

Psychosocial Characteristics of Aboriginal Young Offenders on Vancouver Island, BC

by

Stayc Voll
B.Sc., University of Victoria, 2003

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Supervisory Committee

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Abstract

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Aboriginal youth are overrepresented at Vancouver Island's Youth Forensic Psychiatric Services (YFPS) clinics. Despite this, research on Aboriginal young offenders is very limited. Information of the unique needs of Aboriginal young offenders is needed to enhance culturally appropriate forensic services. The goal of this study was to identify psychosocial characteristics associated with delinquent behaviour that distinguish Aboriginal young offenders from non-Aboriginal young offenders. Utilizing data of 638 reports (168 Aboriginal young offenders and 470 non-Aboriginal young offenders) from the YFPS databank, logistic regression models were used to predict being an Aboriginal young offender, from 24 psychosocial characteristics. Aboriginal young offenders were differentiated based on 12 significant factors. Key findings were: Aboriginal youth were almost 5 times more likely to report alcohol use, 3 times more likely to be incarcerated and 3 times more likely to have lived with a step-parent, a non-parent and to be removed from their families for 1-2 months, than non-Aboriginal youth. The results are preliminary; significant amounts of unknown data was found for both ethnic groups in the YFPS databank. This study is an important first step in laying the foundation for empirical research on Aboriginal young offenders necessary for culturally appropriate treatment services.

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CHAPTER ONE

Introduction

The overrepresentation of Aboriginal peoples in the Canadian Justice System has been well-documented, and extends to both adults and youth, (Brozowski & Taylor-Butts, 2006; Corrado & Cohen, 2002; La Prairie, 1999, 2002; Latimer & Foss, 2004; Latimer, Kleinknecht, Hung, & Gabor, 2005; Nafekh, 2002; Statistics Canada, 2001, 2005). Despite this, there is limited empirical research of the contributing factors of Aboriginal peoples relatively high involvement in the Canadian Justice System, with a void of research regarding Aboriginal young offenders. This lack of research may limit the Canadian Justice System's abilities, through Youth Forensic Psychiatric Services (YFPS), to provide appropriate remedial, and preventative interventions for Aboriginal young offenders (La Prairie, 2002; Latimer & Foss, 2004; Statistics Canada, 2002). This study provides information of the unique psychosocial characteristics of Aboriginal young offenders referred to the Vancouver Island's Youth Forensic Psychiatric Service (YFPS) clinics, enabling YFPS clinicians, and professionals in the youth justice system, to enhance treatment and assessment services for Aboriginal young offenders. Here, the rationale for this study will be discussed, followed by a review of the literature and theoretical background of Aboriginal young offenders' psychosocial characteristics, and concluded by outlining the research hypotheses.

Research Rationale

Aboriginal Overrepresentation at the Vancouver Island's YFPS clinics

In accordance with the Canadian Justice System, and consistent with Statistics Canada (Statistics Canada, 2005), Aboriginal peoples at YFPS are self-identified and include three distinct groups: Indian (First Nations), Métis and Inuit. Just as Aboriginal

youth are overrepresented across many levels and sectors of the Canadian Justice System (La Prairie, 1999, 2002; Latimer & Foss, 2004; Nafekh, 2002; Statistics Canada, 2005), Aboriginal young offenders are also overrepresented at YFPS clinics. Despite being 4-5% of the general population of Vancouver Island, Aboriginal youth make up 25% of the YFPS population, (Badger, Voll & Rees, 2006).

Overrepresentation of Aboriginal youth at the Vancouver Island YFPS clinics is particularly concerning and research of the psychosocial characteristics of these young offenders is important for two reasons. First, youth who are referred to YFPS by the Canadian Youth Justice System are a unique group of youth who are more vulnerable than their counterparts. Young offenders are referred to YFPS by youth court judges either because, a) there are reasonable grounds to believe that the young person is suffering from a mental health disorder, b) there is a history of findings of guilt or there is a pattern of multiple offences, or c) a young offender is charged with a serious violent offence (YCJA, 34.1.(b)). (Refer to Appendix A for more information of this process).

Second, special attention to the unique circumstances of Aboriginal young offenders is outlined in the Youth Criminal Justice Act. In 1999, the Supreme Court of Canada (*R. v. Gladue*) provided an interpretation of section 718.2(e) and concluded that custodial sentences for Aboriginal offenders may be shorter than sentences of non-Aboriginal offenders for the same offence. As outlined in the commentary on *Gladue*, two sets of circumstances are considered to be unique to Aboriginal offenders: 1) The systemic factors which often play a part in bringing the specific offender before the courts (such as the psychosocial characteristics examined in this study); and 2) The types

of sentencing approaches that might be appropriate to the offender because of their Aboriginal heritage.

The Youth Criminal Justice Act (YCJA) includes a provision similar to section 718.2(e) of the Criminal Code: Section 38(2)(d) of the YCJA essentially states that all available sanctions other than custody should be considered for all young persons, with particular attention to the circumstances of Aboriginal young persons. This may effect a youth court judge's decision to implement section 34.1(b), that is, ordering a forensic psychiatric evaluation from YFPS for Aboriginal young offenders brought before them. This also makes the need to identify the characteristics of Aboriginal young offenders all the more important, as it is critical that youth court judges be fully informed of the particular circumstances of Aboriginal youth have contributed to them before coming before the court.

Understanding more about Aboriginal young offenders at YFPS will aid the Canadian Justice System in providing appropriate means in reducing youth involvement in criminal activity. Informed justice services specific to young offenders, is essential in crime prevention and community safety. By curbing delinquent behaviours at a young age, the development of youth to adult trajectories of criminal activity decreases. Indeed, the primary purpose of the YFPS clinics is to provide remediation treatment and assessment services for those young offenders who are most vulnerable to recidivism as they become adults. With the pronounced overrepresentation of Aboriginal youth at YFPS, research focus that is Aboriginal specific is important to providing effective preventive justice measures that are culturally appropriate.

Limited Research of Aboriginal Young Offenders

The data of psychological and sociological attributes specific to Aboriginal offenders in Canada is limited, and what are available consists almost entirely of research regarding adult Aboriginal offenders who have been incarcerated (La Prairie, 1999, 2002; Nafekh, 2002; Statistics Canada, 2005). Studies of Aboriginal offenders who are not incarcerated are rare and research on Aboriginal youth who commit illegal acts is nearly non-existent (Latimer & Foss, 2004). As outlined in Appendix B, the call for such research has been heralded for over two decades by the Criminal Justice System of Canada, Justice System affiliates (i.e. Correction Service of Canada and Forensic Psychiatric Services), Statistics Canada (Statistics Canada Centre for Justice Research and the National Longitudinal Survey of Children and Youth), and representatives of the Canadian Federal and Provincial Governments. As discussed by La Prairie (2002) and Statistics Canada (2005), the multi-faceted problem of the overrepresentation Aboriginal peoples' involvement in the Justice System have been met with mostly administrative data gathering and demographic analysis of the incarceration and sentencing of Aboriginal offenders.

Movements towards building culturally appropriate Aboriginal services has become a focus for the provincial government of British Columbia for sometime (Speech from the Throne, 2005), but these initiatives are often based on little information that is empirically gathered or is specific to Aboriginal peoples in Canada, or the province of British Columbia, simply because such quality research is rare or limited (Statistics Canada, 2005). Carol La Prairie (1999) suggests that before we move forward with Aboriginal initiatives, we need to build a strong foundation of understanding of the

unique circumstances and justice needs of Aboriginal peoples. She outlines a three-step process in reaching this goal. First, determine the characteristics of Aboriginal offenders that will distinguish them from non-Aboriginal offenders. Second, describe the social problems that are unique to Aboriginal peoples. Third, unveil the roots of these problems. This study will provide a first step in La Prairie's call for research: a step in defining the characteristics of Aboriginal young offenders as they present on Vancouver Island, British Columbia. It is critical that sound, quantitative, empirical data about the characteristics of Aboriginal offenders in Canada be gathered, and analyzed in a meaningful manner, so as to better inform policy makers, the justice system and our service providers.

Literature Review and Theoretical Background

Since the works of Glueck and Glueck (1950, 1968), considerable research has been conducted in the social sciences to identify factors associated with juvenile delinquency. Identifying the characteristics of young offenders is still considered crucial to the prevention or reduction of criminal behaviour in youth by providing direction to the development of appropriate and ever evolving interventions. In all, research supports the conclusion that a large majority of adolescents who commit illegal acts share numerous characteristics including: history of incarceration, involvement in the justice system at an early age, weakened academic functioning, antisocial peer involvement, substance use, residential and familial instability and a history of victimization. Research substantiating these psychosocial characteristics and their relation to delinquency is discussed here. First, issues specific to the research of Aboriginal young offenders are addressed – the implementation of the Youth Criminal Justice Act, differentiation of

Aboriginal youth from non-Aboriginal youth, self-reported delinquency measures and cultural understandings of crime. Second, the literature describing the relationships among psychosocial characteristics and crime for non-Aboriginal and Aboriginal youth is outlined.

Issues Specific to Aboriginal Youth Research

Implementation of the YCJA. Originally, caution was taken to examine only Aboriginal specific research and reports of young offenders since April 1, 2003: reflecting only data gathered since the implementation of the Youth Criminal Justice Act (YCJA). The YCJA, replaced the Young Offenders Act (YOA) on April 1, 2003, and the two are different in many ways. One important area of change is that pertaining to the special consideration of circumstances unique to the justice needs of Aboriginal peoples who are presented before Canadian Youth Courts (section 38(2)(d) of the YCJA; Appendix A holds further information). However, due to the lack of Aboriginal specific research that utilizes data since April, 2003, the literature review net was widened to include some studies using data prior the introduction of the YCJA (for example, Corrado & Cohen, 2002; Latmier et al., 2005; Nafekh, 2002).

Aboriginal and non-Aboriginal Comparisons. Research of delinquent psychosocial characteristics, for Aboriginal young offenders do not show meaningful or significant differences when compared to that of young offenders in general. This is because the research available does not specifically compare the significance between Aboriginal and non-Aboriginal young offenders. Unlike the regression model research by Latimer et al. (2005), Aboriginal offender research often cite percentages, and not significance values (for example, Corrado & Cohen, 2002; La Prairie, 1999, 2002;

Latimer & Foss, 2004; Nafekh, 2002; Statistics Canada, 2005) and research of characteristics that are specific to Aboriginal young offenders, in comparison to non-Aboriginal young offenders is scant. The research that is available of Aboriginal young offenders (and Aboriginal adult offenders), are typically generalized only to young offenders who are incarcerated (Latimer et al., 2005; Corrado & Cohen, 2002; Latimer & Foss, 2004, Statistics Canada, 2005; La Prairie 1999, 2002). This is due to the difficulty in finding data of Aboriginal young offenders who are not incarcerated. Further, the data of incarcerated Aboriginal adolescents that are available are often of those youth who have been convicted at a federal, rather than a provincial court (for example, Nafekh (2002)). Adolescents who are incarcerated at a federal level are young offenders who have been given adult sentences who are greater than fourteen years of age and have been found to have committed a serious violent offence or first or second degree murder. As such, these federal young offenders differ from their provincial young offender counterparts, and the results of such studies can only generalize to the federal offender population who are incarcerated.

Self-Report Measures and Official Rates of Crime. An issue that emerges from the limited research available of Aboriginal young offenders is of self-reported delinquency measures and official records of youth crime (Latimer, Kleinknecht, Hung & Gabor, 2003). Self-reported measures have become popular in criminological research (for example, the National Longitudinal Study of Children and Youth (NLSCY)), replacing research utilizing official records (for example, the Uniform Crime Reports (UCR) data bank) of criminal behaviour. Using official records as indicators of delinquent and criminal behaviour does not take in to account the “hidden criminals. Hidden criminals

are those offenders who committed crimes but were never caught, escaping empirical attention (Schussler & Cressy, 1950)); for example, the NLSCY showed 39% of Canadian youth participate in delinquent acts (Latimer et al., 2003) while the UCR reported only 5% (Statistic Canada, 2005). Nor, do official records adequately document Aboriginal peoples (La Prairie, 1999, 2002; Statistics Canada, 2005). Administering self-reported measures to samples with a larger cross section of participants addresses both the “hidden criminal” and Aboriginal identity confounds. As such, self-reported measures of delinquency have now become commonplace measures of delinquency (for example, the meta-analyses of Hawkins, Herrenkohl, Farrington, Brewer, Catalano, Harachi & Cothorn, 2000; Henry, Caspi, Moffitt, Harrington & Silva, 1999 and Latimer et al., 2003) However, self-reports of delinquency provide information only of an individual’s beliefs, perception or awareness of themselves and their behaviours and are limited by the measurable constructs built by the researcher and designer of the self-report measures.

Cultural Constructs of Crime. Self-report measures are accurate within the cultural tapestry in which they are created, but may be confounded by the different understandings of the constructs by other cultures. For example, it may be more likely that results from self-reported measures of delinquency and social problems completed by Aboriginal people may reflect either a lack of compliancy, or over-compliancy, and may not be reflective of the behaviours that would, or would not be, considered criminal by non-Aboriginal researchers. It is suggested by Rupert Ross in both his books (*Dancing with a Ghost* (1992) and *Returning to the Teachings* (1996)) that Aboriginal people hold different understandings of “delinquency” or “social problems” and hold relativistic

views of what non-Aboriginal peoples would consider “problems” to be corrected. This may result in their answering questions in either an over-compliant manner, or in an over-generalized manner, depending on their social need to maintain social comfort when communicating within a non-Aboriginal context. Some Aboriginal researchers suggest, (ie., Willmon- Haque and Big Foot, 2008), that Aboriginal people are much more likely than non-Aboriginals to agree to cultural stereo-types that may be suggested through non-Aboriginal lines of questioning (ie. low IQ, excessive alcohol use, high rates of family abuse). Perhaps, these are just some of the cultural differences that are reflected in the General Social Survey (GSS) data reported in the 2006 Juristat on victimization in Aboriginal communities (Brzozowski, Taylor-Butts and Johnson, 2006). On one hand, Aboriginal people, in this report, were found to be more likely to than non-Aboriginal people to identify social disruptive conditions as “very” to “fairly” big problems in their own neighbourhoods (ie. drug use, public drunkenness, rowdy behaviour, vandalism and property damage). Yet, on the other hand, Aboriginal people reported having relatively low levels of fear of crime, given the high rates of social problems they report in their communities. Aboriginal people had a different comfort level with crime than non-Aboriginal people.

Self-reported measures may also not be suitable for collecting data specific to Aboriginal youth, as they may have difficulties communicating personal information in a non-narrative fashion, presented by non-Aboriginal authority figures (ie. researchers or educators) (Ross, 1996). As most of the research available on Aboriginal young offenders follow common research procedures of self-reported delinquency, results are considered with this in mind.

Although research of the psychosocial characteristics (offence predictors), that are specific to Aboriginal young offenders is limited and somewhat problematic, trends that are specific to Aboriginal young offenders emerge from the few studies that are available. Commonly researched characteristics of young offenders and delinquent behaviour will be discussed here, with focus on available information of Aboriginal young offenders.

Key Factors of Delinquent Behaviour in Young Offenders

Offences & Criminal Charges in Canada

A large majority of criminology, sociology and psychology literature focus on responding to questions of the seriousness and apparent increase in youth crime, with answers couched in qualifiers and nebulous social and legal labels, pointing to the deep complexities of delinquent activities (Kenny & Press, 2006). For this study, the definitions of delinquency are not specifically examined, as the population examined here are youth from YFPS: youth who have been recognized by the Canadian Youth Justice System as having committing a legal offence and have been ordered to complete a medical and psychological assessment under section 34 of the YCJA.

Here, focus is placed on the criminal trends of youth accused and charged in Canada. The following discussion will provide a foreground for comparing the offence types of Aboriginal and non-Aboriginal youth referred to YFPS.

Youth Offences in Canada. Youth accused of a crime are apprehended by police and if formally charged, recommended to the Crown. Police in Canada record the charges that are laid, or recommended, for all youth apprehended through the Uniform Crime Reporting (UCR) database. This database utilized two surveys from 63 police services, in six provinces, from 1998 to 2006. In 2006, UCR data showed that 48% of youth

apprehended were formally charged, while 58% of youth accused were given a warning, caution or extrajudicial measures. This large proportion of accused youth cleared by alternative means is likely a reflection of the focus of the YCJA principles of rehabilitation and reduction of incarceration and punishment for non-violent youth (refer to Appendix A for further information). According to the UCR data of 2006, the youth charges that are commonly projected away from crown are possession of stolen goods, bail violations, and fraud. The proportion of youth charged varies across Canada, with BC having the second lowest rates of criminally charged youth (29%).

Contrary to public perception (and media pressure) (Schissel, 2006), serious youth violence in Canada is rare (Taylor-Butts & Bressan, 2006). For example, in 2006, violent charges account for almost a quarter of all Canadian youth crime, with the majority being assault charges (80%). Homicides constituted 0.05% of youth crime (84 youth were implicated in the 54 homicides in 2006: more than half of the homicides involved multiple perpetrators). Approximately, 5% of all youth crimes involved a weapon: commonly knives (35%), blunt objects (15%), firearms (14%) and other objects (36%). Weapons were involved in 69% of assault charges. Property Crime accounted for 4 in 10 youth accused of crimes in Canada in 2006. Break and enters and minor theft were the most commonly charged criminal offences. Together, youth charged of these crimes represented more than two-thirds of youth charged with property offences. (Taylor-Butts & Bressan, 2006).

Aboriginal Young Offenders, Criminal Charges & Offences. Canadian criminologist Carol La Prairie (1999 & 2002) asserts that “Aboriginal crime” differs from “non-Aboriginal crime” – that Aboriginal crime is characterized by higher proportions of

violent and social disorder offences (with a high proportion directed at family members (41.4%), fewer property offences with the majority offences being petty crimes and crimes against the system (eg. failure to appear) (La Prairie, 1999 & 2002). On the other hand, Latimer et al., (2005) reported in their study of incarcerated adolescents, that Aboriginal youth's self-reported delinquency rate (41%) were similar to non-Aboriginal youth (39%), yet, Aboriginal youth were more likely to report engaging in more serious offences. In terms of specific offence types, Aboriginal youth were more likely than non-Aboriginal youth to report violent offending (24% versus 14%) and drug trafficking (10% versus 5%) but equally likely to report property offending (36% versus 34%) (Latimer et al., 2005). Yet, Corrado and Cohen (2002), reported slight differences in violent offences between incarcerated Aboriginal (41%) and non-Aboriginal young offenders (34%). While there were similarities between Aboriginal and Non-Aboriginal youth when "delinquency concerns" were compared between sexes (it was unclear what constituted "delinquency concerns").

Unclear and contradictory research results such as these perpetuate the popular (and sometimes polar) notions in the socio-legal field that Aboriginal youth are charged with more "court-related" offences (such as failure to appear and breaches), but commit "delinquent acts" as often as non-Aboriginal youth, but when they do act, the offences are of a more violent and serious nature. Discordance between the top-down authoritative processing of the Canadian Justice System and the healing-restorative justice practices of many Aboriginal groups are thought to lead to a lack of understanding between the justice paradigms, resulting, in part, to higher rates of Aboriginal "court related" offences (Ross 1992, 1996). As well, serious violent offences committed by Aboriginal

youth are derived from community vulnerability due to cultural devastation. In fact, section YCJA 34 (based upon 147 of the Criminal Code and *R vs. Gladue*) are based upon these dynamic cultural differences between Aboriginal and non-Aboriginal groups (Appendix A).

Unfortunately, research results that are specific to young offenders can be generalized only to the incarcerated population of young offenders, and as significance values are not reported, it is difficult to determine whether these differences in offence types between Aboriginal and non-Aboriginal groups are as concerning as they may first appear (Corrado & Cohen, 2002; La Prairie, 2002; Latimer & Foss, 2004; Nafekh, 2002). Knowledge of offence type patterns (violent, property or sexual) between the two groups would strengthen the assessment and treatment process for the youth forensic population.

Age; Involvement in the Justice System at an Early Age (12-15 years old)

Age has been considered one of the more robust correlates of the prevalence of delinquency in youth. Criminological research identifies two general patterns of different developmental trajectories of delinquent behaviour based on the age of onset of involvement in the justice system and antisocial behaviour. Adolescents who engage in delinquent behaviours at an early age (12 – 15 years old) increase their delinquent behaviour in severity and in frequency significantly more so than adolescents who engage in delinquent behaviours at a later age (16 – 18 years old). (Carroll et al. 2006; Loeber et al., 1991; McCord et al, 2001; Moffitt, 1993; Nafekh, 2002; Raine et al., 2005; Rankin-White, Bates and Buyske, 2001; White et al., 1993). Further, youth who engage in delinquent behaviours at an early age are more likely to develop “life-time” trajectories of crime, whereas, youth who engage in delinquent behaviour at a later age are more

likely to truncate criminal acts at the age of 21 (Moffitt, 1993; Raine et al., 2005; Rankin-White, Bates and Buyske, 2001; White et al., 1993). Such findings are similar among Canadian young offenders. For example, Latimer et al. (2005), found among Canadian young offenders that escalating self-reported criminal behaviour, both in frequency and severity, increased with the age of the young offenders ($r = 0.11$, $p. < .001$).

Aboriginal Young Offenders, Age. Specific for Aboriginal youth, Corrado and Cohen (2002), found that the incarcerated Aboriginal young offenders in their study commonly got “into trouble” (defined as being involved in physical fights, drug use, cheating in school and general truancy), at the mean age of 10 years old. Latimer and Foss (2004), found that a larger number of incarcerated Aboriginal young offenders experienced their first conviction at young age: 39% experienced first conviction at the age of 12, 23% first convicted at 13 years old, and 22% at age 14. This early involvement with the criminal justice system likely increased the likelihood of a criminal record and more serious sentences (as discussed above). Indeed, Nafekh (2002), found in his study of federally incarcerated Aboriginal offenders, that 96% of Aboriginal offenders had prior involvement in the adult and/or youth court system; however, there were no comparisons between non-Aboriginal and Aboriginal offenders, so it is unclear whether this is a unique, or more serious, issue for Aboriginal offenders specifically.

The trend of the Aboriginal specific research reviewed at the time of this study suggests that they are more likely to be involved in the Canadian justice system at an early age than non-Aboriginal youth; yet, none of the above findings compare Aboriginal young offenders to non-Aboriginal young offenders. No clear conclusions from the

literature at present can differentiate whether Aboriginal young offender's involvement in the justice system at an early age is unique to that of young offenders in general.

Academic Functioning/Attachment

Within the literature, poor school attachment or lack of academic involvement are considered to be strong precursors and correlates of delinquent behaviour in youth. Often, literature on this subject place foci on risk factors of delinquency for youth in general, but examination of Aboriginal young offenders and young offenders (youth who are charged, not just youth who partake in delinquent acts), and who are not incarcerated, is comparatively small.

Throughout the literature "Academic Attachment" is understood and defined by youth's academic relationship with the traditional education system. Included within this category of Academic Attachment are: negative school behaviour and acts of truancy (Latimer et al., 2003), poor school attendance (Towberman, 1994), repeating a grade (McCord et al., 2001) and early withdrawal and suspensions from school (Hawkins, Herrenkohl, Farrington, Brewer, Catalano, Harachi & Cothorn, 2000; Latimer et al, 2005; McCord et al., 2001). School attachment has also been defined using concepts such as school spirit and positive attitudes towards academic performance (Latimer et al. 2005). In Hawkins et al.'s (2000) meta-analysis of 66 longitudinal studies of youth who were not incarcerated, they found that while bonding to school is a protective factor of delinquency and violence, low educational aspirations at ages 14-16 increased the risk of violence. They also found that leaving school before the age of 15 was a predictor of later violence. In Towberman's (1994) four stage analysis (involving correlations, factor analysis and multiple regression), school attendance was found to be an explanatory factor in the total

offences incarcerated youth had committed. Latimer et al., (2003) found that negative school attachment was one of the five core concepts ($p < .0001$) of their multiple regression analysis of self-reported delinquency correlates from the National Longitudinal Survey of Children and Youth (NLSCY). More specifically, they found that a lack in positive school aspirations, and negative school behaviour were correlates of violent offending, while repeating a grade at school, low school attachment (school spirit and positive attitudes towards academic performance), as well as negative school behaviour were correlates of property offending. Definitions of the terms used, such as “negative school behaviour” were not discussed by Latimer et al. (2003).

Aboriginal Young Offenders, Academics. In their study of incarcerated Aboriginal youth, Latimer and Foss (2004) found that a high proportion of Aboriginal youth in custody were reported to have limited education. On average, for Aboriginal young offenders, the highest grade completed was grade 8; only 2% of Aboriginal youth aged 18+ completed high school. Nafkeh (2002) found in his study of federally incarcerated Aboriginal offenders, of young Aboriginal offenders (ages 12-25), 67% had less than grade 10, 91.9% had no high school diploma, perhaps because 15.5% had a learning disability and 37% had concentration difficulties.

Again, these results do not compare Aboriginal and non-Aboriginal young offenders so, it is unclear whether they are reflective of difficulties faced by young offenders in general, or if these challenges are significantly more pronounced for Aboriginal young offenders.

Prosocial Involvement & Delinquent Peers

The social development model (Catalano & Hawkins, 1996), suggests that time spent in unstructured socializing with peers has a positive association with antisocial behaviour because youth, in situations where they have opportunities for deviant behaviour, are rewarded for deviant behaviour materially, or in the form of peer approval, and are unlikely to be caught and punished. In other words, activity involvement is part of a socialization process, either prosocial or antisocial, depend on the values adhered to by the “socializing units” (Catalano & Hawkins, 1996). Youth who engage in disruptive behaviours are unlikely to sign up for, or be invited to take part in, activities that emphasize social skills, instructions and practice. They tend to choose less structure or to “hang out” with youth who choose less structure. Prosocial activities are goal-orientated, structured, and/or adult supervised, because they consist of interactions that adhere to prosocial goals or values. For example, practicing a musical instrument, homework-studying, reading, involvement in youth groups, clubs, or sport teams would all be considered prosocial activities (Fleming et al., 2008).

Similar to the social development theory of prosocial involvement and antisocial behaviour, interactions with delinquent peers is also associated with antisocial behaviour. The literature shows that anti-social peer involvement is one of the primary correlates of youth delinquency (Andrews & Bonta, 1998; Bell, 1999; Lawrence., 1991; McCord et al., 2001; Lipsey & Derzon, 1998; Matessuda & Anderson, 1998; Warr, 1993). The results of the strength of relationship vary from study to study, from sample to sample, but the overarching message is the same: there is an association between delinquent acts and socialization with delinquent peers. For example, in their meta-analysis of 66

longitudinal studies of violent youth, Hawkins et al. (2000) found that associating with delinquent peers was a strong factor for youth in future violent acts, and more so, that being a gang member tripled the risk for future violence.

Aboriginal Young Offenders, Prosocial & Peers. The above finding is of concern especially for Aboriginal young offenders as they are reported to socialize with delinquent peers at high rates and are more likely to be affiliated with a gang than non-Aboriginal youth (Corrado & Cohen, 2002; Latimer et al., 2005; Nafekh, 2002). For example: according to Corrado & Cohen's 2002 report of incarcerated Aboriginal youth in Vancouver, 85% of the females, and 75% of the males reported as having delinquent peers. Similarly, in Nafekh's 2002 report of young male federal Aboriginal offenders (aged 25 and under), 75% were affiliated with a gang. As no direct statistical comparisons between Aboriginal and non-Aboriginal youth were made, the actual severity of peer delinquency and prosocial involvement specific to Aboriginal young offenders (rather than young offenders in general) can be made. Despite this, these studies do suggest that Aboriginal young offenders are more likely to have delinquent peers and less likely to be prosocial involved, than their non-Aboriginal counterparts. Perhaps, this a reflection of poverty faced by many Aboriginal communities (La Prairie, 1999, 2002; Latimer et al., 2004). Consider for example, Eckert (1988) and Lesko's (1988) findings that youth from middle-class backgrounds are more likely to base their friendships on interests and activities, often switching their friendships as their interests change. In contrast, students from working-class backgrounds placed more emphasis on loyalty and stability, with friendships determining their involvement in activities, instead of vice versa. This may suggest that youth in lower income communities or homes - such

as Aboriginal youth (La Prairie, 1999, 2002; Latimer et al., 2004) - would be less likely to change friends, even if the relationships were having a negative effect on individual well-being, resulting in the possibility that Aboriginal youth are more likely to have delinquent peers than non-Aboriginal youth.

Substance Use

Substance use has been a well-documented correlate of criminal behaviour among youth since the 1950's (Glueck and Glueck, 1950), and continues to remain a key factor in differentiating young offenders who commit violent and/ or serious offences, from non-delinquent youth, into recent times (Hawkins et al., 2000; Latimer et al., 2005; Latimer & Foss, 2004; Loeber et al., 1991; Towberman, 1994). For example, Latimer et al., (2005), found that delinquent youth were significantly more likely to use drugs than non-delinquent youth ($\Phi = .29$, $p < .0001$) (two thirds of the self-reported delinquents reported illegal drug use). Hawkins, Jensen and Catalano (1988) reported that nearly 82% of serious young offenders (like those who would be referred to YFPS) used illicit-drugs regularly, used alcohol 4 to 9 times higher than non-delinquents, and used marijuana 14 times more often than non-delinquents.

Aboriginal Young Offenders, Substances. Consistent with the findings of young offenders in general, criminological research suggest that Aboriginal offenders also report drug use, but at higher frequencies than non-Aboriginal young offenders. In their 2004 one-day snapshot of Aboriginal youth in custody across Canada, Latimer and Foss found that 57% of the Aboriginal youth in custody were confirmed as having a substance abuse problem and 8 out of 10 Aboriginal young offenders, were suspected or confirmed to have substance abuse problems. In Corrado and Cohen's (2002) one-day snap-shot of

Aboriginal and non-Aboriginal youth in custody in the Vancouver region, they found that approximately 95% of Aboriginal young offenders use drugs, marijuana (81%), crack (43%), heroin (17%) cocaine (31%) and alcohol (94%). Comparisons between Aboriginal young offenders and non-Aboriginal young offenders were not made for the Corrado & Cohen (2002) nor the Latimer & Foss (2004) studies, but they were made in Latimer et al's 2005 study: 28% of the Aboriginal youth reported using illegal drugs, while only 19% of non-Aboriginal youth reported illegal drug use. Perhaps this 9% difference is substantial, but it is unclear such differences are statistically significant.

Two issues emerge from the research that has directed the research course of this variable. First, is the need to examine both the frequency and the severity of drug use. This issue stems from the lack of operational definition of substance use. Explanations of the terms "substance/drug use" or "substance/drug abuse" are not often made clear (Corrado and Cohen, 2002), or worse, not defined at all (For example, Latimer et al. 2005; Latimer and Foss, 2004; Towberman, 1994). Second, is the need to examine each substance separately, and not examine "substance use" as a collapsed variable (Hawkins et al., 2000; Latimer et al., 2005; Latimer & Foss, 2004; Loeber et al., 1991; Towberman, 1994). This study will examine choice in substance types (alcohol, cannabis, stimulants, hallucinogens and other drugs, such as opiates and inhalants). Unfortunately, due to extensive missing data (29% to 85% of the data were unknown) this study will not examine the frequency of use of each type of substance. However, this study between Aboriginal and non-Aboriginal young offenders will provide information on the specific substances of choice that are unique, or predictive, of being an Aboriginal youth at YFPS.

Victimization

Youth experiences of physical, sexual or emotional abuse, or neglect have been documented in the literature as being related to an increase in the likelihood of delinquent behaviour (Hawkins et al., 1998; Loeber & Stouthamer-Loeber, 1986). Latimer et al.'s, 2005 findings suggest that the frequency of being threatened/attacked/assaulted either outside or inside the home is associated with overall general delinquency and violent offending. Victimization is considered in their study to be one of the five core concepts of self-reported violent, sexual and property offending in youth ages 12 to 15. Similar findings are commonly shared throughout the literature (For example: Andrews & Bonta, 1998; Carroll et al., 2006; Farrington, 1978; Glueck & Glueck, 1950; Hawkins et al., 1998; Loeber & Stouthamer-Loeber, 1986; Patterson & Southammer-Loeber, 1984; Schuesslet & Cressy, 1950; Tolan, 1988).

Aboriginal Young Offenders, Victimization. It is commonly recognized from those working amongst Aboriginal communities that the historical trauma they were forced to endure has led to a disintegration of Aboriginal health and well-being, resulting in heightened vulnerability of individuals to all forms of abuse (ie. La Prairie 1999, 2002; Rupert Ross, 1992, 1996; Willmon-Haque & BigFoot, 2008). In their Jusristat report, Brozowski, Taylor-Butts and Johnson (2006) found that Aboriginal people were nearly twice as likely as their non-Aboriginal counterparts to be repeat victims of violence, sexual assault, robbery and physical assault. Whether Aboriginal young offenders are more likely than non-Aboriginal young offender to have been experienced abuse is unclear, as the research is scant; but, recently some headway has been made in this area.

Corrado and Cohen (2002) reported high rates of physical and sexual abuse for both Aboriginal and non-Aboriginal incarcerated young offenders. Within this population 43% of the Aboriginal boys, compared to 37% of the non-Aboriginal boys had experienced physical abuse, while 80% of Aboriginal girls, compared to 55% of non-Aboriginal girls had experienced physical abuse. Unfortunately, no comparisons between non-Aboriginal young offenders were reported for sexual abuse percentages. Latimer & Foss, 2004 state that a substantial proportion of Aboriginal youth in custody report high rates of victimization.

This understanding of the overrepresentation of Aboriginal youth in the youth justice system is well accepted, but there is no clear evidence available in the literature at present, that when compared to non-Aboriginal youth, Aboriginal youth differ significantly in terms of experienced victimization, especially for the most vulnerable of youth: those referred to YFPS for psychiatric evaluation.

Family Structure & Residential Stability

Research of the relationship between family structure and delinquent behaviours has been large. According to Wells and Rankins' (1991) review of studies published since the 1920s, the literature maintains that children who are raised in homes where both biological parents are missing are significantly more likely to become involved in delinquency than children with both parents present. This large body of family structure and delinquency research has grown from the Social Control theory (Nye, 1958, Hirischi, 1969). This theory suggests that "delinquent acts occur when an individual's bond to society is weak or broken" (Hirischi 1969: 16). This bond has four components: attachment to the convention of others (the most attended to of the components),

commitment to conformity, involvement in conventional activities, and a belief in the legitimacy of the law. When the body of family structure research, based in a paradigm of Social Control Theory, is summarized in this way, questions of the generalization to other cultures, such as Aboriginal culture (especially concerning the belief of the legitimacy of the law), arise. Nevertheless, the underlying idea in the family structure research is that social network support is beneficial to youth and their families. Considering that family is the intimate system where individual development is shaped, it is not surprising that ample empirical evidence (longitudinal studies (Farrington, 1978; Loeber, Stouthamer-Loeber, Van Kammen and Farrington, 1991; Patterson, Southammer-Loeber, 1984;), randomized controlled clinical trails (Tolan, 1988) and cross-sectional studies (Loeber and Dishion, 1983) demonstrates that inconsistent parental discipline /styles (McCord et al., 2001; Loeber & Stouthamer-Loeber, 1986), poor child-parent attachment (Loeber et al. 1991; Rankin & Wells, 1990) and residential instability (Latimer & Foss, 2004; Nafekh, 2002) are primary factors in early patterns of delinquency and aggressive behaviour. One explanation of the predictive relationship between these familial factors and delinquency is that they can often lead to a youth's placement in a government child protection agency or family care home (ie. foster care) (Latimer & Foss, 2004; Nafekh, 2002). Once children are removed from their family, rates of delinquency tend to increase. Positive correlations have been found between the number of changes in youth's living placements and rates of delinquency (ie. the more a child is moved from one foster home to another, the more likely their rates of delinquency will increase) (Latimer & Foss, 2004; Nafekh, 2002). Further, family-child separation due to the child being incarcerated (as the levels of delinquency becomes greater) substantially increases

the risk of further acts of delinquency and aggression (Andrews & Bonta, 1998; Carroll et al., 2006; Hawkins et al., 1998; Henry et al., 1999; Loeber et al. 1991). This is concerning especially for Aboriginal youth who are overrepresented in Canadian correction systems.

There are four major messages that can be summarized from the literature on family structure/home stability and delinquency. First, family structure and residential stability are pertinent to parenting and child development (Hirischi, 1969; Nye, 1958). Second, adolescents reared in step-parent and single-parent families, as compared to two biological parent families, tend to engage in more delinquency (for example, Wells & Rankin, 1991). Third, youth who experienced residential transitions are reported to have higher levels of delinquency, as compared to those who did not (for example, Haynie & Scott, 2005). Fourth, children who experience prolonged or permanent separation from their parents are at greater risk for higher levels of delinquency (for example, Loeber et al., 1991)

Aboriginal Young Offenders, Family. Latimer and Foss (2004), found of the incarcerated youth in their study, 63% of Aboriginal youth were living with parents at time of incarceration, 16% were living with extended family and 39% were involved in child protection agencies. They also found that 47% of Aboriginal youth lived in families that received social assistance. Nafekh (2002) reported that of the federally incarcerated offenders in his study, younger Aboriginal offenders (aged 12-25) were more likely than older Aboriginal offenders (aged 25 and older), to have had a childhood that lacked in family ties, had negative maternal relations, had no father present and to have been raised in a home characterized by criminal family members. Over half of the young Aboriginal offenders had unstable living conditions. These findings are concerning, however,

without comparisons between Aboriginal and non-Aboriginal young offenders it is difficult to determine whether these two groups of young offenders differ much in terms of family dysfunction or parental attachment.

Corrado and Cohen (2002), reported that of the incarcerated youth in their study, 76% of Aboriginal males left home (at a mean age of 12.1 years old), and reported being kicked out of their homes an average of 2.53 times, beginning at age 14. Even more concerning is that 97% of Aboriginal females left home (at a mean age of 11.4 years), and reported being kicked out of their homes an average of 3.43 times, beginning at the age of 13.5. As well, 33% of Aboriginal males and 45% of non-Aboriginal males were living alone, were on the streets, or were wards of the state at the time of their conviction. Also reported was that Aboriginal males lived in an average of nine different places over a period of three months, while Aboriginal girls lived in an average of thirteen different places over a period of three months, previous to their incarceration. Corrado and Cohen (2002) state that Aboriginal young offenders have higher rates of family dysfunction when compared to non-Aboriginal young offenders; however, without reporting significance values (or even comparative percentages), it is difficult to determine whether there are indeed statistical and meaningful differences between these two groups.

Literature Review Summary

Although Aboriginal young offenders share much in common with their non-Aboriginal counterparts, there are some differences between these two groups that are of concern. The research suggests that important psychosocial characteristics of adolescent delinquency for Aboriginal youth are: substance abuse, school attachment, victimization, family structure and involvement in child protection agencies. Yet, the research available

does not provide any conclusive findings or evidence that Aboriginal young offenders are similar, or significantly different, from young offenders in general.

The findings reported in the research available regarding Aboriginal young offenders are of interest, but are incomplete and perhaps misleading. As discussed throughout this literature review, the research available is weakened by poor generalization of results due to population selection (incarcerated youth, federally incarcerated youth) and by unclear meaningful or significant findings in differences between group percentages reported.

Another concern of the available research is the difficulty in determining whether the findings are reflective of incarcerated Aboriginal young offenders as individuals, or if they are reflective of the youth justice system's implementation of 38(2)(d) of the YCJA. For example, it is possible that any differences between Aboriginal offenders and non-Aboriginal offenders characteristics that were found in analyzing the data collected by either Latimer and Foss (2004), Nafekh (2002), Latimer et al. (2002) and Corrado and Cohen (2002), could be confounded by a court's responsibility to take special care in finding alternative means to incarceration for Aboriginal offenders (as is outlined in section 718.2(e) of the Criminal Code of Canada, in accordance with *R. v. Gladue* and reflected in section 38(2)(d) of the YCJA (please refer to Appendix A for further explanation). This would mean that Aboriginal young offenders and non-Aboriginal young offender may differ in terms of sentences involving incarceration based on the court's implementation of section 718.2(e).

Research Hypotheses

Here is outlined the hypothesis for each variable / psychosocial characteristic examined. The twenty four variables have been placed into six broad groupings; these

include Youth justice system involvement, Academic functioning, Prosocial involvement and peer delinquency, Substances used, Victimization and Family structure and residential stability.

Youth Justice System Involvement. This included a) incarceration rates, b) offences youth were charged with and c) involvement with the justice system at an early age.

a) Incarceration. It was hypothesized that Aboriginal youth at YFPS were significantly more likely to have been incarcerated than non-Aboriginal youth at YFPS, as is the case at many levels of the Canadian Justice System (Brozowski & Taylor-Butts, 2006; Corrado & Cohen, 2002; La Prairie, 1999, 2002; Latmier & Foss, 2004; Latimer, Kleintnecht, Hung & Gabor, 2005; Nafekh, 2002; Statistics Canada, 2001, 2005,).

b) Offences. The offences YFPS youth were charged with were categorized as being either violent, property or sexual offences. It was hypothesized that Aboriginal youth: were significantly more likely than non-Aboriginal youth to be charged for property offences (“court-related crimes” such as breaches, failure to comply and “non-serious crimes” such as theft under \$5000 and break and enter) (La Prairie, 1999, 2002;), violent and sexual offences (Corrado & Cohen, 2002; La Prairie, 1999, 2002; Latimer et al., 2005).

c) Early-Age. Involvement in the justice system at an early age was based upon the research of Early-Onset versus Late-Onset delinquent trajectories (Carroll et al., 2006; Latimer & Foss, 2002, 2004; Latimer et al., 2005; Loeber & Stouthamer-Loeber, 1986; Loeber et al., 1991; Moffitt, 1993, Nafekh, 2002; Raskin, Bates & Buyske, 2001; White, Moffitt, Caspi, Bartusch, Needles & Stouthmaer-Loeber, 1993). It was

hypothesized that Aboriginal youth were significantly more likely to be referred to YFPS at an early age (12-15 years old) than non-Aboriginal youth (Corrado & Cohen, 2002; Nafekh, 2002; Latimer & Foss, 2004).

Academic Functioning. This category of variables included school status levels (attending school, left school, expelled or completed school), alternative school enrolment levels, and diagnosis of a learning disability. (Latimer & Foss, 2004; Latimer et al., 2005; McCord, Spatz & Crowell, 2001; Nafekh, 2002). It was hypothesized that Aboriginal youth were:

i) significantly more likely to have experienced limiting educational status (having left school or been expelled) and less likely to have been attending or completed school, than non-Aboriginal youth at YFPS (Latimer & Foss, 2004; Nafekh, 2002).

ii) significantly more likely to be enrolled in alternative schools than non-Aboriginal youth.

iv) significantly more likely to have been diagnosed with a learning disability than non-Aboriginal youth at YFPS (Latimer & Foss, 2004; Nafekh, 2002).

Prosocial Involvement and Peer Delinquency. These two variables were intended to represent in part the dynamic and self-chosen socialization of youth at YFPS. Prosocial involvement included, for example, being involved in organized sports, clubs and groups. Delinquent peers were considered to be youth who were actively involved in criminal activity; association with delinquent peers was examined in terms of frequency of socialization (does not associate, occasionally associated and frequently associated).

It was hypothesized that Aboriginal youth at YFPS were:

i) significantly less likely to be involved in prosocial activities than non-Aboriginal youth (Catalano & Hawkins, 1996; Fleming, Catalano, Mazza, Brown, Haggerty & Harachi, 2008).

ii) more likely to socialize with delinquent peers than non-Aboriginal youth (Andrews & Bonta, 1998; Bell, 1999; Corrado & Cohen, 2002; Lawrence., 1991; Latimer et al, 2005; Latimer et al., 2004, Lipsey & Derzon, 1998; Nafekh, 2002; Matessuda & Anderson, 1998; McCord et al., 2001; Warr, 1993).

Substances Used. The types of drugs used were examined; these included five substance types (alcohol, cannabis, stimulants, hallucinogens and others). It was hypothesized that Aboriginal youth were more likely to report using all substance types than non-Aboriginal youth (Corrado & Cohen, 2002; Latimer & Foss, 2004; Latimer, et al., 2005; Loeber, et al., 1991; Hawkins, Herrenkohl, Farrington, Brewer, Catalano & Harachi, 1998;).

Victimization. Victimization variables included experience of physical abuse, sexual abuse, emotional abuse and neglect. It was hypothesized that Aboriginal youth were more likely to have experienced all forms of abuse than non-Aboriginal youth at YFPS (La Prairie 1999, 2002; Ross 1992, 1996; Willmon-Haque & BigFoot, 2008; Brozowski, Taylor-Butts and Johnson, 2006; Corrado & Cohen, 2002; Latimer & Foss, 2004 Loeber & Stouthamer-Loeber, 1986; Hawkins et al., 1998).

Family Structure and Residential Stability. Family structure variables included living with a step-parent, single parent, step-parent or a non-parent. Residential stability variables included separation from family and community in terms of temporary, prolonged, or permanent separation and residence in a government care facility. It was

hypothesized that Aboriginal youth at YFPS were more likely than non-Aboriginal youth to have experienced more familial structure disruption (Latimer et al, 2005; Loeber & Stouthamer-Loeber, 1986; Rankin & Wells, 1990, Nafekh, 2002, LaPrarie, 1999, 2002) and been removed from their families and communities (Latimer et al, 2005; Loeber & Stouthamer-Loeber, 1986; Rankin & Wells, 1990, Nafekh, 2002, LaPrarie, 1999, 2002). Specifically, it was hypothesized that Aboriginal youth were:

i) more likely to have lived in government or treatment care programs than non-Aboriginal youth (Latimer et al, 2005; McCord et al., 2001; Loeber & Stouthamer-Loeber, 1986; Rankin & Wells, 1990, Nafekh, 2002),

ii) more likely to have lived in non-parent households than non-Aboriginal youth (Latimer et al, 2005; McCord et al., 2001; Loeber & Stouthamer-Loeber, 1986; Rankin & Wells, 1990, Nafekh, 2002).

CHAPTER TWO

Methods

The purpose of this study was to identify significant psychosocial characteristics of Aboriginal young offenders, when compared to non-Aboriginal young offenders referred to the Vancouver Island Youth Forensic Psychiatric Services Outpatient Clinics (YFPS). Archival data from Vancouver Island's YFPS databank were obtained on June 3, 2008 from reports of 651 young offenders referred to Vancouver Island's YFPS over a five year span, from April 1 2003 to April 30, 2008. After data screening, 638 young offender reports were viable for analysis; 168 Aboriginal young offender reports and 470 non-Aboriginal young offender reports; 24 variables were examined.

This chapter is organized as such: First, the purpose of YFPS providing background of the population of young offenders examined in this study. This is followed by discussion of their consent to research. Second, the research design is outlined, complete with a delineation of both the sample characteristics and psychosocial variables of the population.

Youth Forensic Psychiatric Services (YFPS)

YFPS is a Government of British Columbia agency charged with performing court-ordered psychological assessments of young offenders under the mandate of the federal Youth Criminal Justice Act. The service operates nine clinics across the province, two of which service young offenders on Vancouver Island (stationed in Victoria and Nanaimo). This study used data from these two Vancouver Island outpatient clinics. The Vancouver Island YFPS databank was developed at Victoria YFPS beginning in 2002, and contains

information on young offenders who were admitted for psychiatric assessment and/or treatment from British Columbian youth courts.

Young offenders are referred to YFPS by youth court judges either because there are reasonable grounds to believe that the young person is suffering from a mental health disorder, there is a history of charges or a pattern of multiple offences, or that a young offender is charged with a serious violent offence (YCJA, 34.1.(b)). Vancouver Island YFPS has been active in recording data of adolescents who have been before the courts for illegal activity and have been referred by the justice system to complete a psychological assessment and to participate in treatment. The data recorded by YFPS were collected from multidisciplinary teams assigned to each young offender referred to YFPS, and includes information from the psychological assessments of young offenders by social workers, psychologists and psychiatrists. Along with the demographic profiles (sex, age, ethnicity) of each young offender referred to YFPS, data of offence types, incarceration, academic functioning, prosocial involvement and delinquent peers, substance use, victimization and family structure and residential stability are also recorded.

Only data from reports of young offenders referred to YFPS over a five years span, since April 1, 2003 were analyzed, so as to reflect only characteristics of young offenders who have gone before a youth court since the implementation of the Youth Criminal Justice Act (YCJA). The YCJA includes a provision similar to section 718.2(e) of the Criminal Code that was not contained in the Young Offenders Act. Section 38(2)(d) of the YCJA essentially states that all available sanctions other than custody

should be considered for all young persons, with particular attention to the circumstances of Aboriginal young persons.

Research Approval and Youth Consent

Government policy, provincial legislation, and federal statutes protect information contained in the client files belonging to YFPS. The former Young Offender's Act (1984) and the current Youth Criminal Justice Act (2002) grant anonymity to youths in conflict with the law. As YFPS' clients are referred for service following conflict with the law, their identities continue to be protected. Contacting former clients to request permission to access their file information would be, in itself, a violation of their rights under the above named legislation.

The Ministry for Child and Family Development, and specifically, YFPS, retain ownership of the client files; however, access for research purposes can be granted, but only to authorized individuals following approval of the YFPS Provincial Evaluation and Research Committee. Along with approval from the YFPS Provincial Evaluation and Research Committee, consent was also received from the manager of the Vancouver Island region of YFPS for the use of YFPS data. A waiver of ethics approval was accepted by the University of Victoria's Research Ethics Board as this study utilized archival data only.

Design

Procedure and Research Questions. Multivariate quantitative analysis was used to examine and identify distinct psychosocial characteristics of Aboriginal young offenders, compared to non-Aboriginal young offenders referred to YFPS based on factors associated with youth offence behaviour. The broad question asked was: Do the

psychosocial characteristics that are known to be associated with delinquency, have similar patterns of relationship in both Aboriginal and non-Aboriginal young offenders referred to YFPS? Three stages to the analysis were conducted: The first stage involved lengthy data screening and variable transformation. Second, a preliminary analysis, involving missing data analysis and demographic comparisons, was completed. Third, a logistic regression analysis was conducted to reveal significant psychosocial characteristics specific to Aboriginal youth referred to YFPS. Data were analyzed using Statistical Package for the Social Sciences 2008, version 17 (SPSS 17.0.1).

Data Screening and Variable Transformation. At the time of this study, the Vancouver Island YFPS databank was relatively young (six years old) and had not undergone many statistical analyses. Organizing the raw data into variables that allowed for statistical analysis was cumbersome. Missing data, double entries of files with different identification numbers, coding errors and reorganization of raw data into meaningful variables took months to complete. For example, the creation of operational definitions and categorization of youths' charges, from numerous acts, for the variable "offence types" required numerous meetings and consultations between the YFPS research assistant, the YFPS manager, YFPS clinicians, probation officers, and myself. The challenges of transforming raw data of the charges a youth came to YFPS with, into offence type variables, stemmed from a plethora of criminal codes from multiple acts and a lack of operational definitions of offence types. A summary of the data screening and variable transformation particular to each variable is discussed here; more in depth discussion of the data screening and variable transformation process is in appendix C

Data initially received from YFPS included all available clinical files (N = 651) from youth who were referred to YFPS on Vancouver Island to complete a forensic psychological assessment from April 1, 2003 – April 30, 2008. Only data from reports of young offenders referred to YFPS since April 1, 2003, were analyzed, so as to reflect only characteristics of young offenders who have gone before a youth court since the implementation of the Youth Criminal Justice Act (YCJA). This act replaced the Young Offender Act (YOA) on April 1, 2003 and the two differ in many ways that affect Aboriginal involvement in youth justice system (Appendix A).

The data were provided in four SPSS files and included demographic, psychiatric, psychological and social work files of the youth. Coding errors and double identification numbers were found when case summaries and crosstabulations of youth's identification number across all four files were done, before merging the four files. In all, the 129 coding errors and two double identification numbers found were corrected after file reviews by the YFPS research assistant and myself (a detailed account is available in appendix C). Three errors were unresolved through file review and ten files were missing ethnicity data; these thirteen cases were dropped from the analysis resulting in a total sample size of 638.

Sample Characteristics and Psychosocial Variables

Ethnicity

Aboriginal young offenders versus non-Aboriginal young offenders was the logit for the logistic regression model: the dichotomous criterion variable for this study. Within the YFPS population, Aboriginal youth are youth who have self-identified as First Nations, Métis, Inuit and Aboriginal-mixed (eg. First Nations and Caucasian) to

clinicians at YFPS. Non-Aboriginal youth consisted of all other ethnicities (Caucasian, East Asian, Southeast Asian, West Asian, South Asian and African). Table 1 displays the breakdown of ethnic groups of the whole sample as identified by YFPS. Aboriginal youth are overrepresented at YFPS. Although Aboriginal people only make up 4-5% of the general population of Vancouver Island, they composed 26% (n = 168) of the YFPS population (N = 638). This is consistent with other findings of Aboriginal overrepresentation within many levels and aspects of the Canadian Justice System (Statistics Canada, 2005, Nafekh, 2002; Latimer & Foss, 2004; La Prairie, 1999; La Prairie, 2002).

Table 1

Ethnic Breakdown of Whole Sample

Ethnicity	n	%
Non-Aboriginal	470	72.5
<i>Caucasian</i>	435	67.1
<i>East & Southeast Asian</i>	4	0.6
<i>West & South Asian</i>	5	0.8
<i>Other</i>	26	4.0
Aboriginal	168	25.9
<i>Aboriginal/Caucasian</i>	34	5.2
<i>First Nation, Métis, Inuit</i>	134	20.7

Age

Ages were determined through the date of first admission to YFPS and the date of birth. Only youth between the ages of 12 and 18 years old can be charged under the

Youth Criminal Justice Act, and this is reflected in the age range of youth at YFPS: 12 to 19 years old. Eight youth (1% of the sample) were charged under the Youth Justice Act at 18 years old and received YFPS services when 19 years old. Table 1 displays the age breakdown for both Aboriginal and non-Aboriginal youth at YFPS. The mean age for the sample as a whole was 15.44 years (SD = 1.51; n = 637). The age of one non-Aboriginal youth report could not be determined, resulting in an n = 637 (Aboriginal youth, n = 168; non-Aboriginal youth, n = 469). As can be seen in Table 2, the age spread for both ethnic groups was similar. The mean age for Aboriginal youth was 15.48, with a median of 15.50 (SD = 1.54, n = 168); the mean age for non-Aboriginal youth was 15.43, with a median age of 16.00 (SD = 1.496, n = 469).

Table 2

Age breakdown of Aboriginal and Non-Aboriginal Youth

	Aboriginal		Non-Aboriginal	
	n	%	n	%
12 years old	3	1.8	9	1.9
13 years old	17	10.1	42	9.0
14 years old	25	14.9	85	18.1
15 years old	39	23.2	98	20.9
16 years old	37	22.0	109	23.2
17 years old	32	19.0	96	20.5
18 years old	13	7.7	25	5.3
19 years old	2	1.2	5	1.1

Sex

Approximately, three of every four youth seen at Vancouver Island's YFPS clinics were male. Male predominance of this sex ratio is concurrent with criminological literature and Statistics Canada (approximately one of every five cases in youth court have been girls (Retisma-Street (2004)). As can be seen from Table 3, the sex ratio share nearly identical patterns between Aboriginal and non-Aboriginal youth: approximately 70% of the youth are male and 30% are female. There was no missing data for sex in the YFPS data set (Aboriginal youth, n = 168; non-Aboriginal youth, n = 470).

Table 3.

Sex of Aboriginal and non-Aboriginal Youth

	Aboriginal		Non-Aboriginal	
	n	%	n	%
Males	122	72	335	71
Females	46	27	135	28
Total	168	100	470	100

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 470).

Offence Types

For each offence a youth referred to YFPS is charged with, an index offence code is entered into the YFPS data base. The index offence codes in the YFPS data base are not fully based upon the Canadian Criminal Codes (CCC), or even the Youth Criminal Justice Act (YCJA). They include codes from the older Young Offenders Act (YOA), the Motor Vehicle Acts (MVA), and the Controlled Drugs and Substance Act (CDSA), as well.

Also, many youth were referred to YFPS due to multiple charges. For example, some youth were charged with more than twenty offences of differing types at one time. Creation of a system of nomenclature that accurately represented the offence types that youth at YFPS are charged with was necessary before an analysis could be done. Categorization of the offences YFPS youth were charged with occurred over a three step process:

First, the referral offences that were coded in the YFPS database were sourced to the appropriate act (ie. Youth Criminal Justice Act, Motor Vehicle Act, Controlled Substance Act, Canadian Criminal Codes or the older Young Offender Act) and a “codeguide” was created. Second, operational definitions of the offence types were created and agreed upon through consultations between the YFPS manager, the YFPS research assistant, a YFPS psychologist/researcher and myself. Third, youth were categorized into one of three offence typologies based upon their charges: a violent offender, a sexual offender or a property/administrative offender. A youth was categorized as a Sexual Offender if they had been charged with any sexual offences. A youth was categorized as a Violent Offender if they had any violent offences (but no sexual offences). Youth charged with property/administrative offences (but neither sexual or violent offences) were categorized as Property Offenders.

The operational definitions of the offence types were:

a) Property/Administration offences were defined as: Offences that result in secondary harm, or the possibility of secondary harm to a person(s). “Secondary harm” does not produce immediate (primary) physical or sexual harm at the time of the event,

but may produce harm sometime after the event. For example, these offences included breaches and failure to comply, theft under \$5000 and, break and enter.

b) Violent offences were defined as: Offences that result in immediate physical harm or the direct possibility of physical harm to a person(s). Offences committed with disregard for human life or immediate safety of others – with or without intent. An offence was considered violent by clinicians at YFPS if the behaviour suggested the possibility that harm could be done to a person, of there could be a perceived threat by a bystander, or if there was the appearance of loss of behavioural/emotional control that could be perceived as threatening. A victim or a potential victim would be necessary for an offence to be considered violent. For example, these offences included uttering threats, possession of a weapon and assault.

c) Sexual offences were defined as: Offences that result in harm, or the possibility of harm, to a person(s) that is sexual in nature. Involving the use of a victim to fulfill, or attempt to fulfill, a sexual gratification of the offender. If the offence was sexually violent, the offence would be considered a sexual offence. Sexual offences included sexual interference, indecent exposure, indecent act, sexual assault and invitation to sexual touching.

Displayed in Table 4 are the frequencies of the Offence Types variables. Both Aboriginal and non-Aboriginal youth displayed similar patterns in offence typologies: most youth at YFPS had been charged with a Violent Offence (60%) or a Property Offence (29%). A minority (10%) of the Vancouver Island YFPS population had been charged with a Sexual Offence. There was no missing data for this variable.

Table 4

Frequencies of Offence Types of Aboriginal and non-Aboriginal youth.

Offence Type	Aboriginal		Non-Aboriginal	
	n	%	n	%
Sexual Offender	17	10.1	47	10.0
Violent Offender	104	61.9	283	60.2
Property Offender	47	27.9	140	29.8

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 470).

Early Age Onset of Delinquent Behaviours

Age categories of younger and older youth for this study were based on criminological research, specifically that of Terrie Moffitt's theories (Moffitt, 1993) of the age trajectories of antisocial behaviour of young offenders. Her theory quantitatively differentiates two different types of delinquency as a function of time (age): Late-onset antisocial behaviour (which unfolds into a trajectory of adolescent-limited delinquency) and early-onset antisocial behaviour (which unfolds into a trajectory of life-course persistent delinquency). Supported by this theory, youth ages 12 – 15 years old were been categorized as early-onset youth (Younger Youth) and youth ages 16-20 years are late-onset youth (Older Youth). At YFPS, there was an equal number of both older (n = 319) and younger (n = 318) youth. As well, Aboriginal and non-Aboriginal youth, shared equal patterns of younger/older distributions, both groups consisted of 50% younger youth and 50% older youth (Table 5). There was one non-Aboriginal file missing date of YFPS referral data, resulting in an overall n = 637 (Aboriginal, n = 168; non-Aboriginal, n = 469).

Table 5.

Age Classifications of Aboriginal and non-Aboriginal youth

Age Set	Aboriginal		Non-Aboriginal	
	n	%	n	%
Younger (12-15)	84	50	234	50
Older (16-19)	84	50	235	50

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 469).

Incarceration.

The archival data's original differentiations of a youth residing at Victoria's Youth Correction Center at the time of the referral, or ever being incarcerated in the past, were collapsed into one level: if the youth had ever been incarcerated. Values for this variable included: never being incarcerated (n = 354; 55.5%), having been incarcerated (n = 261; 40.9%) and unknown (n = 23; 3.6%). As can be seen in Table 6, Aboriginal youth were incarcerated 10% more often than non-Aboriginal youth (48.8%, n = 82 and 38.1%, n = 179, comparatively). As well, there was 5.6% more missing data (unknown) for Aboriginal youth than for non-Aboriginal youth (7.7%, n = 13 and 2.1%, n = 10, comparatively).

Substance Use.

Substances examined included: Alcohol, Cannabis (marijuana, pot, hashish), Stimulants (cocaine, crack, speed, amphetamines, crystal methamphetamine) and Hallucinogens (MDMA (ecstasy, X), LSD, psilocybin (mushrooms), mescaline, peyote) (n = 638 for each substances type). Data available for youth tobacco use was removed from the analysis as it was a relatively new variable added to the YFPS data bank, and only very limited data were available. Also removed from the analysis due to a

Table 6.

Incarceration of Aboriginal and non-Aboriginal youth.

	Aboriginal		Non-Aboriginal	
	n	%	n	%
Incarceration				
No (Never)	73	43.5	281	59.8
Yes (Past and/or Present)	82	48.8	179	38.1
Unknown	13	7.7	10	2.1

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 469).

substantial amount of missing data (n = 120, 19%) and no use (n = 409, 64.1%) was the YFPS variable “other drugs” which included opiates, barbiturates, benzodiazepines, inhalants, nitrous oxide, solvents, and miscellaneous drugs.

Each substance variable had three levels: the youth had used the substance, the youth had never used the substance, and unknown. This variable expansion allowed a closer examination drug use by substance type and removed possible confounds of polysubstance use. For each substance examined, there were 168 Aboriginal and 470 non-Aboriginal youth.

Alcohol & Cannabis. Table 7 shows similar trends in reported alcohol and cannabis use among YFPS youth. Most youth at YFPS reported using alcohol (88.7%, n = 566) and cannabis (88.4%, n = 564). When compared to non-Aboriginal youth, 4-5% more Aboriginal youth reported using both alcohol (92.3%, n = 155 and 87.4%, n = 411) and cannabis (91.6%, n = 154 and 87.2%, n = 410). There were 21 cases (3.3%) with unknown values for alcohol use, and 17 cases (2.7%) for cannabis use, with similar amounts of missing data shared between Aboriginal and non-Aboriginal youth.

Stimulants. Overall, a large percentage of youth reported stimulant use (n = 283, 44.4%). non-Aboriginal youth reported using stimulants 8.5% more than Aboriginal youth (46.6%, n = 219 and 38.1%, n = 64, comparatively). The unknown values for stimulant use constituted 14.7% (n = 94) of the stimulant use data, with Aboriginal youth missing 4% more data than non-Aboriginal youth (17.9%, n = 30 and 13.6%, n = 64).

Hallucinogens. The percentages displayed in Table 7 show opposing patterns of use between the two ethnic groups. When examined on their own, somewhat more Aboriginal youth reported never using hallucinogens (40.5%, n = 68), than having used them (39.3%, n = 66). When non-Aboriginal youth were examined on their own, most reported having used hallucinogens (50%, n = 235). Yet, when the two groups were directly compared, substantially more (11%) Aboriginal youth reported using hallucinogen drugs than non-Aboriginal youth. Perhaps this dichotomy is due to the amount of unknown data for this variable (n = 101, 15.8%), with 5.9% more missing data for Aboriginal youth (n = 34, 20.2%) than non-Aboriginal youth (n = 67, 14.3%).

Academic Functioning

Three subcategories were intended to represent youths' academic functioning at the time of their YFPS assessment: School Status (enrolled, left school, expelled, completed or unknown), Alternative School Enrolment, and Learning Disability. Missing values were created into an "unknown" value for missing data analysis. For each variable, the sample size was 638: Aboriginal n = 168; non-Aboriginal n = 470.

School Status. Five levels formed this variable: attending school, left school, expelled, completed school or unknown. At YFPS, variables for both suspensions (temporary leave from school with the intention of the youth returning) and expelled

Table 7

Substance Use of Aboriginal and non-Aboriginal Youth

Substance Used	Aboriginal		Non-Aboriginal	
	n	%	n	%
Alcohol				
No, Never Used	7	4.2	44	9.4
Yes, Used	155	92.3	411	87.4
Unknown	6	3.6	15	3.2
Cannabis				
No, Never Used	10	6.0	47	10.0
Yes, Used	154	91.6	410	87.2
Unknown	4	2.4	13	2.8
Stimulant				
No, Never Used	74	44.0	187	39.8
Yes, Used	64	38.1	219	46.6
Unknown	30	17.9	64	13.6
Hallucinogens				
No, Never Used	68	40.5	168	35.7
Yes, Used	66	39.3	235	50.0
Unknown	34	20.2	67	14.3

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 470)

(indefinite or permanent leave) were available from the databank; however, often these terms were considered interchangeable in the files documented by some YFPS clinicians.

To control for this, the two levels (suspensions and expelled) were collapsed into one:

Expelled was defined as a leave from a school, or a school district, (temporary, undetermined or permanent) on the decision of school authorities.

As can be determined from Table 8, most youth at YFPS (n = 309, 48.4%) were attending school at the time of their assessment; with 10.8% more non-Aboriginal youth attending than Aboriginal youth. A large number of youth had either left school (n = 172, 27%), with similar percentages for both Aboriginal and non-Aboriginal youth (28.6%, n = 48 and 26.4%, n = 124). A notable number of youth had been expelled from school (n = 74, 11.6%), with 4.5% more Aboriginal youth (n = 25, 14.9%) being expelled than non-Aboriginal youth (n = 49, 10.4%). With a minority of the YFPS population being 17 years and older (see Figure 1), it is not surprising that a minority of youth had completed school (n = 6, 0.9%). Overall, 12% (n = 77) of the data for the school status variable was unknown, with 2% more data unknown for Aboriginal youth (n = 23, 13.7%) than non-Aboriginal youth (n = 54, 11.5%).

Alternative School Enrolment. Youth's enrolment in alternative schools from the Greater Victoria School District 61 (Access, SJ Willis, Girl's Alternative Program) and Cowichan School District 79 (Open Learning Centres, Cowichan Valley Alternative and Middle Alternative Program) were recorded in the YFPS data bank. Enrolment into alternative schools was recorded at the time of the youth's first assessment. No transformation of the original YFPS variable was needed. The majority of youth at YFPS (n = 387, 60%) were enrolled in an alternative school. Slightly more Aboriginal youth (3% more) were enrolled in an alternative school than non-Aboriginal youth (n = 106, 63.1% and n = 281, 59.8%; Table 9). There were 56 cases (9%) of unknown or missing information for the alternative school variable.

Table 8

School Status of Aboriginal and non-Aboriginal youth.

School Status	Aboriginal		Non-Aboriginal	
	n	%	n	%
Left	48	28.6	124	26.4
Expelled	25	14.9	49	10.4
Attending	68	40.5	241	51.3
Completed	4	2.4	2	0.4
Unknown	23	13.7	54	11.5

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 470)

Table 9

Alternative School Enrolment of Aboriginal and non-Aboriginal Youth

Alternative School Enrolment	Aboriginal		Non-Aboriginal	
	n	%	n	%
No	46	27.4	149	31.7
Yes	106	63.1	281	59.8
Unknown	16	9.5	40	8.5

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 470)

Learning Disability. Learning Disability was coded by psychologists based upon the initial assessment at YFPS or if there was a clear documentation of a learning disability based upon on a prior diagnosis. No transformation of this variable from the data set provided by YFPS was necessary; however, recoding of missing values into an “unknown” value was created for missing data analyses. As can be determined from Table 10, 33% (n = 209) of the youth at YFPS had been diagnosed with a learning

disability (alternatively, 50% (n = 323) of the youth referred to YFPS had never been diagnosed with a learning disability). When compared directly, 11% more Aboriginal youth (n = 66; 39.3%) were diagnosed with a learning disability than non-Aboriginal youth (n = 135, 28.7%). For the learning disability variable, 17% (n = 106) of the data were unknown and was missing equally between the two groups.

Table 10

Learning Disability Diagnosis for Aboriginal and non-Aboriginal Youth

	Aboriginal		Non-Aboriginal	
	n	%	n	%
Learning Disability				
No	74	44.0	257	54.7
Yes	66	39.3	135	28.7
Unknown	28	16.7	78	16.6

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 470)

History with Peers (Delinquent Peers and Prosocial Involvement).

Delinquent Peers. Association with delinquent peers was coded by YFPS clinicians as either frequent association or occasional association. Frequent association was documented if a youth's primary peer group was criminal or antisocial, if a youth frequently associated with other delinquents or criminals including youth who regularly engaged in antisocial or were involved in gang activities or were gang members. Occasional association was documented if a youth's primary peer group was not criminal or antisocial, but the youth occasionally associated with other delinquents or criminals, or regularly associated with other youth who have engaged in relatively infrequent or minor antisocial acts. Isolated minor delinquent acts by one or two friends would not be coded

as an association with delinquent peers, but frequent or antisocial behaviour, even if it was relatively minor, would.

Most youth at YFPS had occasional associations with delinquent peers ($n = 257$, 40%), followed by frequent associations ($n = 206$, 32%); together, this means that 72% of the YFPS population had some form of association with delinquent peers. Aboriginal youth reported 5% more occasional associations, and 3% more frequent associations with delinquent peers than non-Aboriginal youth (see Table 11). Unknown information constituted 10.8% ($n = 69$) of the data for this variable, with 2% more data missing for Aboriginal youth than non-Aboriginal youth.

Table 11

Association with Delinquent Peers of Aboriginal and non-Aboriginal youth

Association with Delinquent Peers	Aboriginal		Non-Aboriginal	
	n	%	n	%
No Associations	16	9.5	90	19.1
Occasional Associations	74	44.0	183	38.9
Frequent Associations	58	34.5	148	31.5
Unknown	20	12.0	49	10.5

Note. Percentages are within ethnic group (Aboriginal, $n = 168$; non-Aboriginal, $n = 470$)

Prosocial Involvement. Youth at YFPS were documented to be prosocially involved if they participated in prosocial activities and associated with prosocial peers. Prosocial activities were defined by YFPS clinicians and researchers as leisurely pursuits outside of academics that are socially acceptable (eg. organized sports, clubs, groups, etc.). Prosocial peers were defined as youths who were not involved in delinquent or criminal activities. The majority of youth at YFPS (61%, $n = 386$) did not take part in

prosocial activities, with 6% more Aboriginal youth (n = 109, 64.9%) not being prosocial involved than non-Aboriginal youth (n = 277, 58.9%) (Table 12). Unknown information constituted 9% (n = 59) of the data for the prosocial variable, and was shared equally among the two groups.

Table 12

Prosocial Involvement of Aboriginal and non-Aboriginal youth

	Aboriginal		Non-Aboriginal	
	n	%	n	%
Prosocial Involvement				
No or Limited	109	64.9	277	58.9
Yes	46	27.4	147	31.3
Unknown	13	7.7	46	9.8

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 470)

Residential Stability (Residence in Government Care Facilities)

If a youth referred to YFPS had ever resided in group-based programs, a residential treatment programs or in family care homes, they were coded by clinicians as having lived in Government Care Facilities. Group-based programs included living situations in which the facilities provide an environmental intervention but were not residential treatment providers; for example, Oasis, Headstart and Kiwanis Emergency Youth Shelter (Victoria Youth Empowerment Society). Residential treatment programs included mental health facilities such as Maples, Queen Alexandra and Drug and Alcohol over-night treatment programs. Models of family care homes included foster care homes, Turnabout, and Connections. Transformation and variable collapsing of the original data were necessary before analysis. Originally, YFPS differentiated between group-based

programs, treatment programs and family care home. As well, each of these separate variables had three levels: no residence, residence at the time of assessment, and residence in the past. In order to produce parsimonious results from this variable, the three original variables were collapsed into one, representing government care facilities as a whole, and levels were collapsed to differentiate between those youth who had never experienced these living situations, and youth who had. Values for this variable were: Never residing in a government care facility (44%, n = 279), having resided in a government care facility (55%, n = 352) and Unknown (1%, n = 7) (Table 13). Although a small majority of youth referred to YFPS were placed in government care facilities, Aboriginal youth had resided in government care facilities 12% more than non-Aboriginal youth (n = 103, 63.9% and n = 249, 53%).

Table 13

Placement in Government Care Facilities for Aboriginal and non-Aboriginal youth

Placement in Government Care	Aboriginal		Non-Aboriginal	
	n	%	n	%
No, Never	62	36.9	217	46.2
Yes	103	64.9	249	53.0
Unknown	3	1.8	4	1.0

Note. Percentages are within ethnic group (Aboriginal, n = 168; non-Aboriginal, n = 470)

Family Structure

Originally, in YFPS data bank, family living situations youth had experienced documented by YFPS clinicians included four variables: 1) having ever lived with both biological or adoptive parents, 2) ever lived with only one parent, 3) ever lived with step-parent (alongside a biological parent, or alone with step-parent), and 4) having ever lived

in a non-parent household (with either grandparents, aunts, uncles, siblings or friends). Each of these four variables had three levels each: Yes currently, Yes in the past, and No. Transformation of these four variables into one variable (ie, family structure type) with four levels (ie. both parents, one parent, step-parent, non-parent) was complicated by the random missing data for each of the original four family structure variables. To simplify this construct, the levels for these variables were collapsed. The original two levels of current and past family structures (yes current and yes in the past) were collapsed into one level (yes, has experienced) for each of the four family situation variables. Recoding of missing values into an “unknown” value was created for missing data analyses purposes. This resulted in three levels for each variable: the youth had experienced the living situation at some time (yes), the youth had never experienced the living situation (no), and unknown.

Most youth at YFPS had experienced living with both parents (81%, n = 517) and living with a single parent (80%, n = 508). Half of the youth at YFPS experienced living with a step-parent (50%, n = 320) and living in a non-parent home (52%, n = 330) (Table 14). Discussed here are the direct comparisons of percentages between Aboriginal and non-Aboriginal youth’s experienced family structures.

Both Parents Household. While the majority of youth at YFPS had experienced living with both parents, 11% more non-Aboriginal youth (84%, n = 395) had experienced this family structure than Aboriginal youth (72.6%, n = 122), and 20.2% (n = 34) Aboriginal youth (6% more than non-Aboriginal youth) had never experienced living with both parents (Table 14). Unknown information constituted 6% (n = 23) of the data,

with 5% more data missing for Aboriginal youth (7.2%, n = 12) than non-Aboriginal youth (2%, n = 11).

Table 14

Family Structure of Aboriginal and Non-Aboriginal Youth

Family Structure	Aboriginal		Non-Aboriginal	
	n	%	n	%
Lived with Both Parents				
No, Never	34	20.2	64	13.6
Yes, Currently or in the Past	122	72.6	395	84.0
Unknown	12	7.2	11	2.4
Lived with Single Parent				
No, Never	13	7.7	100	21.3
Yes, Currently or in the Past	148	88.1	360	76.6
Unknown	7	4.2	10	2.1
Lived with Step-Parent				
No, Never	57	33.9	217	46.2
Yes, Currently or in the Past	87	51.8	233	49.8
Unknown	24	14.3	20	4.0
Lived in a Non-Parent Household				
No, Never	41	24.4	223	47.4
Yes, Currently or in the Past	105	62.5	225	47.9
Unknown	22	13.1	22	4.7

Note: Percentages are within groups: Aboriginal (n = 168) and non-Aboriginal (n = 470).

Single Parent Household. Although most youth at YFPS had experienced living with a single parent at one time (80%, n = 508), a large portion of Aboriginal youth (88.1%, n = 148) reported having this experience: 12% more than non-Aboriginal youth (76.6%, n = 360) (Table 14). For the single parent variable, 3% (n = 17) of the data were unknown, with 2% more data missing for Aboriginal youth (4.2%, n = 7) than non-Aboriginal youth (2.1%, n = 10).

Step-Parent Household. As can be determined by Table 14, half of the YFPS population had experienced living with a step-parent. Aboriginal youth were reported to have lived with a step parent 2% more than non-Aboriginal youth (51.8%, n = 87 and 49.8%, n = 233, comparatively). Conversely, a notable number of non-Aboriginal youth (46.2 %, n = 217) reported not ever living with step parents: 12% more than Aboriginal youth (33.9%, n = 57). Overall, 7% (n = 44) of unknown data constituted this variable; 14% (n = 24) of the data for Aboriginal youth was unknown: 10% more than that of non-Aboriginal youth (4%, n = 20).

Non-Parent Household. Similar to the step-parent household variable, half of the YFPS population had this experience (52%, n =330; Table 14), yet striking differences between the two groups were apparent. A large portion of Aboriginal youth reported having lived in a non-parent household (62.5%, n = 105), 15% more than non-Aboriginal youth (47.9%, n = 225). Substantial differences emerge between the two groups when compared: 23% more non-Aboriginal youth (47.4%, n = 223) than Aboriginal youth (24.4%, n = 41) had never lived in a non-parent household. Unknown information constituted 7% of the data for this variable, with 8% more data unknown for Aboriginal youth (13.1%, n = 22) than non-Aboriginal youth (5%, n = 22).

Victimization

The victimization variable grouping included sexual abuse, emotional abuse, neglect and physical abuse. The database at YFPS also included sexual exploitation as an abuse type, but due to the large amount of missing data (95%, n = 606), this variable was omitted from the analysis. Operationalization and coding of the child abuse types were delineated by YFPS as follows: Sexual Abuse - when a child is used (or likely to be used) for the sexual gratification of another person. Emotional Abuse - may range from parental ignoring to habitually humiliating the child, or withholding life-sustaining nurturing; Generally, involving acts or omissions by those in contact with the child that are likely to have serious, negative emotional impacts. Physical Abuse was defined as a deliberate physical assault or action by a person that resulted in (or is likely to result in) physical harm to a child; often in an unreasonable force to discipline a child or prevent a child from harming themselves or others. Neglect was defined as a failure to provide for a child's basic needs and often involved an act of omission by the parent/guardian, resulting in (or likely to result in) harm to the child.

Overall, the highest level of recorded abuse from youth at YFPS was physical abuse (39.7%, n = 253), with both emotional abuse (36.5%, n = 233) and neglect (31.8%, n = 203) following closely behind (Table 15). Sexual abuse was reported by 17.6% (n = 112) of YFPS youth. Alternatively, this also means that a large percent (71% to 47.5%) of youth referred to YFPS did not report having experienced these forms of abuse. Aboriginal youth experienced each form of victimization more than non-Aboriginal youth: 29% more reported neglect, 13% more reported physical abuse, 10% more reported emotional abuse and 7% more reported sexual abuse. As well, the percentages of

unknown values were higher for Aboriginal youth than non-Aboriginal youth. Sexual abuse had the lowest rate of unknown values (11.7%, n = 74), but Aboriginal youth had 10% more missing data than non-Aboriginal youth (19%, n = 32 and 8.9%, n = 42). Emotional Abuse had 15% (n = 96) unknown values, with 9% more missing data for Aboriginal youth (22%, n = 36) than non-Aboriginal youth (12.6%, n = 59). Physical Abuse had unknown values for 82 cases (12.9%), with Aboriginal youth missing 5% more data than non-Aboriginal youth (16.7%, n = 28 and 11.5%, n = 54, comparatively). The neglect variable had 89 unknown cases (13.9%), with 2.9% more missing information for Aboriginal youth than non-Aboriginal youth.

Separation from Family and Community.

In the YFPS data bank, three variables of separation of youth from family and community were delineated: Temporary Separation lasting one to two months long, Prolonged Separation from family for longer than two months and Permanent Separation. Each variable had two levels: Never experienced and Yes, had experienced; a third level: Unknown was created for missing data analysis. Separation from the family could be due to a number of circumstances; for example, removal from the home due to abusive relationships or neglect, parental death or illness, hospitalization of the youth for behavioural reasons, or incarceration of either the parent or the child. Hospitalization of the youth for medical reasons was not coded as familial separation for the YFPS database.

Overall, most youth (50%, n = 32) at YFPS had experienced temporary separation (1 to 2 months) (Table 16). Prolonged separation (over 2 months) was also experienced

Table 15

Victimization Experienced by Aboriginal and non-Aboriginal Youth at YFPS

	Aboriginal		Non-Aboriginal	
	n	%	n	%
Sexually Abused				
No, Never	98	58.3	354	75.3
Yes	38	22.6	74	15.7
Unknown	32	19.0	42	8.9
Emotionally Abused				
No, Never	57	34.0	252	53.6
Yes	74	44.0	159	33.8
Unknown	37	22.0	59	12.6
Physically Abused				
No, Never	57	33.9	246	52.3
Yes	83	49.4	170	36.2
Unknown	28	16.7	54	11.5
Neglect Experienced				
No, Never	52	31.0	294	62.6
Yes	89	53.0	114	24.3
Unknown	27	16.0	62	13.1

by a large portion of youth (44%, n = 282), and 20% (n = 125) of youth at YFPS experienced permanent separation from family and community. Aboriginal youth consistently had experienced more family and community separation than non-Aboriginal youth. As well, Aboriginal youth were missing a substantial amount more data for each of the three separation variables than non-Aboriginal youth.

Temporary Separation (1 to 2 months). While 50% (n = 320) of the youth at YFPS had experienced temporary separation, 10% more Aboriginal youth (57.7%, n = 97) had this experience than non-Aboriginal youth (47.4%, n = 223). Conversely, 22% more non-Aboriginal youth (40.2%, n = 189) had never experienced temporary separation than Aboriginal youth (17.9%, n = 30). Unknown data formed 16% (n = 99) of this variable; Aboriginal youth were missing 12% more data than non-Aboriginal youth (n = 41, 24.4% and n = 58, 12.4%).

Prolonged Separation (over 2 months). Prolonged separation was experienced by 44% of the youth at YFPS (and conversely, 42% had not experience prolonged separation); however, 11% more Aboriginal youth (52.4%, n = 88) had experienced prolonged separation than non-Aboriginal youth (41.3%, n = 194). As well, 18% more non-Aboriginal (46.4%, n = 218) than Aboriginal youth (28.6%, n = 48) reported not ever experiencing prolonged separation. Unknown information constituted 14% (n = 90) of the data for this variable, with 7% more data missing for Aboriginal youth (19%, n = 32) than non-Aboriginal youth (12.3%, n = 58).

Table 16

Separation from Family and Community of Aboriginal and non-Aboriginal youth

	Aboriginal		Non-Aboriginal	
	n	%	n	%
Temporary Separation (1 to 2 months)				
No, Never	30	17.9	189	40.2
Yes	97	57.7	223	47.4
Unknown	41	24.4	58	12.4
Prolonged Separation (over 2 months)				
No, Never	48	28.6	218	46.4
Yes	88	52.4	194	41.3
Unknown	32	19.0	58	12.3
Permanent Separation				
No, Never	85	50.6	347	73.8
Yes	55	32.7	70	14.9
Unknown	28	16.7	53	11.3

Note: Percentages are within groups: Aboriginal (n = 168) and non-Aboriginal (n = 470).

Permanent Separation. Overall, 20% of the youth at YFPS had experienced permanent separation from family and community, with 18% more Aboriginal youth (32.7%, n = 55) having this experience than non-Aboriginal youth (14.9%, n = 70). Unknown data made up 13% (n = 81), with 5% more data missing for Aboriginal youth (16.7%, n = 28) than non-Aboriginal youth (11.3%, n = 53).

CHAPTER THREE

Logistic Regression Results

Examination of the psychosocial characteristics that differentiate Aboriginal and non-Aboriginal youth was made using data from the Vancouver Island's Youth Forensic Psychiatric Services (YFPS) database, from April 2003 to April 2008. Specifically, the research question asked was: which psychosocial characteristics are predictive of being an Aboriginal youth referred to YFPS? The null hypothesis was: No psychosocial characteristics examined will be predictive of being an Aboriginal youth referred to YFPS. Direct logistic regression analysis was performed on two ethnic grouping outcomes: Aboriginal youth and non-Aboriginal youth and twenty-four predictors (or psychosocial characteristics): Offence Type, Early Age -Onset of Delinquency, Drug Use (Alcohol, Stimulant, Cannabis and Hallucinogen), School Status, Alternative School Enrolment Learning Disability, Family Structure (Living with Both Parents Single Parent Step Parent and non-Parent), Government Care Residence, Separation (Temporary, Prolonged and Permanent), Victimization (Neglect, Emotional Abuse, Physical Abuse and Sexual Abuse), Prosocial Involvement, Peer Delinquency and Incarceration.

Logistic regression was chosen for this study, rather than multiple regression, logit analysis or discriminant analysis, as it was better suited to the data available. Logistic regression allows the prediction of a discrete outcome such as group membership (ie. Aboriginal and non-Aboriginal youth) from a set of variables that may be continuous, discrete, dichotomous or a mix. Logistic regression is more flexible than logit analysis, discriminant analysis and multiple regression as logistic regression has no assumptions about the distributions of the predictor variables. In logistic regression the

predictors do not need to be normally distributed, linearity related or of equal variance. Unlike logit analysis, which analyses only a maximum of ten variables, logistic regression analysis has no real limit to the number of variables put into the equation (rather than regular multivariate concerns). (Tabachnick and Fidell, 2007; Fox, 1991; George & Mallery, 2006).

There are a great many ways logistic regression analysis may be interpreted and presented; variation across disciplines and authors and a lack of nomenclature of terms, concepts and practices has created some confusion amongst readers and researchers alike. Here, the logistic regression results will be presented following the guidelines Peng, So, Stage and St. John (2002) suggested in their review of 52 educational research articles reporting logistic regression. Discussion of the rationale behind each of the evaluative steps taken will provide transparency and better means for future falsification and revalidation with other samples and other times. Outlines of the logistic regression equation, direct logistic regression modeling, variables, overall model statistics, tests of the model (goodness-of-fit statistics), tests of individual parameters (psychosocial characteristics), and summary of relevant predictors will be presented.

Equations. Logistic regression is a non-linear model, and as such, the equations used to describe the outcomes are slightly more complex than those for multiple regression (Tabachnick and Fidell, 2007; Peng et al., 2002), so they will be discussed briefly here. Logistic regression is an extension of a typical linear regression equation.

A typical linear regression equation appears as such:

$$Y^{\wedge} = B_0 + B_1(X_1) + B_2(X_2) + \dots + B_{12}(X_{12}). \quad (1)$$

Where Y^{\wedge} = estimated outcome variable

B_0 = constant of the equation (Y-intercept)

$B_1 \dots B_p$ = estimated parameters corresponding to predictor values

$X_1 \dots X_p$ = predictor values

Logistic regression is a variation of this typical equation For an estimated outcome variable that is dichotomous. The equation appears as such:

$$Y^{\wedge} = e^{B_0 + B_1(X_1) + B_2(X_2) + \dots + B_p(X_p)} / 1 + e^{B_0 + B_1(X_1) + B_2(X_2) + \dots + B_p(X_p)} \quad (2)$$

Where Y^{\wedge} = the estimated outcome, is based on the probabilities of being in one of the dichotomous categories

Therefore,

$$\ln(Y^{\wedge} / 1 - Y^{\wedge}) = B_0 + \sum B_j X_{ij} = \text{logit} \quad (3)$$

The linear regression equation creates a logit (or log of the odds): That is, the linear regression equation is the natural log (\log_e) of the probability of being in one group divided by the probability of being in another group. (Peng et al., 2002; Tabachinck and Fidell, 2007). The null hypothesis states that all B s equal zero. A refecton of this null hypothesis implies that at least one B does not equal zero.

Dependent (Outcome) and Independent (Predictor) Variables. In logistic regression, the dependent variable (also known as the outcome variable), has two categories. For this study, the dependent variable was the ethnicity of youth referred to YFPS, split into two categories: Aboriginal and non-Aboriginal young offenders. In

SPSS, logistic regression predicts the higher of the two categories of the dependent variable (Aboriginal youth were coded as 1), using the lower as the reference category (non-Aboriginal youth were coded as 0) (George & Mallery, 2006). The twenty-four independent variables (predictor variables), were all nominal or ordinal categorical and were entered into the equation as categorical variables..

Direct Logistic Regression. In direct logistic regression (as opposed to sequential or stepwise logistic regression), all predictors are entered into the equation simultaneously. The variables were entered into the logistic regression equation using the SPSS “Enter” method; the default settings were maintained with the goal to create a parsimonious and meaningful model output. In all, only two models were necessary to create the final model: one model holding all the twenty-four psychosocial characteristics (predictor variables) and one final model, holding only significant predictors (those with Wald statistics significant at $p > .20$; Hosmer and Lemeshow (2000), Tabachnick and Fidell (2007)).

Overall Model Statistics

Case Processing Summary / Sample Size. A number of problems may occur when there are too few cases to the number of predictor variables. In logistic regression, extremely large parameter estimates, standard errors and failure of convergence when combination of discrete variables may result in too many cells with too few cases.

Tabachnick and Fidell (2007), Peng, *et al.* (2002) and Green (1991) discuss that although there are no set guidelines for determining a good sample size for logistic regression, the “rule of thumb” for multiple correlations analysis based on R^2 likely provides an acceptable sample size range. They suggest using the equation:

$N \geq 50 + 8M$ (where M = the number of IVs). For the final model (with 16 relevant independent variables), the equation reveals that an $N \geq 178$; therefore a sample size of 638 is considered adequate.

Accurate Classification (predictive power of the model)). The final model (holding all sixteen significant psychosocial characteristics) had an overall prediction success rate of 79.3%. Aboriginal youth were accurately classified by the final model 42.9% of the time; non-Aboriginal young offenders were accurately predicted 92.3% of the time. The model falsely predicted Aboriginal youth 36 times (5.6%) and falsely predicted not being Aboriginal 96 times (15%). The differences between the accurate classifications of Aboriginal youth and non-Aboriginal youth may be a result of data collection issues, such as substantial amount of missing data for Aboriginal youth on specific variables.

Significance Tests of the Model

Comparison of the Constant-Only Model and the Full Model: The Likelihood Ratio Test. The likelihood ratio test (or the omnibus test of model coefficients) indicates a model's appropriateness or fit to the data. A "likelihood" is a probability, specifically the probability that the observed values of the dependent variable (ethnicity) may be predicted from the observed values of the independent variables (psychosocial characteristics). A well fitting model is significant at the .05 level or better and means that the researcher's model is significantly predictive (Fox, 1991; Tabachnick and Fidell, 2007). The model for this study was significant ($\chi^2(35) = 167.486, p = .000$), leading to the rejection of the null hypothesis that all predictor effects are zero and that at least one of the psychosocial characteristics entered into the final model were significantly related to the dependent variables.

Effect Size and Approximations to R^2 . For logistic regression there is no widely-accepted means for determining explained variance, or an analog to linear regression's R^2 . This is because a R^2 measure seeks to make a statement about the "percent of variance explained", but the variance of a dichotomous dependent variable depends on the frequency distribution of that variable (Peng, et al., 2002). For a dichotomous dependent variable, variance is at a maximum for a 50-50 split and the more lopsided the split, the lower the variance. This means that R^2 measures for logistic regression with differing marginal distributions of their respective dependent variables and cannot be compared directly, such as we have with the current study. The *Nagelkerke R^2* statistic measures are only approximations to linear regression's R^2 , and cannot be interpreted as actual percent of variance explained; rather, they are attempts to measure strength of association. *Nagelkerke's R^2* varies from 0 to 1, and is the most reported of the pseudo R^2 estimates. The *Nagelkerke's R^2* statistic for the final model suggest a satisfactory effect size (*Nagelkerke* = .337). (Tabachnick and Fidell, 2007; Fox, 1991; George & Mallery, 2006).

Comparison of the Primary Model and the Final Model: Goodness of Fit (-2LL).

The Goodness of Fit, or the -2 log likelihood statistic (-2LL) is a measure of the improvement in a model's predictive ability that the explanatory variables make (ie. the goodness of fit) (George & Mallery, 2006). The -2LL statistic can be used to make comparisons between candidate models (the improvement in fit of model as predictors were added or removed from the model) (Fox, 1991; Tabachnick & Fidell, 2007). Simply, -2LL should decrease in magnitude between candidate models; the smaller the statistic, the better.

For this study, two models were created: one primary model with all predictors and one final model with only significant predictors. In the primary model (holding all psychosocial characteristics), $-2LL = 560.855$; $df = 50$, (*Nagelkerke* = .349); for the second and final model (holding relevant predictors), $-2LL = 568.133$; $df = 35$, (*Nagelkerke* = .337). Comparison of the $-2LL$ statistic for each model shows that the statistic became somewhat larger between the first and second model. Although the $-2LL$ statistic did not decrease between the two models, it did not increase dramatically. This is not surprising as nearly half of the variables from the first model were considered relevant enough (*Wald's p* > .20) to be entered into the second model. Together, the lack of dramatic change in the $-2LL$ between the two models, the effect size estimate statistics (*Nagelkerke R²*) and the likelihood ratio test statistics for the final two models, suggest that the final model predicts well (predicting Aboriginal youth based on the significant predictors retained).

Significance Tests of the Independent Variables (Relevant Psychosocial Characteristics)

The Wald Chi-Square. The Wald statistic is commonly used to test the significance of individual logistic regression coefficients for each independent variable. Wald chi-square tests the unique contribution of each predictor in the context of the other predictors; that is, holding constant the other predictors and disregarding any overlap between predictors. The Wald statistic is the squared ratio of the unstandardized logistic coefficient to its standard error. As suggested by Hosmer and Lemeshow (2000) and Tabachinck and Fidell (2007) (pg. 456), independent variables were considered relevant to the logistic regression model when *Wald p* > .20 (Table 17). Predictors with a Wald values that were *p* < .20 were considered irrelevant and removed from the model.

Table 17

Results of the Logistic Regression Model with the Final Predictor Variables

Predictor Variables	β	S.E.	Wald	p	ExpB: odds ratio
ALCOHOL USE					
Yes	-1.551	.814	3.633	.057	.212
HALLUCINOGEN USE					
Yes	.795	.543	2.145	.143	2.215
LEARNING DISABILITY					
Unknown	.687	.345	3.964	.046	1.987
SCHOOL STATUS					
Completed	-.644	.362	3.171	.075	.525
Unknown	2.012	1.108	3.299	.069	7.479
PEER DELINQUENCY					
Occasional Association	-1.129	.535	4.464	.035	.323
PROSOCIAL INVOLVEMENT					
Yes	1.127	.505	4.988	.026	3.087
Unknown	.868	.528	2.700	.100	2.382
INCARCERATED					
Yes	-1.033	.545	3.589	.058	.356

Note: Predictors were considered relevant to the logistic regression model if Wald $p < .20$ (Tabachnick and Fidell, 2007). Reference Levels are presented in Appendix D

Table 17 (Continuation)

Results of the Logistic Regression Model with the Final Predictor Variables

Predictor Variables	β	S.E.	Wald	p	ExpB: odds ratio
STEP-PARENT					
Yes	-1.161	.464	6.263	.012	.313
Unknown	-.988	.442	5.003	.025	.372
NON-PARENT					
Yes	-1.124	.479	5.511	.019	.325
TEMPORARY SEPARATION					
Yes	-.776	.403	3.709	.054	.460
PERMENANT SEPARATION					
Unknown	.819	.403	4.132	.042	2.268
SEXUAL ABUSE					
Yes	-.843	.382	4.865	.027	.430
Unknown	-.570	.400	2.028	.154	.566
NEGLECT					
Unknown	.860	.355	5.861	.015	2.364
CONSTANT	1.757	1.223	2.063	.151	5.795

Note: Predictors were considered relevant to the logistic regression model if Wald $p < .20$ (Tabachinck and Fidell, 2007). Reference Levels are presented in Appendix D

Predicted and Observed Odds. One of the most important pieces of information in a logistic regression interpretation is the value of $Exp(\beta)$, which can be interpreted as the change in odds resulting from a unit change in the predictor (independent) variable. The importance of the independent variables (psychosocial characteristics) in predicting

whether a youth at YFPS is Aboriginal or non-Aboriginal can be determined by the $Exp(\beta)$ statistic, which represents the observed odds. Another way to think of the $Exp(\beta)$ statistic, or odds ratio, is that it is the natural log base, e , to the exponent, β , (where β = the predictive odds); a change in one unit on the part of the predictor multiplies the odds by e^β . The $Exp(\beta)$ statistic represents the change in odds of being either an Aboriginal or a non-Aboriginal youth, when the value of a psychosocial characteristic changes by one unit. When $\beta = 0$, $Exp(\beta) = 1$, an odds ratio of 1 corresponds to an explanatory variable which does not affect the dependent variable. If $Exp(\beta) > 1$, the odds of being an Aboriginal youth are increased, if $Exp(\beta) < 1$, the odds have decreased. For example, the odds ratio of alcohol use was less than one ($Exp(\beta) = .212$, Table 17); therefore the odds that a young offender who reports alcohol use is an Aboriginal youth has increased (they are more likely to be an Aboriginal youth than a non-Aboriginal youth). The odds ratio of hallucinogen use was greater than one ($Exp(\beta) = 2.215$, Table 17); therefore the odds of young offender who reports hallucinogen use being an Aboriginal youth has decreased (they are less likely to be an Aboriginal youth, and more likely to be a non-Aboriginal youth).

In a sense, the $Exp(\beta)$ can be used to reveal the magnitude of the influence of each relevant predictor. The farther the odds ratio is from one, the more influential the predictor. The $Exp(\beta)$ statistic change in odds can be more intuitively interpreted by dividing one by the odds ratio; the predictive psychosocial characteristics for being an Aboriginal youth based upon the odds ratio are shown in Table 18. The influence of each level of the categorical variables is determined by comparison to the reference level. For this study, the coding of all of the reference categories (code 0) represented either “no” or

“without” the psychosocial characteristic in question, excepting school status, in which “left school” was the reference level.

Summary of the Logistic Regression Predictors of Being an Aboriginal Youth at YFPS

Substance Use. According to the $Exp(\beta)$ change in odds statistic (Table 18), one of the strongest significant indicators of being predicted as an Aboriginal youth in the YFPS population, was alcohol use. The odds ratio show that reporting alcohol use was almost five times more likely ($Exp(\beta) = 4.72$), than not, for Aboriginal youth compared to non-Aboriginal youth at YFPS ($\chi^2(1) = 3.63, p < .10$) For the significant variable, hallucinogen use, the predictive odds statistic was positive ($\beta = .795$) (and the corresponding change in odds ratio was below one, ($Exp(\beta) = 0.45$); the odds of a youth at YFPS being Aboriginal was almost five times less likely if they reported hallucinogen use, than not, when compared with non-Aboriginal youth ($\chi^2(1) = 2.15, p < .20$).

Family Living Situations. The logistic regression model revealed that the odds of living with a step-parent, than not, were three times greater for Aboriginal youth, than non-Aboriginal ($\chi^2(1) = 6.26, p < .10$). Similarly, having lived in a non-parent home (eg. with extended family or friends) also increased the odds of being an Aboriginal youth by three, $\chi^2(1) = 5.51, p < .10$. Having unknown values for the step-parent variable increased the odds of being an Aboriginal youth by almost three times, $\chi^2(1) = , p < .10$.

Occasional Association with Delinquent Peers. The change in odds ratio (Table 18), show that a predictive factor of being an Aboriginal youth, compared to being a non-Aboriginal youth was occasional association with delinquent peers ($\chi^2(1) = 4.46, p < .10$). Youth who were reported to engage with peers who were involved in infrequent, minor

criminal acts, or other criminals, as opposed to not engaging with delinquent peers at all, were three times more likely to be Aboriginal.

Prosocial Involvement. For prosocial involvement, the change in odds ratio was below one ($Exp(\beta) = 0.32$) showing that involvement in prosocial activities is three times less likely, than not being prosocial, for Aboriginal youth, compared to non-Aboriginal, $\chi^2(1) = 4.99, p < .10$. However, Aboriginal youth were also significantly less likely than non-Aboriginal youth to be missing data for the prosocial variable ($\chi^2(1) = 2.70, p < .10$).

Incarceration. The odds ratio suggest that having ever been incarcerated was almost three times more likely ($Exp(\beta) = 2.81$), than not, for Aboriginal youth, compared to non-Aboriginal youth at YFPS ($\chi^2(1) = 3.59, p < .10$).

Sexual Abuse. Reported sexual abuse was two times more likely ($Exp(\beta) = 2.33$), than not, for Aboriginal youth than non-Aboriginal youth ($\chi^2(1) = 4.87, p < .10$). Missing data were also two times more likely for Aboriginal youth ($Exp(\beta) = 1.77$) than non-Aboriginal youth ($\chi^2(1) = 2.03, p < .10$).

Temporary Separation. Being removed from families and communities for one to two months was two times more likely ($Exp(\beta) = 2.17$), than not ever being removed, for Aboriginal youth than non-Aboriginal youth, $\chi^2(1) = 4.13, p < .10$.

Completed School. Completing school was two times more likely ($Exp(\beta) = 1.90$), than having left school, for Aboriginal youth compared to non-Aboriginal youth, $\chi^2(1) = 3.17, p < .10$. Aboriginal youth had significantly less unknown values for this variable ($\chi^2(1) = 3.30, p < .10$).

Unknown Data. Having unknown or missing values increased the odds of a youth being Aboriginal by a factor 2.69 for the step-parent variable ($\chi^2(1) = , p < .10$) (odds increased by almost three) and by a factor of 1.77 for the sexual abuse variable ($\chi^2(1) = 2.03, p < .10$) (the odds increased by almost two).

Table 18

Predictors of being an Aboriginal youth based on the Change in Odds Ratio of a Logistic Regression Analysis

More Likely for Aboriginal Youth		Less Likely for Aboriginal Youth	
Predictor	Change in Odds Ratio	Predictor	Change in Odds Ratio
Alcohol Use: Yes	4.72	Learn. Disability: Unknown	0.50
Step-Parent: Yes	3.19	Hallucinogen Use: Yes	0.45
Delinquent Peers: Occasional	3.10	Perm. Separation: Unknown	0.44
Non-Parent Household: Yes	3.08	Prosocial: Unknown	0.42
Incarceration: Yes	2.81	Neglect: Unknown	0.42
Step Parent: Unknown	2.69	Prosocial Involvement: Yes	0.32
Sexual Abuse: Yes	2.33	School Status: Unknown	0.13
Temporary Separation: Yes	2.17		
Completed School	1.90		
Sexual Abuse: Unknown	1.77		

Odds that a youth at YFPS was an Aboriginal youth decreased for unknown data for the variables: school status ($\chi^2(1) = 3.30, p < .10$), neglect ($\chi^2(1) = 5.86, p < .10$), prosocial involvement ($\chi^2(1) = 2.70, p < .10$), permanent separation ($\chi^2(1) = 2.70, p < .10$), and learning disability ($\chi^2(1) = 3.96, p < .10$).

CHAPTER FOUR

Discussion

The goal of this study was to identify the differences between Aboriginal and non-Aboriginal young offenders referred to Youth Forensic Psychiatric Services (YFPS) based on psychosocial characteristics associated with offence behaviour of youth. In a broader sense, this study was intended to provide a position from which social justice and community based research regarding Aboriginal young offenders can grow. Specifically, the research question asked was: What psychosocial characteristics, known to be associated with delinquency, are predictive of being an Aboriginal young offenders referred to YFPS? By answering this question, empirical evidence can replace speculation, often gleaned from demographic comparison studies, of the unique challenges and strengths of the Aboriginal population in the youth justice system. This information is intended to aid appropriate responsiveness to the distinctive needs of Aboriginal youth at YFPS. Discussed here are the findings that emerged from this study. First, building the logistic regression models revealed that Aboriginal and non-Aboriginal youth were similar in many respects, based on the psychosocial characteristics examined. Second, the final logistic regression model shows that Aboriginal and non-Aboriginal youth are different based on sixteen of the psychosocial characteristics examined. Third, the limitations of the study are delineated: missing data, generalization, homogeneity, data accuracy and assumptions. The model presented is clearly preliminary and any conclusions reached from the results should be interpreted and used with caution – as is noted throughout this discussion.

Similarities Between Aboriginal Youth and Non-Aboriginal Youth.

The final logistic regression model was built on one primary model (this primary model was the first step in the creation of the final model). The primary model held all twenty-four psychosocial characteristics. Non-significant factors ($p > .20$) were removed and another model holding the remaining significant factors was created; the second, and final model revealed that all remaining factors were indeed significant. Presented here are the factors that were removed, the psychosocial characteristics that were not significant in predicting being an Aboriginal youth at YFPS; the similarities between Aboriginal and non-Aboriginal youth. These included: sex, involvement in the justice system are an early age (12-15 years old), offence types (property, violent or sexual), cannabis use, alternative school enrolment, living with both parents, emotional abuse, physical abuse, neglect and prolonged separation (more than two months) from family and community.

Sex. Approximately, three of every four youth seen at the Vancouver Island's YFPS clinics were male. Male predominance of this sex ratio is concurrent with criminological literature and Statistics Canada (for example, one of every five cases in British Columbia's youth courts have been girls (Retisma-Street, 2004)). There were no notable differences between Aboriginal and non-Aboriginal young offenders at YFPS in terms of this male to female ratio.

Early-Onset of Delinquent Behaviour. While, early-onset of delinquent behaviour is one of the more robust factors in predicting future criminal trajectories (for example, Carroll et al. 2006; Raine et al., 2005; Raskin-White et al., 2001; Moffitt, 1993), this was not found in this study. Both younger offenders (ages 12-15 years old) and the older offenders (ages 16-19 years old) were equally split among the YFPS population, and between Aboriginal and non-Aboriginal youth. Despite the literature's suggestive

findings that Aboriginal youth were more likely to be involved in the justice system (Corrado and Cohen, 2002; Nafekh, 2002; Latimer and Foss, 2004), this was not seen in the YFPS populations. Perhaps this is because, in this study, the differentiation between younger and older youth were determined by using data of the youth's first admission to YFPS, intending to represent the onset-of delinquent behaviour recognized by the court. In hindsight, this definition may not encapsulate the onset of delinquent behaviour as would be defined by Moffitt (1993); YFPS data is a filter of the court system. For example, youth are referred to YFPS for three reasons: one, because the charges are severe; two, there is a mental health concern; three, because the youth shows delinquent patterns and criminal trajectories of concern. Further, it is likely that youth at YFPS are referred after being known to the court, that is, after a pattern of delinquency has developed. Perhaps, youth are not brought before the court or recognized by the justice system for delinquent behaviour until the criminal trajectories are set; until criminal behaviour is severe or until trajectories (patterns of behaviour) are set. A notion that ties into the self-report discussions in the literature review of this paper.

Offence Types. Most youth at YFPS had been charged with a violent offence (60%), followed by property offence (29%), and a minority of youth were charged with a sexual offence (10%). There were no significant differences between Aboriginal and non-Aboriginal youth in terms of offence types. This study suggests that offence pattern speculations of Aboriginal youth may be faulty. There are two commonly (yet opposing) held beliefs among those working in the youth justice field: 1) that Aboriginal youth are more likely to be charged with more "court related crimes" (labelled property offences here), and 2) Aboriginal youth are more likely to have been charged with more serious

and violent crimes than non-Aboriginal youth, due to YCJA (section 34) sanctions. As can be discerned from this study, this is not the case for Aboriginal youth at YFPS.

Cannabis Use. Most youth referred to YFPS had used cannabis (88%) with 92% of the Aboriginal youth reported using cannabis, 4% more than non-Aboriginal youth. This is consistent with Corrado and Cohen's 2002 finding that the majority of incarcerated Aboriginal youth (81%) used marijuana. However, when these differences from this study were analyzed, they were found to be non-significant. The logistic regression analysis revealed that although cannabis is the most widely used substance (aside from alcohol) among youth at YFPS, it is not a significant predictor of being an Aboriginal young offender.

Despite not being a significant factor in predicting Aboriginal youth from non-Aboriginal youth, it is clear, cannabis use among the YFPS population is of concern. The correlation between substance use and serious delinquent acts among youth are well substantiated (Loeber et al., 1991; Towberman, 1994; Hawkins, Herrenkhol et al., 2000; Latimer et al., 2005; Latimer & Foss, 2004). It would be beneficial for Aboriginal and non-Aboriginal youth alike, for clinicians at YFPS to place treatment focus on cannabis use.

Alternative School Enrolment. The majority of youth at YFPS were enrolled in an alternative school (61%), and no great pronounced differences were found between Aboriginal and non-Aboriginal youth. Enrolment in an alternative school (Greater Victoria School District 61 and Cowichan School District 79) was not a predictor of being an Aboriginal youth at YFPS.

Living with Both Parents. The majority of youth at YFPS had experienced living with both parents (81%). Percentage comparisons reveal that 11% more non-Aboriginal youth had experienced living with both parents, (with 20% of Aboriginal youth never having lived with both parents); however, this was not a predicting factor of being an Aboriginal youth at YFPS. The literature strongly suggests that living in a two parent household is correlated with lower youth delinquency, and according to the Social Control Theory of criminology (Hirschi, 1969), living with both parents create a stronger bond to society.

This result taps into the initial inspiration for conducting this study: that percentage comparisons, so commonly used in the Aboriginal justice literature (ie. Nafekh, 2002; Corrado and Cohen, 2002), are not suitable for evidence-based policy creation and service development, as they can be misleading and may not fully represent significant differences between groups.

Emotional Abuse and Physical Abuse. Physical Abuse was the highest recorded form of abuse at YFPS (40%), with emotional abuse (37%) following close behind. Although Aboriginal youth reported 13% more physical abuse and 10% more emotional abuse, than non-Aboriginal youth, the logistic regression analysis revealed that these forms of victimization were not predictive factors in differentiating Aboriginal youth at YFPS. This is an interesting find, as discussion papers (Rupert Ross, 1992, 1996; Willmon-Haque & BigFoot, 2008) and reports (Brozowski et al., 2006; Corrado & Cohen, 2002; La Prairie, 1999, 2002) of Aboriginal young offenders strongly suggest that Aboriginal people are substantially more likely to have experienced these forms of victimization than non-Aboriginal youth. As discussed in the literature review of this

paper, although this understanding is commonly accepted, there is no clear evidence that when compared to non-Aboriginal youth, Aboriginal youth differ significantly in terms of experienced victimization. Here, the analysis showed that specifically, physical abuse and emotional abuse are not significant in differentiating Aboriginal youth from non-Aboriginal youth at YFPS; however, the percentage comparisons along with the amount and pattern of missing data from these variables may negate this finding. Perhaps, large unknown/missing values masked a significant result (type 1 error). Emotional abuse had 15% unknown data, with 10% more data missing for Aboriginal youth than non-Aboriginal youth. Physical abuse had 13% unknown data, with 5% more data missing for Aboriginal youth than non-Aboriginal youth. Despite logistic regression's fortitude in examining predictors with differing distributions, having a limited number of cases for these variables may have effected the outcome. Controlling for this statistical difficulty in future studies of victimization experiences of Aboriginal young offenders at YFPS, would be beneficial.

Prolonged Separation. Being removed from family and community for longer than two months was not found to be a predictor of being an Aboriginal youth at YFPS. A large portion of youth at YFPS had experienced prolonged separation (44%), with Aboriginal youth having had this experience 11% more than non-Aboriginal youth. Again, a large amount of unknown data (14%), specifically for Aboriginal youth (7% more than non-Aboriginal youth), may have masked a significant result.

Predictors of being an Aboriginal Youth at YFPS.

Here is presented factors of the final logistic regression model: the distinct psychosocial characteristics that significantly predicted being an Aboriginal young offender referred to YFPS (those factors with a Wald of $p < .20$).

Overrepresentation. Consistent across the literature, Aboriginal youth were overrepresented in the Vancouver Island YFPS clinics. Of the 638 youth cases examined: 25.9% were of Aboriginal youth; yet, Aboriginal youth comprise only 4-5% of the Vancouver Island population. These concerning statistics could represent higher acknowledged, or perceived, need for YFPS mental health services for Aboriginal young offenders from the youth justice system. It may also be a reflection of the overrepresentation of Aboriginal youth involved in the youth justice system. Important questions that emerge from this finding: Are Aboriginal young offenders face more mental health issues than non-Aboriginal youth? Do youth court judge's decisions to implement section 34.1(b) (ordering a forensic psychiatric evaluation) have relationship to section 38(2)(d) of the Young Criminal Justice Act (that is, considering and utilizing all available sanctions, with particular attention to the circumstances of Aboriginal youth)? Data of the mental health diagnoses of youth referred to YFPS were missing a substantial amount of values and were unsuitable for analysis at the time of this study. Without accurate data about the mental health of Aboriginal young offenders, the above questions can not be answered, and suitable policy and service creation for these youth will be jeopardized. Future focus on answering such questions would aid the Youth Justice System, YFPS and Aboriginal young offenders.

Alcohol Use. A large portion of the youth at YFPS reported using alcohol (89%), with Aboriginal youth reporting 4% more alcohol use than non-Aboriginal youth. Yet,

according to the logistic regression analysis, alcohol use was the most substantive significant predictor of being an Aboriginal youth at YFPS (Table 18). Reporting alcohol use greatly increased the odds of being an Aboriginal youth, by almost a factor of five. With 3% of the data unknown for both Aboriginal and non-Aboriginal youth alike, this significant finding is likely unhindered by type I error. This result compliments that of Corrado and Cohen's 2002 snap-shot of incarcerated Aboriginal young offender in the Vancouver region (94% of the Aboriginal youth in the study reported using alcohol).

Though it is suggested that reported alcohol use is one of the strongest psychosocial characteristics differentiating Aboriginal youth from non-Aboriginal youth, for two reasons, this result does not clarify whether Aboriginal youth, in fact, do use more alcohol than non-Aboriginal youth. Firstly, substance use was reported by youth to a YFPS clinician. Perhaps, Aboriginal youth were more likely to report alcohol use to a clinician, and non-Aboriginal youth were hesitant to do so. Second, this finding does not address how much alcohol was being used. Perhaps, Aboriginal youth used alcohol at a much different rate than non-Aboriginal youth (for example, once a month, a few times a month, weekly, daily). Examination of the frequency of substance use was a goal of this study, but due to the large missing data (over 20%), the variable was removed from the study. Addressing both of these issues in future studies would complete this finding, and provide a more accurate picture of substance use of Aboriginal youth at YFPS.

Stimulant Use. The reference level (no) of the stimulant variable was found to be a predictor of Aboriginal youth at YFPS ($\chi^2(1) = 5.22, p < .10$), see appendix D). Examination of the percentage comparisons (table 7) show that 4% more Aboriginal youth, than non-Aboriginal youth, reported not using stimulants. Further, non-Aboriginal

youth reported using stimulants 8.5% more than Aboriginal youth. Together, these findings suggest that Aboriginal youth were significantly more likely to not use stimulants than non-Aboriginal youth. However, unknown values were high for the stimulant variable; 14.7% of the data were unknown (18% unknown for Aboriginal youth and 14% for non-Aboriginal youth). Controlling for the missing data in future studies would be beneficial in determining Aboriginal youth stimulant use.

Hallucinogen Use. Opposing findings that were of concern in the percentage comparison of the hallucinogen variable (chapter two), were echoed in the two-headed logistic regression finding for this variable. First, the results suggest that Aboriginal youth were differentiated from non-Aboriginal based on not using hallucinogens. The predictive odds statistic (β) of the yes response was positive, showing that Aboriginal youth were less likely than non-Aboriginal youth to report hallucinogen use ($\chi^2(1) = 2.15$, $p < .20$), table 17). This is supported, in part, by the percentage comparisons: a majority of Aboriginal youth (40.5%) had never reported using hallucinogens, and the majority of non-Aboriginal youth (50%) had reported using this group of drugs. However, when directly compared, substantially more Aboriginal youth (11%) reported using hallucinogens than non-Aboriginal youth. As well, a large amount of missing data for this variable (16%), especially for Aboriginal youth (20%), may have lead to a type I error. It is unclear from these results whether Aboriginal youth can be predicted based on reported hallucinogen use (or lack of).

Learning Disability. The large amount of data that was unknown for this variable (17%) was significant. Having unknown values for this variable decreased the odds of being an Aboriginal youth by a factor of five. In other words, non-Aboriginal youth have

a concerning amount of missing values for the learning disability variable in the YFPS data bank. Controlling for missing data for this variable would be mandatory for future studies of learning disabilities among young offenders at YFPS.

Completing School and Having Left School. Contrary to the hypothesis that Aboriginal youth were more likely than non-Aboriginal youth to face academic barriers and challenges, one of the results from the logistic regression analysis was that the odds were almost two times greater of a youth having finished school, than leaving school, for Aboriginal youth. Interesting, as only a minority of youth at YFPS had completed school (0.9%, table 8). This finding is not a reflection of age differences between the two groups (ie. Aboriginal youth being an older group than non-Aboriginal youth and, therefore, more likely to have completed school); both groups were split equally in terms of younger (12-15 years old) and older (16-19 years old) groupings (table 5) and shared a similar spread of age across the sample (Means for both groups was 15 years olds, with standard deviations of 1.5 (table 2).

However, the unknown level for this variable was also significant. Percentage comparisons of the left school level show that marginally more Aboriginal youth left school than non-Aboriginal youth (2.2% more; table 9); yet, the logistic regression analysis show this was a significant predictor ($\chi^2(1) = 12.44, p < .20$), table 17). Together the findings here (that Aboriginal youth are both more likely to have completed school and to have left school than non-Aboriginal youth at YFPS), expand upon the studies of Aboriginal young offenders' academic functioning. The results of this study suggest that Aboriginal academic experiences are more dynamic than they may first appear. However, caution should be taken in the interpretation of this variable as the unknown level was

also significant: Aboriginal youth were less likely to have missing data for the school status variable. This suggests that it is more likely for information of Aboriginal youth's academic standing to be requested, shared and/or documented by YFPS clinicians, than it was for non-Aboriginal youth. As well, this finding may be significant, but is it meaningful? While most youth at YFPS were attending school (48%) or had left school (27%) (11% had been expelled from school), only a small majority of youth (0.9%, n = 6) had actually completed school, four of which were Aboriginal. Future studies controlling for these data screening issues will be necessary before any concrete conclusions about the school status of Aboriginal youth at YFPS can be made.

Occasional Association with Delinquent Peers. While most youth at YFPS associated with delinquent peers, both occasionally (40%) and frequently (32%), the analysis showed that there were differences between Aboriginal youth and non-Aboriginal youth in terms of occasional associations only. The odds of being an Aboriginal youth increased three times if occasional association with peers who were delinquent, or associated often with peers who were involved in minor antisocial acts, were recorded. The logistic regression analysis also revealed that having no associations with delinquent peers was less likely for Aboriginal youth than non-Aboriginal youth.

These results support the findings of incarcerated Aboriginal youth examined in the papers reviewed both by the Corrado & Cohen (2002) report and the Latimer et al. (2005) study. They found that incarcerated Aboriginal youth were more likely than non-Aboriginal youth to be involved in gangs and to have frequent levels of association with severely delinquent peers. This study suggests that, unlike incarcerated youth, Aboriginal youth at YFPS have more moderate interactions with delinquent peers, in that they were

more likely than non-Aboriginal youth to be involved in occasional associations, not frequent associations. However, 10.8% of unknown data for this variable set may have lead to a type II statistical error. Comparisons between incarcerated YFPS Aboriginal youth and non-incarcerated Aboriginal youth at YFPS, while controlling for missing data, would be a good next step in identifying peer delinquency issues of antisocial behaviours.

Prosocial Involvement. The hypothesis that Aboriginal youth were less likely to be involved in prosocial activities, than non-Aboriginal youth at YFPS, was supported by two of the findings from the logistic regression analysis. Both the reference level (no) (appendix D) and the yes level were significant predictors (table 17). The predicted odds (β) statistic for the yes response was positive, and examination of the percentage comparisons show that 4% more non-Aboriginal youth than Aboriginal youth were involved in socially acceptable pursuits. Further, 6% less Aboriginal youth, than non-Aboriginal youth, were prosocially involved (the significant reference level, no, $\chi^2(1) = 5.40, p < .10$, Appendix D). Together these findings suggest that Aboriginal youth were less likely than non-Aboriginal youth to be engaged in positive activities outside of academics. The significant finding for the unknown level; the missing data may be hindering the magnitude of this predictor. Although 9% of the data were missing for this variable, the logistic regression analysis revealed that non-Aboriginal youth were significantly more likely than non-Aboriginal youth to be missing data for this variable. Controlling for missing data in future studies would alleviate this concern.

Incarceration. At YFPS, 41% of the youth had been incarcerated. As was expected, more Aboriginal youth, than non-Aboriginal youth, had experienced being incarcerated. In fact having ever been incarcerated increased the odds, almost by a factor

of three, of being an Aboriginal youth. Complimenting this result was the significant reference level (no response) ($\chi^2(1) = 12.44, p < .20$; Appendix D): 16% less Aboriginal youth than non-Aboriginal youth had been incarcerated (table 17). Being incarcerated was the fifth strongest predictor for being an Aboriginal youth at YFPS (table 18). Although there was a difference between the unknown values of Aboriginal and non-Aboriginal youth (Aboriginal youth were missing 6% more data), the logistic regression analysis showed that the difference was not significant. The findings here were not surprising, as it is well-documented that Aboriginal people are overrepresented in every level of the Canadian justice system (ie., Brozowski, Taylor-Butts & Johnson, 2006; Corrado & Cohen, 2002; La Prairie, 1999, 2002; Latmier et al., 2005; Latimer & Foss, 2004, Statistics Canada, 2001 & 2005). Here we see that the pervasive problem of Aboriginal overrepresentation extends through the whole fabric of the justice system, into the level of youth forensic clinics: being incarcerated is a predictive factor in differentiating Aboriginal young offenders from non-Aboriginal young offenders.

Living Situations: Single Parent, Step-Parent and non-Parent Households.

Interestingly, half of the YFPS population had experienced living with a step-parent and living in a non-parent home, and while only 2% more Aboriginal youth than non-Aboriginal youth had ever lived with a step-parent, 15% more Aboriginal youth had lived in non-parent homes. Yet, both the variables emerged from the logistic regression analysis as equally strong predictors for being an Aboriginal youth: the odds ratios show (table 18) that having lived with a step parent, and having lived in a non-parent home, were both three times more likely for Aboriginal youth, than non-Aboriginal youth. However, the unknown level for living with a step-parent variable (but not the non-parent

or single parent variables) was itself a significant predictor of Aboriginal youth:

Aboriginal youth were almost three times more likely than non-Aboriginal youth to have missing data for the step-parent variable.

For the single parent variable, the reference level (no response) was significant ($\chi^2(1) = 5.16, p < .10$), see appendix D). While a minority (15%) of YFPS youth had never lived in a single parent household (80% of youth had this experience), 13.6% less Aboriginal youth, than non-Aboriginal youth, had never experienced living with in a single family household. Missing data were not a concern for this variable (only 3% of the data were unknown).

Together, these results show that, indeed, most Aboriginal youth at YFPS had experienced different family structures when contrasted with non-Aboriginal youth. Although both groups were equally likely to have lived with both parents at one time, Aboriginal youth were three times more likely to have lived with a step-parent and a non-parent (ie. grandparent, aunt, uncle) than non-Aboriginal youth, but not as likely to have lived in a single parent home. An interesting, yet confusing find, as the literature reviewed suggests that Aboriginal young offenders have higher rates of family dysfunction and residential instability, and are less likely to experience living in a two parent home, when compared to non-Aboriginal youth (for example, Corrado & Cohen, 2002; Nafkeh, 2002). Yet the results of this study unveil complex possibilities of Aboriginal youth's family and residential experiences. For example, perhaps Aboriginal youth have more opportunities to live in a step-parent or a non-parent household, while such extend family access is not as available to non-Aboriginal young offenders. Future studies of Aboriginal youth family structure would be beneficial.

Government Residence. While no clear findings of youth's experiences of the family living situations examined in this study (living with both parents, single-parent, step-parent or non-parent) were present in the literature reviewed, more common were studies of youth's transitions and placement into government residences as factors of youth delinquency (for example, Corrado & Cohen, 2002; Nafekh, 2002, Haynie & Scott, 2005; Loeber et al. 1991; Carroll et al., 2006). The literature suggests that Aboriginal young offenders are more likely than non-Aboriginal young offenders to have experienced living in government care facilities. Yet, the logistic regression analysis results in this study showed the opposite: that not having experiences in living in government residences ($\chi^2(1) = 5.76, p < .10$), Appendix D) was significant in predicting Aboriginal youth at YFPS. The percentage comparisons revealed that while 44% of YFPS youth had never resided in a government care facility (55% of the youth had this experience) and 10% more Aboriginal youth, than non-Aboriginal youth, had never resided in a government care facility. As only 1% of the data for this variable was unknown, the finding is considered to be unhindered by a type II error.

Temporary Separation. Although half of the youth referred to YFPS had experienced temporary separation, the odds of being an Aboriginal youth were increased by almost two, if a youth was documented to have been removed from families and communities, for one to two months. As well, the logistic regression analysis revealed that Aboriginal youth were less likely than non-Aboriginal youth to not experience temporary separation ($\chi^2(1) = 4.05, p < .20$), Appendix D). Overall, 16% of this variable was missing data, with Aboriginal youth missing 12% more data than non-Aboriginal youth; noteworthy, as results with 10% missing values should be interpreted with caution

(Tabachnick and Fidell, 2007). Yet, even with the missing data, the two complimentary findings from the logistic regression analysis suggest that temporary separation is a predictor of Aboriginal youth at YFPS.

Permanent Separation. The logistic regression analysis revealed that the reference level (no, never) for permanent separation from family and community was a significant predictor for Aboriginal youth ($\chi^2(1) = 6.22, p < .05$, Appendix D). Percentage comparisons reveal that 23.2% less Aboriginal youth had never been permanently separated from their family/community. This is complimented by the non-significant percentage comparisons that while overall, 20% of the youth at YFPS had this experience, 18% more Aboriginal youth had been removed from their homes than non-Aboriginal youth. Missing data were an issue for this variable. Overall, 13% of the data were missing, and unknown values for this variable were found to be significant. The positive predictive odds statistic shows that Aboriginal youth were less likely than non-Aboriginal youth to be missing data, even though Aboriginal youth were missing 5% more data than non-Aboriginal youth. Controlling for missing data in further investigations of permanent separation of Aboriginal youth at YFPS will be necessary before any concrete conclusions can be made.

Sexual Abuse. Experiencing sexual abuse was reported by 18% of youth referred to YFPS, with Aboriginal youth reporting 7% more sexual abuse than non-Aboriginal youth. The results of the logistic regression analysis paints an incomplete picture of this variable. The analysis suggest that the odds of being an Aboriginal youth increased by two times when sexual abuse was reported. It also suggest that being an Aboriginal youth were also increased by almost two times based on unknown values for this variable.

Further, the logistic regression results show that Aboriginal youth were less likely than non-Aboriginal youth to not report being sexually abused ($\chi^2(1) = 4.93, p < .10$), table 17). Together these findings suggest that accurate reporting and documentation of sexual abuse experiences of Aboriginal young offenders may be a challenge; perhaps a reflection of communication challenges between Aboriginal youth and non-Aboriginal clinicians. In Rojas and Gretton's 2007 study of Aboriginal young offenders in the Prince George and Burnaby, British Columbian YFPS clinics, they reported that Aboriginal youth were significantly more likely than non-Aboriginal youth to have experienced sexual abuse ($\chi^2(1) = 8.12, p < 0.001$) (as well as physical abuse and neglect). Results from this study complement Rojas and Gretton's (2007) findings, and supports their speculation that Aboriginal youth at YFPS "may reduce the likelihood ... to disclose their abusive experiences to people outside their communities" (pg. 276).

Neglect. Overall, 31.8% of youth at YFPS had experienced neglect, with 28.7% more Aboriginal youth having experienced this form of victimization, than non-Aboriginal youth. Yet, the logistic regression analysis reveals an unexpected finding. The reference level (no) was a significant predictor in being an Aboriginal youth ($\chi^2(1) = 17.87, p = .000$), appendix D); percentage comparisons show that 31.6% less Aboriginal youth had experienced neglect, than non-Aboriginal youth. However, missing data is a concern for this variable: the unknown level for the neglect variable was significant ($\chi^2(1) = 5.86, p = .05$), table 17). Overall, 14% of the data were missing and even though the percentage comparisons show that Aboriginal youth were only missing 3% more data than non-Aboriginal youth, the predicted odds statistic (β) is positive: Aboriginal youth were less likely than non-Aboriginal youth to have unknown values in the YFPS data

bank. Therefore, the finding that never having experienced neglect was a predictor for non- Aboriginal youth, than non-Aboriginal youth may have to be taken with caution.

Limitations of the Study

Missing Data

Missing data is one of the most pervasive problems in data analysis (Tabachnick and Fidell, 2007). There were two concerns regarding the missing data from YFPS's archival data: the amount of missing data and the pattern of missing data. Missing data analysis was of interest for this study, as no research of this type (multivariate analysis of psychosocial characteristics) had been conducted with the YFPS data base, and as such, examination of the missing data patterns would not only aid in more accurate conclusions of the analysis, but may also shed light on the documentation of communications between Aboriginal youth and YFPS clinicians. As all of the variables used in this study were categorical, and all missing values for the variables could be easily recoded as "unknown". It should be noted that missing values were not manually removed from the multivariate analysis, as they are automatically removed from the logistic regression model before analysis by the SPSS program; the "unknown" level for each variable was created solely for examination of data screening and missing data analysis. Data entry errors and duplicated cases that could not be remedied through the file review by the YFPS research assistant were removed from the data set.

There was a substantial amount of missing data from the YFPS databank for the variables/psychosocial characteristics examined. According to Tabachnick and Fidell (2007), there are no firm guidelines for how much missing data can be tolerated for a sample of a given size, but there are acceptable rules of thumb. A minimal amount of

missing data is considered to be 5% or less, and is likely not to seriously increase error in most data analysis. Missing data that constitutes 10% of the data from a moderately sized data bank, such as the YFPS data bank, can be a serious problem in data analysis if they are not noted and the information integrated into the interpretation of multivariate analysis (Tabachnick & Fidell, 2007). In this study, 13 of the 23 variables examined were missing 10% or more data (as was outlined in for each variable above): Stimulant use (14.7%, n = 94), hallucinogen use (15.8%, n = 101), school status (12%, n = 77), learning disability (17.1%, n = 100), association with delinquent peers (10.8%, n = 69), sexual abuse (11.7%, n = 74), emotional abuse (15%, n = 96), physical abuse (12.9%, n = 82), neglect (13.9%, n = 89), having lived with a step-parent (14%, n = 24), temporary separation from family (16%, n = 99), prolonged separation from family (14%, n = 90) and permanent separation from family (13%, n = 81).

Pattern of Missing Data. The pattern of missing data may be more important than the amount missing. For example, data that is predominantly missing for Aboriginal youth, but not for non-Aboriginal youth for specific variables. Examination of the missing data revealed that missing information for 8 of the 23 psychosocial characteristics examined were different for Aboriginal youth than that of non-Aboriginal youth. Aboriginal youth at YFPS were missing 5% or more data than non-Aboriginal youth for the following variables: incarceration (5.6% more), hallucinogen use (5.9% more), living with a step-parent (10% more), living in a non-parent household (8% more), both sexual (10% more) and emotional abuse (9% more) and both prolonged (7% more) and temporary separation from family (12% more). Discrepancies between Aboriginal and non-Aboriginal youth in terms of missing data for these psychosocial characteristics

may be because the information was not disclosed by the Aboriginal youth, the information was not requested by the clinician, or the information was inaccurately recorded.

Generalization to the Greater Population.

Generalizations of the findings of this study are limited to the clients referred to Youth Forensic Psychiatric Services (YFPS) during the study period. An accurate sample of the entire population of offending adolescents on Vancouver Island cannot be determined because data is not available on Aboriginal and non-Aboriginal youth who have committed offences but have yet to become involved with the justice system or YFPS. The results of this study are specific to youth referred to Vancouver Island's Youth Forensic Psychiatric clinics.

Homogeneity and Specificity.

Overall, Aboriginal and non-Aboriginal youth referred to YFPS are likely to be more similar based on psychosocial characteristics than they are different. They are similar in the fact that both groups of youth have been charged with committing an offence and are noted by the Youth Justice System as needing psychiatric assessments and YFPS resources.

The data for the study was limited to a specific time period, April 1, 2003 to April 30, 2008, producing a five year snapshot of clients. It is possible that the characteristics of the study population may differ over time in response to changes in the study region (for example, socioeconomic factors or demographic fluctuations).

Data accuracy.

Although every reasonable effort was made to ensure data accuracy, it is important to note that the archival data collected for this study came from file information previously collected by multidisciplinary clinicians during an interview of the youth and the youth's guardian and family. Unless the information provided to the assessing clinician was supported or contradicted by reliable collateral information, such as birth and medical records, the information collected was unverified. Although overlaps in the information from the various sources provided some consistency in the data, information provided by the youth or guardian may be inaccurate due to issues in self-disclosure: faulty recall, subject-expectancy bias, lack of direct knowledge, or intentional omission of self-deprecating details.

Further, given that information provided during an assessment could be included in a report submitted to the court or a supervising probation officer or, as required by law, be reported to the authorities, there exists the risk of biased disclosures by youths and guardians, and the avoidance of any self-incriminating details. Clinician bias and recording error may also have influenced the accuracy of that data collected from progress notes, summary reports, or discharge recordings.

Making comparisons between Aboriginal and non-Aboriginal young offenders does not necessarily provide information that is specific to the unique needs of Aboriginal young offenders, though it is a good first step. The parameters of data collection involving both self-disclosed information and clinician-youth communications that inevitably involve a top-down authoritative style based on the very nature of the

justice system referral to YFPS. Perhaps this is a research limitation more sensitive for Aboriginal youth than for non-Aboriginal youth.

Assumptions.

It is important to recognize the cultural paradigm this study has grown from. This study is non-Aboriginal in its very nature; although the data utilized provides information regarding Aboriginal youth, it was created, collected and maintained by non-Aboriginal clinicians and research assistants. The research procedures here are empirical in structure and represent an understanding of truth-hunting that has grown out of the philosophies of dualism and positivism. According to some Aboriginal writers and researchers (Ross, 1992 & 1996; Willmon-Haque & BigFoot, 2008), Aboriginal cultures place importance on relationships and relativism when attempting to understand the world. As Rupert Ross explains in his book *“Dancing with a Ghost”* (1996), Western understandings are “noun” based, where categories and end-results are of importance. Aboriginal understandings are “verb” based, where relationships and dynamic processes are of importance. If so, this study is “noun” based, with the attempt to produce an end-result that will aid in the accurate prediction of categorizing people. This study is set from a non-Aboriginal perspective nurtured at the University of Victoria’s Educational Psychology Master’s program.

Summary

Overall, the results of this study show that based on several psychosocial characteristics of delinquency, Aboriginal youth can be significantly differentiated from non-Aboriginal youth at the Vancouver Island Youth Forensic Psychiatric Services (YFPS) outpatient clinics. The most reliable predictors were those that were both

significant, with a non-significant unknown level. That is, a significant variable was likely not hindered by missing data; the unknown values were not predictive of being an Aboriginal young offender. Six variables met these criteria. Reported alcohol use was one of the outstanding factors of predicting Aboriginal youth at YFPS; reporting alcohol use increased the odds of being an Aboriginal youth almost five times. The final model showed that reporting hallucinogen use, decreased the odds of being an Aboriginal youth almost five times. Incarceration was another strong factor in the final model: Having experienced being in jail at some time was almost three times more likely for Aboriginal youth than non-Aboriginal youth. Having lived in a non-parent household and temporary separation were both variables that were significant, with non-significant unknown levels: odds of being an Aboriginal youth increased by three times if a youth had been documented to have lived in a non-parent house (with extended family or friends) and two times if a youth had been removed from their families for one to two months. As well, the peer delinquency variable was significant with a non-significant unknown level; occasionally associated with peers who were delinquent increased the odds of being an Aboriginal youth three times.

There were five variables that were suggestive of being accurate predictors of being an Aboriginal youth at YFPS, but were hindered by significant missing data. These include: school status (having completed school), prosocial involvement, having lived with a step-parent, being permanently separated from family and community and having experienced sexual abuse. The final model shows that Aboriginal youth were more likely to have completed school, to have lived with a step-parent and to have experienced sexual abuse, than non-Aboriginal youth. They were also more likely to have missing

data for two variables: sexual abuse and living with a step-parent. As well, Aboriginal youth were less likely than non-Aboriginal youth to be involved in prosocial activities and to be permanently separated from their family and community. Aboriginal youth were less likely than non-Aboriginal youth to have missing data for five variables: learning disability, school status (completed school), prosocial involvement, permanent separation and neglect.

Interestingly, as it was originally thought that if unknown data were to be a concern, it was likely to be missing data for Aboriginal youth. The literature reviewed supported this speculation (i.e. Rupert Ross, 1992 & 1996 and Willmon-Haque & BigFoot, 2008), and examination of the percentage comparisons between the two groups suggested so. Yet, being an Aboriginal youth at YFPS can be predicted based on missing data from the data bank for only two variables: sexual abuse and living with a step-parent. On the other hand, non-Aboriginal youth were missing significant amounts of data for the school status, prosocial involvement, permanent separation from family and community and neglect variables. Issues of missing data in the YFPS data bank is a problem that will need to be contended with in future studies.

The final model of the logistic regression analysis revealed that three variables were significant based on their reference levels only (the no response): stimulant use, having lived in a government care home and having lived in a single parent household. Interpretations of these variables were made based on percentage comparisons; less Aboriginal youth had experienced living in a single parent household and in government residence, and reported using stimulants.

Finally, both groups of youth examined were similar in many aspects, as they are all youth who have been referred by the Canadian justice system for examination and treatment by multidisciplinary teams at YFPS. Both Aboriginal and non-Aboriginal youth were similar based on offence types (being a violent, sexual or property offender), sex, early-onset of delinquent behaviour, cannabis use, alternative school enrolment, living with both parents, emotional abuse and physical abuse and prolonged separation (more than two months) from family and community.

Broad Conclusions or Themes

There are three main themes that emerged from this study: 1) Aboriginal youth can be differentiated from non-Aboriginal youth based on a set of psychosocial characteristics, and the differences found between the two ethnic groups are likely substantially greater than their similarities, 2) while facing many challenges, Aboriginal youth also have strengths to draw from, when compared to non-Aboriginal youth 3) any barriers in the communication pathway from youth, to clinician, to the YFPS databank are likely not specific to Aboriginal youth.

Aboriginal youth differ from non-Aboriginal youth at YFPS.

Overall, it is believed that Aboriginal young offenders are more vulnerable to circumstances that perpetuate trauma and marginalization than are non-Aboriginal young offenders; this broad understanding of Aboriginal youth, found in the literature reviewed (for example, La Prairie, 1999 & 2002; Ross, 1992 & 1996; Willmon-Haque & BigFoot, 2008), is supported by this study. Overall, Aboriginal young offenders referred to YFPS are placed at a greater risk to continue the long term trajectory of delinquent behaviours and, decreased levels of both micro and macro levels of well-being, than are non-

Aboriginal offenders. For example, according to Willmon-Haque and BigFoot (2008), Aboriginal peoples across North America are more susceptible to trauma. This *vulnerability to trauma* is related to the marginalization and the cultural devastation brought on through colonization and hegemony faced by Aboriginal peoples across North America. This has been recognized by the Canadian Justice System, reflected in section 718.2(e) of the Criminal Code and 38(2)(d) of the Youth Criminal Justice Act. This historical trauma faced by Aboriginal communities continues to affect subsequent generations, as can be seen at the Youth Forensic Psychiatric Services of Vancouver Island. Aboriginal youth at YFPS are overrepresented and while both Aboriginal and non-Aboriginal youth face similar challenges, Aboriginal youth often do so at a greater level than their counterparts. This study shows that they are incarcerated more often, report more alcohol use, are temporarily removed from family community more often, live in non-parent and step-parent households, and are more likely to associate with delinquent peers, on an occasional basis and may be more likely to experience sexual abuse, than non-Aboriginal youth. Focusing on these results paint a bleak picture of well-being for Aboriginal youth referred to YFPS.

Yet, while the broad understanding of vulnerability to trauma for Aboriginal youth can be substantiated with the findings from this study, it is incomplete. Like most young areas of research and theorizing that lay the foundations for future developments, they can sometimes overgeneralize relations and mask the more complex and dynamic constitutes of peoples. This study, for example, revealed that while Aboriginal youth do differ substantially from non-Aboriginal in terms of challenges they face, they may also have some strengths to draw from. Placing emphasis on the challenges that Aboriginal

youth face hinders the original intent of this study: to reveal the vulnerabilities and strengths of Aboriginal youth at YFPS, so that culturally appropriate policies and services can be maximized.

Do Aboriginal youth have strengths to draw upon?

A welcome result of this study was the finding that a small number of the null hypotheses were accepted. Based on the limited literature available on Aboriginal young offenders, it was hypothesized that they would face challenges and the analysis would reveal vulnerabilities for every psychosocial characteristic of delinquency examined; but this was not so.

Substance Use. Substance use is one factor that has been well documented to be closely related to delinquency, and although there is some research that suggest that Aboriginal young offenders face this difficulty at even more extreme levels than non-Aboriginal young offenders (i.e. Corrado and Cohen, 2002; Latimer and Foss, 2004), this study does not support this notion. Here, the analysis showed that while there are significant alcohol use concerns, both hallucinogen use and stimulant use were less likely for an Aboriginal youth at YFPS to report, compared to non-Aboriginal youth. As well, Aboriginal youth at YFPS did not differ significantly in terms of the most popular substance reported from YFPS youth: cannabis. The finding that there are differences between specific substance types used by Aboriginal and non-Aboriginal youth at YFPS is a good first step in understanding drug use patterns, but it is incomplete. The next step in determining the unique substance use patterns of the Aboriginal youth population at YFPS would be an examination of the frequency of use for each specific drug type across both Aboriginal and non-Aboriginal young offenders. Knowing whether there are

differences between the two groups in terms of the severity of substances used (whether youth use a substance once a month, a few times a month, weekly or daily) would help to clarify substance use patterns of both Aboriginal and non-Aboriginal young offenders. Such information would aid culturally appropriate services for Aboriginal young offenders.

Clarity of substance use patterns is one issue that grows from these findings; another is whether they are a result of expectations communicated through to the YFPS databank. Perhaps Aboriginal youth are more likely to report more alcohol use, but not other substances, than non-Aboriginal clinicians. Alternatively, perhaps non-Aboriginal clinicians are more likely to document this data for Aboriginal youth than non-Aboriginal youth. Examination of the unknown values for the substance use variables reveals that a minority of data were missing for alcohol and cannabis use (3%), while missing data for stimulant and hallucinogen use was higher (15%). As well, the YFPS variable “other drug types” (which included opiates, barbiturates, benzodiazepines, solvents, inhalants, Nitrous Oxide and miscellaneous substances) was not used in the analysis as 20% of the data were unknown. Further investigation into why specific substances had a high recording rate than others would be beneficial for future studies of substance use patterns specific to Aboriginal youth.

Nevertheless, even with these limitations taken into account, this study does show that while reported alcohol use is a serious concern for Aboriginal youth at YFPS, reported stimulant and hallucinogen use may be both significantly lower for Aboriginal youth than non-Aboriginal youth.

Family Structure and Residential Stability. Possible strengths may be lurking in the murky waters of the family structure and residential stability variable groupings for Aboriginal youth to draw upon. It was hypothesized that Aboriginal youth would be reported to have experienced more familial disruption, in terms of residence in non-traditional households. While the results of the analysis show that living in a non-parent and step-parent household was a significant predictor of being an Aboriginal youth, living with both parents was not a significant predicting factor in differentiating Aboriginal youth from other youth at YFPS. The literature of family experiences strongly suggest that living with both parents is a protective factor against delinquency, and that youth raised in step-parent and single parent families tend to engage in greater delinquency (for example, Hirischi, 1969; Nye, 1958; Wells & Rankin, 1991). So, while it may be a concern that Aboriginal youth are more likely to have lived with a step-parent, or in a non-parent home, most Aboriginal youth, like their non-Aboriginal counterparts, had lived in a two parent home. Although this is not specific to Aboriginal youth, it nevertheless, is a possible strength shared among many of the youth at YFPS.

It was also hypothesized that Aboriginal youth would be predicted in terms of living in government residencies. It came as a welcome surprise that this hypothesis was wrong. Despite being predicted based on temporary and permanent removal from their families and communities, and being incarcerated, Aboriginal youth were significantly less likely than non-Aboriginal youth to have experiences living in government residence. However, it does open further questions. For example, if a significant number of Aboriginal youth were being removed from their families by government agencies, for one or two months, but are not being placed in government care, where were they going? Were they being

incarcerated? Being incarcerated at one time, was almost five times more likely, than not, for Aboriginal youth at YFPS than non-Aboriginal youth. This would be of concern, as the YCJA is clear that alternative solutions to jail be taken into account for youth especially for Aboriginal youth (section 38(2)(d)). Were they removed from their primary family (for example, both parents) to be placed with a secondary family, or next of kin home (for example, grandparents (non-parent home))? Did Aboriginal youth have more opportunities to be placed in secondary, non-parent homes than non-Aboriginal youth?

Further, why were Aboriginal youth being removed from their families in the first place? Does victimization play a role here? Both groups of youth did not differ based on physical and emotional abuse, but they did, based on sexual abuse. Having experienced sexual abuse was two times more likely for Aboriginal youth; indeed this finding may be masked and it is possible that this predictor could be even stronger, as Aboriginal youth were also two times more likely to be missing data for the sexual abuse variable. Not recorded in the YFPS databank was whether the sexual abuse youth experienced was from a member of a shared household or tight-knit community, or elsewhere. Further investigation would be beneficial.

One limitation with the findings of youths' living situations is that of stability vs uncertainty. The categorical levels of the variables place inflexible parameters to the interpretation of the living situation results. Youth were categorized as either having ever had the living situation experience (both parents, one-parent, step-parents, non-parents), or as not ever having this experience. Therefore the findings do not allow insight into the flow and change of living situations, for example, how many times a youth had experienced family structure transitions. Data of the number of foster homes a youth had

lived in was available from the Vancouver Island YFPS databank, however, due to the substantial missing values (over 25%), this variable was removed from the analysis.

Knowing what family structures Aboriginal youth have experienced is a good beginning to understanding familial relations, but it is incomplete. Residential stability is pertinent to parenting and child development and examination of such variables is imperative in gaining a full picture of Aboriginal youths' unique strengths and concerns of the trajectories of delinquent behaviours.

The results of this study do show that Aboriginal youth at YFPS faced significantly more non-parent living situations, removal from family and community and more sexual abuse than did non-Aboriginal youth. However, like most youth at YFPS, they lived with both parents. As well, Aboriginal youth were less likely than non-Aboriginal youth to live in government residences. Perhaps these are strengths to draw from; further investigation into the effects of living situation experiences and residential stability of Aboriginal youths' development will be necessary in providing empirical evidence necessary in enhancing YFPS's culturally appropriate treatment and services for Aboriginal young offenders.

Academic Functioning. In contrast to the Aboriginal specific literature reviewed (for example, Latimer and Foss, 2004; Nafekh, 2002), the analysis revealed that Aboriginal youth at YFPS were more likely to have completed school than non-Aboriginal youth. Agreed upon by a history of researchers (for example, Hawkins et al.), high academic attachment and completing school are protective factors against the development of delinquent behaviour (both property and violent offending). Questions that could emerge from this finding are plentiful. For example, what schools did the

majority of Aboriginal youth attend? Where were Aboriginal youth succeeding? Were they completing school through the traditional education system, or through Aboriginal specific education programs? The findings in this study show that it is likely not through alternative schools (Greater Victoria's school district 61 and Cowichan's school district 79), as this variable was non-significant in the first logistic regression model. However, as pointed out in the discussion of this variable, though the analysis shows that completing school is a predictive factor for Aboriginal youth at YFPS, but it may not be a meaningful result. With only four Aboriginal youth and two non-Aboriginal youth in the sample who completed school, the power of these results is likely hindered. Future research into the academic success of Aboriginal young offenders referred to YFPS, would be a beneficial pursuit, as it may be a specific strength for Aboriginal youth at YFPS that could be utilized in YFPS treatment services.

Significant Amounts of Missing Data.

From the twenty-four variables that were examined in this study, eight had significant amounts of missing data. It was expected that Aboriginal youth would be more likely than non-Aboriginal youth to have missing data. The percentage comparisons showed just that. While thirteen variables consisted of 10% unknown values, missing data were more pronounced for Aboriginal youth than non-Aboriginal youth. Aboriginal youth had 5% more unknown data for eight variables (incarceration, hallucinogen use, step-parent, non-parent, sexual abuse, emotional abuse, and both prolonged and temporary separation). Based on the works of Rupert Ross (1992 & 1996) and Willmon-Haque and BigFoot (2006), and supported by the percentage comparisons in this study, it was thought that communication barriers between Aboriginal youth and non-Aboriginal

clinicians and from clinicians to the databank would be prevalent. According to the logistic regression analysis, this was not so. In fact, Aboriginal youth at YFPS were missing significant amounts of data for only two of the eight final factors with significant amounts of unknown values, both of which were significant predictors of being an Aboriginal youth: sexual abuse and having ever lived with a step-parent. Aboriginal youth were two times more likely to be missing data for the sexual abuse variable and three times more likely to be missing data for the step-parent variable. Non-Aboriginal youth, on the other hand, were missing significant amounts of data for five of the eight variables: prosocial involvement, permanent separation from family, neglect, learning disability and school status. While the amount of missing data is important, the pattern of missing data may be more so (Tabachnick and Fidell, 2007). The results of this study suggest that missing data is a concern for the YFPS databank, but not as hypothesized; significant amounts of missing data were more so for non-Aboriginal youth than Aboriginal youth.

Summary

The results are preliminary; significant amounts of unknown data was found for both ethnic groups in the YFPS databank. This exploratory study is a good first step in laying the foundation for empirical research on Aboriginal young offenders necessary for culturally appropriate treatment services.

Despite the preliminary nature of the results (due to, for example, significant amounts of missing data for both ethnic groups), this study is an important first step in the empirical documentation of the psychosocial characteristics of delinquency that are significant predictors of being an Aboriginal young offender at YFPS. Aboriginal youth

are overrepresented in the Vancouver Island YFPS clinics, composing of 26% of the YFPS population, despite being charged with nearly identical rates of offence types (violent, property and sexual offences) as non-Aboriginal youth at YFPS. Perhaps this is because the Canadian Youth Justice System is utilizing section 38(2)(d), in attempts to find other sanctions, other than custody, (i.e. implementation of section 34.1(b): ordering a forensic psychiatric evaluation from YFPS), particularly for Aboriginal youth. Yet, Aboriginal youth at YFPS were almost three times more likely to have been incarcerated than non-Aboriginal youth.

The final model of the logistic regression analysis was found to predict Aboriginal youth from non-Aboriginal youth well, based on the likelihood ratio test ($X^2(1) = 167.486, p = .000$) and the model's goodness of fit ($-2LL = 568.133; df = 35$, (Nagelkerke $R^2 = .337$)). Relevant psychosocial characteristics that significantly predicted Aboriginal youth from non-Aboriginal youth at YFPS were higher rates of reported alcohol use, living with a step-parent, living with in a non-parent household, occasional association with delinquent peers, being sexually abused and temporary separation from family and community. Focus on these issues would benefit the treatment services for Aboriginal youth referred to YFPS.

Limitations of this study were cloaked in three main categories. First, was the issue of missing data. Random missing data in the YFPS databank was found (through percentage comparisons) to be more pronounced for Aboriginal youth. Yet, missing data analysis, utilizing the logistic regression analysis, showed that non-Aboriginal youth had more significant amounts of unknown values for more variables than did Aboriginal youth. Second, was the issue of generalization and specificity. The results of this study at

specific to the sample: youth who had been referred to Vancouver Island's YFPS clinics by the Canadian Justice System. Three, the study is non-Aboriginal in its very nature and has grown from non-Aboriginal paradigms.

The initial inspiration for this study came from the recognition that while there was a great need to provide culturally appropriate services for Aboriginal youth referred to YFPS, there has been very limited research of the specific psychosocial characteristics of Aboriginal youth, apart from that of young offenders in general. Meaningful and helpful services and policies rely on credible research and data; policies and specific services for Aboriginal youth require identification of Aboriginal young offenders' unique needs. The results of this study provide good first steps in the long and winding journey into the specific needs of Aboriginal youth at Vancouver Island's YFPS clinics. The momentum of such a journey will be dependent on the continued understanding that Aboriginal young offenders do have specific needs, apart from any other ethnic groups at YFPS. It will also depend on the reduction of research barriers, such as providing researchers with pre-screened data and pre-classification of complex data (for example, DSM-IV codes & offence codes). This would allow quality research necessary to inform policy makers of the needs specific to Aboriginal youth to be completed at a much faster rate. It is hoped that the screening and variable transformations of the data from the first stages of this study have aided in the maintenance of Vancouver Island's YFPS databank. Ideally, the creation of Aboriginal Mental Health Teams could lead to Aboriginal specific data collection and support Aboriginal specific research.

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Appendix A

Youth Forensic Psychiatric Services Vancouver Island;

34.1(b) of the Youth Criminal Justice Act, 718.2(e) of the Canadian Criminal Code,

38(2)(d) of the Youth Criminal Justice Act, and the sanctions of *R vs Gladue*.

YFPS (Youth Forensic Psychiatric Services)

Youth Forensic Psychiatric Services (YFPS) is a program of British Columbia's Ministry of Children and Family Development that provides court ordered and court related forensic psychosocial assessments and treatment for young offenders. Young offenders are referred to YFPS by youth court judges either because either a) there are reasonable grounds to believe that the young person is suffering from a mental health disorder, b) because there is a history of findings of guilt or there is a pattern of multiple offences, or c) because a young offender is charged with a serious violent offence (YCJA, 34.1.(b)). Vancouver Island YFPS has been active in recording data of adolescents who have been before the courts for illegal activity and have been referred by the justice system to complete a psychological assessment and to participate in treatment. The data recorded by YFPS is derived from the multidisciplinary team assigned to each young offender referred to YFPS, and includes information from the psychological assessments of young offenders by social workers, psychologists, psychiatrists and from psychological measures administered. Along with the demographic profiles of each young offender referred to YFPS, data of ethnic self-identity, offence types, incarceration, academic functioning, prosocial involvement and delinquent peers, substance use, victimization and family structure and residential stability are recorded.

Youth Criminal Justice Act and the Criminal Code of Canada

Only data from reports of young offenders referred to YFPS since April 1, 2003, were analyzed, so as to reflect only characteristics of young offenders who have gone before a youth court since the implementation of the Youth Criminal Justice Act (YCJA).

This act replaced the Young Offender Act (YOA) on April 1, 2003 and the two differ in many ways that affect Aboriginal involvement in youth justice system. For example, the YCJA places greater emphasis on the proportionality and sentencing practices provided by youth court judges, particularly for Aboriginal youth. In 1999, the Supreme Court of Canada (*R. v. Gladue*) provided an interpretation of section 718.2(e) and concluded that custodial sentences for Aboriginal offenders may be shorter than sentences of non-Aboriginal offenders for the same offence. *Gladue* was important for a number of reasons. As outlined in the commentary on *Gladue*, two sets of circumstances were considered to be unique to Aboriginal offenders:

- 1) The systemic factors which often play a part in bringing the specific offender before the courts; and
- 2) The types of sentencing approaches that might be appropriate to the offender because of their Aboriginal heritage.

The YCJA includes a provision similar to section 718.2(e) of the Criminal Code that was not contained in the Young Offenders Act. Section 38(2)(d) of the YCJA essentially states that all available sanctions other than custody should be considered for all young persons, with particular attention to the circumstances of Aboriginal young persons. This may effect a youth court judge's decision to implement section 34.1(b), that is, ordering a forensic psychiatric evaluation from YFPS.

This also makes the need to identify the characteristics of Aboriginal young offenders all the more important, as it is critical that youth court judges be fully informed of the particular circumstances of Aboriginal youth have contributed to them before coming before the court.

Appendix B

Statements supporting the need for information on Aboriginal people in the
Canadian Criminal Justice Systems.

“There is not enough information on Aboriginal people in the criminal justice system.”
 Canada. April 2002. *Report of the Auditor General of Canada to the House of Commons. Chapter 4-The Criminal Justice System: Significant Challenges.*

“It is a tragic reality that too many Aboriginal people are finding themselves in conflict with the law. Canada must take the measures needed to significantly reduce the percentage of Aboriginal people entering the criminal justice system, so that within a generation it is no higher than the Canadian average.”

The Right Honourable Jean Chrétien. December 2001. *Speech from the Throne to Open the First Session of the 37th Parliament of Canada.*

“...knowledge alone is insufficient to change fundamental attitudes. Despite an overlay of concern, it does not take much provocation to uncover prejudiced attitudes and deep-seated hostility among Aboriginal and non-Aboriginal people alike. Sound information is an important element in overcoming this hostility. But also needed are opportunities for meaningful interaction as well as strong public role-modeling by leaders of both sectors – and not only the political leadership. Finally, ways need to be found to make discriminatory and racist behaviour unacceptable in private as well as public circles. The building of an open and inclusive society is a complex process that extends well beyond what is commonly understood as public education.”

Canada. 1996. Royal Commission on Aboriginal Peoples. *Report of the Royal Commission on Aboriginal Peoples, “Building Awareness and Understanding” in volume 5, Renewal: A Twenty Year Commitment.* Ottawa: The Commission.

Recommendation 2.94 from Alberta’s Cawsey Commission states: “That all police organizations in Alberta maintain statistics which would allow for the identification of Aboriginal workload and contact.”

Alberta. 1991. *Report of the Task Force on the Criminal Justice System and its Impact in the Indian and Métis peoples of Alberta.* Department of Justice Alberta.

“One reason Donald Marshall, Jr. was convicted of and spent 11 years in jail for a murder he did not commit is because Donald Marshall is an Indian. [This statement] is simply one of the more blatant and overt examples of the seemingly unconscious racism and racial stereotyping that influenced what happened to Donald Marshall, Jr.”

Nova Scotia. 1989. *The Report of the Royal Commission on the Donald Marshall, Jr., Prosecution. Vol. 1 Commissioner's Report – Findings and Recommendations*, pg 148. Halifax, Nova Scotia.

“We recommend that governments consult with Aboriginal groups to design and implement a data collection system that will provide detailed information to compare the impact on and treatment of, Aboriginal and non-Aboriginal persons by the justice system, to evaluate the success of programs dealing with Aboriginal offenders and to provide information to help identify reforms.”

Manitoba. 1991. *Public Inquiry into the Administration of Justice and Aboriginal People. Report of the Aboriginal Justice Inquiry of Manitoba, volume 1, The Justice System and Aboriginal People*, pg. 672.

Recommendation 0.1 from the Saskatchewan Indian Justice Review Committee states “In consultation with Indian and Métis organizations, federal and provincial government departments design and implement data collection systems to provide detailed information to compare Aboriginal and non-Aboriginal contact with, and treatment, by the criminal justice system, especially with respect the family violence.

Linn, Patricia. 1992. *Report of the Saskatchewan Indian Justice Review Committee*. Regina, Saskatchewan.

Recommendation 2 of an Amnesty International report states: “The federal government should ensure adequate funding for comprehensive national research on violence against indigenous women, including the creation of national registry to collect and analyse statistical information from all jurisdictions.”

Amnesty International. October 2004. *Stolen Sisters: Discrimination and Violence Against Indigenous Women in Canada*, page 35.

Appendix C

Offence Types Variables (violent, sexual, property):

Detailed Accounts of the Raw Data to Variable Transformation

Here is the documentation of the rationale of the categorization and organization of the raw data into three offence type categories: violent offences, sexual offences and property/administrative offences. The criminal charges of young offenders referred to YFPS are documented in the YFPS data base. Both the code of the charge and a short descriptor of the charge (ie. theft, or assault) are recorded. However, there is inconsistency between the codes as well as unmatched descriptors to the codes recorded. Further, the offence codes in the YFPS data base are not fully based upon the Canadian Criminal Codes (CCC), or even the Youth Criminal Justice Act (YCJA). They include codes from the older Young Offenders Act (YOA), the Motor Vehicle Act (MVA) and the Controlled Drug and Substance Act (CDSA) as well. This complicated the reorganization of these codes into categories of Violent, Sexual and Property/Administration Offences. The categorization of the raw data of youth criminal charges into the three level offence types variable used in this study are outlined.

Categorization of Violent, Sexual and Property/Administrative Offences
YFPS frequencies from 2004+ database.

Table B1.

Violent Offences: Offences that result in immediate physical harm, or the possibility of immediate physical harm, to a person(s), with or without intent.

Criminal Code	Offence Description	Frequency at YFPS			
		First Offence	Second Offence	Third Offence	Total
85	Using a Firearm in commission of an offence	1	1		2
87	Pointing a Firearm	1			1
88	Possession of weapon for Dangerous purpose	10	9	5	24
89	Carrying a weapon while attending public meeting	1			1

90	Carrying concealed weapon	3	3	3	9
91	Unauthorized possession of Firearm	2	2		4
92	Possession of firearm, knowing its possession is unauthorized		1		1
95	Possession of prohibited or restricted firearm with ammunition		1	2	3
129	Offences relating to public or peace officer	2	6	5	13
234	Manslaughter	1			1
235	Punishment for murder		1		1
245	Administering noxious thing	1			1
248	Interfering with transportation facilities	2			2
249	Dangerous Operations of motor vehicles, vessels and aircraft	2	1		3
252	Failure to stop at the scene of an accident		1		1
253	Operation while impaired	2	1	3	6
255 (2)	Punishment for 254 – (2) impaired driving causing bodily harm		1	1	2
264	Criminal Harassment	44	36	18	98
266	Assault	121	53	40	214
267	Assault with a weapon or causing bodily harm	34	22	11	67
268	Aggravated Assault		2	1	3
270	Assaulting a peace officer; 270.1 – disarming a peace officer	1	1	3	5
279	Kidnapping (279.02 – material benefit)	2	1	2	5
343	Robbery (with violence)	1			1
344	Robbery (with firearm)	28	14	7	49
346	Extortion		1		1
348.1	Breaking & Entering - Aggravating Circumstances – home invasion (348 – property)	1	1	1	3
420	Military Stores		1		1
433	Arson – disregard for human life (434 – property)	3	1		4
446	Causing damage or injury	2	1		3

	(animals)				
810	Where injury or damage feared				
810	Fear of certain offences (810.1 – sexual)	9	3	1	13
		274	165	103	543

Table B2.

Sexual Offences: Offences that result in harm, or the possibility of harm, to a person(s), that is sexual in nature. Involves the use of a victim to fulfill, or attempt to fulfill a sexual gratification of the offender.

Criminal Code	Offence Description	Frequency at YFPS			
		First Offence	Second Offence	Third Offence	Total
151	Sexual Interference	14	9	4	27
152	Invitation to Sexual touching	3	1		4
173	Indecent Acts	5	1	1	7
271	Sexual assault	33	9	2	44
272	Sexual Assault with a weapon, threats to a third party, or causing bodily harm	2	2		4
810.1	Where fear of sexual offence (810.01 – violent)	1			1
		58	22	7	87

Table B3.

Property/ Administration Offences: Offences that result in secondary harm, or the possibility of secondary harm, to a person. “Secondary Harm” – an offence that does not produce immediate (primary) physical or sexual harm at the time of the event, but produces harm some time after the offence.

Criminal Code	Offence Description	Frequency at YFPS			
		First Offence	Second Offence	Third Offence	Total
24	Attempts		2	2	4
26	Excessive Force	2	19	18	39
115	Forfeiture	1			1
137	Fabricating Evidence	14	24	32	70
139	Obstructing justice		1	2	3
140	Public Mischief	4		1	5
145	Escape & Being at large without excuse, failure to attend court, failure to comply with condition of undertaking,	8	31	43	82

	etc.				
144	Prison Breach		1		1
175	Causing a disturbance, indecent exhibition, loitering, etc.		1		1
177	Trespassing at night	2			2
326	Theft of telecommunication service			1	1
334	Punishment for theft	98	59	50	207
335	Taking a motor vehicle or vessel or found therein without consent	10	6	3	19
340	Destroying Documents of Title	1			1
342	Theft, Forgery etc., of Credit Card	1	2	1	4
345	Stopping mail with intent	1			1
347	Criminal Interest Rate			1	1
348	Breaking and Entering with Intent, Committing Offence or breaking out (348.1 – violent)	46	31	18	95
349	Being unlawfully in dwelling – house	4	3	1	8
351	Possession of break-in instrument (351 (2) disguise with intent)	1	10	7	18
354	Possession of property obtained by crime	1			1
355	Punishment for 354	29	26	15	70
364	Fraudulently obtaining food, beverage or accommodation	3	1		4
367	Punishment for forgery	5			5
368	Uttering forged document		1	2	3
380	Fraud. Exchequer bill papers, public seals, etc.	2	2		4
393	Fraud in relation to fares, etc.			1	1
430	Mischief	51	34	28	113
434	Arson – damage to property (433 – violent)	4	2	1	7
437	False Alarm of fire	2	1		3
459	Conveying instruments for coining out of mint		1		1
464	Counselling offence that is not committed	1			1
466	Conspiracy in restraint of trade	1			1
811	Breach of Recognizance		1	1	2
		292	259	228	779

Appendix D

Reference Levels of the Predictors of the Final Logistic Regression Model

Predictor Variables	Wald	Sig.	Predictor Variables	Wald	Sig.
ALCOHOL USE			SINGLE PARENT		
No	4.225	.121	No	5.159	.076
STIMULANT USE			STEP-PARENT		
No	5.636	.060	No	6.294	.043
HALLUCINOGEN USE			NON-PARENT		
No	5.221	.073	No	9.436	.009
LEARNING DISABILITY			TEMPORARY SEPARATION		
No	10.325	.006	No	4.054	.132
SCHOOL STATUS			PERMENANT SEPARATION		
Left	12.441	.014	No	6.223	.045
PEER DELINQUENCY			SEXUAL ABUSE		
No	7.287	.063	No	4.933	.085
PROSOCIAL INVOLVE.			NEGLECT		
No	5.404	.067	No	17.867	.000
INCARCERATED			GOVERNMENT CARE		
No	4.867	.088	No	5.757	.056

Reference Levels of the Predictors of the Final Logistic Regression Model