Above the YLS/CMI in Predicting General Recidivism

	β	SEβ	*p*	OR	95% CI OR	AUC	Cox & Snell	Nagelkerke's R^2
Step 1								
YLS/CMI	.054	.014	.000	1.06***	1.03, 1.09	.623***	.05	.07
Step 2								
YLS/CMI	.043	.015	.004	1.04**	1.01, 1.08	.664***	.09	.12
FamBreak3	.646	.302	.032	1.91*	1.06, 3.45			
OutHome	.587	.254	.021	1.80*	1.09, 2.96			
SupportS	-.238	.332	.474	.788	.411, 1.51			

Note. OR = Odds Ratio. AUC = Area Under Curve. Final model = 26.534 (4), *p* < .001.
****p* < .001. ** *p* < .01. * *p* < .05.

Table 23

Incremental Predictive Validity of Family Break Aggregated Risk Factor Above the YLS/CMI in Predicting General Recidivism

	β	SEβ	*p*	OR	95% CI OR	AUC	Cox & Snell	Nagelkerke's R^2
Step 1								
YLS/CMI	.054	.014	.000	1.06***	1.03, 1.09	.623***	.05	.07
Step 2								
YLS/CMI	.045	.015	.002	1.05**	1.02, 1.08	.646***	.07	.10
FamilyBreak	.181	.072	.012	1.20*	1.04, 1.38			

Note. OR = Odds Ratio. AUC = Area Under Curve. Final model = 21.375 (2), *p* < .001.
****p* < .001. ** *p* < .01. * *p* < .05.

Table 24

Incremental Predictive Validity of Individual Culturally-specific Risk Factors Above the YLS/CMI in Predicting Violent Recidivism

	β	SEβ	*p*	OR	95% CI OR	AUC	Cox & Snell	Nagelkerke's R^2
Step 1								
YLS/CMI	.040	.014	.006	1.04**	1.01, 1.07	.584*	.03	.04
Step 2								
YLS/CMI	.043	.016	.007	1.04**	1.01, 1.07	.704***	.11	.15
CWB	-.088	.023	.000	.916***	.88, .96			
OutHome	.753	.274	.006	2.12**	1.24, 3.63			
SupportS	-.146	.356	.681	.864	.43, 1.74			
Reserve	1.646	.594	.006	5.184**	1.62, 16.61			

Note. OR = Odds Ratio. AUC = Area Under Curve. Final model = 32.423 (5), *p* < .001.
***p < .001.** *p* < .01. * *p* < .05

Table 25

Incremental Predictive Validity of Family Break Aggregated Risk Factor Above the YLS/CMI in Predicting Violent Recidivism

	β	SEβ	*p*	OR	95% CI OR	AUC	Cox & Snell	Nagelkerke's R^2
Step 1								
YLS/CMI	.040	.014	.006	1.04**	1.01, 1.07	.584*	.03	.04
Step 2								
YLS/CMI	.035	.015	.020	1.04*	1.01, 1.07	.605*	.03	.05
Family Break	.119	.077	.121	1.13	.97, 1.31			

Note. OR = Odds Ratio. AUC = Area Under Curve. Final model = 10.237 (2), *p* = .006.
** *p* < .01. * *p* < .05.

Table 26

Summary of Hierarchical Logistic Regression Examining Impact of Reserve on Predictive Validity of YLS/CMI with General Recidivism

	β	SEβ	*p*	OR	95% CI OR	AUC	Cox & Snell	Nagelkerke's R^2
Step 1								
YLS/CMI	.054	.014	.000	1.06***	1.03, 1.09	.623***	.05	.07
Step 2								
YLS/CMI	.055	.015	.000	1.06***	1.03, 1.09	.622***	.05	.07
Reserve	.110	.257	.670	1.12	.67, 1.85			
Step 3								
YLS/CMI	.073	.019	.000	1.08***	1.04, 1.12	.626 ***	.06	.08
Reserve	1.00	.605	.098	2.72	.83, 8.90			
YLS/CMI* Reserve	-.05	.030	.101	.951	.88, 1.01			

Note. OR = Odds Ratio. AUC = Area Under Curve. Final model = 17.736 (3), *p* < .001.
***p* < .001.

Table 27

Summary of Hierarchical Logistic Regression Examining Impact of Reserve on Predictive Validity of YLS/CMI with Violent Recidivism

	β	SEβ	*p*	OR	95% CI OR	AUC	Cox & Snell	Nagelkerke's R^2
Step 1								
YLS/CMI	.040	.014	.006	1.04**	1.01, 1.07	.584*	.03	.04
Step 2								
YLS/CMI	.047	.020	.017	1.05*	1.01, 1.09	.588*	.04	.05
Reserve	.664	.326	.042	1.94*	1.03, 3.68			
Step 3								
YLS/CMI	.069	.025	.006	1.07**	1.02, 1.13	.595**	.05	.07
Reserve	1.844	.850	.030	6.325*	1.20, 33.45			
YLS/CMI* Reserve	-.064	.042	.130	.938	.864, 1.02			

Note. OR = Odds Ratio. AUC = Area Under Curve. Final model = 10.283 (3), *p* = .016

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

Discussion

The current study explored the predictive validity of the commonly used YLS/CMI (Chapter 1) and culturally-specific risk factors (Chapter 2) for Aboriginal youth offenders in the province of Ontario. Most hypotheses for Chapter 1 were supported as results indicated that although the YLS/CMI total score and most subscales accurately predicted recidivism for Aboriginal youth, some subscales and half the risk categories (i.e., low and moderate) did so with less accuracy compared to non-Aboriginal youth. The exploratory nature of Chapter 2 yielded interesting results in that some, but not all, culturally-specific risk factors predicted recidivism and provided incremental predictive validity to the YLS/CMI. The results of each chapter will first be individually discussed, followed by limitations and implications of the current findings.

Chapter 1

The first study examined the discrimination and calibration of the YLS/CMI using a sample of Aboriginal and non-Aboriginal youth offenders on community supervision from Ontario.

Discrimination. Results indicated that the Aboriginal offenders scored significantly higher than non-Aboriginal offenders on all subscales and the total score, placing them in higher risk categories. This finding is consistent with a number of studies demonstrating that Aboriginal offenders tend to score higher on actuarial risk assessment tools (e.g., Hann & Harman, 1993; Jung & Rawana, 1999; Mann, 2009). For example, Olver and colleagues (2012) assessed a sample of 167 young offenders referred to a community mental health clinic and found that the Aboriginal youth scored significantly higher than White youth on the YLS/CMI total score and five of eight subscales. The

various explanations for these higher scores are complex and lack consensus within the literature. It has been suggested that the higher scores accurately represent the higher offence rates of this offender group, with studies finding higher absolute recidivism rates for Aboriginal offenders considered evidence of this (e.g., Bonta et al., 1997). Others have argued, as reviewed in the Introduction, that these higher risk scores improperly capture risk by incorporating a cultural bias into the estimations through comparing Aboriginal offenders to risk constructs developed largely on Caucasian offenders (Hannah-Moffat & Maurutto, 2010; Maynard et al., 1999).

As predicted, the YLS/CMI total score predicted both general and violent recidivism outcomes (i.e., with and without technical violations) for Aboriginal youth. This suggests that the YLS/CMI total score can be used to predict re-offending for Aboriginal offenders. This is consistent with a number of other studies demonstrating good predictive validity of the total score for this scale (Gossner & Wormith, 2007; Jung & Rawana, 1999; McKinnon, 2004; Rector et al., 2007). When examining individual subscales, results found that nearly all subscales predicted general recidivism and fewer predicted violent recidivism. The only subscales that did not predict general re-offending were Substance Use (including and excluding technical violations) and Peer (excluding technical violations). For violent recidivism, only Family Circumstances/Parenting and Personality/Behaviour predicted reconviction. Despite relatively consistent accuracy with the YLS/CMI total score, the lack of consistency in the predictive validity of the YLS/CMI subscales has been found in other studies with Aboriginal and non-Aboriginal samples (e.g., Olver et al., 2012). For example, Schmidt and colleagues (2011) found that although the YLS/CMI total score was significantly predictive of re-offending over a 10-

year period for primarily Caucasian male offenders, Peers, Substance Use, and Leisure/Recreation did not provide accurate estimates for general recidivism and Family, Education, Peers, Substance Use, and Leisure/Recreation did not predict violent recidivism.

The results when examining the differences in discrimination of the YLS/CMI found no differences between Aboriginal and non-Aboriginal youth in the predictive validity of the entire YLS/CMI for general recidivism *including* technical violations. For general recidivism *excluding* technical violations, however, Criminal History and the total score were significantly better predictors for non-Aboriginal youth. These findings suggest that, although the discrimination of YLS/CMI is equally accurate when predicting any general re-offence, the total score and Criminal History appear to be poorer predictors for Aboriginal youth when predicting new offences that exclude compliance issues. Olver and colleagues (2009) conducted a meta-analysis exploring the predictive validity of a number of risk assessment tools for youth and identified 5 unique studies that compared Aboriginal and non-Aboriginal youth on the YLS/CMI. Their results are consistent with the current findings for general recidivism including technical violations in that they found no significant difference in predictive validity of the total score between Aboriginal and non-Aboriginal offenders (Over et al., 2009). It is difficult, however, to directly compare their results to those in the current study as their measure of recidivism included a number of possible outcomes (e.g., arrests, charges, convictions, including/excluding technical violations) and the current results suggest that the YLS/CMI may have differing predictive accuracy according to the type of outcome measured.

For both violent recidivism outcome measures (i.e., including/excluding technical violations), the Personality/Behaviour subscale presented as a better predictor for non-Aboriginal youth; there were no differences found for any other subscales or the total score. This finding is noteworthy given that the Personality/Behaviour subscale is developed based on the antisocial personality pattern construct, a major construct in many theories of criminal behaviour developed based on experiences with primarily Caucasian offenders (e.g., Andrews & Bonta, 2010). Given the paucity of individual studies specifically comparing the predictive validity of the YLS/CMI total score for Aboriginal and non-Aboriginal youth offenders, it is unsurprising that there are even fewer studies that examine the individual subscales and their differential predictive ability by ethnicity (e.g., Jung & Rawana, 1999; McKinnon, 2004; Thompson & McGrath, 2012). For example, the meta-analysis by Olver and colleagues (2009) does not report predictive validity of individual subscales, likely due in part to lack of available data. One of the few studies completed after the 2009 meta-analysis did examine the eight YLS/CMI subscales for both Aboriginal and non-Aboriginal youth offenders (Olver et al., 2012). Although they did not conduct any formal comparisons, the effect sizes for nearly all subscales were larger for Aboriginal compared to White youth, initially suggesting increased predictive validity for this group (Olver et al., 2012). However, this finding is likely non-representative of the true functioning of the tool as none of the YLS/CMI subscales were found to be a significant predictor of general recidivism for the White youth in this sample, which the authors attribute to the small sample of White offenders ($n = 40$).

The finding of increased accuracy of some subscales and total scores for non-Aboriginal offenders is consistent with meta-analytic results of similar investigations targeting the adult-equivalent of the YLS/CMI (i.e., LSI) (Gutierrez et al., 2013; Wilson & Gutierrez, 2014), which is also based on the Central Eight and theory of criminal behaviour as the YLS/CMI (Andrews & Bonta, 2010).

Calibration. When examining calibration, or the degree to which the YLS/CMI accurately predicts absolute recidivism rates, the same pattern of reduced predictive validity under some circumstances was found. As hypothesized, the results indicated that when compared to non-Aboriginal youth, the YLS/CMI under-predicted the absolute recidivism rates of Aboriginal youth scoring in the low and moderate risk levels for both general and violent recidivism. In other words, Aboriginal youth scoring in those levels had higher observed recidivism rates than expected based on their equivalent non-Aboriginal youth, suggesting that they are being under-classified by the YLS/CMI.

Few studies have examined the calibration of the YLS/CMI as most risk prediction studies focus solely on the discrimination of the tool. In fact, no study could be located that examined the calibration of the original YLS/CMI with Aboriginal youth offenders. However, the current findings with Aboriginal offenders are consistent with results found when examining the Australian version of the YLS/CMI (YLS/CMI-AA; Thompson & McGrath, 2012) and the adult version of the risk tool, LSI (Wilson & Gutierrez, 2014). They differ slightly from results found with the LSI:SK when comparing Aboriginal and non-Aboriginal youth on community supervision (Luong, 2007). Although Luong (2007) found that the Aboriginal youth offenders in the moderate risk level re-offended at a higher rate than their non-Aboriginal counterparts similarly to

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the current study, this effect disappeared when controlling for varying lengths of follow-up. These differing findings may be due to differences in sample size (as the current study had nearly 10 times the sample size as the Luong study) and the slight differences in how the LSI:SK is scored compared to the YLS/CMI (e.g., higher number of items, differences in scoring procedure).

It may be that the poor comparative discrimination of the YLS/CMI for some subscales/total score is caused by problems with calibration. As outlined in Wilson and Gutierrez (2014), the solution to the issue with calibration is intrinsically linked to the causal source attributed to the problem. It could be that racial discrimination inherent in our criminal justice system is accounting for these higher base rates of recidivism seen for low and moderate scoring Aboriginal youth. It has been well established that Aboriginal offenders are more likely to be subject to longer periods of incarceration, lower parole grant rates, and over-conviction compared to their non-Aboriginal counterparts (e.g., Mann, 2009). Therefore, it is possible that these Aboriginal youth are more likely to be caught and processed by the juvenile justice system for crime than non-Aboriginal youth, suggesting that these higher absolute recidivism rates for low and moderate scoring youth are merely an artifact of detection rather than true offending rates.

The second possible explanation could be that the items within the subscales in the YLS/CMI are accurate indicators of risk for Aboriginal youth (e.g., Gutierrez et al., 2013), just as they are for non-Aboriginal youth, but that Aboriginal youth simply have a greater number of these risk factors. Therefore, it could be that low and moderate scoring youth have a higher number of measured (by the YLS/CMI) and unmeasured risk factors

within the Central Eight risk constructs that account for their higher than expected recidivism rates. It is likely that a history of colonization and marginalization has contributed significantly to the presence of this high number of risk factors (e.g., Martel et al., 2011); however, if the purpose of assessment is strictly risk prediction, this does not distinguish Aboriginal offender as qualitatively different from non-Aboriginal offenders.

Lastly, the issues with calibration may be explained by the lack of culturally-inclusive operationalization of risk items and/or unique risk predictors. The ways in which risk items are currently defined within the YLS/CMI may not capture the experiences of Aboriginal people (e.g., more inclusive definition of family), leading to decreased predictive validity of the tool. Additionally, it is possible that the YLS/CMI under-predicts re-offending due to the lack of inclusion of culturally-specific risk predictors (e.g., loss of Native language) or contextual determinants more commonly experienced by Aboriginal people (e.g., residing in a disadvantaged community). Therefore, it may be that low and moderate-scoring Aboriginal youth would score higher on these culturally-specific items, thereby presenting with a higher risk of re-offending and, for the YLS/CMI, a more accurate prediction of recidivism. The degree to which these culturally-specific risk factors predict re-offending is precisely the purpose of Chapter 2.

Chapter 2

The second study was designed to assess the utility of Pre-Sentence Reports (PSRs) in identifying relevant culturally-specific risk factors for Aboriginal youth and examining the predictive validity of those factors commonly discussed in the reports. The

significant amount of missing data, particularly on those factors that are mandated by the MCYS (MCYS, 2006), suggests that PSRs are generally not a good source of culturally-specific information for Aboriginal youth. For example, less than 50% of PSRs included an explicit section addressing the impact of Aboriginal history and circumstances on the youth, as recommended by the MCYS, despite acknowledging in the report that the youth is identified as Aboriginal. The concerns associated with considering cultural and historical factors of Aboriginal offenders within PSRs has been discussed and evaluated conceptually, with Hannah-Moffat and Maurutto (2010) concluding that the risk-based format of these reports does not allow for a holistic understanding of the impact of cultural factors on risk and need and that this can be accomplished through Gladue reports. In Ontario, however, the responsibility of gathering cultural information in line with the Gladue principles has been absorbed by the MCYS and their probation officers (POs) when writing PSRs. Given the absence of culturally-specific information identified in the current sample of PSRs, it may be unlikely that these reports, as current policy directs their structure, are sufficient in achieving that goal.

The reason for this lack of consistency is unclear. It is likely that the individual and organizational experiences of the POs played a significant role in influencing the degree to which the identity and unique experiences of the Aboriginal youth were discussed. For example, some PSRs were written by individuals identified by title as Native Probation Officers and were employed through Aboriginal programming organizations, increasing the likelihood that culture would be discussed. Some probation offices likely have a higher proportion of their clients identifying as Aboriginal, such as the MCYS Northern region from which 60% of PSRs were sent, and therefore POs in

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those offices may be more familiar and likely to pay attention to culture and unique experiences. It also may be that certain offices have had more training on how to identify, discuss, and consider relevant culturally-specific factors, leaving other offices and officers to feel less confident in what to include as it relates to Aboriginal status. Regardless of the explanation, the lack of consistency with which culturally-specific factors are being considered points to the need to develop alternative methods of seeking this information above and beyond reports designed for the courts. The degree of missing data is of significant importance and suggests that the results of this study should be considered with caution.

When examining the predictive validity of individual culturally-specific risk factors as they relate to general recidivism, only three of 13 were found to be significant predictors: FamBreak3 (problematic substance use in the home), OutHome (out of home placement), and SupportS (spiritual support in past three months by elder, grandparents, or parents). The relationship between problematic substance use in the home by other members and the re-offending of the youth should be unsurprising. It has been well-established that the use of substances by family members increases the likelihood of children developing their own problems with substance use, through both genetic and social influences (e.g., Kroll, 2004; Leyton & Stewart, 2014), which is a well-documented risk factor for future offending (e.g., Andrews & Bonta, 2010). Research has also found that youth who witness substance use in the home are more likely to be exposed to other criminal behaviour by parents/family (e.g., Andrews & Bonta, 2010; Kroll, 2004), dysfunctional relationships and violence (e.g., Brookoff, O'Brien, Cook, Thompson, & Williams, 1997; Velleman & Orford, 1999), risk taking behaviour (e.g.,

Kroll, 2004), and abuse (e.g., Ammerman, Kolko, Kirisci, & Dawes, 1999; Famularo, Kinscherff, & Fenton, 1992; Jaudes, Ekwo, & Van Voorhis, 1995), all of which have been linked to future offending.

Placement in foster care also increased a youth's risk of future general offending. The reason for this relationship has been tied to both the increased number of risk factors for youth prior to care placement (e.g., antisocial parents, substance use, exposure to maltreatment; Corrado et al., 2011; Perry, 1997; Preski & Shelton, 2001), suggesting that this factor may be a proxy for high risk status, as well as the unique risks associated with foster care, such as multiple placements/changes in support workers and the instability this causes in a youth's life (e.g., inability to meet personal goals, complete school, build stable relationships; Corrado et al., 2011; Finlay, 2003). It has also been found that Aboriginal youth are rarely placed in Aboriginal homes (e.g., Richardson & Nelson, 2007), and it has been suggested that this can sever the youth's relationship with their culture while creating a disconnect to the family they are legally considered a part of, creating a sense of 'culturelessness' and, arguably, limiting social connections that may inhibit criminal behaviour (Marie, 2010; Richardson & Nelson, 2007).

Lastly, spiritual support in the past three months by an Elder, grandparent, or parent appeared to be protective in that youth who received this support were less likely to be reconvicted for a general offence. The exact mechanisms behind this effect are somewhat unknown. It could be that having someone in their life with whom they can be open and seek advice assisted them in problem solving and making better and healthier decisions. This effect has been demonstrated generally when examining the protective effect of positive social support (e.g., Resnick, Ireland, & Borowsky, 2004). For example,

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when examining the predictive validity of strong social support defined by the SAVRY as at least one individual who provides emotional support and concrete assistance in times of need (Borum, Bartel, & Forth, 2006), Lodewijks and colleagues (2010) found that presence of this factor significantly predicted lower recidivism rates among a sample of youth offenders. It may also be that, for Aboriginal youth in the present study, relying on their culture enhanced their motivation to remain crime-free. This positive impact gained by knowledge of Aboriginal culture has been suggested by qualitative studies focused on Aboriginal offenders. For example, Gideon (2013) interviewed 36 adult Aboriginal offenders in a Canadian Institution and found that many believed that they would have been less likely to commit crime if they had been taught about their culture as a child. As this is the first prospective risk prediction study examining this particular factor, more research will be needed in further understanding the nature of this relationship.

Consistent with hypothesis two, two of these individual risk factors (FamBreak3 and OutHome) added incremental predictive validity to the YLS/CMI. This finding was also consistent with the FamilyBreak aggregated risk factor adding incremental predictive validity to the YLS/CMI (Table 23). These results suggest that greater attention to an Aboriginal youth's family situation beyond those items currently captured in the YLS/CMI may assist in predicting future general offending. For Aboriginal people, these two factors (FamBreak3 and OutHome) are systemically linked to a history of colonization, but are not necessarily unique to this offender group, as both are experienced by non-Aboriginal youth. However, consistent with consideration of these factors as arguably more important for Aboriginal youth, there is some evidence that the

predictive validity of family breakdown is greater for Aboriginal offenders. For example, Yessine and Bonta (2009) compared 439 Aboriginal and non-Aboriginal youth offenders on probation and found that a dysfunctional family life significantly increased the odds of chronic criminal behaviour for Aboriginal youth but not for non-Aboriginal youth.

Interestingly, receiving spiritual support in the past three months did not provide incremental predictive validity to the YLS/CMI. It may be that the construct that SupportS is tapping into is similarly captured by relationship with parents, help seeking behaviour, and/or prosocial acquaintances/friends, all of which are items in the YLS/CMI. It may also be that spiritual support is better conceptualized as a responsivity, rather than criminogenic, factor. For example, it may be that building a relationship with an Elder facilitates change of other criminogenic needs that are more directly related to recidivism, such as antisocial attitudes. In this way, changes in antisocial thinking may be the mechanism through which SupportS is related to recidivism, accounting for why it did not add incremental predictive validity to the YLS/CMI. Although more research is needed to better understand this relationship, from a case management perspective, it may be useful to inquire about interest in working with an elder or grandparent/parent in learning more about the youth's culture, as this study does suggest protective aspects of this type of relationship.

The prediction of violent recidivism using culturally-specific factors presented a slightly different pattern. Four risk factors were found to be significantly related to violent reconviction: OutHome, SupportS, Reserve (residing on a reserve), and CWB (community well-being value), with the last two differing from the prediction of general recidivism. Both Reserve and CWB represent the community in which the youth resided

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at time of index arrest and, therefore, the predictive validity of both, rather than one, is unsurprising. The link between CWB and Reserve is also further seen as, consistent with research completed by Statistics Canada (AANDC, 2015), this study found that the average CWB for reserves was notably lower than that for non-reserves. This suggests that the reserves included in this study share many qualities of reserves seen across Canada (Anaya, 2014; Jacklin, 2009), in that they have generally represented environments with lower education and employment rates, poor access to clean water, chronic housing shortage, a lack of infrastructure, and higher rates of substance use problems.

The results indicated that residing on a reserve and lower CWB values were associated with increased odds of violent reconviction. In fact, both CWB and Reserve, in addition to OutHome, added incremental predictive validity to the YLS/CMI. These findings suggest that the community in which the youth resided was highly related to violent offending for the youth, in fact, more so than general recidivism. This finding appears to provide some support for criticisms that social context is incorrectly ignored by risk prediction tools, which typically consider the concept of risk to be predominantly associated with personal variables (Boeck, Fleming, & Kemshall, 2006; Hannah-Moffit & Maurutto, 2013). In ignoring the neighborhood in which a youth is returning, the aspects of the community that are not reducible to individual variables are then ignored. Many risk models, such as the General Personality and Cognitive Social Learning theory of criminal behaviour (Andrews & Bonta, 2010) after which the YLS/CMI was developed (Hoge & Andrews, 2006), emphasize the importance of the individual's risk-

benefit analysis associated with decision making while ignoring the structural or contextual constraints in which this process occurs (Boeck et al., 2006).

The link between crime and community has often been tied to institutional resources (or lack thereof), such as job placement centres, treatment clinics, medical facilities, and family support centres, that may assist in addressing the needs of offenders (Kubrin & Stewart, 2006; Sampson, Morenoff, & Gannon-Rowley, 2002). Without many of these, it is argued that the likelihood of an offender returning to criminal behaviour is high. Research has also begun to acknowledge the importance of the social community and the opportunity to build social capital (Kubrin & Stewart, 2006; Mills & Codd, 2008). This allows access to other residents who can facilitate re-establishment in the community (e.g., seeking a home, finding a job, locating child care) as well as create supportive networks and a sense of reciprocity (Boeck et al., 2006; Forrest & Kearns, 2001). In areas with high social capital, needs can be satisfied through informal support networks (Mills & Codd, 2008). Therefore, if an individual is returning to a community with very little social capital, with many or most individuals experiencing similar difficulties, the opportunity for an offender to rely on informal social networks to assist in satisfying basic needs (e.g., stable housing) as well as higher-level needs (e.g., higher education, treatment) is greatly diminished. Consistent with results from other risk prediction studies (e.g., Kubrin & Stewart, 2006), the results of the current study suggest that these aspects of the community predict violent offending above and beyond personal risk factors. This is likely true for all offenders, irrespective of ethnicity, but few would argue the disproportionate way in which it impacts ethnic minorities, and Aboriginal people in Canada in particular. The need for replication is indisputable; however, with

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increasing research support, it may be that the general conceptualization of risk for re-offending as solely individually determined will need to expand to include community variables in order to best predict and assist offenders seeking to reintegrate in the community.

Despite Reserve being related to violent recidivism, as previously discussed, the predictive validity of the YLS/CMI did not differ according to whether a youth resided on a reserve at the time of PSR completion. In other words, the YLS/CMI was equally predictive regardless of the community in which the youth resided. This suggests that the constructs included in the YLS/CMI capture re-offending behaviour equally for both groups but that residing on a reserve increases risk of violent re-offending.

Involvement in Aboriginal culture as a whole did not significantly predict general or violent reconviction. As this is the first prospective study to investigate these types of predictors for Aboriginal offenders, the cause attributed to this finding is unclear. It may be that general involvement in Aboriginal culture is not related to whether a youth re-offends. As coders were constrained by the ways in which the factors were discussed, it may also be that the way in which these factors were operationalized did not adequately capture the protective or risky nature of involvement with culture. For example, the Involvement aggregate factor demonstrated low internal consistency (alpha = .60), which can reduce the probability of identifying significant effects (Field, 2009). It may also be that a more nuanced way of examining these factors is needed. For example, the predictive validity of involvement with Aboriginal culture may be contingent on the degree to which an individual identifies with that culture. Involvement in a cultural ceremony may mean very little to an Aboriginal youth who does not currently feel

connected to their culture and, therefore, may impact their offending very little. However, a youth who strongly identifies with Aboriginal cultural traditions and is afforded the opportunity to participate in their Longhouse may experience a protective effect against future offending. While this is a simple example, it highlights the need for a more nuanced examination of these risk factors, unlike how many risk factors are currently tested (i.e., individual factors tested on entire sample and included if predictive generally for all).

Limitations and Implications of the Current Study

Limitations. Given that different Aboriginal tribes/subgroups have varied cultural practices and experiences in Canada (e.g., differing exposure to Europeans), the predictive validity of the YLS/CMI and culturally-specific factors may differ according to tribe/subgroup (e.g., Allan & Dawson, 2004). Based on the small proportion of individuals identified as Métis or Inuit and restrictions in sample size related to individual First Nation tribes, it was not possible to investigate the moderating effects of Aboriginal tribe/group in predicting recidivism; however, this should be investigated in future risk prediction studies. This study also utilized only male offenders and, therefore, its generalizability to female offenders is quite limited. Given increasing arguments suggesting gender-based pathways to crime (e.g., Blanchette & Brown, 2006; Covington & Bloom, 2006) and the increased disadvantage experienced by female Aboriginal offenders (e.g., Canadian Human Rights Commission, 2003), beyond that experienced by male Aboriginal offenders, it is important that studies are conducted that specifically explore risk factors as they relate to female offending.

The use of archival data eliminates control over the assessment of risk using the YLS/CMI for both Chapters 1 and 2. Therefore, the reliability of the scoring and adherence to coding guidelines is unknown. Similarly, the age range of included youth (i.e., 12-22 years old) extends beyond that designated by the YLS/CMI, which may impact on validity estimates. However, the 'true' validity of the YLS/CMI with Aboriginal youth may be less important than its validity when employed by correctional/probation officers in the province of Ontario, as they are responsible for the associated decisions related to classification, conditions, and treatment planning. The use of convictions, and official criminal records generally, is also considered a conservative measure of recidivism and likely underestimates crime compared to self-report data (Carcach & Leverett, 1999). Due to limited data for Chapter 1, it is unknown how treatment participation directly after the assessment influenced the YLS/CMI's predictive validity. However, given the requirements set out by the Youth Criminal Justice Act to prioritize treatment, there may be little expectation that Aboriginal youth are receiving greater or fewer treatment opportunities than non-Aboriginal offenders once in the community and, therefore, this factor likely affects both samples equally.

Specifically related to Chapter 2, given the use of existing PSRs, the choice of culturally-specific risk factors and the ways in which they were operationalized was restricted by data availability. Therefore, there are a number of culturally-specific factors discussed more widely in the literature that were not explored in the current study, such as experiences of racism or strength of cultural identity. As there lacked consistency across probation officers, probation offices, and provincial regions in the inclusion of culturally-specific risk factors, there was a notable amount of missing data that must be

considered when reviewing the findings of Chapter 2. Despite these limitations, this study has the potential to contribute to knowledge and treatment of Aboriginal offenders in many ways.

Implications for Practice and Research. There are a number of important practical implications and research suggestions stemming from results of this study. Despite arguments suggesting that risk assessment tools developed on non-Aboriginal offenders cannot be accurately used with Aboriginal offenders (e.g., Martel et al., 2011; Maynard et al., 1999), results from this study suggest that the YLS/CMI provides significant discrimination of recidivists and non-recidivists for Aboriginal youth. Therefore, an argument can be made for its continued use with Aboriginal offenders. However, the caution with which it should be used is highlighted by the poor calibration of the tool with low and moderate scoring Aboriginal youth. As such, it will be important for jurisdictions using this tool to balance the benefits of its use (i.e., significantly predicts re-offending) and the consequences (under-classification of a large proportion of youth).

It is clear that further research is needed into the cause(s) of the problem with calibration, particularly given the implications for levels of intervention and case management associated with each risk category. For example, in line with the Risk-Need-Responsivity principles of correctional treatment (Andrews, Bonta, & Hoge, 1990), youth scoring in the low risk category receive fewer and less intensive services than those identified as moderate or high risk. However, it may be that Aboriginal youth scoring low on the YLS/CMI more closely resemble moderate risk youth, given their rates of re-offending, and, therefore, they may benefit from increased services than would normally

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be afforded to them as low risk offenders. However, decisions surrounding how to manage the poor calibration of the tool can only be supported by further research. If the higher absolute recidivism rates are caused by systemic racial discrimination, treating these offenders as higher risk will simply result in further discrimination with the addition of conditions and increased intervention requirements. If the issues with calibration are due to 1) increased number of risk factors for Aboriginal youth, 2) lack of culturally-specific operationalization of existing items, and/or 3) need for of culturally-specific risk predictors, changes will need to be made to the YLS/CMI in order to better capture Aboriginal offending. As explanations for the problem with calibration are not mutually-exclusive (e.g., Aboriginal offenders may experience discrimination and have many more risk factors than non-Aboriginal youth), continued research into this issue is warranted; however, results from Chapter 2 suggest that the lack of inclusion of risk factors that disproportionately impact Aboriginal people is likely contributing to the poorer predictive validity of the YLS/CMI for Aboriginal youth. In order to continue to explore reasons for poor calibration of the YLS/CMI, future research could specifically target large samples of Aboriginal youth offenders in the low and moderate range to investigate whether the more refined culturally-specific risk factors account for their higher than expected recidivism rates.

This study uniquely contributed to existing research on the role of Aboriginal culture and historical context in the criminal behaviour of these offenders as it was the first to prospectively investigate the predictive validity of culturally-specific factors. Although the need for replication and continued research in this area is indisputable, these findings highlight the importance of front-line workers discussing and considering

the unique circumstances of their Aboriginal clients, as factors that are not often considered in a systematic way in risk prediction (e.g., family breakdown, residential community) appear to be useful in understanding their offending behaviour. In order to better identify specific treatment targets, future research should elucidate the relationship between the culturally-specific risk factors (e.g., family breakdown, spiritual support) and re-offending. For example, what is it specifically about experiencing an out-of-home placement that increases a youth's risk of re-offending? As discussed earlier, it may be, for example, a lack of stable connection to others, lack of ability to meet other life goals, or the development of negative views of self that reduce motivation to remain crime-free; aside from the preventative goal of attempting to minimizing out of home placements for youth in general, and specifically Aboriginal youth, the nature of the interventions to target this risk factor is contingent on the way in which it impacts future crime. Continued research into the role of community in re-offending is also warranted, particularly the degree to which neighbourhoods predict re-offending above and beyond personal variables for both Aboriginal and non-Aboriginal youth.

Given the restrictions in the current study on which culturally-specific risk factors were examined and their operationalization, much more research is needed to explore these factors, particularly those that were not found to be significant in the current study. Although the results of this study can assist in guiding researchers to factors that should be included (e.g., increased family and community variables), as this is the first study to examine these factors, the rejection of any risk factors not found to be significant would be short-sighted and premature. Future research will likely require the development of a comprehensive interview and/or self-report survey that inquires about a wide variety of

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risk factors argued to be linked to Aboriginal offending and operationalizes them in a number of ways (e.g., cultural involvement in past 3, 6, and 12 months).

If the MCYS continues to require POs to discuss and consider the unique experiences of their Aboriginal clients when completing PSRs, likely the case given that this policy remains unchanged since approximately 2006, increased training on the ways in which to identify and discuss culturally-specific factors would enhance the consistency with which they are addressed and increase opportunity for all Aboriginal youth to have their culture considered in their treatment and case management, should this be of importance to them.

Conclusion

The current findings suggest that the YLS/CMI can be used with Aboriginal offenders; however, the caution with which it should be used is highlighted by problems with calibration for a large proportion of the current sample. Despite claims by proponents of general offender theories, these findings suggest the importance of ethnicity in the prediction of risk using the YLS/CMI. Therefore, in order to manage Aboriginal youth offenders in the least restrictive and most appropriate manner, it is likely, with additional research, that the YLS/CMI requires changes that will firmly address the issues in calibration. Although the exact cause of the poorer predictive validity, and therefore the primary solution, remains unclear, this study provides some evidence to suggest that the YLS/CMI fails to consider risk factors related to a history of marginalization in Canada (e.g., family breakdown, disadvantaged community) that are important in understanding and predicting the offending behaviour of Aboriginal youth. Moving forward in the spirit of Gladue, it will be important that these risk factors are not used to justify increased conditions and limitations on freedom, but serve as a signal for greater intervention, at the individual and community-level, to assist these youth in succeeding. Given that nearly half of youth offenders in Canada identify as Aboriginal, the ability of research to inform the management and treatment of this overrepresented group of offenders is imperative and, therefore, it is our hope that this be one of many studies to prospectively examine factors specifically related to this important group of people.

Codes for Criminal Offenses

Criminal convictions are coded under 10 types of crimes.

Crimes against the person [all non-sexual violence (NSV)]
010 – murder
020 – accessory to murder/conspiracy to commit murder/counsel to commit
030 – manslaughter
040 – accessory to manslaughter/council to commit
050 – assault causing bodily harm/with a weapon/aggravated/unlawfully
      CBH/torture
060 – arson with intent to harm human life
100 – assault (common or simple)
110 – robbery/disguise with intent
120 – armed robbery
130 – robbery with violence
140 – attempted robbery
141 – attempted armed robbery/attempted robbery with violence
142 – assault with intent to rob
150 – criminal negligence/criminal negligence causing death/CBH
160 – bribery
170 – possession of a weapon
180 – threat/uttering threats
181 – kidnap/hostage taking/forcible confinement
182 – harassing phone calls/false messaging
190 – criminal harassment
191 – administer noxious substance

Crimes against property
200 – break and enter/with intent/&commit/forcible entry/with entry
210 – break, enter, and theft
220 – theft
221 – attempted theft
222 – theft under/shoplifting
223 – theft over
230 – attempted break and enter with intent
240 – forgery of documents/passport
241 – uttering forged document
242 – uttering counterfeit/possession of counterfeit money
250 – false pretences/attempted false pretences
251 – fraud/attempted fraud/using forged documents
260 – possession of stolen property/proceeds of crime/property obtained by crime
270 – possession of housebreaking instruments
280 – conspiracy to defraud

290 – taking auto without owner's consent
300 – possession of instruments of forgery
310 – unlawfully in dwelling house
320 – auto theft
330 – personation
340 – possession of stolen credit card/use of stolen credit cards
350 – trespassing/trespassing at night
360 – mischief

Crimes against public morals and decency
400 – procuring/soliciting/prostitution/juvenile prostitution/communicate
410 – indecent phone call
420 – gambling
430 – possession of child pornography

Narcotics
500 – possession of restricted drugs/scheduled drugs/controlled substances or double
      doctoring
510 – possession of narcotics/methamphetamines for the purpose of trafficking
520 – traffic in heroin/narcotics/controlled or restricted or scheduled drug/possession of
      controlled/ scheduled drug for purpose of trafficking
530 – importing/exporting narcotics
540 – cultivation of narcotics/produce a scheduled substance
550 – possession of narcotics
560 – possession of hashish/marijuana
570 – conspiracy to traffic or distribute
580 – conspiracy to produce

Crimes against property with violence
600 – arson/arson causing damage/arson by criminal negligence (NSV)
610 – willful damage/damage to property
620 – conspiracy to commit arson/uttering threats to burn, destroy or damage (NSV)
630 – malicious damage

Liquor and traffic offences
700 – fail to remain/fail to stop at the scene of an accident
710 – driving while ability imparited/refuse to provide sample/driving with more than
      80mgs of alcohol in blood
720 – care/control of vehicle or vessel while impaired
730 – driving while disqualified
740 – dangerous driving
741 – dangerous/impaired driving CHB or death

Crimes against public order and peace
800 – obstructing peace/police officer/justice
810 – personation of a peace/police officer

820 – resist arrest/assault to resist arrest (NSV)
830 – assaulting a police officer/attempted assault police officer (NSV)
840 – causing a disturbance
850 – breach of recognizance/fail to appear/disobeying a court order/failure to comply with undertaking
860 – public mischief
870 – attempt to obstruct

P & P violation
990 – probation/parole violation/failure to comply with probation order
991 – breach of conditional sentence order

Sexual offences
061 – rape
062 – attempted rape/attempted sexual assault
070 – sexual assault/indecent assault
071 – sexual assault with a weapon/aggravated/sex assault causing bodily harm
080 – sexual intercourse with a female under 14
081 – sexual interference with a person under 14
082 – sex crimes against children
083 – sex crimes against children (e.g., invitation to sexual touching, sexual exploitation, exhibiting, indecent exposure)
090 – indecent exposure/gross indecency or other in indecent acts
091 – incest

Other
900 – contributing to juvenile delinquency
910 – vagrancy
920 – smuggling (all types except narcotics)
930 – escape/unlawfully at large/prison break
940 – conspiracy/attempt to commit an indictable offence
950 – unmanageability/running away/setting fire
960 – other (breach of trust/security, illegal entry, perjury, unlawful manufacture, counsel or attempt to commit an indictable or summary offence, breach of income tax, etc)

Culturally-Specific Risk Factors Coding Manual – 2015

Offender ID: _____   **Date Coded:** _____
Finding of Guilt Date: _____   **Coder:** _____
(mm/dd/yyyy)
Stand Down Report: Yes   No

DEMOGRAPHIC/BASIC VARIABLES			
Index	Index Offence Code(s)	_____ _____ _____ _____	
OPO	Office of Probation Officer	:_____	
Language	Knowledge of native language	0 No 1 Yes Language:_____	☐ Not reported
Reside	Current residential circumstances	1 With biological parent(s) 2 With adoptive parent(s) 3 Extended family (e.g. grandparents, aunts/uncles) 4 Foster care (e.g., group home; foster parents) 5 Incarcerated 6 Other _____	☐ Not reported
Reserve	Current/Official residence on a reserve	0 No 1 Yes Name: _____	☐ Not reported
ReserveEver	Ever lived on a Reserve	0 No 1 Yes Name: _____	☐ Not reported
MIZ	Metropolitan Influence Zone	0 No 1 Weak 2 Moderate 3 Strong 4 Census agglomeration 5 Metropolitan area	

PERSONAL/FAMILY HISTORY

ABgroup	Aboriginal group identity	1 First Nations 2 Inuit 3 Metis	☐ Not reported
ABtribe	Tribe	_____	☐ Not reported
ABnation	Nation	_____	☐ Not reported
ResSchool	Did a family member ever attend a residential school? If so, check all that apply	0 No 1 Yes ☐ Maternal Grandmother ☐ Maternal Grandfather ☐ Paternal Grandmother ☐ Paternal Grandfather ☐ Mother ☐ Father ☐ Aunt ☐ Uncle	☐ Not reported
Racism	Experiences of racism (e.g., comments made directly to youth re: race/ethnicity)	0 No 1 Yes	☐ Not reported
Adopt	Was youth formally adopted?	0 No 1 Yes At what age: _____	☐ Not reported
AdoptAB	Adopted into an Aboriginal family	0 No 1 Yes	☐ Not reported ☐ Not applicable
CAS	CAS involvement with family	0 No 1 Yes	☐ Not reported
OutHome	Ever been in out-of-home care (excluding adoption)	0 No 1 Yes	☐ Not reported
FamBreak1	Raised by 3+ individuals/families	0 No 1 Yes	☐ Not reported

FamBreak2	Parents separated/divorced/ broken up	0 No 1 Yes	❐ Not reported
FamBreak3	Problematic substance abuse in home (in child's lifetime)	0 No 1 Yes	❐ Not reported
FamBreak4	Any violence in home OR any experience of abuse by youth (youth cannot be solely responsible for violence)	0 No 1 Yes	❐ Not reported
FamBreak5	Parent ever in jail	0 No 1 Yes	❐ Not reported
FamBreak6	Attempt/Suicide of a family member (by blood or legal union)	0 No 1 Yes	❐ Not reported
CWB	Community Well-Being Index	_____	
Identity	Identification with an Aboriginal group/First Nation/clan/tribe	0 No 1 Yes	❐ Not reported
Interest	Expressed interest in learning about culture	0 No 1 Yes	❐ Not reported
Culture	Attendance in a cultural ceremony in past 12 months (excludes court-mandated; feast, smudging, powwow)	0 No 1 Yes	❐ Not reported
Activity	Engagement in traditionally Aboriginal-centred activity in last 12 months (e.g., hunting, fishing, beadwork, sewing, attendance at Aboriginal health care centre, participation at a Friendship Centre/Native Canadian Centre – must be voluntary)	0 No 1 Yes	❐ Not reported

Knowledge	Lacks ancestral knowledge	0 No 1 Yes	☐ Not reported
ABassociates	Time spent with other Aboriginal adults/youth outside family (excluding through treatment provision)	0 No 1 Yes	☐ Not reported
SupportS	Has the youth had spiritual support in past 3 months? (i.e., work with an Elder, grandparents, parent)	0 No 1 Yes	☐ Not reported

EDUCATION/EMPLOYMENT

Educ	Last grade completed	1 </= grade 7 2 Grade 8 3 Grade 9 4 Grade 10 5 Grade 11 6 Grade 12 7 Any university/college	☐ Not reported

INVOLVEMENT WITH COMMUNITY AGENCIES/SUPPORT

PrevTreat	Previous involvement in restorative/ culturally-specific interventions? If yes, court mandated?	0 No 1 Yes If so, where/when: _____ 0 No 1 Yes	☐ Not reported ☐ Not reported
AbSection	Section in PSR dedicated to Aboriginal history/ experience?	0 No 1 Yes	

Coding Rules

Variable	Suggested location (please check throughout PSR if info not found in this location)	Extra coding rules/tips (not exhaustive but provide guidance with ambivalent/vague reporting)
Finding of Guilt Date	Front page	
Index	Front page	-Please code either the section number OR named offence (depending on what is available) -Code all that are present
OPO	-Front page -Last page (if probation officer address/ signature at end)	
Language	-second page under *Language Spoken* -*Aboriginal Circumstances section*	-Code any knowledge of Native language (even if not fluent)
Reside	-Second page under '*Resides With'* HOWEVER, this may be their OFFICIAL and not CURRENT residence -*Assessment and Recommendations section* (will often state where the youth is currently) -MUST look throughout PSR to assess whether they are in fact residing at the above address	-This is their CURRENT address and not permanent address -The youth must be residing at this location at time of PSR completion -Oftentimes, POs will write their PERMANENT residence under Reside With (second page) even if they are currently incarcerated – this variable would therefore be coded a 5 (Incarcerated) -If an extended family member (e.g., grandmother, aunt) is considered a foster parent, still code as 3 (Extended Family) -Extended family member INCLUDES siblings (e.g., brother) -If the youth resides with a stepparent ONLY (i.e., no bio parent in home), then code as 3 (Extended family). If living with bio parent AND step-parent, code 1(Biological parent)

Reserve	- Second page under '*Resides With*' - *Aboriginal Circumstances section* - *Personal and Family History*	-Therefore, this could be where they currently reside OR if incarcerated, where they were residing at time of arrest -If a youth spends half their time in one location and half in another, choose the location where they spend the majority of their time (e.g., 51% of time) -If unsure if location is a reserve, may have to look up
ABgroup	-*Aboriginal Circumstances section* -*Personal/Family history*	
ABtribe	-*Aboriginal Circumstances section* -*Personal/Family history*	-Specific tribe (e.g., Ojibway) -NOT the name of the First Nation
ABnation	-*Aboriginal Circumstances section* -*Personal/Family history*	-Name of First Nation (e.g., Pikangikum if from Pikangikum First Nation) -Does not apply if they identify as Metis or Inuit
ResSchool	-*Personal/Family history*	Any experience in a residential school should be coded, even if they were there for only a brief period
Racism	-*Personal/Family history*	-Expressed by youth or official (e.g., parent, school)
Adopt	-*Personal/Family history*	-Code as **0 (No)** if the youth resides with biological family (as it is assumed that this means they are not adopted) -Code as **0 (No)** if they are currently a Crown Ward (which implies the state is their parental guardian and not a legal family) -If multiple out of home placements with no mention of adoption, code **0(No)** -Will likely explicitly state that the youth WAS adopted if relevant
AdoptAB	-*Personal/Family history*	-Does not apply if they are not adopted -Code as **1(Yes)** if either parent is any part Aboriginal (even if they do

		not engage in traditional practices)
CAS	*-Personal/Family history* *-Involvement with Community Agencies/Supports*	-Must be coded **1(Yes)** if the youth is a Crown Ward (even if not explicitly stated) - Must be coded **1(Yes)** if the youth has ever been in foster care (even if CAS involvement is not explicitly stated) -if there is very little information provided, cannot assume CAS involvement
OutHome	*-Personal/Family history* *-Involvement with Community Agencies/Supports*	-Designed to capture foster care experience -Adoption-only does not count as out of home placement (unless they specify being in foster care first) -Periods of incarceration or residential treatment do NOT count as out of home placements
FamBreak1	*-Personal/Family history* *-Involvement with Community Agencies/Supports*	-Must be raised by 3 or more different people -This includes different family members (e.g., grandmother, aunt = 2 people if separate homes) -Also count number of foster/group homes as independent places (as each place is a new environment/ rules) -MUST keep track of and count places, do not just assume -EXCEPTION: If it states that they have been at 'several homes', can code **1(Yes)** (as it is likely that this is more than 2 places and they likely lived with parents at one point = 3 places)
FamBreak2	*-Personal/Family history*	-Also include breaking up if parents were never married -Code **1(Yes)** if separated by the death of one parent
FamBreak3	*-Personal/Family history*	-Must be during child's lifetime; cannot simply assume based on the fact that the youth has FASD -Code **1(Yes)** if child or officials are reporting concerns

		-Code **1(Yes)** if siblings are using substances in home
FamBreak4	*-Personal/Family history*	-Capturing violence by *others* in home -Cannot code if only info is about youth in question committing the violence -Code **1(Yes)** if domestic violence present -Code **1(Yes)** if youth was abused physically or sexually (even if it did not specifically occur in the home) -Code **1(Yes)** if sibling is engaging in violence in home -Neglect does NOT count as violence for this variable
FamBreak5	*-Personal/Family history*	-Either parent spending ANY time in jail (even if remand OR later acquitted) -Must state this explicitly; CANNOT assume based only on the presence of a criminal record -EXCEPTION: can code as **1(Yes)** if parent charged/convicted of a serious offence (e.g., aggravated sexual assault, murder).
FamBreak6	*-Personal/Family history*	-Attempted or completed suicide must be by a family member by blood or legal union
Identity	*-Personal/Family history* *-Aboriginal Circumstances*	-Captures whether the youth acknowledges Aboriginal identity -CANNOT assume if PSR simply states that he is Aboriginal – need to know what the youth thinks
Interest	*-Personal/Family history* *-Aboriginal Circumstances* *-Involvement with Community Agencies/Supports* *-Youth's Plans*	-Captures the youth's feelings/stance towards culture -Can only code if information is provided about Aboriginal culture in some way (CANNOT assume based on lack of involvement in activities) -Must be *expressed* – youth must allude to culture [e.g., culture does not play a role = **0(No)**; wish I was more involved = **1(Yes)**; enjoys

		cultural activities = **1(Yes)**] -Code **1(Yes)** if youth is planning on continuing to engage in cultural activities
Culture	*-Personal/Family history* *-Aboriginal Circumstances* *-Involvement with Community Agencies/Supports*	-Must occur in the past 12 months -this may require identifying where the youth was during the past 12 months if timeline is ambiguous (e.g., "youth enjoys participating in smudging ceremonies when in the community" – find out when in community) -Do not count ceremonies that are court-mandated (must be voluntary) -Can code as **0(No)** if youth or family reports that they do not engage in any traditional practices
Activity	*-Personal/Family history* *-Aboriginal Circumstances* *-Involvement with Community Agencies/Supports*	-Must occur in the past 12 months -this may require identifying where the youth was during the past 12 months if timeline is ambiguous (e.g., "youth enjoys participating in hunting and living off the land when in the community" – find out when in community) -This variable can include: hunting, fishing, beadwork, sewing, drumming circles, attendance at Aboriginal health care centre, participation at a Friendship Centre/Native Canadian Centre, taking a Native Language course voluntarily (e.g., in jail), work with an Elder - may have to LOOK UP activity to assess whether it is culturally-specific -Activity can also include voluntary Aboriginal programming (even if in custody) -Above are simply EXAMPLES – tying to capture voluntary engagement with Aboriginal culture -Can code as **0(No)** if youth or

		family reports that they do not engage in any traditional practices
Knowledge	*-Personal/Family history* *-Aboriginal Circumstances* *-Involvement with Community Agencies/Supports*	-Capturing whether they have any familiarity with any part of their particular family history OR Aboriginal history/practices generally **-**Code **1(Yes)** if the youth expressed interest in learning but has not yet learned or participated in any activities -If PSR does not refer to culture in any way, MUST code Not Reported
ABassociates	*-Personal/Family history* *-Aboriginal Circumstances* *-Involvement with Community Agencies/Supports* *-Education/Employment*	-Capturing whether a youth voluntarily associates with Aboriginal people outside of family members or specific treatment providers (e.g., psychologist, counsellor, correctional officers, probation officers) -Code **1(Yes)** if they attend an Aboriginal-centred school -Code **1(Yes)** if they reside on a reserve
SupportS	*-Personal/Family history* *-Aboriginal Circumstances* *-Involvement with Community Agencies/Supports*	-Capturing having someone in their life to get spiritual advice/guidance from -ONLY includes an Elder, grandparent, or parent – need to reasonably know relationship with all 3 to code this variable -Must be in past 3 months -this may require identifying where the youth was during the past 3 months and who they had contact with -Can code as **0(No)** if activities/engagement is described by PO and there is no mention of work with Elder, contact with grandparents, or parents being culturally-involved -If little family information is provided, cannot assume no contact with grandparents

		-If youth is incarcerated with no family visitors and no Elder, code **0(No)**
Educ	*-Personal/Family history* *-Education/Employment* *-Involvement with Community Agencies/Supports* *-Youth Plans*	-If youth will be entering a specific grade, assume they have completed the previous grade -May need to keep track of credits received (e.g., only 2.0 credits towards grade 9, assume completed grade 8) -If the only information is that the youth plans to complete high school, code Not Reported (unless there is other evidence suggesting how far along they are towards that goal)
PrevTreat	*-Education/Employment* *-Involvement with Community Agencies/Supports* *-Assessment and Recommendations*	-Must be culturally-specific or restorative -Requires some form of treatment or intervention (not case management) -can code as **1(Yes)** as long as at least 1 session has been completed (excludes interventions they PLAN to take) -This does NOT include assessments only -If the PO describes all the groups the youth participated in and there is no mention of culturally specific programs, code **0(No)** -Can include programs that were either court-mandated OR non-CJS group
AbSection	*-Requires separate section*	-Must be a separate section -Code **0(No)** if they discuss Aboriginal factors under Personal/Family History

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