An Examination of the Relationship Between Fetal Alcohol Spectrum Disorder, Aboriginal Women, and the Criminal Justice System

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Dedication

I would like to dedicate this thesis to my Gingie, Cherilyn Mishell, who fostered my love of learning, and my grandmother Barbara Andre who has supported me financially, physically and emotionally throughout the completion of my degree. Without your support, I would not be where I am today.
Abstract

Fetal Alcohol Spectrum Disorder (FASD) is an umbrella term for a severe neurological and physical disorder caused by in-utero exposure to alcohol. Research suggests high prevalence rates for FASD can be found in the Aboriginal population, specifically those within correctional settings. Due to the higher prevalence of FASD among Aboriginals in correctional settings, providing information and training on FASD is needed to help ensure that effective support services are provided to the offenders. Consistent with this need, the primary goal of the current study is to synthesize the literature for the Canadian guidelines for FASD; social history of Aboriginal people in Canada; prevalence of alcohol abuse among Aboriginal women and its relationship with FASD; the relationship between FASD and crime, if one exists; and, additionally, evidence-based interventions for individuals with FASD. Results of the literature review support a theoretical relationship between FASD, Aboriginal women and the criminal justice system. Behavioural interventions shown to be effective for individuals with FASD included educational, cognitive, parenting, and adaptive skills. Parental efficacy and using FASD diagnostic-based framework for developing interventions were additional considerations found throughout the research. Future research should continue to evaluate clinical and literary works surrounding the relationship between FASD, Aboriginal women, and the criminal justice system, specifically within the correctional setting.
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Chapter I: Introduction

Fetal Alcohol Spectrum Disorder (FASD) is an umbrella term for a debilitating disorder caused by alcohol consumption by the mother during pregnancy (O’Leary, 2004). FASD is an overarching term that refers to several disorders that fall under the spectrum including Prenatal Alcohol Exposure, Fetal Alcohol Syndrome, Alcohol Related Neurodevelopmental Disorders and Alcohol Related Birth defects (O'Leary, 2004). Exposure to alcohol at any time during pregnancy can put the foetus at risk of developing FASD (O’Leary, 2004). Researchers have not yet pin-pointed at what time the foetus is at greatest risk of developing FASD, or what precise amount of alcohol begins to affect the foetus (O’Leary, 2004). Although high and chronic levels of alcohol consumption have been identified as causal factors, some researchers have also found instances of FASD occurring when lower levels of alcohol were consumed during pregnancy (O’Leary, 2004). Owing at least in part to the reality that the biological cause of FASD is behavioural, that is, the mother’s decision to consume alcohol, there is a large stigma amongst mothers of children with FASD, in addition to the children themselves (Chudley et al., 2007).

It is difficult to ascertain prevalence rates of FASD in Canada due to errors in diagnoses, but accepted estimates suggest that approximately 9 in every 1000 people are affected with FASD (Popova et al., 2013). Current research estimates that two out of every nine individuals with FASD in Canada are of Aboriginal ethnicity (O'Leary, 2004). The term Aboriginal refers to the indigenous populations and tribes of Canada such as Metis, Mohawk, Inuit, Cree, and Ojibwa (Mawhiney, 1995, pp. 213). Tragically, communities in Canada with a strong Aboriginal presence have been found to have a disproportionately higher prevalence of FASD as compared to communities with less Aboriginal individuals (Masotti, Szala-Menok, Selby, Randford, & Koughnett, 2003). This is, in part, a result of the high rates of alcoholism found within Canadian communities with a higher proportion of Aboriginal individuals (Masotti et al., 2003). Some researchers suggest increased rates of alcoholism are, at least partly, due to the traumatic social history of Aboriginal peoples and the effects of post-colonialism (Johnston & Boyle, 2013). Post-colonialism is a theoretical perspective that suggests that the aggressive introduction of European society on the Aboriginal peoples and the assimilation of their culture lead to the use of inappropriate coping techniques (e.g., alcohol and other drugs) to deal with the trauma of post-colonialism (Johnston & Boyle, 2013). Assimilation of culture, loss of traditions, and suppression of spirituality have been implicated in the literature as factors associated with heightened risk for drinking in Aboriginal women and these risk factors continue during pregnancy (Masotti et al., 2003). These stressors have left some Aboriginal women vulnerable to various forms of maladaptive coping, such as alcohol consumption and later dependence (Masotti et al., 2003). One of the effects of alcohol dependence is a disproportionately high prevalence rate of FASD in Aboriginal children (O’Leary, 2004).

Secondary deleterious trends may occur as a result of negative interactions between the environment and the primary disabilities (i.e., FASD; O’Leary, 2004). These harmful trends include, but are not limited to, academic failure and early entry into the criminal justice system (Burd, Fast, Conry, & Williams, 2010). Historically, Aboriginal individuals have a higher incidence of incarceration, at least partly owing to the aforementioned stressors. Due to this elevated risk of incarceration combined with the secondary deleterious trends that occur in FASD, there is an expressed concern for these individuals and need for more research (Burd et al., 2003). Burd and colleagues’ (2003) study found high rates of FASD within the correctional setting, an estimated 1,341 undiagnosed or misdiagnosed cases of FASD across male and female federally incarcerated Canadian inmates.. Tough and associates (2007) found high birthrates of
FASD throughout Canada, but disproportionately higher within communities with a higher Aboriginal presence, between male and female births. Due to the higher prevalence of FASD among Aboriginals in correctional settings, providing information and training on FASD is needed to help to ensure that effective support services are provided to the offenders and community members (e.g., parole officers, case managers, counsellors, etc.) who assist them (Burd et al., 2003).

A common thread throughout the literature appears to be some relationship between FASD, Aboriginal women, and the criminal justice system (Burd et al., 2003; Popova et al., 2011; Weatherburn, Snowball, & Hunter, 2008). Accordingly, there is a need for continued information and awareness for staff to properly assist these offenders in the justice system (Burd et al., 2003). Consistent with this need, the primary goal of the current study is to synthesize the literature on FASD, its relationship with female Aboriginal offenders, and the criminal justice system.

Many obstacles may arise when working with individuals with FASD that may include the development of secondary disabilities and difficult behaviours, such as non-compliance and aggression (Chudley, Kilgour, Cranston & Edwards, 2007). Due to these secondary disabilities and behaviours which clinicians and other service providers may find challenging to manage, individuals with FASD are often incorrectly labelled as untreatable (Chudley et al., 2007). Current research, although sparse, suggests that some evidence-based interventions are effective in modifying symptoms and behaviours associated with FASD (Paley & O’Connor, 2007). Accordingly, a secondary goal of this study is to review evidence-based interventions that have resulted in positive outcomes for individuals with FASD.

This study will focus on creating a synthesized analysis of the current research and literature for: (1) Canadian guidelines for diagnosis of FASD; (2) the social history of Aboriginal people in Canada; (3) the prevalence of alcohol abuse among Aboriginal women and the relationship with FASD; (4) the relationship between FASD and crime, if one exists; and (5) evidence-based interventions for individuals with FASD.

The final product of this thesis will be the completed literature review, bound and available for reading, along with two pamphlets, one for the staff at the Elizabeth Fry Kingston and one for women with FASD seeking services at the Elizabeth Fry Kingston. The staff pamphlet will outline key points taken from the literature review, including Canadian diagnostic criteria of FASD, the prevalence rate of FASD among Aboriginal women and offenders, and evidence-based interventions used to reduce problem behaviours. A second pamphlet will be created as an informational resource for women who have FASD. This pamphlet will describe key points from the literature review, including Canadian guidelines of diagnosis for FASD, the relationship between FASD and crime if one exists, and interventions that may help them.
Chapter II: Methodology

This study will consist of a literature review that will be a synthesized analysis of the content of current research. Areas covered within the literature review include: (1) Canadian guidelines for diagnosis of FASD; (2) the social history of Aboriginal people in Canada; (3) the prevalence of alcohol abuse among Aboriginal women and the relationship with FASD; (4) the relationship between FASD and crime, if one exists; and (5) evidence-based interventions for individuals with FASD. Articles will be retrieved from peer-reviewed journals found online through databases that include PsycARTICLES, Academic Search Premier, MEDLINE, and QCAT Library Catalogue. Searches will focus on articles related to Fetal Alcohol Syndrome, Prenatal Alcohol Exposure (PAE), Alcohol Related Neurodevelopmental Disorders, Alcohol Related Birth Defects, Fetal Alcohol Effects, Aboriginal women and alcoholism, behavioural interventions for FASD, interventions for FASD, FASD and its relation to the criminal justice system, and FASD and offenders. Publication dates for articles will predominantly range between 2000 and 2014 to ensure that the literature review is informed by current knowledge. Articles published prior 2000 were only included in relation to Aboriginal history, due to a lack of comprehensive literature after 2000. In addition, empirically validated behavioural interventions for individuals with FASD will be reviewed. Reference lists from accumulated articles will also be examined for additional resources. This project is based solely on available research and does not involve the use of human participants.

The literature review will examine a possible link between FASD, Aboriginal women, and offending behaviours. The literature on behavioural interventions for FASD will be examined, and any gaps identified in the research will be discussed. The literature review will be distilled into two pamphlets: one for staff at the Elizabeth Fry Kingston, and one for clients of the Elizabeth Fry Kingston, and will serve as user-friendly resources.

The staff pamphlet will provide information regarding Aboriginals and FASD: prevalence rates, diagnostic criteria, common behavioural challenges and evidence-based interventions to help modify those behaviours. In addition, the staff pamphlet will have a brief overview of the Aboriginal Social History and its relation to past trauma and risk factors that may lead an Aboriginal woman to consume alcohol while pregnant. Incarceration rates for Aboriginal offenders and estimated rates of diagnosed and undiagnosed cases of FASD will also be included to offer staff and likelihood that they may encounter an Aboriginal offender with FASD.

The client pamphlet will also include Aboriginal and FASD: prevalence rates, diagnostic criteria and common behavioural challenges, however, will be presented in an educational and reflective manner so that the client may better understand their diagnosis. Self-management techniques will also be provided to assist the client and support independence. In addition, both pamphlets will include community resources in regards to FASD support.
Chapter III: Literature Review

Fetal Alcohol Spectrum Disorder

The term Fetal Alcohol Syndrome (FAS) was first introduced in 1973 by Drs. Smith and Jones who observed abnormalities in children born from mothers who had consumed high levels of alcohol during their pregnancy (Jones & Streissguth, 2010). Both doctors recorded cases with common abnormalities in the children who survive birth (Jones & Streissguth, 2010). Initial common symptoms included abnormalities in growth, cognitive functioning, and facial characteristics (Jones & Streissguth, 2010). Initially, only severe symptoms of FAS, such as a smooth philtrum (i.e., indent above the upper lip between the nose and the lips) and below average Intelligence Quotient (IQ), ranging from below 50 up to 83, was used to determine if an individual had FAS; however, later a spectrum of disorders within FAS was identified (Jones & Streissguth, 2010).

The subtypes of FAS differentiated include Alcohol Related Neurodevelopmental Disorders (ARND), Alcohol Related Birth Defects (ARBD), and Fetal Alcohol Effects (FAE; O’Leary, 2004). The former focuses on abnormalities within the central nervous system. ARBD describes physical abnormalities, and finally FAE is similar to FAS, but symptoms of FAE are not as severe as FAS (O’Leary, 2004). For example the IQ for individuals with FAE ranges between 70 to 85, they exhibit mild facial abnormalities, and have mild behavioural or cognitive delays (O’Leary, 2004). FAS was later changed to Fetal Alcohol Spectrum Disorder (FASD) to incorporate all other diagnoses similar to FAS (O’Leary, 2004).

Diagnosis of FASD

The diagnosis of FASD brings with it severe stigmatization for the mother; it is regarded as a highly preventable genetic disorder since the mother can make the decision to abstain from alcohol during her pregnancy (Salmon & Clarren, 2011). Due to this stigmatization, two common trends can lead to a misdiagnosis of FASD; the mother may deny consumption which would result in a misdiagnosis, or the clinician may be inclined to lean toward the diagnoses of FASD and stereotype because of the mother’s ethnic background (Salmon & Clarren, 2011). An example of this negative ethnic stereotype would be assuming the child has FASD because the mother is Aboriginal (i.e., “the drunk Indian”), therefore, they assume alcohol consumption is definite. In addition, diagnosticians may assume FASD when presented with mild symptoms, such as the presence of a learning disability, or only presenting with one of the characteristic facial abnormality (Salmon & Clarren, 2011). For these reasons, misdiagnosis of FASD is common, and makes it difficult to ascertain an accurate prevalence (O’Leary, 2004; Salmon & Clarren, 2011). A diagnosis of FASD first requires confirmation of the mother’s consumption of alcohol during pregnancy (Salmon & Clarren, 2011). If the mother denies consuming alcohol, a credible observer of the pregnancy such as an intimate partner or doctor may provide sufficient collateral information (Salmon & Clarren, 2011). Once alcohol consumption during the pregnancy has been confirmed, consideration of an FASD diagnosis can move forward with the care of a multidisciplinary team, often consisting of a physician, a psychologist or neuropsychologist, and various developmental specialists, coordinated by a case management team (Popova et al., 2013).

There are four main indicators used to assess for FASD: growth retardation,
characteristic facial abnormalities, central nervous system anomalies, and in-utero exposure to alcohol (O'Leary, 2004; Chudley et al., 2005). Diagnosis of FASD may be approached in different ways depending on the makeup of the multidisciplinary team (Chudely et al., 2005). As a method to try to ensure consistency, Astley (2004) created a 4-Digit Diagnostic Code that measures the severity of the main features of FASD. The severity is ranked on a 4-point Likert-type scale ranging from one, representing an absence of the feature, to four, representing an extreme presence (Astley, 2004). Each of the four areas is assessed separately through the 4-Digit Diagnostic Code, which can assist the clinician in determining if the individual has FASD (Astley, 2004).

**Physical Abnormalities**

Growth retardation consistent with FASD is observed in an individual who scores at or below the tenth percentile in height, weight, and head circumference (Chudley et al., 2005). Facial abnormalities comprise three distinct types of characteristic facial features, including a short distance between the tear duct and the edge of the eye (sometimes referred to as the palpebral fissure), a smooth or flattened philtrum, and a thin lip line (sometimes referred to as the vermilion border of the upper lip; Chudley et al., 2005). Guidelines for measuring facial abnormalities state that the short palpebral fissures must either be at or below the third percentile, and the philtrum and vermilion border of the upper lip must score four or five on the Lip-philtrum guide (Chudley et al., 2005). According to the 4-Digit Diagnostic Code, if an individual presents with two of the three facial abnormalities then they would be scored as moderate on the Likert-type scale (Astley, 2004). If an individual presented with all three facial abnormalities then they would be ranked as severe on the Likert-type scale, indicating the possibility of an FASD diagnosis solely from the facial features (Astley, 2004).

Some diagnosticians frequently rely on the presence of the obvious facial abnormalities and in-utero exposure of alcohol as sufficient evidence for a diagnosis of FASD (Chudley et al., 2005). Kuehn and colleagues (2012) conducted a cohort study of children born from women who consumed alcohol during their pregnancy and examined the prevalence of the four indicators of FASD diagnosis. Kuehn and associates (2012) conducted a variety of assessments including the 4-Digit Diagnostic Code. Researchers collected subjects from a community health clinic in Chile who had reported consuming alcohol while pregnant; their children were then assessed approximately eight-and-a-half years later to see if they met the diagnostic criteria for FASD. Of the final 92 children with prenatal alcohol exposure (PAE), 59 had enough data to identify possible abnormalities within domains that were assessed. Out of 59 participants, 47 had one abnormality identified (Kuehn et al., 2012). Only one participant using the 4-Digit Diagnostic Code for facial abnormalities met the criteria for FASD; however, many of the other participants met the criteria for central nervous system (CNS) anomalies (Kuhlen et al., 2012). Similar to the findings of Chudley and associates (2005), Kuhlen and associates (2012) discouraged the exclusive use of the facial characteristics as a means of diagnosing FASD. Chudley and associates (2005) note that there are other developmental disorders that can present with similar physical distortions, such as the broad smooth philtrum found in persons with Williams Syndrome. Authors caution the use of only the facial abnormalities and exposure to alcohol as a method of diagnosis, suggesting instead that diagnosticians utilize the assessment of all indicators, particularly the CNS anomalies, before arriving at a diagnostic conclusion.
Conclusion of FASD (Chudley et al., 2005).

Central Nervous System Anomalies

CNS anomalies encompass a wide assortment of deficits affecting multiple neuropsychological constructs (Davis, Desrocher, & Moore, 2011). Intellectual functioning, learning, memory, language, reaction time, motor functioning, visuospatial functioning, executive functioning, behavioural functioning and social skills are among areas in which deficits often emerge as a result of FASD (Davis et al., 2011). These deficits may develop as a direct result of prenatal exposure of alcohol on the brain during key developmental periods (Davis et al., 2011). Structural brain abnormalities identified by the literature implicate the corpus callosum, hippocampus, limbic system, cerebellum and frontal lobe (Davis et al., 2011).

Sowell and associates (2002) conducted brain imaging scans of individuals’ brains with documented prenatal exposure to alcohol with the purpose determining if those with prenatal exposure had differences in the brain size and structure as compared to individuals without prenatal exposure to alcohol. Results from the study showed decreased frontal cortex volume and increased tissue volume within all other areas of the brain (Sowell et al., 2002). Researchers speculate that, due to decreased frontal cortex volume, other areas of the brain such as the parietal lobe increased in size to accommodate the underdeveloped frontal cortex (Sowell et al., 2002). It is possible that this example of irregular development of the brain could result in deficits within neuropsychological domains (Davis et al., 2011).

Studies have found that those with structural brain abnormalities as a result of prenatal exposure to alcohol tend to have a deficiency in some neuropsychological domains. Norman and colleagues (2013) compared the spatial working memory of children with heavy PAE to children without PAE. The results of each group were compared using functional magnetic resonance imaging (fMRI), a technique that measures the blood oxygen levels within the brain (Norman et al., 2013). Participants were required to locate alternating blocks quickly and accurately as they appeared on the screen, and reaction times and performance were recorded (Norman et al., 2013). Participants with PAE displayed limited brain activation in all regions of the brain when they were engaged in tasks requiring memory and attention (Norman et al., 2013). There was also no increase in blood oxygen volume within the frontal lobe for individuals with PAE during the analysis of reaction times (Norman et al., 2013).

Additional studies have examined response inhibition using imaging techniques in assessing how a person with FASD or PAE performs. Fryer and researchers (2007) conducted a seminal study investigating the inhibitory response of a person with PAE using imaging analysis. Participants were required to view a laptop screen and press a button when presented with various visual stimuli (Fryer et al., 2007). The stimuli presented included a large circle, small circle, or large square, coded as “go-tasks;” however, when presented with a small square participants were instructed to abstain from pressing the button, coded as “no-go” tasks (2007). Areas of the brain involved in inhibition did not activate as readily compared to individuals without PAE when engaging in “no-go” tasks, further supporting the hypothesis that PAE has a negative effect on the developing brain (Fryer et al., 2007).

Later O’Brien and colleagues (2013) duplicated Fryer and associates’ (2007) study but added predictive cueing to determine if that would improve response inhibition for
individuals with PAE. A replicated procedure was used but included a pattern cueing participants to refrain from pressing the button. Results from the study showed that some of the individuals with PAE could acknowledge that a pattern exists; however, few could accurately recognize the pattern (O’Brien et al., 2013). The fMRI responses showed increased activation of various areas of the brain, although not necessarily related to response inhibition. O’Brien and colleagues’ (2013) results differed from Fryer and associates’ (2007) in that participants with PAE made a similar amount of errors in response inhibition to the participants without PAE. Although, this may be partly due to the simplicity of the “go” and ”no-go” tasks used and as a result may not have benefited from the predictive cueing. Overall, the literature seems to support the notion that abnormalities in brain structure and size have the potential to affect neuropsychological development, and thereby may contribute to deficits in various neuropsychological domains.

Social skills represents another area of development that has been frequently assessed for individuals with FASD (Davis et al., 2011). Deficits in social skills have been noted in individuals with FASD, and frequently manifest as a struggle to accurately perceive social cues, show concern for others, and develop close interpersonal relationships (Davis et al., 2011; Kully-Martens et al., 2012). Possible explanations for the deficits in social skills identified by the literature stems from the role of impaired executive functioning, often observed in individuals with FASD (Davis et al., 2011). In the Sowell and colleagues (2002) study, researchers found abnormalities in brain growth that impeded executive functioning. Additional research speculates that this initial impaired executive functioning can aggravate deficits in social skills that may worsen over time (Kully-Martens et al., 2012). Although, Kully-Martens and associates (2012) suggest that even though individuals with FASD are at an initial disadvantage, proper supportive environments can help them catch up to their peers and develop age-appropriate social skills. Accordingly, despite being behind their same aged peers at the outset, individuals with FASD are able to catch up to their peers with an enriched environment.

Prevalence of FASD

Canadian studies investigating the prevalence rates of FASD are sparse, providing only estimations of live births of individuals with FASD (O’Leary, 2004). At present, there are no national statistics within Canada examining the prevalence rates of FASD; however, smaller studies have examined Aboriginal communities throughout Canada (Chudley et al., 2005). Available prevalence rates of FASD within these small communities range from 7.5 up to 190 individuals per 1,000 live births (Chudley et al., 2005) compared to the overall estimated population of FASD within Canada at a rate of 9 individuals per 1,000 live births (Popova et al., 2013). However, researchers warn against generalizing these prevalence rates to the Canadian public (Chudley et al., 2005).

Regardless of whether the prevalence rate is high or low, it is difficult to obtain an accurate prevalence rate for FASD due to possible errors in diagnosis (Chudley et al., 2005). Popova and associates (2013) outlined the potential cost of accurately diagnosing an individual with FASD in Canada, which estimates ranging from $3,110 to $4,570 to be properly screened, referred, admitted and diagnosed. Multiple sources in the literature emphasize the use of an interdisciplinary team as a prerequisite to making an accurate and consistent diagnosis of FASD (Chudley, et al., 2005; Popova et al., 2013; Salmon & Clarren, 2011). However, the cost of assembling an interdisciplinary team and the
processes involved leading up to a possible FASD diagnosis can, understandably, be extensive and exceed the budget of many Canadians (Popova et al., 2013).

Overall, FASD is a complicated and pervasive developmental disorder that follows a person throughout their life span (O’Leary, 2004). The process of diagnosing FASD is both extensive and expensive; however, a diagnosis is often necessary to obtain the proper resources to help them maintain a full and functional life (Popova et al., 2013). As mentioned earlier, FASD presents itself with certain indicators that include growth retardation, distinct facial features, CNS anomalies and in-utero exposure to alcohol (Salmon & Clarren, 2011). It is important to examine all of these indicators before arriving at a diagnosis, and to go beyond only acknowledging the obvious indicators, such as classically implicated facial features (Salmon & Clarren, 2011). It is also important to set aside negative and damaging stereotypes (e.g., “drunk Indian”) of certain ethnic groups which can increase the misdiagnosis of FASD (Salmon & Clarren, 2011). The stigmatization that occurs for the individual with FASD and the mother often prevents an accurate diagnosis; it may lead to the mother feeling ashamed, viewing herself as a bad mother, and denying alcohol consumption (Johnston & Boyle, 2013). The research has noted that the development of this disorder can occur when alcohol is consumed at any time during pregnancy, irrelevant of social factors (Salmon & Clarren, 2011). However, there are certain individuals who are more likely to give birth to a child with FASD, due to severe risk factors associated such as chronic alcoholism (Salmon & Clarren, 2011).

As stated earlier, prevalence rates for FASD are difficult to calculate; although, smaller studies of Aboriginal communities have noted higher rates of FASD amongst its people than other communities in Canada (Chudley et al., 2005). Overall, research has demonstrated that the history of Aboriginals in Canada and the after effects of colonialism have increased maladaptive coping mechanisms resulting in health problems (Johnston & Boyle, 2013). The next section in this literature review examines the social history of Aboriginals, the forceful assimilation of their culture and the possible link to FASD.

Social History of Aboriginal people in Canada

Pre-Colonialism

Initial Aboriginal cultures focused heavily on the community, community welfare and the collective interests of all peoples (Mawhiney, 1995). Aboriginal communities had an equal social structure between the sexes, an equal division of labour between men and women that was vital to the survival of the community, and equal importance placed on the work by each gender (Mawhiney, 1995). Leadership was determined by immediate needs of the community and an individual’s experience (Mawhiney, 1995). For example, if the community required food, the best hunter would lead the rest of the men in the hunt (Mawhiney, 1995). Elders also played an important role in Aboriginal societies; knowledge and experience were highly valued and Elders passed on knowledge, information, and stories to the younger generation (Mawhiney, 1995). Aboriginal communities had a strong interdependence with one another, and an individual’s success was determined by the overall success of the community (Mawhiney, 1995). This was, in part, due to cohesive nature of Aboriginal societies as many tasks could not be completed by a single individual and instead required effort from many in the group (Mawhiney, 1995).
Colonialism

First attempts by European cultures to colonize Aboriginal lands were met with heavy resistance; European society was direct opposite of the Aboriginal societies, valuing independent self-success rather than the well-being and success of the community (Mawhiney, 1995). The Europeans later developed strategies to convince Aboriginals into adopting the European lifestyle such as learning the languages of the different tribes, emphasizing the commonalities between the two cultures, and presenting the Aboriginals with technological advancements, and providing them with tobacco and alcohol as gifts (Mawhiney, 1995). The Europeans managed to lure many Aboriginals into accepting the “new” and “better” perks of modern society (Mawhiney, 1995). Aboriginal peoples were exploited by being paid for goods and services with alcohol, leading to high levels of dependence (Mawhiney, 1995). However, even though much of the Aboriginal societies had been dismantled, the Aboriginal people still managed self-governance and to resist the conversion over into European ways (Mawhiney, 1995).

As the wars within Europe continued, the British began to take notice of the valuable goods being produced within Aboriginal Nations (Mawhiney, 1995). Initially, the British Crown was prepared to meet with Aboriginal delegates to develop negotiations for trade and land rights (Mawhiney, 1995). However, as European settlers began to relocate from Europe to the Aboriginal Nation, arguments over land and occupant rights led to the development of policies and laws that subjugated the Aboriginal peoples' living amongst the European settlers (Mawhiney, 1995).

Between the years 1763 and 1876 the British crown concentrated on what they termed “civilizing” the Aboriginals people by moving them from their large land holdings to smaller reserves to live (Mawhiney, 1995). When the topic of legalisation was first introduced, many Aboriginals openly rejected this idea and refused to comply (Mawhiney, 1995). The British quelled this outburst removing the Aboriginals self-government and placing them under the care of the United Canada, which was the term used for Canada while still under British rule (Mawhiney, 1995). The British and Europeans tried to promote citizenship, stating that only Canadian citizens had the right to land, vote and education (Mawhiney, 1995). However, the requirements for an Aboriginal to become a Canadian citizen were unrealistic, as an Aboriginal person had to be able to read or write in either English or French (Mawhiney, 1995). Most Aboriginals were illiterate in English and French, making it impossible for them to gain citizenship and simultaneously promoted a fallacy of Aboriginals as inferior to the European colonists (Mawhiney, 1995).

In 1876, the Indian Act was passed, which placed the previously self-governed Aboriginal society under the control of the federal government and subjected the Aboriginal peoples to legislation (Mawhiney, 1995). Much of the legislation around native affairs focused on having Aboriginals choose between maintaining their native status or basic rights such as voting and land rights (Dickson & McNab, 2009). An example from the literature discusses how the government imposed a land act that held penalties for non-status Indians trespassing on reserve land. However, once this act was passed the federal government changed the criteria for who was considered “Indian” (Dickson & McNab, 2009). The federal government dictated who was considered an “Indian”, limiting this term to males, their children and spouses (Mawhiney, 1995). One of the changes in criteria of who was “Indian” was that if a Native woman married into a “white man” family, she lost
her native status. However, her children could retain their native status (Dickson & McNab, 2009). Along with development of legislation and Indian status came the development of residential schools (Mawhiney, 1995). The purpose of residential schools was to assimilate the growing generation of Aboriginal children into European society (Kaspar, 2014), thereby promoting the eradication or genocide of Aboriginal culture and peoples. At these schools, children were regularly punished for speaking their Aboriginal language, or engaging in cultural activities (Kaspar, 2014). A European curriculum was taught, and Aboriginal children were forced to engage in religious, specifically Christian, rituals in hopes that they would forget their old traditions and adapt new ones (Kaspar, 2014). The remaining Aboriginal leaders attempted to remove their children from the residential schools; however, the government retaliated with a military force and threats of starvation (Mawhiney, 1995). Initially the children were allowed to practice their Aboriginal culture when they returned home to their parents, but soon the children were held within the school during scheduled breaks in their school year (Mawhiney, 1995). This successfully broke many of the remaining ties the children had with their Aboriginal heritage and assimilated them into the European culture (Mawhiney, 1995).

Residential Schools

Negative repercussions from the residential schools have continued throughout the generations of Aboriginal families. These repercussions have been the subject of interest and research, investigating the psychological and physical effects that are experienced by survivors and their children. Researchers Johnston and Boyle (2013) conducted a study that examined the experience of Aboriginal mothers raising children with FASD. They conducted semiformal interviews with the mothers and gathered information pertaining to the mother’s beliefs, practices and challenges associated with raising a child with FASD (Johnston & Boyle, 2013). Results from the study showed what the researchers called “intergenerational patterns” of FASD (Johnston & Boyle, 2013). The mothers reported that the effects of FASD had existed through generations, with many of the participants having multiple family members diagnosed with FASD (Johnston & Boyle, 2013). Additional results from the study noted that participants discussed extensive drug and alcohol abuse throughout the family (Johnston & Boyle, 2013). Some participants stated that their own drug and alcohol abuse was learned through their parents and grandparents who used substances to cope with unresolved trauma, particularly trauma developed due to residential school experiences, resulting in the higher probability of them having a child with FASD (Johnston & Boyle, 2013).

In addition to Johnston & Boyle’s research on the intergenerational effects, Bombay, Matheson, and Anisman (2014) investigated the implications of the intergenerational effects that the residential schools had on the Aboriginal survivors in relation to the theoretical concept of historical trauma. Bombay and colleagues (2014) examined the literature for evidence of the collective trauma of Aboriginal peoples and how it would relate to the increase of risk factors for poor health and societal outcomes. Researchers used data collected from the First Nations Regional Longitudinal Health Survey and the Aboriginal Peoples Survey and found many of the survivors of the residential schools reported thoughts of suicide and suicide attempts compared to those who did not attend the residential schools (Bombay et al., 2014). As well, high rates of drug use, depressive symptoms and various mental health issues were active within the population of residential school survivors.
Researchers report that there are additional variables that could account for the increase of maladaptive behaviours in the residential school survivors; however, they suggest a strong correlation between the two variables (Bombay et al., 2014). Additionally, Bombay and colleagues speculated from presented data that many of the intergenerational effects were due to a lack of positive parenting, abuse (e.g., sexual, physical, and psychological) which resulted in poor social skills and familial dysfunction (2014).

Another study examined if attending the residential schools had any effect on Aboriginal health status. Kaspar (2014) collected data on individuals who attended a residential school, and those that did not. Information on health status was collected through a self-reported measure using a Likert-type scale from 1 to 5, with higher scores, indicating greater self-perceptions regarding health status (Kaspar, 2014). Results from the study showed that individuals who attended the residential schools declared that they had poorly perceived health; however, some who did not attend the residential schools also reported poor health status (Kaspar, 2014). The study notes that that due to the self-reported measures there was high variability in the perceived health status, some individuals who attended the residential schools reported no health concerns, whereas others reported severe health concerns (Kaspar, 2014). The researchers comment that high variability in the data could have skewed the results, however, additional statistical analysis excluded the high rate of variability as a confounding factor. The researchers also took into account the socioeconomic similarities of those who attended the residential schools and found that those who attended the residential schools tended to come from communities with severe disadvantages related to social, health and education (Kaspar, 2014).

The traumatic effects of Aboriginal Social History is well documented. The literature currently examined is only a small fraction of the available literature that depicts harsh abolishment of Aboriginal culture, particularly in regards to the Indian Act and residential schools. Long term effects of the residential school system suggest the development of maladaptive coping strategies that continue on throughout families. The next section of this literature review examines the prevalence of alcohol abuse amongst Aboriginal women and the implications of FASD.

**Alcohol Abuse among Aboriginal Women**

As acknowledged in the previous section, the colonialism of the Aboriginal peoples in Canada was one of assimilation, abuse and trauma. Aboriginal peoples were often manipulated by the European governments and their representatives into unfair trades as well had their cultural practices exploited. In Aboriginal cultures, mood and mind altering substances, such as tobacco, were used in relation to achieving a higher level of consciousness (Van Wormer & Davis, 2013). When the Europeans exposed them to alcohol, the Aboriginal peoples assumed to use alcohol in the same way, unaware of the hazardous affects it would have (Van Wormer & Davis, 2013). Aboriginals were assimilated into the European culture and during the early years of the 1800’s heavy alcohol consumption was the norm (Van Wormer & Davis, 2013). The literature on alcohol abuse amongst the Aboriginal people suggests this early exposure and the intergenerational trauma from colonization has led to the growing epidemic of substance abuse (Van Wormer & Davis, 2013; Harrison & Carver, 2004).

In 2001, May and Gossage (2001) examined the overall drinking patterns among American Aboriginal people using a random sampling of 1,436 Northern American Indians from
four different tribes within the United States. They surveyed the participants, detailing their demographic background as well as their alcohol and drug use habits for (May & Gossage, 2001). Descriptive results from the study found that on average onset for drinking in females occurred around 18.1 years (May & Gossage, 2001). Females reported consuming over three drinks per drinking day with an average of 2.1 drinking days per week (May & Gossage, 2001). In examining the presence of binge drinking, females reported drinking between 0 to 48 drinks within the last month with an average of 3.7 drinks per drinking day. In this study, males double many of the female’s alcohol consumption rates with up to 9 to 10 drinks per day and an average of 4.7 drinking days per week (May & Gossage, 2001). Additionally, when asked about the context in which the participants consumed alcohol it was primarily within social gatherings; rarely did excessive alcohol consumption occur when the participant was alone. May and Gossage (2001) comment that much of the heavy alcohol consumption occurs during adolescence and into the early years of adulthood (2001). Data collected from 50+ year-old females showed a decrease to an average of only 1.4 drinks per day (May & Gossage, 2001). Taking into account the study’s results of the participants engaging in heavy consumption of alcohol, May and Gossage (2001) do report that these binging activities were limited to a few days out of the year. Additionally when not engaging in these binging behaviours, 39.6% of females and 29.3% of male participants reported abstaining from alcohol approximately (May & Gossage, 2001). These same participants also agreed with harsher legislation surrounding alcohol consumption, availability and offences. This type of attitude is contrary to the negative stereotype of the commonly known “drunken’ Indian” (May & Gossage, 2001).

Years later following May and Gossage’s (2001) work, Trujillo Lewis, Shipman, and May (2011) surveyed approximately 179 mothers with children who had been referred to a FAS epidemiology research project. Of that 179, 39 of the mothers had a child with an FASD diagnosis (Group 1), whereas 107 of the mothers had children without a diagnosis of FASD (Group 2), and 30 of the mothers were used as a control group (Group 3). The purpose of this study was to examine the demographics, socioeconomic status and psychological characteristics of the mothers with children either diagnosed or presenting with symptomology similar to FASD. In addition to these findings, researchers examined maternal prenatal alcohol consumption (Trujillo et al., 2011). 30 out of the 39 group 1 mothers reported drinking prior to knowledge of their pregnancy and were able to provide estimates regarding alcohol consumption (Trujillo et al., 2011). The other nine were unsure of their alcohol consumption. Similar to Group 1’s results, 99 out of 107 Group 2 mothers reported drinking prior to knowledge of their pregnancy and were able to provide an estimation of their alcohol consumption (Trujillo et al., 2011). The other 8 were unsure about their previous alcohol consumption (Trujillo et al., 2011). Results from the mother’s alcohol consumption across all three groups showed a significant amount of alcohol consumption between the two testing groups as compared to the control group (Trujillo et al., 2011). In Group 1, overall average of the mother’s alcohol consumption translated into approximately 173.58 drinks throughout the month, whereas Group 2 only reported an average of 59.65 drinks per month (Trujillo et al., 2011). From these results the authors comment on their speculations in regards to the relationship between alcohol consumption and children born with FASD.

Wardman and Quantz (2005) further examined the occurrence of binge drinking within Aboriginal communities. Researchers conducted one of the first exploratory studies into the overall appearance of binge drinking and the factors relating to it (Wardman & Quantz, 2005). 15 participants were selected for the study, all were of Aboriginal heritage, between the ages of
20 to 60, and had experienced or were still currently experiencing instances of binge drinking (Wardman & Quantz, 2005). Through the use of semi-structured interviews, the authors obtained descriptive data on the characteristics of the participants' binge drinking behaviour as well as the risk and protective factors surrounding their drinking habits. Recurring themes were found throughout all participants observations of their own drinking habits such as frequency, duration and triggers related to binge drinking episodes (Wardman & Quantz, 2005). According to the participants, binge drinking episodes lasted 1 to 2 days on a weekly basis. A majority of these episodes occurred closer to the weekend and after triggering events occurred, such as a loss of funds or having to take care of their children. Unlike the Trujillo et al. (2011) study that referenced binge drinking occurring in social situations, participants in Wardman and Quantz’s (2005) study reported that most binge drinking occurred to escape daily stressors. Additionally, participants disclosed that when they engaged in binge drinking it was to numb the trauma they suffered either through previous physical, sexual, or emotional abuse and the loss of their cultural identity for those who lived through the residential schools. Although the participants recognized that binge drinking was problematic, they noted a normalization of alcoholism and heavy drinking. Many of the participants recalled that initially their drinking habits were not seen to be an issue because growing up those drinking habits was reinforced by their parents and the community (Wardman & Quantz, 2005).

Aboriginal Women and FASD

Much of the literature surrounding the relationship between Aboriginal women and FASD focuses on preventative measures to decrease the birth rate of children born with FASD. Prevalence rates show that Aboriginal children are born with FASD, at a rate of approximately 7.5 and 190 per 1,000 live births (Salmon, 2011; Tough, Clarke, & Cook, 2007). Previous studies have noted Aboriginal women being at a higher risk of binge drinking and as a result, having a higher rate of children born with FASD. Research into the exact moment at which a fetus is put at risk for FASD is limited due to the various confounding variables preventing an accurate estimation, however, May and colleagues (2013) attempted to determine what the effects of binge drinking might play in the in-utero development of FASD.

May and colleagues (2013) set out to pin-point key variables to develop accurate risk factors related to alcohol consumption that could lead to FASD. Researchers acquired a sample size of 250 mothers of children with FAS, partial fetal alcohol syndrome (PFAS), or ARND. In addition, 107 control participants were selected who had a history of prenatal alcohol consumption, but with complaints of developmental delays or a diagnosis of FAS. Each diagnosis was separated into its own group to be compared to the control and each other. Neither the control or exposed groups were exclusively Aboriginal, however, the researchers made an inference to participants being of various ethnicities (May et al., 2013). The participants were interviewed on their drinking habits, and were assessed for developmental and behavioural deficits. Results of drinking habits for the exposed group were consistent with the aforementioned studies. Mothers to children diagnosed with FAS consumed an average of 11 drinks per week approximately 3 months prior to knowledge of pregnancy and an average of 13.7 drinks per week while pregnant. These rates increased to 15.7 on the weekends (Friday, Saturday and Sunday), and dropped down to 2.9 drinks during weekdays. Mothers of children diagnosed with PFAS consumed an average of 14 drinks per week 3 months prior to knowledge of pregnancy, and an average of 13.1 drinks per week while pregnant. Mothers of children born with ARND followed a similar trend of high alcohol consumption prior and throughout their
pregnancy. In addition to May and colleagues (2013) measuring the frequency of drinks, researchers broke down weekly alcohol consumption throughout pregnancy trimesters. For all groups, the first trimester had the highest amount of alcohol consumed with a steady average trend continuing throughout the second before decreasing in the third trimester. May and colleagues (2013) concluded from this data that mothers who reported drinking, specifically binge drinking, were 12 times more likely to give birth to a child with FAS, PFAS, or ARND than a mother who reported that they did not drink. As the mothers moved through trimesters the likelihood of FASD diagnosis continues to increase; however, like many other studies there was limited statistical significance in regards to which was more harmful to the fetus, drinking only in the first trimester or throughout the entire pregnancy (May et al., 2013).

Aboriginal women are particularly vulnerable to having a child with FASD due to the various risk factors discussed throughout this study. As such, acknowledgement of these risk factors has been a driving force for various organizations to create preventative strategies for Aboriginal women without appointing blame or shaming them for maladaptive behaviour. Instead, organizations aim to create preventative strategies to educate Aboriginal women on the hazards of consuming alcohol while pregnant, as well as support programs to help the women abstain from substance use.

Salmon and Clarren (2011) outlined two research projects developed by the Canada Northwest FASD Research Network to assist clinicians in the northern territories utilize important preventative measures. The first research project consisted of working with clinicians in the northern territories in collecting accurate diagnostic data from the various teams working with the families in the area. This collection of data was needed to determine the level of service required from the government to support them. The research project sought to examine the risk factors relevant to having a child with FASD in hopes that clinical services could target those individuals at risk and support before they could cause harm to themselves or the fetus. Additionally, the researchers examined the possibility of creating a preventive strategy for FASD by analyzing the relationship between the presence of trauma and substance use within the Aboriginal communities (Salmon & Clarren, 2011).

Masotti and colleagues (2007) sought to bring together researchers and the Aboriginal community to develop preventive strategies and to assist communities to conduct research on various risk factors associated with live birth rates of FASD. The goal of this partnership was to develop the Healthy Communities, Mothers and Child Project, a three-year project to develop FASD prevention studies and intervention programs to help prevent FASD (Masottti et al., 2007). The end result of the study is on-going; however, researchers created an intervention program that combined motivational interviewing, cognitive behavioural therapy with behaviour modifications to address various risk factors found from the initial clinical research conducted (Masotti et al., 2007). This intervention was adapted from Fleming’s brief alcohol intervention program (Masottti et al., 2007). The target participants of this group would be Aboriginal women with a previous history of alcohol abuse and who had at least one child (Masotti et al., 2007). The authors noted that postpartum women could be some of the highest consumers of alcohol and thus supported their reason for choosing that population (Masotti et al., 2007). In addition the preventive interventions would be conducted in community setting and piloted across four different communities to provide access for all eligible parties (Masottti et al., 2007).

Another group of researchers moved to develop an evaluation framework of FASD programs to ensure the programs were providing effective interventions and appropriate support groups (Rutman, Poole, Hume, Hubberstey, & Van Bibber, 2014). Researchers began by
isolating key visual maps for evaluation categories they determined to be FASD prevention, FASD support, and FASD programs in Aboriginal communities (Rutman et al., 2014). Once the visual maps of the appropriate service elements were created, researchers sought to collect feedback on their project (Rutman et al., 2014). Over the course of the articles publication, Rutman and colleagues (2014) were provided with feedback from various professionals in the field until they had a finalized design. The resulting visual map began with the pregnant woman/mother and child in a circle surrounded by a ring of community and family supports (Rutman et al., 2014). Next was a ring containing nine program philosophies and theoretical frameworks such as woman directed, harm reduction, outreach based, etc. Rutman and colleagues (2014) note that not all programs are required to have all nine philosophies and frameworks, but that they should have the presence of some to ensure effective programming. The next ring consisted of activities and approaches, outlining some effective activities programs should be utilizing to provide quality interventions such as home visits, role modeling, and skill development (Rutman et al., 2014). The final three rings of the visual map relate to program outcomes (e.g., satisfaction and retention of skills); participant outcomes, relating to four identified domains: physical/economic, spiritual/cultural, mental/political and emotional/social to provide a holistic perspective; and, finally community outcomes which relates to the societal level of the community being able to support the mothers and children (Rutman et al., 2014). Although the visual map has yet to be formally evaluated, Rutman and colleagues (2014) comment on how the initial presence of the visual map has encouraged service providers to ensure they are providing quality programming by adhering to the suggested framework.

Aboriginal women are often placed at an extreme disadvantage due to their vulnerability to various risk factors such as past trauma and binge drinking. When present they can lead to various bouts of binge drinking that can continue into pregnancy putting the fetus at risk. Studies show consistent binge drinking behaviour in many Aboriginal women, although they differ on instances of context of alcohol consumption. Descriptive data shows a trend of risk factors that can affect the child in utero, and later result in the development of secondary deleterious trends. The next section of this study examines the possible relationship between Aboriginal offenders, FASD and crime by examining prevalence rates, case law, government reports, and observations made by front-line emergency staff.

**FASD and Crime**

Research into individuals diagnosed with FASD in the correctional system shows a large amount of Aboriginal offenders presenting with an FASD diagnosis. Ruddell and Gottschall (2014) investigated how well Aboriginal offenders adjusted to the institutional environment through examining institutional misconducts within the 53 prisons in Canada through January 1, 2006 to August 31, 2009. They collected data on over 3,356 Aboriginal offenders and found out of the cohort of offenders they surveyed, approximately 26% of offenders have been involved in a minimum of one incident of misconduct as either the victim or the instigator. This is in comparison to the 14,719 non-Aboriginal offenders where only 19% of offenders were involved in a minimum of one major incident of misconduct (Ruddell & Gottschall, 2014). When researchers examined the demographics of the Federal offenders involved with the institutional misconducts, they found a pattern of risk factors in the Aboriginal offender’s history (Ruddell & Gottschall, 2014). They found that Aboriginal offenders engaged in prison misconducts often had higher risk and need among the assessed dynamic factors (e.g., personal/emotional, education/employment, substance abuse, associates and attitudes), they also had a history of
gang involvement (Ruddell & Gottschall, 2014).

These findings further support the developing risk factors that were earlier identified by Weatherburn, Snowball and Hunter (2008) when they conducted an exploratory study into the predictive factors into Aboriginal arrest. This was achieved through the collection of descriptive data on 9,359 Australian Aboriginal people who completed the Aboriginal National Survey on risk factors associated with persons who had been charged or imprisoned (Weatherburn et al., 2008). Results from the study showed a powerful correlation relationship between alcohol abuse and arrest (Weatherburn et al., 2008). Additionally, drug abuse, welfare dependence, unemployment, financial stress, one-parent families and being a member of the “stolen generation” were also identified risk factors of arrest (Weatherburn et al., 2008). The stolen generation referred to the Aboriginal children that were removed from their home and placed into residential schools by the government (Weatherburn et al., 2008).

The heavy influx of Aboriginal offenders and FASD is not unknown to Corrections Canada; it has been the subject of multiple inquiries and their influence on the system is still currently being researched. In 2009, the Office of the Correctional Investigator (OCI) set forth a change in policy to accommodate the recent statistics that showed the increase of Aboriginal offenders displaying symptoms of FASD (Mann, 2009). The OCI reported a lack of overall positive outcomes for aboriginal offenders incarcerated (Mann, 2009).

According to the OCI’s statistics, approximately 80% of Aboriginal offenders receive either a maximum or medium security classification compared to 66% of non-Aboriginal offenders with little overrides to the security classification rating scale (Mann, 2009). The OCI comments that because of the higher security classification, appropriate programming is often inaccessible for Aboriginal offenders (e.g., healing lodges) as they can only be accessed while housed in lower security levels (Mann, 2009). This prevents many Aboriginal offenders from accessing essential rehabilitative programming which cascades into a domino effect of the offender being held until their statutory release or warrant expiry because they do not meet the Parole Boards expectations for release (Mann, 2009). In addition, Aboriginal offenders are subject to higher rates of segregation which the OCI notes is due to external gang affiliations (Mann, 2009).

However, the OCI notes that the Correctional Service of Canada (CSC) recognizes that concerning Aboriginal offenders, there are many confounding variables and causal factors related to their offending behaviour, such as substance abuse, past trauma, and gang affiliations (Mann, 2009). Due to these consistent issues, the OCI and CSC collaboratively developed a strategic plan to address the aforementioned areas of concern associated with Aboriginal offenders (Mann, 2009). The plan moved to include more culturally based rehabilitative programs at all security levels so that offenders would be allowed access and an increase in Aboriginal programing, specifically for women (Mann, 2009). Additionally, the OCI reported a need for a redesigned security classification scale, the development of an FASD assessment and risk management protocols related to gang affiliations (Mann, 2009). Investigators report that within CSC, offenders with FASD pose a challenge. As discussed throughout the literature, individuals with FASD present with multiple behavioural issues that, if not directly linked to their criminal activity, will have negative repercussions in relation to their adjustment to living within the institution (Mann, 2009). The OCI note that the presence of FASD is integral to developing the appropriate correctional plan that will assist the offender in their rehabilitation (Mann, 2009).

In 2012, the OCI conducted a follow-up report to determine the progress of the strategic
plan it had developed to address the previously mentioned issues (Office of the Correctional Investigator, 2012). Results from the follow-up showed a rather negative outlook in regards to supporting Aboriginal offenders (Office of the Correctional Investigator, 2012). Many attempts to create healing lodges as alternatives to institutional incarceration were met with limited funding and lack of community and government support (Office of the Correctional Investigator, 2012). Additionally, many Aboriginal offenders continued to remain in higher security classifications (Office of the Correctional Investigator, 2012). Due to CSC policy, this prevented them from gaining access to the alternatives to institutional incarceration with only 337 of the 2,976 Aboriginal offenders making up the minimum security population (Office of the Correctional Investigator, 2012). The follow-up report neglected to comment on the status of the developing classification scales or FASD assessment tools (Office of the Correctional Investigator, 2012).

Fast and Conry (2004) address common behavioural deficits that place individuals with FASD at risk, these deficits center around adaptive behaviour, language, attention, reasoning and memory (ALARM). These deficits combined with negative environmental stressors can lead to the aforementioned secondary deleterious trends and correlate with involvement with the criminal justice system. Similar to the barriers found in determining prevalence rates of FASD in the general population, FASD rates within the correctional system are difficult to determine. Initial estimation rates from Burd and colleagues (2003) reported approximately 9.1 cases of FASD per 1,000 offenders within the Canadian correctional system. Popova and associates further examined prevalence rates within the Canadian correctional system through compiling the available literature of prevalence studies and analysing the data to develop a more accurate prevalence rate (2011). From their research, Popova and associates estimated that there could be over 3,686 adult offenders with FASD within correctional system (2011).

Taking into consideration that the prevalence rates are estimated and thus allow for exaggeration, the diagnosis of FASD and the secondary deleterious trends associated with it is not unknown to the criminal justice system. Douds, Stevens, and Sumner investigated FASD and its role in the American courts through the examination of case law (2012). Over 108 cases were presented before the American district, circuit and supreme courts in relation to FASD (Douds et al., 2012). The authors found that the clinical community and the court systems were confused in regards with the consensus of FASD, the significance that FASD impairments played during proceedings (Douds et al., 2012). Although, Douds and associates noted that while the court systems were unsure about the significance a diagnosis of FASD played, the courts did acknowledge the evidence of FASD as relevant to the case (2012). In relation to arrest and confession, Douds and associates found that the courts considered full confessions provided by individuals diagnosed with FASD as voluntary and informed (2012). This is contrary to clinical evidence that recognizes individuals with FASD often will confess to crimes they did not commit because of cognitive deficits (Fast & Conry, 2004).

The previously mentioned cognitive deficits known as ALARM take into account that sufferers of FASD have difficulties with attention, reasoning and memory which directly relate to determining if a confession is voluntary and informed. Fast and Conry argue that persons with FASD often have an inability to understand abstract concepts, a need to please authority and unintentionally falsify memories (2004). As a result, when interrogated one might simply take the blame to remove themselves from the aversive situation or be lead into a guilty confession (Fast & Conry, 2004). If the person becomes confused with the proceedings their behaviour can be misinterpreted as hostile and exacerbate the situation further (Fast & Conry, 2004).
Unfortunately, due to the lack of clinical evidence presented at the time, the courts often accept the confession of a person diagnosed with FASD as voluntary and informed (Douds et al., 2004).

Douds and associates examined the courts position on FASD in relation to mental capacity and determined arguments in defense and against the relevance of FASD (2012). One of the arguments reported is that due to the commonality of defendants presenting with FASD, the diagnosis was no longer valid as a means of arguing mental incapacity (Douds et al., 2012). The authors comment that through recognizing the increased numbers of defendant’s diagnosis of FASD, it has ultimately devalued itself as a means of sufficient evidence, which they consider to be absurd. However, Douds and associates insinuate that this argument does not necessarily devalue the diagnosis of FASD, but requires more than just stating “a person has FASD therefore has diminished capacity”, instead they must demonstrate the lack of mental capacity (2012). Some cases involving individuals diagnosed with FASD did meet the requirements for diminished capacity, however the authors stress that this is due in part to the presented diagnosis of FASD in conjunction with additional evidence supported the case for diminished capacity (Douds et al., 2012). Often when presenting FASD to the courts, the authors report that defendants look to use it as a mitigating circumstance however in recent years, the courts have recently found it to be an aggravating factor for harsher punishment and incarceration (Douds et al., 2012). In conclusion to the examination of case law, Douds and associates advise that addressing a FASD diagnosis as a mitigating factor be used sparingly as current trends are leading towards harsher penalties (2012). This all relates back to lack of clinical and court consensus on the diagnosis of FASD. Due to the inconsistency of diagnostic criteria, the courts remain inconsistent with sentencing.

In addition to the exposure FASD incurred with the court system, research has shown that front-line emergency staff is also familiar with the diagnosis of FASD. Authors Stewart and Glowatski (2014) examined front-line police perceptions regarding FASD. They interviewed approximately 34 police officers, with an average of 9.2 years of service from rural Saskatchewan (Stewart & Glowatsk, 2014). The authors initially hypothesized that front-line police officers would have little to no knowledge of FASD, results from their interviews found that in fact front-line police officers had extensive knowledge about FASD (Stewart & Glowatsk, 2014). Many officers reported having come into contact with a person diagnosed with FASD and could explain behavioural and facial characteristics (Stewart & Glowatsk, 2014). However, the officers did report that this had no effect on how they handled the individual. Officers stated that their foremost concern was the outward hostile behaviours that they were presented with (Stewart & Glowatsk, 2014). One officer stated that he “was going to deal with people based on their actions and behaviour” (p. 21) and that he didn’t have time to check for a diagnosis before engaging with the individual. Stewart and Glowatsk (2014) restate that the officers feel that they must treat all individuals equally to safely manage the situation, however, the authors make a distinction that what the officers perceive as hostility, unwillingness, and escalation could actually be the individual misinterpreting or not understanding the situation due to the cognitive deficits found in individuals with FASD (Stewart & Glowatsk, 2014). Additionally, the authors suggest that increased training and knowledge about FASD could provide front-line officers with the ability to properly de-escalate a situation with an individual diagnosed with FASD (Stewart & Glowatsk, 2014). Overall, front-line officers reported that they would gladly welcome additional resources and training to help them manage persons with cognitive deficits (particularly FASD) to better protect themselves and the individual they encounter (Stewart & Glowatsk, 2014).
These studies demonstrate the presence of FASD within the criminal justice system at all levels. It has also identified key areas of concern and risk associated with FASD, specifically the need for education and consistent diagnosis. Often, the behavioural deficits associated with FASD are misperceived as hostile and defiant behaviour which ultimately can lead to increased contact with law officers, harsher sentencing from the judicial court system, and misconducts within the correctional institutions. The added factor of the individual presenting with Aboriginal heritage increases the overall chances of coming in contact with the law. However, government legislation is currently making efforts to provide better support for Aboriginals and individuals diagnosed with FASD. There is still an expressed need from staff in the criminal justice system for education on how to work with and support these individuals.

The next section of the literature review examine the possible behavioural interventions for individuals with FASD, breaking them down into categories and providing clinical evidence for each intervention. As well, additional considerations will be noted including parenting efficacy and concerns relating to misdiagnosis.

**Behavioural Interventions for FASD**

Many persons affected by FASD can present with a multitude of skill deficits and behavioural problems. These severe behavioural problems can result in the parents or caregivers feeling helpless and unable to find adequate treatment that can help. Research has shown a lack of inhibitory responses, executive, and intellectual functioning resulting in lower IQ, inattentiveness, and difficulties problem solving (Davis et al., 2011). Interventions that have been shown to work well for individuals with FASD are ones that help managed the aforementioned secondary deleterious trends that arise when the neurological impairments conflict with the environment.

Paley and O’Connor conducted an examination into outlining treatment considerations for persons with FASD (2009). The authors explored a variety of treatment options including; educational, cognitive, parenting, and adaptive skills, all with behavioural strategies to target the problem behaviours (Paley & O’Conner, 2009).

**Educational Interventions**

Educational interventions focused on the school environment and how teachers and staff could work with students who present with FASD (Paley & O’Conner, 2009). The authors identified some strategies to help with classroom behaviours such as providing: a predictable routine, multiple opportunities for practice, explicit contingencies, and breaking down verbal instructions and providing visual cues (Paley & O’Conner, 2009).

Consistent with the educational recommendations noted by Paley and O’Conner (2009), Kable, Coles and Taddeo (2007) sough to improve behavioural and mathematical functioning for children affected by FASD by including teaching alternative learning strategies and intensive, short, individualized teaching sessions at the school and at home. Research acknowledged that skill deficits and problem behaviours associated with FASD could be difficult for instructors and caregivers to manage, thus they incorporated a support system, such as caregiver education, to assist in the participants meeting treatment goals (Kable et al., 2007). The participants were broken into two treatment groups, one receiving only psychoeducation and an individual educational plan, and the other group receiving the same psychoeducation plus additional interactive mathematics training, with tutoring services (Kable et al., 2007). The students in the second treatment group, with the added interactive mathematics training, displayed statistically
significant increases in mathematics knowledge, as well as overall positive behaviours, over the standard psychoeducation group. Similar to the results in the first study, educators and caregivers found that the added psychoeducation about FASD and its problem behaviours assisted them in supporting the children (Kable et al., 2007).

**Cognitive Interventions**

The authors comment that there is a lack of evidence-based cognitive interventions, although the few studies they did find identified targets for treatments similar to individuals with attention deficit hyperactivity disorder such as visualization training and self-regulation training (Paley & O’Conner, 2009). A cognitive treatment Paley and O’Conner identified was Cognitive Control Therapy (CCT) (2009). Researchers Riley & McGee (2005) conducted a pilot study using CCT which focused on teaching children how to effectively acquire and organize incoming information. The skills focused on increasing the child’s overall awareness of bodily function and movement, focal attention, and ability to process information while being presented with distracting stimuli, controlling external information and categorizing information (Riley & McGee, 2005). Results from the study showed decreased behavioural problems in the classroom and increases in self-efficacy, motivation, and self-confidence; however, there was no significant difference in cognitive control from that of the control group (Riley & McGee, 2005).

Additionally Chasnoff and colleagues (n.d.) focused on developing a program to increase neurocognitive rehabilitation for children with FASD. As reported earlier, individuals affected by FASD have impaired executive functioning which presents itself as impulsive behaviour and limited problem solving capabilities (Davies et al., 2011). The purpose of the intervention was to promote executive functioning and develop self-regulation techniques (e.g., memory, cause/effect reasoning, planning and problem solving) to reduce problem behaviours resulting from the neurological damage. Researchers used content adapted from the Alert Program that had facilitators explain how the children's brain worked using the metaphor of a car. Chasnoff and colleagues explain the process as using the metaphor of a car’s engine to explain how a child with FASD’s brain works (n.d.). There engine (brain) can make the car (body) run either high or low. The program is broken into three stages that teach the children to identify the engine speed, strategies to change their engine speeds and to monitor their engine speeds. Results from the study demonstrated statistically significant improvements in executive functioning which the authors attributed to the incorporation of self-regulation techniques. The parents also reported improvements in the children’s executive functioning. This study suggests the inclusion of a neurocognitive rehabilitation program in the general treatment of FASD would be beneficial.

**Parenting Interventions**

Parenting interventions philosophy assumed that these problem behaviours arose from negative parent and child relationships. Researchers (Olson, et al., 2004) evaluated two FASD programs that addressed behavioural problems in the children and the resulting stress among the caregivers. One treatment group involved both the parent and the child where they were taught behavioural parenting skills and coached on the proper techniques (Olson, et al., 2004). The other treatment group was a parent-only support and management program that taught the parents evidence-based behavioural techniques to decrease problem behaviours (Olson, et al., 2004). There was no statistical significance between either group utilizing the pre- and post-treatment measures. However, there was clinical significance (e.g., observed behaviour change by mediators and parents) noted for both groups from baseline to treatment (Olson, et al., 2004).
Overall stress scores decreased for both groups, although lower stress scores were found in the parent and child therapy group (Olson, et al., 2004). As well, both groups reported a decrease in problem behaviours (Olson, et al., 2004). The study supported both parent-only and parent and child therapies as effective interventions for children with FASD (Olson, et al., 2004). Conclusions reported by similar results for decreased behaviour obtained by the parent only group, provided additional support that difficult behaviours in children with FASD are not just the result of parent and children interactions, but of a multitude of confounding variables (Olson, et al., 2004).

**Adaptive Skills**

Adaptive skills encompass multiple areas, mainly daily living skills, required to effectively function in society. These living skills include communication and socialization that individuals with FASD display a severe deficit in (Paley & O’Connor, 2009). O’Connor and colleagues (2006) examined the effectiveness of implementing a parent-assisted children’s friendship training to improve social skills in children with FASD (O’Connor et al., 2006). Parents were trained as facilitators for the study and the procedure was modified to account for specific neurological deficits found in children with FASD. The modifications were mainly towards how the intervention was delivered and the author states that there was severe changes that would have effected treatment integrity (O’Connor et al., 2006). The skill sets taught concentrated on the children understanding social network formation, engaging with peers in a common-ground activity, entry into an already existing group children engaging in play, in-home play dates, and conflict and negotiation skills through the use of modeling, rehearsal, and performance feedback (O’Connor et al., 2006). The intervention sessions took place at the research facility and at home to promote generalization (O’Connor et al., 2006). Children were assessed using the Test of Social Skills Knowledge after 12 weeks and at a 3 month follow-up (O’Connor et al., 2006). Additionally, parents were assessed for their own knowledge of FASD, the neurological effects, and parental advocacy opportunities (O’Connor et al., 2006). Statistical analysis showed that there was significant improvement in the children’s knowledge of appropriate social behaviour. The parents reported increased use of social skills and a decrease in problem behaviours (O’Connor et al., 2006). Furthermore, the parents reported increased knowledge of FASD which correlated with a high level of satisfaction with the intervention (O’Connor et al., 2006).

**Additional Considerations**

Parent efficacy is another area to examine. As reported earlier, FASD is often considered an “untreatable” condition that presents with severe behavioural issues. Some literature reports that a negative parental and child relationship could cause severe problem behaviours. This type of thinking adds additional pressure to parents who already feel guilt over causing the prenatal exposure to alcohol.

Rutman and Van Bibber (2010) interviewed 59 people from diverse communities within British Columbia examining the challenges and accomplishments associated with parenting and FASD. The interviewees ranged from adults with or suspected of FASD (Aboriginal and Caucasian); support persons of the individual with FASD, and multi-disciplinary service providers for people with FASD. The authors included those who did not have a formal diagnosis of FASD (Rutman & Van Bibber, 2010). The authors explain the reason for this inclusion was due to many individuals living in remote areas lacking the resources (e.g.,
financial limitations and appropriate social services) to necessary to obtain a formal diagnosis (Rutman & Van Bibber, 2010). Results of the study included findings for: parenting challenges and barriers, challenges with societal attitudes and expectations, and policy barriers, which is consistent with other studies within the literature (Rutman & Van Bibber, 2010).

Interviewees reported specific parenting challenges and barriers associated with poor social conditions and unsupportive child welfare policies around the disorder (Rutman & Van Bibber, 2010). Additionally, the interviewees reported that they had issues with drug and alcohol addiction (Rutman & Van Bibber, 2010). The interviewees stated that they recognized the danger of having an addiction while caring for their children and the increased likelihood of losing custody (Rutman & Van Bibber, 2010). However, the interviewees struggled to address their addiction issues due to the lack of supportive rehabilitative programs (Rutman & Van Bibber, 2010). The interviewees also described a lack of supportive parenting role model (Rutman & Van Bibber, 2010). The interviewee’s with Aboriginal heritage reported the lingering and damaging effects of the residential schools on the survivors, consistent with the literature (Kaspar, 2014; Johnston & Boyle, 2013).

The interviewee’s often report negative societal attitude and experiences labeling individuals with FASD as difficult or impossible to treat, due to severe behavioural issues. (Rutman & Van Bibber, 2010). Additionally, parents with children diagnosed with FASD were often seen as “bad mothers” because they exposed their unborn child to alcohol. Due to this stereotyping of parents as a “bad mother”, workers often put much more emphasis on their mistakes or faults; instead of the positive gains they achieved (Rutman & Van Bibber, 2010). Mothers felt highly scrutinized by government workers, depleting their parental efficacy and setting the mothers up for failure instead of success (Rutman & Van Bibber, 2010). On the contrary to the mothers being highly scrutinized, other interviewees found that their diagnosis of FASD was often overlooked and disregarded as an extenuating circumstance (Rutman & Van Bibber, 2010). Instead, interviewees found that their behavioural difficulties resulting from FASD were typically misperceived as the client being unmotivated and aggressive (Rutman & Van Bibber, 2010).

Public policy barriers often experienced by the interviewees was that for them to access beneficial supports with financial coverage through the government, the children would have to be viewed at a high-risk of having their child removed from their custody (Rutman & Van Bibber, 2010). This deterred many of the interviewees from seeking help due to the societal attitude and implications of them not being able to take care of their children (Rutman & Van Bibber, 2010). Another policy barrier faced by some interviewees was the category of parent they were placed in and what supports they were allowed to access (Rutman & Van Bibber, 2010). An example in the article reports on foster parents, they are often supported by the government and given much more financial aid than a biological parent would (Rutman & Van Bibber, 2010).

On a much more positive note, when the authors examined the interviewees common parenting accomplishments and strategies, they found that even without formal training and education in FASD, parents developed effective strategies for working with and supporting their children, such as using memory aids (e.g., agendas and post-it-notes), self-talk, consistency with scheduling, setting boundaries and focusing on positive behaviours (Rutman & Van Bibber, 2010). Many of the interviewees stated that they would often try and reinforce the good behaviours instead of placing emphasis on what they did wrong (Rutman & Van Bibber, 2010). They would try and make every situation a learning experience and try to promote appropriate
problem solving (Rutman & Van Bibber, 2010). Also, the interviewees continued to recognize that their addiction to substances could play a negative role in raising their children (Rutman & Van Bibber, 2010). As a result, the interviewees would try and either eliminate or cutback on engaging in those types of behaviours (Rutman & Van Bibber, 2010).

In addition to the study conducted by Rutman and Van Bibber (2010), Olsen, Oti, Gelso and Beck (2009) also conducted research in the role of the family when working with an individual with FASD. Researchers examined what role the family dynamic played in relation to FASD and found that with raising a child diagnosed with FASD the family unit can have some influence on the trajectory of symptoms (Olsen et al., 2009). In a previous study (Olsen et al., 2004) the researchers adapted a behavioural consultation model to develop efficient interventions for children with FASD. Descriptive data about the families included in this study was collected and analysed separately (Olsen et al., 2009). Olsen and colleagues (2009) found that caregiver stress most often was not associated with the specific problem behaviours that the child presented with, but with unmet needs (Olsen et al., 2009). The unmet needs Olsen and colleagues noted were around debriefing, self-care, resources and support similar to the areas of concern noted by the previous researchers (Rutman & Van Bibber, 2010). Families often found themselves unable to talk to like-minded individuals who could relate to their experiences supporting a person diagnosed with FASD which they viewed would be essential to an effective support network (Olsen et al., 2009). In relation to the development of interventions and treatments, the parents in the study reported an unmet need that they often faced was a lack of clinical expertise in FASD (Olsen et al., 2009). The parents reported that they felt their children would greatly benefit from treatment if they were able to obtain a behavioural consultant with expertise in working with individuals with FASD and their challenges (Olsen et al., 2009).

Also, Olsen and colleagues (2009) suggested that effective parenting interventions should include methods that will increase parenting efficacy, such as providing supports and resources for parents. This is consistent with Rutman and Van Bibber’s (2010) findings, as parents noted a lack of efficacy in their parenting skills which led them to engaging in maladaptive parenting strategies to deal with problem behaviours. At the time, due to the lack of research, Olsen and colleagues (2009) suggested that due to the similarity of FASD with developmental disabilities and Autism Spectrum Disorder (ASD), one could replicate treatment frame works for those disorders and apply them to FASD. However, one of the core issues addressed with FASD is its similarity to other disorders that can lead to errors in diagnosis and treatment. Applying treatment frame works meant for different diagnoses could lead to hazardous results.

Bishop, Gahagan, and Lord (2007) conducted a study examining the difference and similarities between children diagnosed with autism and FASD. The authors compared both populations using assessments, the Autism Diagnostic Interview-Revised (ADI-R) and the Autism Diagnostic Observation Schedule (ADOS) to measure behavioural deficits (Bishop, Gahagan, & Lord, 2007). Results from the study showed that autism and FASD had some similar characteristics such as an inability to assess social situations, a lack of social awareness, quality of social overtures, quality of social responses, and difficulty engaging with peer groups (Bishop, Gahagan, & Lord, 2007). However, Bishop and associates found more extreme differences between behavioural problems in children with autism and children with FASD (2007). Children with autism presented with more problems with the physical engagement of social interaction (e.g., eye contact, gestures, and non-verbal behaviour) whereas children with FASD had the ability to engage, but had difficulty engaging in appropriate social interaction (Bishop, Gahagan, & Lord, 2007). A distinctive feature of FASD is that social impairment is
often the result of additional symptoms (e.g., aggression and hyperactivity) but not a core defining symptom as it is in cases of Autism Spectrum Disorder (Bishop, Gahagan, & Lord, 2007). The authors stress the importance that while both diagnoses have similar characteristics, closer inspection shows different clinical presentations and should be assessed and treated differently (Bishop, Gahagan, & Lord, 2007).

In conclusion, FASD if often considered difficult if not impossible to treat. Problem behaviours in a person with FASD are misinterpreted as aggressive, inattentive and defiant. However, it is important for those working with individuals with FASD to recognize these misinterpretations as manifestations of neurocognitive deficits as a result of the FASD rather than an underlying “difficult” personality structure. Although limited, the literature supports the use of a multitude of interventions such as educational, cognitive, parenting, and adaptive skills with core behavioural principles to correct problem behaviours and efficiently. Other considerations researchers must examine when developing interventions, specifically for caregivers, is how it will foster efficacy. Due to the previously mentioned attitudes surrounding FASD, individuals often find themselves in distress when attempting to correct the presenting problem behaviours. This is an important to address because to ensure that mediators will utilize interventions depends on their self-efficacy and knowledge in what they are implementing. Additionally, although some literature supports the use of treatment frame works from other disorders with similar problem behaviours (e.g., ASD), FASD must still be examined in the context of itself and the neurocognitive deficits presented, not because it has similar deficits as another disorder. A core issue identified throughout the literature is misdiagnosis which ultimately leads to improper treatment designs. If using treatment frameworks from another disorder, researchers should be cautioned to examine the underlying concepts that the treatment is based off to ensure that the treatment method targets problem behaviours in the way they are presented in context to FASD.
Chapter IV: Results

Results from the current study have been summarized and presented in two pamphlets. One pamphlet directed towards front-line staff discussing the epidemiology and behavioural concerns associated with FASD, prevalence rates and an overview of evidence-based interventions along with available community resources (see Appendix A). In addition, another pamphlet has been developed for individuals diagnosed with FASD providing educational support on their diagnosis and as well providing community resources (see Appendix B).

The next chapter summarizes the overall findings of the literature review as well discusses the strengths and limitations of the current study. The multilevel challenges associated with service implementation for Aboriginal persons diagnosed with FASD are discussed, as well as the contributions this study offers to the behavioural field, and finally the implications for future research.
Chapter V: Discussion

Summary of Findings

The purpose of this study was to develop a synthesized analysis of the current literature to examine the possible relationship between FASD, Aboriginal women, and the criminal justice system. Aboriginal social history is full of harsh assimilation, loss of culture, abuse and trauma. Early European colonists sought to eliminate Aboriginal cultures and assimilate them into their own. Later it was through government legislation (e.g., Indian Act) and acting in the perceived “best interest” of the children (e.g., residential schools) that the Canadian government managed to erase much of their cultural identity leaving them vulnerable to various negative risk factors. Negative repercussions of some of the assimilation techniques, in particular residential schools are painfully evident today (Johnston & Boyle, 2013; Kaspar, 2014). Predominantly the after-effects of residential schools present itself in emotional disturbances for survivors and cascades down across generations as an example of intergenerational trauma. Past trauma is passed through abuse (e.g., emotional, physical, or sexual), neglect of parental duties, and a lack of effective parenting (Johnston & Boyle, 2013; Bombay et al., 2014). Some researchers found high prevalence rates of substance abuse within survivors of residential schools and speculated that these behaviours passed on to their children and would continue throughout the generations (Bombay et al., 2014). Additionally, negative health effects have been noted, which ultimately relates to the poor societal conditions (e.g., poverty, lack of stable housing, and a lack of security) Aboriginal people are often in as a result from previous government legislation (Dickason & McNab, 2009; Kaspar, 2014, Mawhiney, 1995). It is because this past trauma that many Aboriginal peoples find themselves susceptible to a multitude of risk factors associated with substance dependence, mental health, suicide and coming into conflict with the law (Harrison & Boyle, 2004; Van Wormer & Davis, 2013). Throughout the literature, Aboriginal communities have been identified as having some of the highest rates of substance abuse, most frequently alcohol and binge drinking (Harrison & Boyle, 2004; Van Wormer & Davis, 2013). Although higher rates of binge drinking are often found in Aboriginal males, Aboriginal females still consume heavy amounts of alcohol as compared to non-Aboriginal females and often even continue drinking through pregnancy (May & Gossage, 2001; Trujillo et al., 2011; Wardman & Quantz, 2005).

Consuming alcohol while pregnant and thereby exposing the unborn baby at any trimester to teratogens can harm the fetus and can cause lifelong developmental abnormalities, in particular FASD. Common themes recognized through the development of the study were inconsistency of diagnosis and inconsistency of treatment targets. Often, unless children presented with identifiable facial characteristics signifying FASD, they were instead regarded as “bad children” or “delinquents” in later years, unknown to them that the reality of the matter was they actually had CNS deficits that frequently resulted in behavioural problems (Chudley et al., 2005; Kuhen et al., 2012; O’Leary, 2004). Each study found throughout this study have stressed the need interdisciplinary teams to accurately assess, diagnosis and treat individuals with FASD as some individuals will not always present with the obvious features of FASD, and might not always meet the full criteria of FASD (Paley & O’Conner, 2009). Unfortunately, costs of an accurate diagnosis of FASD are expensive and often inaccessible for individuals, particularly Aboriginal people (Popova et al., 2013). Thus, many go without proper treatment due to an inaccurate diagnosis, if they have one at all (Popova et al., 2013). If left untreated these individuals are left vulnerable and when exposed to negative environments (e.g., impoverished,
gangs and high crime rate) that aggravate the individual’s primary disabilities can result in the development of secondary deleterious trends (O’Leary, 2004). These secondary deleterious trends are what often lead individuals with FASD into coming into contact with the law.

The presence of FASD within the criminal justice system is not a new phenomenon (Douds et al., 2004; Mann, 2009; Office of the Correctional Investigator, 2012; Stewart & Glowatski, 2014). In addition, a disproportionately high proportion of Aboriginals reside within correctional facilities (Mann, 2009) and often have adjustment issues with the institutional setting (e.g., misconducts). The diagnosed and undiagnosed presence of FASD still presents as area of concern for the criminal justice system as both front-line emergency workers and the courts are undecided on how to treat these individuals (Burd et al., 2010; Douds et al., 2012; Stewart & Glowatski, 2014). A consistent need for research and education is present throughout the literature and requested by various stakeholders. It is important to reiterate that the purpose of this study is not point blame or reinforce negative stereotypes of Aboriginals, but to acknowledge additional factors with Aboriginals, FASD and their involvement with the correctional system. In conclusion, the literature supports a theoretical relationship between FASD, Aboriginal women and the criminal justice system.

Additionally, in regards to the secondary purpose of the current study, contrary to the societal perception that individuals with FASD are impossible to treat, clinical studies have shown a decrease in problem behaviours through the use of evidence-based interventions (Kable et al., 2007; O’Connor et al., 2006; Olson et al., 2004). As well, the clinical studies have demonstrated in some cases that amending behavioural deficits and assisting the individual and families can help in increasing quality of life (Chasnoff et al., n.d.).

Strengths and Limitations

A strength to the current study is the overall inclusion of a multitude of theories and methods of analysis (e.g., medical, case law, and clinical) when examining the relationship between FASD, Aboriginal women and the criminal justice system. This provides a detailed and cohesive synthesized literature review of the relationship between the aforementioned factors.

A limitation to the study is the lack of available literature. Although the study consists of a variety of studies, the overall breadth of literature surrounding FASD, Aboriginal people and the criminal justice system is extremely sparse and often out dated. Another limitation of this study, is lack of consideration for the systematic prejudice within the Canadian correctional system towards Aboriginal offenders. As well, much of the research examined data and literature pertaining to both male and female aboriginal, not specifically females. This is due in part to the lack of research surrounding female aboriginals with FASD within the correctional setting. In addition, of the studies examined, only a few were clinical in nature. This may be due in part to the heavy stigmatization FASD brings on both the mother and the child and prevents the families from coming forward to seek help. Another limitation of available literature may be due to the inconsistent categorizing and diagnosis of FASD. The current study noted that much of the literature reported similar findings that due to lack of formal standardized diagnostic criteria for FASD, many individuals could go either undiagnosed or misdiagnosed as another disorder.

Multilevel Challenges to Service Implementation

With respect to Aboriginal women and individuals with FASD who may come into contact with the law, a variety of challenges occur at all levels of programming and care. These challenges create barriers that, without proper support, can lead to an individual remaining
untreated and a risk to themselves or others.

At the client level, individuals with FASD present with multiple behavioural and cognitive deficits that may present as aggressive and inattentive. Individuals presenting with these types of difficult behaviours can create barriers to treatment considerations, as they can be viewed as not engaged in treatment and either removed or receive negative evaluation on progress. As well, an accurate diagnosis of FASD requires extensive testing and assessment that most individuals cannot access, either due to a lack of funds or a lack of competent professionals within the community. Most Aboriginals live in remote areas where access to such resources range from limited to non-existent. Aboriginal peoples face a variety of challenges at the client level. Many have past experiences of trauma, stigmatization and discrimination. These factors coupled with substance abuse and a child born with FASD presents as a center for shame and guilt as FASD is considered a preventable disorder. This shame and guilt can lead to a mother neglecting to have her child tested due to the criticism she would face having it made public that she engaged in the cultural taboo of drinking while pregnant.

At a program level, challenges for Aboriginal women and individuals with FASD relate to a lack of diagnosis resulting in an inability to engaging in programing, or a simple lack of programming. Programming for FASD is still sparse and the programs that do exist for FASD require a formal diagnosis. Aboriginal women who overcome their guilt for drinking while pregnant are met with the barrier of being unable to access programming due to the overall cost of acquiring the diagnosis. As well, the literature comments on the lack of Aboriginal-specific cultural programming for individuals with FASD, which has been shown to be a protective factor against committing a crime.

At the organizational level, many FASD programs are still in their infancy of development. Although the literature on the subject dates back to the early 1970s community programs for individuals with FASD are still developing. Many programs are still in the pilot stage and have yet to be opened up to the public at large. In addition, they have yet to be evaluated on their effectiveness to treat FASD symptoms.

Finally, at the societal level, one of the many challenges these individuals face is the public’s perception. FASD is considered a preventable illness and, as stated earlier, is a position of shame and guilt for some mothers who have children with the diagnosis. This being said, society can sometimes harsh opinion of mothers who have children with FASD and presume that are unfit parents because of this unaware that research states any consumption of alcohol can cause FASD, not only chronic heavy use. In relation to chronic and heavy use, many in society do not recognize the additional factors that can lead the mother to engaging in her maladaptive coping (e.g., heavy drinking) to escape from negative stressors in her life.

Contributions to Behavioural Psychology Field

The practical application of this study for the field of Behavioural Psychology is its addition to the literature. Gaps still remain in the larger field, however this study adds to the theoretical relationship between Aboriginal women, FASD, and the criminal justice system. Additionally, this study pulled from multiple disciplines to present a cohesive synthesized analysis of the available research.

Further Research

The current study only examines the literature available at the time of this papers formulation. Future studies can continue to evaluate the literature and compile the available
Further research that could be conducted should examine the relationship between FASD, Aboriginal heritage and the criminal justice system. Very few studies have examined the correlation between Aboriginals incarcerated and presenting characteristics of FASD. As suggested by the Office of the Criminal Investigator, accurate inquiry into the prevalence of FASD within the correctional institution, specifically within the Aboriginal population, can further assist the CSC in providing effective programming to decrease recidivism rates. Another gap recognized by the current study was the lack in evaluation of preventative programs. Much of the literature surrounding treatments for the Aboriginal mothers focused on preventative programs however there appears to be a lack of experimental analysis in regards to the effectiveness of these programs and if they do decrease FASD rates.

In addition, behavioural interventions for FASD reviewed in the current study were limited to child and adolescent subjects. There was a complete lack of FASD interventions for adults which pose as an area for research since many individuals do not become aware of their diagnosis of FASD sometimes until they reach adulthood. As well, some adults with FASD can present with severe behavioural problems (e.g., hostility and aggression) and would warrant some form of clinical intervention. Furthermore, although the literature stresses the importance of not treating FASD in a similar fashion as one would a child with ASD or a developmental disability, the pervasive CNS abnormalities and behavioural deficits may benefit from early intensive interventions commonly attributed to children diagnosed with ASD. The literature may benefit either from the clinical or literature analysis to see if early intervention could help decrease these problem behaviours and achieve that same regulatory functioning results achieved by children with ASD.
References


corrections and conditional release act. Ottawa, Canada: Office of the Correctional Investigator.


Health Research (Online), 17(2), 1-21.
**What can I do to help?**

- Individuals with FASD are commonly presumed to be untreatable. This is not true.
- FASD can be managed. Through extensive work and collaboration, individuals can live full and meaningful lives with FASD(8).
- FASD symptoms can be managed. Through extensive work and collaboration, individuals can live full and meaningful lives with FASD(8).

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**Additional Resources**

For general FASD information within Ontario:

- **FASDOne**
  - [http://www.fasdontario.ca](http://www.fasdontario.ca)
  - Email: info@fasdntario.ca

- **Kingston**
  - Hotel Dieu Hospital Child Development Center
  - Phone: (613)544-3400

- **Oshawa**
  - Grandview Children's Centre (Kris Nouak)
  - Phone: (905)728-1673
  - Toll Free: 1-800-6180

- **Toronto**
  - Surrey Place Centre for FASD Adult Diagnostic Clinic* (Valerie Temple)
  - Phone: (416)362-3451
  - For Adults

- **Thunder Bay**
  - NorthWest Community Health Centres* (Maureen Parker)
  - Email: mmparker@norwcesthc.org
  - For Adults

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**FASD is not untreatable**

- Many treatment strategies for individuals with FASD focus on managing the cognitive delays in the environment and work on building skills to assist with functioning(8).
- Strategies that have been found to work will with individuals with FASD are having short, intensive and individual sessions, particularly if you are teaching a skill(8).
- Interactive teaching methods where the individuals can actively engage with skill and practice being taught helps promote memory and the individual utilizing it(8).
- Metaphors can help individuals with FASD understand abstract thoughts about self-regulation(8).

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**References:**


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**Working with FASD, Aboriginal Women, & the Criminal Justice System**

**Created in Collaboration with Elizabeth Fry Kingston**
**Fetal Alcohol Spectrum Disorder**

- FASD is an umbrella term for several additional disorders such as: Alcohol Related Neurodevelopmental Disorders (ARND), Alcohol Related Birth Defects (ARBD), Fetal Alcohol Effects (FAE), and Fetal Alcohol Syndrome (FAS).
- FASD presents with 4 main indicators: growth retardation, facial abnormalities, central nervous system anomalies, and intra-uterine exposure to alcohol.
- Assessment of facial abnormalities are comprised of three different types using a 4-digit diagnostic code. If an individual presents with 2 of the 3 facial abnormalities they would be scored as moderate on the Lifer-Tape scale, the presence of all 3 abnormalities would rank the individual as severe. However, clinicians caution only using the presence of facial abnormalities to assess for FASD or the lack of facial abnormalities to rule out FASD.
- Central nervous system anomalies often present as impaired intellectual functioning, learning memory, language, reaction times, motor functioning, visuospatial functioning, executive functioning (higher thinking/problem solving), behavioural functioning and social skills.

**Aboriginal Women & FASD**

- No nationally recognized birth rates of FASD in Canada (6).
- However, clinicians found that prevalence rates of FASD within small Aboriginal communities range from 7.5 to 190 individuals per 1,000 live births (6).
- Aboriginal peoples have a long and traumatic history within Canada. These trauma experiences can often lead to the development of inappropriate coping strategies (such as heavy drinking and drug use) to deal with the psychological pain (4).
- This type of trauma can be a risk factor for Aboriginal women to engage in heavy drinking which can lead to negative health effects especially during pregnancy (5).
- Research has shown that in-uterine contact with alcohol at any stage can result in FASD. However, exposure during the first trimester is particularly damaging. Because of this, many Aboriginal women who engage in binge drinking can be at an elevated risk of having a child with FASD (5).

**Stigma, guilt, & shame**

- A child with a diagnosis of FASD can result in extreme stigmatization, guilt and shame (6).
- Because FASD is considered a “preventable” illness, some members of the community might view the diagnosis of FASD as a sign of neglectful parenting, or alcoholism (6).
- It’s important to remember that ANY consumption of alcohol during pregnancy can cause FASD, not just heavy drinking (6).

**FASD & Criminal Justice**

- There is an unfortunately high number of Aboriginal peoples currently incarcerated within the Correctional System (2).
- Many of them presenting with features consistent with FASD. However, many present without a confirmed diagnosis of FASD (6).
- There is approximately 1,134 undiagnosed or misdiagnosed cases of FASD within Corrections Canada (2).
- Certain cognitive deficits related to FASD can leave individuals vulnerable to coercion, involuntary confession and exploitation (5).
- Often individuals can become confused or fail to recall information, this due to their cognitive deficits, although this can be misinterpreted as non-compliant, defiant and even hostile (2).
- It’s important to remember that individuals with FASD have cognitive delays, some can be mild and some can be severe. It is important to recognize these deficits before assuming that the person is being inattentive (2).

**Hostile? or Confused**

- FASD is frequently recognized through the characteristic facial abnormalities, however, not everyone presents facial abnormalities (6).
- Individuals with FASD can easily become confused. They often lack the higher thinking required to make sound decisions and they will often engage in inappropriate behaviours to escape aversive situations (7).
- It’s important when working with an individual with FASD to take it slow (8).

Facial Abnormalities are depicted in the picture above.
- Palpebral Tissue (short distance between the edge of the eye and the tear duct)
- Smooth or flattened philtrum (space between nose and upper lip)
- Vermillion Boarder of the Upper Lip (smooth and thin lip line)
Appendix B: Pamphlet for Individuals diagnosed with FASD

Additional Resources
For general FASD information within Ontario:
FASDOne
http://www.fasdontario.ca
Email: info@fasdontario.ca

Ontario Diagnostic Clinics for FASD:
Kingston
Hotel Dieu Hospital Child Development Center
Phone: (613)544-3400

Oshewa
Grandview Children’s Centre (Kris Nousk)
Phone: (905)728-1873
Toll Free: 1-800-6180

Toronto
Surrey Place Centre for FASD Adult Diagnostic Clinic
(Valerie Temple)
Phone: (416)952-5181
*For Adults

Thunder Bay
NorthWest Community Health Centre
(Maureen Parton)
Email: mparton@nwchc.org
*For Adults

References:
Fetal Alcohol Spectrum Disorder

- FASD is an umbrella term for several additional disorders such as: Alcohol Related Neurodevelopmental Disorders (ARND), Alcohol Related Birth Defects (ARBD), Fetal Alcohol Effects (FAE), and Fetal Alcohol Syndrome (FAS) (O’Leary, 2004).
- FASD presents with 4 main indicators: growth retardation, facial abnormalities, central nervous system anomalies, and in-utero exposure to alcohol (Astley, 2004).
- Although FASD is commonly known for the characteristic facial abnormalities, many individuals with FASD do not present with them (O’Leary, 2004).
- Instead, individuals present with the “invisible symptoms” pertaining to the central nervous system (O’Leary, 2004).
- Central nervous system anomalies often present as impaired intellectual functioning, learning memory, language, reaction times, motor functioning, visuospatial functioning, executive functioning (higher thinking/problem solving), behavioral functioning and social skills (Astley, 2004).

Aboriginal Culture & FASD

- Sometimes it’s hard when someone is speaking really fast or asking you questions you don’t understand. Sometimes you can get a bit frustrated. It’s important to remember that sometimes people might not be aware of your challenges. It’s important not act out on your frustrations (Paley & O’Conner, 2009).
- If you are ever speaking to someone and you are having a hard time understanding, or they are going too fast. Ask them to slow down—this will help you understand better and allow you to communicate your concerns appropriately (Paley & O’Conner, 2009).

Not everyone presents with facial abnormalities

- Research into small Aboriginal communities has shown a higher rate of infants being born with FASD (Masotti et al., 2003).
- This can be due to the elevated risk factors associated with some of the past trauma experiences in regards to Aboriginal history which can create vulnerabilities (Masotti et al., 2003).
- However, it is also important to remember that culture is a protective factor. You can always find support in your community (Masotti et al., 2003).