Validating the Spousal Assault Risk Assessment-Version 2 (SARA-V2) Guide with Indigenous men supervised by British Columbia Corrections

by

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Abstract

The over-representation of Indigenous individuals in the Canadian criminal legal system warrants examination of the cross-cultural validity of risk assessment tools used with this population (*Ewert v. Canada,* 2018*).* The Spousal Assault Risk Assessment Guide-Version 2 (SARA-V2; Kropp et al., 1995, 1999) is a Structured Professional Judgement (SPJ) tool widely used to measure risk for Intimate Partner Violence (IPV) among adult males (Hanson et al., 2007). This study examined the predictive accuracy of the SARA for Indigenous (*n* = 3,188) and White (*n* = 6,550) individuals supervised by British Columbia Corrections. Overall, the SARA demonstrated significant, albeit not similar, predictive accuracy for the outcomes of domestic violent, violent, and any criminal recidivism across Indigenous and White subgroups. Effect sizes were generally in the trivial to moderate range. A pattern of lower predictive accuracy for Indigenous individuals was observed, suggesting the need to re-examine the utility of some of the SARA items for this population. Implications for future research and practice are discussed.

Keywords: risk assessment; cross-cultural validity; Indigenous; intimate partner violence; spousal assault

Dedication

To my mom and her graceful resilience.

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Chapter 1. Introduction

Research has shown that risk assessment within the criminal justice context is influenced by identity markers such as race/ethnicity (Hannah-Moffat & Maurutto, 2010; Raynor & Lewis, 2011). Consequently, there are concerns about the potential of risk assessment tools to exacerbate longstanding racial disparities within the criminal legal system. Some scholars argue that current Western, White-centric models of assessing risk are not generalizable to culturally and racially diverse groups with unique offending trajectories shaped by cultural and social forces (Hovane et al., 2014; Woldgabreal et al., 2020). Most risk assessment instruments are developed and validated on correctional samples of primarily White males and presumed to apply to marginalized cultural groups, including Indigenous peoples (Hannah-Moffat, 2006, 2013, 2015; Taylor & Blanchette, 2009). The danger of operationalizing risk through a Western lens that does not consider cultural influences is that it could result in overestimating risk for culturally diverse individuals (Day et al., 2022).

Although evidence-based risk assessment holds tangible benefits such as public safety, security of institutions, and effective allocation of scarce resources, it is important to note the adverse consequences of culturally invalid and inflated risk assessment findings on the individual being assessed. Results from risk assessments guide decision-making at every stage in the criminal legal system such as charging, sentencing, security classification, treatment intensity, parole, restrictiveness of community supervision, and if inflated, can perpetuate cumulative disadvantage for marginalized individuals, such as Indigenous peoples (Woldgabreal et al., 2020). In the Canadian context, this is especially concerning given the ongoing overrepresentation of Indigenous individuals in the criminal legal system. Turnbull (2014) argued that the “whitestream model of justice” (p. 388) continues to fail Indigenous individuals as it prevents a more holistic and intersectional understanding of their identities and unique social positionality within Canadian society. Although risk assessments are not singularly responsible for the overrepresentation, they arguably play a role in the workings of a complex criminal legal system that disenfranchises Black, Indigenous, and racialized persons (Reece, 2020, Wortley, 2003).

Scholars have argued that criminogenic risks and needs may vary and function differently between Indigenous and White individuals (Singh Bhui, 1999). Failing to recognize this increases the likelihood of misclassifying risk for both groups and hampers their ability to receive appropriate interventions (Allan & Dawson, 2004; Martel et al., 2011; McCuish & Corrado, 2018). When it comes to Indigenous individuals in contact with the Canadian criminal legal system, the adverse consequences that can result from inaccurate risk assessments are too grave to dismiss if any form of reconciliation or decolonization is to occur at the criminal legal level in Canada. Therefore, it is paramount that risk assessment instruments used with Indigenous individuals are cross-culturally valid and relevant to prevent further inequities.

1.1. *Ewert v. Canada* (2015, 2018): Cross-Cultural Validity of Risk Assessment

The issue of cross-cultural validity of risk assessment scales was explored in a landmark Canadian case (*Ewert v. Canada*, 2015, 2018). Mr. Ewert, a Métis male, claimed that Correctional Services of Canada (CSC) applied inappropriate, invalid, and biased actuarial risk assessment tools (namely, the Hare Psychopathy Checklist—Revised, or PCL-R (Hare, 1991, 2003); the Violence Risk Appraisal Guide or VRAG and Sex Offender Risk Appraisal Guides or SORAG (Quinsey, Harris, Rice, & Cormier, 1998, 2006); the Static-99 (Hanson & Thornton, 1999); and the Violence Risk Scale-Sex Offender Version (VRS-SO; Wong et al., 2003) to Indigenous individuals such as himself. He argued that the continued use of such scales without validation on Indigenous samples violated his constitutionally guaranteed rights under the Canadian *Charter of Rights and Freedoms*. The trial judge ruled that the actuarial tests impugned were susceptible to cultural bias and further concurred with Mr. Ewert's claim that "these tests are used in making decisions, and are a contributing factor in decisions that have had an adverse impact on his [Mr. Ewert's] incarceration" (*Ewert v. Canada*, 2015, para. 75). The trial court decision signaled that CSC was aware of this issue for more than a decade but had continued their "arbitrary" (para. 105) reliance on such scales to assess risk of violence among Indigenous inmates without "qualification" or "caution" (para. 101). Ultimately, the judge ruled in favor of Mr. Ewert, concurring that his *Charter* rights

had been violated, and reproved CSC's use of these tools without validation research with Indigenous individuals.

However, in 2016, the federal government appealed the trial court decision and *Ewert v. Canada* (2015) was overturned by the Federal Court of Appeal (*Canada v. Ewert*, 2016). The federal government argued that the trial judge had made mistakes in applying the law and that the inability to use the impugned scales on all justice-involved individuals would cause more harm as CSC would be unable to consider all risk-relevant information when making decisions (Hart, 2016). The court found that a lack of evidence for the predictive properties of factors included in risk assessment tools with Indigenous individuals does not mean that these factors are not present in or informative of Indigenous peoples' involvement in criminal behaviour. The case then went up to the Supreme Court of Canada (*Ewert v. Canada*, 2018).

While *Ewert (2015, 2018)* only specifically challenged a few scales, the Supreme Court of Canada judges effectively broadened the scope of this issue by finding that CSC's purpose is to:

> contribute to the maintenance of a just, peaceful and safe society by carrying out sentences through the safe and humane custody of inmates and by assisting in their rehabilitation and their reintegration into the community as law-abiding citizens. Having accurate information about an offender's psychological needs and the risk the offender poses is doubtless crucial for the CSC to effectively achieve this purpose. (*Ewert v. Canada*, 2018, para. 38)

The court further ruled that CSC breached its obligation under section 24(1) of the *Corrections and Conditional Release Act* which requires CSC to "take all reasonable steps to ensure that any information about an offender that it uses is as accurate, up to date and complete as possible" (para. 40). They interpreted information sources as results from psychological tests and recidivism risk assessments and argued that this would further CSC's paramount goal of protecting society (*Ewert v. Canada*, 2018, para. 40). Arguably, any tool that falls under "psychological tests and recidivism risk assessments" used by CSC on those who have offended should then be validated. The judges acknowledged the inequitable criminal legal outcomes Indigenous individuals are exposed to and pointed to the necessity of validation research to mitigate cultural bias in

tools used with this population. Thus, the case has prompted increased scrutiny and emphasis on validating risk assessment tools for culturally diverse groups, generally, and Indigenous offenders, specifically (Olver et al., 2018).

1.2. Indigenous Overrepresentation within Canada's Criminal Legal System

The overrepresentation of Indigenous people at all stages of the Canadian criminal legal system is a well-established issue and continues to increase disproportionately as compared to non-Indigenous individuals (Clark, 2019) despite reforms to address the problem. As of January 2020, despite representing only 5% of the Canadian population, 30% of individuals in federal correctional facilities were Indigenous (Office of the Correctional Investigator [OCI], 2020). In a follow-up 2021 press statement released by the OCI, the Correctional Investigator stated that:

> On this trajectory… Canada will reach historic and unconscionable levels of Indigenous concentration in federal penitentiaries… Over-representation of Indigenous people in correctional settings remains one of Canada's most pressing human rights issues, and is evidence of public policy failures over successive decades as no government has been able to stop or reverse this trend. (OCI, 2021).

Indigenous individuals are not only over-represented in correctional institutions but are also more likely to be placed in maximum security institutions, incarcerated for violent offences, placed in administrative segregation, denied bail, released later in their sentences, and classified as higher risk individuals as compared to their non-Indigenous counterparts (Clark, 2019). Scholars have argued that the use of culturally biased risk assessment tools can directly explain such experiences of disadvantage at various stages of the criminal legal system as many of these tools are more accurate for White individuals and fail to account for the role of race/ethnicity and cultural identity in explaining the risk of engaging in criminal behaviour (Singh et al., 2014, Woldgabreal et al., 2020). Meanwhile, the overrepresentation continues to increase.

To remedy this overrepresentation, section 718.2(e) of the *Criminal Code* (added in 1996) directs judges to consider the unique systemic disadvantages that Indigenous

peoples face and consider reasonable alternatives to incarceration for this group. This was endorsed by a Supreme Court of Canada decision in *R. v. Gladue* (1999) where the court acknowledged that the "the figures [relating to overrepresentation] are stark and reflect what may fairly be termed a crisis in the Canadian criminal justice system" (p. 688). *Gladue* led to the development of *Gladue* factors that CSC decision makers are obligated to consider as mitigating in relation to offender intake and risk assessment, security classification, parole hearings, release planning, disciplinary decisions, and so on (Keown et al., 2015). *Gladue* factors include any risk-relevant factors that may have disproportionately affected the lives of Indigenous peoples such as substance abuse, racism, family or community breakdown, lack of education and employment opportunities, foster care, and residential school experiences (Keown et. al., 2015). The importance of *Gladue* was reaffirmed in *R. v. Ipeelee (2012),* another Supreme Court of Canada decision that clarified the requirement for judges to consider section 718.2(e) when sentencing Indigenous individuals. Despite these provisions and case law in place, overrepresentation has worsened for Indigenous individuals in conflict with the law (Public Safety Canada, 2022). The reasons underlying this overrepresentation are multifaceted and often tied to the lingering adverse social, economic, and political impacts of colonization.

1.3. Context Matters: The Experience of Colonization

Any discussion on Indigenous over-representation within correctional settings is incomplete without explicit acknowledgement and understanding of colonization and its continuing impacts. The experience of colonization has shaped many of the historical and contemporary harmful contexts and risk factors that Indigenous peoples face. According to a 1996 report authored by the Royal Commission on Aboriginal[1] Peoples (RCAP), "colonialism provides an overarching conceptual and historical link in understanding much of what has happened to Aboriginal peoples" (p. 47). Further, the Truth and Reconciliation Commission (TRC) of Canada (2015) has argued that the

[1] To acknowledge a shift in terminology, the term "Aboriginal" was entrenched in the Canadian Constitution and is prominent in laws and policies until fairly recently, when the preferred terminology has shifted to "Indigenous," following international conventions and less Eurocentric etymology (Animikii, 2020). I use the term "Indigenous" to refer to First Nations, Inuit, and Métis peoples inclusively except where "Aboriginal" is entrenched in law/policy.

history of colonialism and forced assimilation of Indigenous peoples amounts to “cultural genocide” (p. 3) as the Canadian government intentionally aimed to destroy the language, culture, traditions, and spirituality of Indigenous peoples. It is also crucial to recognize the physical genocide caused by colonialism - many Indigenous peoples lost their lives to violence, disease, social turbulence, and inadequate access to social services and health care, due to the impacts of legislative policies and practices enacted by the Canadian federal government (Hart, 2016). A few key laws and practices that contributed to the colonial conquest and related dispossession are outlined below. Although these laws and practices might no longer be in effect, the impacts of colonialism are very much alive in Canada today and are reflected in the lived experiences of Indigenous peoples, as discussed in later sections.

1.3.1. Indian Act, 1876

Enacted in 1876, the *Indian Act* [hereinafter, *Act*] is the primary document that oversees the interactions of the federal government of Canada with Indigenous communities. Since its inception, the federal government has been able to define and control almost all spheres of Indigenous life – imposition or removal of Indian status, creation of reserves, allotment of land resources, drafting of treaties – all in an attempt to ultimately eliminate the “Indian problem” (Palmater, 2014, p. 30) in Canada. The paternalistic and harmful rationale behind the *Act* was that it was the Canadian government’s “responsibility to care for and protect interests of First Nations people by acting as their guardians until such time as they could reach a level of sophistication that allowed them to fully integrate into Canadian society” (Indian and Northern Affairs Canada, 2010, p. 8).

The Canadian federal government intentionally used the *Act* to remove traditional forms of governance, self-sufficiency, and dispossess Indigenous peoples of practices they had honored for generations (Woolford, 2009). The government prohibited cultural practices such as the Potlach and Sun Dance in an attempt to strip away the cultural identity of Indigenous peoples and their connections to the land. The prohibition on such communal practices also prevented older generations from passing down oral history, values, and beliefs to younger generations (Kan, 2015). The *Act* specifically discriminated against Indigenous women in various ways. For example, Indigenous

women would permanently lose their Indian status upon marrying a non-Indigenous man whereas the same rule did not apply to Indigenous men who married non-Indigenous women; in fact, in these situations, non-Indigenous women would gain Indian status. This process was referred to as the “bleeding off” (Palmater, 2014, p. 36) of Indigenous women and their children from reserves and communities and continued for over a hundred years before this provision of the *Act* was repealed in 1985. In keeping with its racist and paternalistic agenda, the *Act* facilitated the creation of residential schools, causing irreparable harm to Indigenous communities in Canada, the consequences of which are still very much alive.

1.3.2. Residential Schools

Residential schools were created with the goal of assimilating Indigenous children into the Canadian dominant culture and removing the “Indian” from the child (Jung, 2009). This form of social control was exercised by invalidating Indigenous languages and traditions, disconnecting Indigenous children from their cultural roots and families, degrading their practices as inferior, and forcibly teaching them the ways of life seen appropriate by White authorities (Palmater, 2014). It is estimated that over the course of 125 years, more than 150,000 Indigenous children were forcibly removed from their homes and placed into residential schools (RCAP, 1996; TRC, 2015). The TRC (2015) report suggests that unethical food and nutrition-related experiments were conducted on Indigenous children in these residential schools along with them being subjected to physical, sexual, and verbal abuse. The RCAP (1996) found that “a reign of disciplinary terror, punctuated by incidents of stark abuse continued to be the ordinary tenor of many schools throughout the system” (p. 373). In 1922, the Canadian medical community characterized the living standards Indigenous children faced in these residential schools as a “national crime” (Milloy, 1999, p. 75). The last such school in Canada shut down in 1996 but the harm inflicted by these institutions continues to perpetuate inequities and intergenerational trauma for Indigenous peoples all over the country. Between May 2021 and March 2022, the unmarked graves of more than 1,000 children have been discovered on the premises of three former residential schools in Canada (Austen, 2022).

1.3.3. From the Sixties Scoop to Contemporary Child Welfare

The Sixties Scoop, which started in the 1950s and continued until the 1980s (TRC, 2015) refers to the “scooping up” (Sinclair, 2007, p. 67) of Indigenous children from their homes and communities and placing them with non-Indigenous (primarily White) foster families across Canada, Europe, and the United States. As an extension of paternalistic policies that sought to remove the “Indian” from the child, government authorities viewed such scooping as an easy way to address the overrepresentation of Indigenous children in the child welfare system. In the 1970s, approximately 1 out of 3 children under the care of child welfare services was Indigenous and 70% of the Indigenous children scooped up during this time were placed into non-Indigenous homes where they often struggled with navigating their Indigenous identity and ancestry (Johnston, 1983). The long-lasting impacts of the Sixties Scoop on Indigenous peoples are considerable, ranging from a loss of cultural identity and connection to low self-esteem and various socio-economic inequities (Sinclair, 2007).

The trauma resulting from the residential school system and the Sixties Scoop is intensified for Indigenous peoples by contemporary discriminatory Canadian government policies. These policies include coercive sterilization of Indigenous women, and more recently, the disproportionate rates at which young children are taken away by child protective services because Indigenous women are seen as unfit to care for their children (Sinclair, 2007). Coercive sterilization legislation that existed in Alberta and British Columbia between 1928 and 1973 was yet another form of social control that robbed Indigenous women of their agency. It established prejudiced notions regarding their sexual or moral character and severed the link between generations by taking away Indigenous women’s ability to reproduce (Stote, 2012). Further, the practice of coercive sterilization has been viewed as a cost-effective way for the Canadian government to reduce the number of Indigenous peoples it has any financial obligation towards in the form of welfare assistance (Stote, 2012).

Despite the repeal of such eugenics-based legislation in Canada, its harmful consequences are still in force. For example, Indigenous children continue to be disproportionately taken away from their families by child protective services and placed in foster care (Sinclair, 2007). According to the 2016 census by Statistics Canada, although Indigenous children make up only 7.7% of children in Canada, they account for

52.2% of children in foster care. It can be argued that this practice furthers the colonial agenda of isolation and assimilation by equating the “best interests of the child” (the standard used in court justifications for placing children in foster care) with their removal from their Indigenous families and communities and placement in primarily non-Indigenous environments (Sinclair, 2007). This also suggests that a new form of scooping up of Indigenous children is happening every day in a legal way and therefore begs the question if colonization or the attempt to exercise control over Indigenous peoples ever really ended in Canada.

1.4. Impacts of Colonization: Risks and Needs among Indigenous Peoples in Canada

Colonialization has positioned many Indigenous peoples on the margins of society and led to higher rates of poverty, unemployment, substance abuse, homelessness, lack of education, mental health issues, dysfunctional relationships, intimate partner violence, and suicides among this population compared to their non-Indigenous counterparts (Aguiar & Halseth, 2015). For example, a report by the Canadian Poverty Institute suggests that 1 in 4 (or 25%) of Indigenous peoples are living in poverty. The median after-tax income for Indigenous peoples ($20,000) is lower than the Canadian average of $27,600 (Statistics Canada, 2018). Further, Indigenous individuals are more likely to depend upon income assistance, with 33.6% of Indigenous peoples receiving assistance compared to 5% of their non-Indigenous counterparts (Sawchuk, 2018). Low socioeconomic status negatively impacts Indigenous peoples’ ability to fully participate in social life and has been linked with higher rates of violence perpetrated by and against them as they are caught in a complex interplay of high financial stress, low social supports, substance abuse, and reduced social capital (Daoud et. al., 2013).

Poverty and related deprivation are direct consequences of low employment and education rates. According to the 2011 National Household Survey and 2016 Census, Indigenous peoples are less likely to finish high school or post-secondary education than their non-Indigenous counterparts. Consequently, they are less likely to be a part of the paid labour force - Statistics Canada’s 2020 Labour Force Survey indicated that 7.4% of White Canadians were unemployed during August to December 2020 compared to 13%

of Indigenous peoples (Block, 2021). These stresses of economic and educational marginalization also expose Indigenous peoples to higher rates of homelessness – to illustrate, Belanger and colleagues (2013) found that 1 in 15 Indigenous peoples in Canadian urban centres are homeless compared to 1 in 128 for the general population (i.e. 8.5 times more likely). Other researchers argued that in addition to homelessness, housing on reserves are often sub-standard, over-crowded, and increase the likelihood of health issues (Blackstock & Trocmé, 2005). Arguably, homelessness and social disorganization within Indigenous communities are by-products of colonial trauma and these structural inequalities create a breeding ground for additional risk factors such as substance abuse, mental health issues, and violence.

The compounding effect of historical trauma and transgenerational marginalization in Canadian society has left many Indigenous peoples particularly vulnerable to alcohol and substance abuse to cope with postcolonial distress (Kirmayer et. al., 2014). Studies show that those who engage in alcohol and substance abuse have an increased risk for educational and employment failure, mental health problems, physical and sexual violence victimization, death due to motor vehicle accidents, suicide, and so on (Lemstra et al., 2013; Maina et. al., 2020; Stein, 1999). Indigenous peoples in Canada are more likely to be hospitalized due to substance-related issues and overdoses than their non-Indigenous counterparts (Nickel et. al., 2022). In a study conducted on a retrospective cohort of 70,035 individuals sentenced through courts in British Columbia from 2001 to 2010, Indigenous individuals were almost twice as likely (OR = 1.92) to exhibit alcohol dependence than their White counterparts (Rempel et. al., 2015). According to a report by the Aboriginal Healing Foundation (2007), high rates of substance use are found among Indigenous residential school survivors as they continue to cope with the grief, unresolved trauma, and loss of their cultural identity. Bucharski and colleagues (2006) found that Indigenous women reported using drugs and alcohol as a way to “forget” (p. 728) traumatic childhood experiences and thus became addicted to these substances at an early age. This method of coping through substance and alcohol use can get passed down to future generations, resulting in higher rates of drug and alcohol addictions among Indigenous peoples (Chansonneuve, 2007).

Another prominent risk factor that is magnified for Indigenous peoples through their exposure to colonization, residential schools, inter-generational trauma, and cultural loss

is mental health issues. The TRC (2015) outlined key historical factors related to colonization that have contributed to higher rates of depression, anxiety, post-traumatic stress disorder, and suicidal ideation among Indigenous individuals with a parent or grandparent who attended a residential school than among those whose parents and grandparents did not attend such a school (Boksa et. al., 2015). Existing mental health issues among Indigenous peoples are worsened by the lack of trauma-informed interventions, stigma associated with accessing mental health supports, discrimination within healthcare settings, precarious funding of projects, and overall culturally insensitive systems of providing care (Boksa et. al., 2015).

1.5. The Gendered Experience of Colonialism

Many of the above mentioned experiences of marginalization or risk predispose Indigenous peoples to experiencing higher rates of violent victimization. A 2019 Statistics Canada report found that the rate of violent victimization among Indigenous peoples was more than double that among their non-Indigenous counterparts. More specifically, the risk of victimization is much higher for Indigenous women, as highlighted by the 2016 national inquiry on missing and murdered Indigenous women and girls in Canada and calls to end the disproportionately high levels of violence faced by this group (National Inquiry into Missing and Murdered Indigenous Women and Girls [Canada], 2019). This was, in part, due to the efforts of Amnesty International in 2014 urging the federal government to take immediate action on the disproportionate amount of violence targeted towards Indigenous women in Canada.

Research suggests that Indigenous women experience higher rates of childhood sexual and physical abuse by adults and this perpetuates intergenerational trauma and violence (Statistics Canada, 2021). Prior to colonization, Indigenous women occupied important (even sacred) positions in their communities with several Indigenous communities operating under matrilineal and female-centered structures (Burnette & Hefflinger, 2017). Therefore, such high rates of gendered violence can be viewed as products of the imposition of Western patriarchal gender beliefs that have served to undermine the status of and normalize violence against Indigenous women (Brownridge, 2003). Considering this study is validating a risk tool used for intimate partner violence and Indigenous women are disproportionately exposed to such violence, it is important

to emphasize the gendered nature of violence and how colonialism has reinforced these connections.

The Interconnectedness of it All

All of these risk factors are interconnected and need to be viewed holistically to understand the socio-cultural inequities and trauma that Indigenous peoples face and how these coincide to increase their interactions with settler law and legal institutions. Indigenous peoples come disproportionately into contact with the criminal legal system not only as victims of violence but also as perpetrators of such violence, including IPV/spousal assault (Brownridge, 2003). In trying to understand this risk of violence generally, and family violence specifically, it is difficult to disentangle Indigenous individuals' high risk of family violence or abuse from the lingering effects of colonization. This is captured by Indigenous activist, Ellen Gabriel: "violence is not part of our cultural values but is instead an effect of colonial self-hatred stemming from the Indian Residential School system and colonialism" (National Aboriginal Circle Against Family Violence, p. 15).

According to colonization theory (Brownridge, 2003), Indigenous peoples are at a higher risk for IPV because of historical trauma and intergenerational oppression (Burnette & Heffinger, 2017). Gone and colleagues (2019) argued that Indigenous historical trauma differs from other forms of psychological trauma as it is "colonial in origin, collective in impact, cumulative across adverse events, and cross-generational in transmission of risk and vulnerability" (p. 21). Due to exposure to such historical trauma, Indigenous individuals have internalized colonial oppression and this affects their thoughts, feelings, behaviours, and relationships (Puchala et al. 2010). Internalized oppression results in feelings of distress, anger, pain, hopelessness (Brownridge et al, 2017) and this combined with contemporary experiences of marginalization (lower socio-economic status, employment, education rates, higher substance abuse, etc.) increases Indigenous individuals' risk of perpetrating IPV. Research has also found that Indigenous individuals have greater risk of experiencing child maltreatment in the form of exposure to violence, direct physical and/or sexual abuse victimization, as well as both exposure and direct victimization (Brownridge et al, 2017). Experiencing such maltreatment is associated with outcomes such as post-traumatic stress, antisocial or offending behaviour, and perpetrating violence (Shepherd et al., 2014). Therefore, the

intergenerational cycle of violence is a by-product of colonization and has left many Indigenous peoples in circumstances that facilitate offending and victimization (Bartels, 2010).

1.6. Intimate Partner Violence

Intimate partner violence (IPV), also referred to as spousal or domestic violence, is a pervasive form of violence, where a current or former intimate partner inflicts harm (physical, sexual, emotional and/or psychological) on their partner (Government of Canada, 2020). The World Health Organization (WHO) recognizes IPV as a major global public health concern because it transcends geographic and socio-cultural borders and impacts millions of people, especially women, worldwide. To illustrate, a 2021 report published by WHO that analyzed all available prevalence data from surveys and studies conducted between 2000 and 2018 in 161 countries found that approximately 1 in 4 (26%) of ever-married/partnered women have been subjected to physical and/or sexual IPV from a current or former male intimate partner at least once in their lifetime (WHO, 2021). For the purposes of this WHO report, physical IPV was defined as:

> acts that can physically hurt the victim, including, but not limited to: being slapped or having something thrown at you that could hurt you; being pushed or shoved; being hit with a fist or something else that could hurt; being kicked, dragged or beaten up; being choked or burnt on purpose; and/or being threatened with or actually having a gun, knife or other weapon (WHO, 2021, p. 6).

Sexual IPV was defined as:

> being physically forced to have sexual intercourse when you do not want to; having sexual intercourse out of fear for what your partner might do or through coercion; and/or being forced to do something sexual that you consider humiliating or degrading (WHO, 2021, p. 6).

In the Canadian context, more than 4 in 10 women and 1 in 3 men have experienced IPV in their lifetimes (Heidinger, 2021). In a recent study that examined ten-year trends in physical dating violence among adolescent boys and girls in British Columbia, it was found that boys were more likely than girls to have experienced physical dating violence victimization but the severity of violence experienced was greater for girls (Shaffer et al., 2021). Further, research in Canada indicated that women

victims of homicide are more likely to be killed by an intimate partner than by any other type of perpetrator and are more likely than men to be killed by an intimate partner (Roy & Marcellus 2019). It is also important to acknowledge that the frequency and intensity of IPV incidences tend to be underreported due to a variety of reasons including but not limited to fear, anxiety, stigma, internalized victim-blaming, and feeling trapped by a partner (Burczycka, 2014, 2019).

The multi-layered impacts of IPV on victims are well-documented. In additional to direct physical injuries (including death), IPV impacts victims' mental, emotional, psychological, educational, and financial wellbeing (WHO, 2014). Mental health consequences of IPV for victims include but are not limited to suicidal ideation, clinical depression, anxiety disorders, posttraumatic stress disorder (PTSD), substance abuse, phobias, panic disorder, and overall low self-esteem (Afifi et al. 2009; Bonomi et al. 2009; Golding 1999; Karakurt et. al., 2014). IPV also has an economic cost since victims are often already from impoverished communities and their victimization perpetuates their financial precariousness as it makes it challenging for them to be focused at their jobs, hampers their ability to attend work and advance in their careers, and ultimately increases the risk of a loss of employment (Moe & Bell, 2004; Wettersten et al., 2004). Experiencing IPV also negatively affects educational attainment and performance – to illustrate, Strenio (2017) found that IPV reduced the likelihood of high school graduation among those impacted. These adverse consequences of IPV in different domains of social and professional life are consistent with the literature on the connections between violence and social inequities, and how gendered violence specifically preserves and reproduces patriarchal oppression in society (Farmer, 2004).

Several studies have examined, to varying degrees, the connections between race/ethnicity and IPV. A systematic review of 228 studies that looked at risk factors for IPV (Capaldi et. al., 2012) found that being a member of a minority group was a risk factor for IPV perpetration and victimization, with findings of highest risk for African American individuals as compared to their White counterparts. Another study conducted in New Zealand found that even after controlling for socioeconomic status, family functioning factors, and individual factors, Māori individuals were at higher risk for both IPV perpetration and victimization than their non-Māori counterparts (Marie et. al., 2008). It is difficult to disentangle the contribution of colonization and systemic racism to this overrepresentation. Similarly, in the Canadian context, a 2021 Statistics Canada report documented that Indigenous women (61%) and men (54%) were more likely to have

been victims of IPV in their lifetime compared with their non-Indigenous counterparts (44% and 36%, respectively). Indigenous women who experienced IPV were also more likely (56%) to report feeling controlled or trapped by an intimate partner than their non-Indigenous counterparts (42%). The influences of race/ethnicity/gender on IPV victimization and perpetration are complex and have deep historical antecedents. However, these need to be acknowledged in order to conduct meaningful, context-driven, and accountable assessments of risk.

Given the prevalence and negative impacts of IPV, it is critical to have evidence-based risk assessment approaches that can assist with risk identification and effective risk management in this area. Effective risk assessment, at the most foundational level, relies on identification of risk factors associated with certain criminal behaviours. Before discussing risk factors specifically associated with IPV, it is important to discuss and understand risk factors in general.

1.7. Contextualizing Risk

A risk factor is “any characteristic that precedes an outcome and is associated with the subsequent likelihood of that outcome” (Tanner-Smith et. al., 2013, p. 3). In the specific context of criminality, a risk factor would then be associated with the subsequent likelihood of offending or reoffending (although the factors that predict onset of offending may not always be the same as those that predict reoffending). Some risk factors are quite broad and associated with several negative consequences, including the propensity to engage in criminal behaviour. A meta-analysis found that low self-control is a risk factor for substance abuse, obesity or eating disorders, impulsive shopping, procrastination, as well as criminality (De Ridder et. al., 2012). This is further complicated if the role of protective factors is considered (for example, social bonds or resilience) and how those can suppress co-existing risk factors (Hannah-Moffat, 2015). However, there are specific risk factors that have been associated with individual criminality and propensity for violent offending in various longitudinal studies and have strongly shaped risk assessment and management processes across countries (Farrington et. al., 1998; Loeber et. al., 1999; Piquero, 2008).

Scholars have argued that “some personal characteristics are consistently and strongly associated with future violence” (Quinsey et. al., 2006, p. 207). Specifically,

research studies (Andrews & Bonta 1994) have identified eight risk/need factors (i.e., the "Central Eight") that reliably predict involvement in criminal behaviour. These include antisocial peers, antisocial temperament/ personality, antisocial attitudes, history of antisocial behaviour, lack of attachment to family/marital supports, social/employment problems, lack of prosocial leisure or recreation activities, and substance abuse (Polaschek, 2012). Among these risk factors, history of antisocial behavior is a static risk factor that cannot be amended. The remaining risk factors are dynamic or malleable and various studies have suggested that targeted treatment of these criminogenic needs can reduce recidivism (Andrews et al., 1990; Andrews et al., 2006; Andrews & Dowden, 2006).

The Risk-Need-Responsivity (RNR) model is one of the most influential models for the assessment and treatment of offenders from various different backgrounds. Developed in the 1980s and first formalized in 1990, the model has been used to assess and rehabilitate criminal justice involved in Canada and around the world (Bonta & Andrews, 2007). It is based on three principles: the risk principle states that criminal behaviour can be reliably predicted and that treatment should focus on the higher risk offenders (i.e. low risk offenders need little to no intervention), the need principle explores the importance of addressing dynamic or changeable criminogenic needs in the design and delivery of treatment, and the responsivity principle lays out how the treatment should be provided and this includes tailoring the treatment to the learning style, motivation, abilities, and strengths of the offender (Andrews & Bonta, 2003). The strength of the RNR model is that it does not take a one-size-fits-all approach but instead allows for accommodation of individual strengths and weaknesses. Ever since its emergence in the 1980s, the RNR model has been researched, evaluated, and tested with different criminal justice-involved populations. Meta analyses have shown support for the usage of RNR principles in reducing recidivism among various subgroups such as youth (Andrews et al., 1990), females (Dowden & Andrews, 1999), individuals who commit sex offences (Hanson et al., 2009), and individuals who commit violent offences (Dowden & Andrews, 1999). Interventions that adhere to the RNR principles have been associated with greater risk reduction than interventions ignoring or minimally incorporating these principles (Dowden & Andrews, 1999; Gendreau et. al., 2006).

Additionally, it is important to understand that risk is cumulative (i.e. as risk factors increase in frequency and intensity, the risk for offending increases), domains of

risk overlap, and some risk factors are more relevant than others when specific types of offending behaviours or recidivism outcomes are being explored (Beck & Shipley, 1989; Yessine, 2011). This implies that it is important to consider whether there are unique risk factors for IPV. Risk factors specifically associated with IPV have been studied in various countries and this has resulted in the identification of a range of factors that influence the risk of perpetrating IPV (Abramsky et. al, 2011). For example, a meta-analysis of 85 studies (Stith et. al, 2004) found large effect sizes in predicting IPV for five risk factors such as emotional/ verbal abuse, forced sex, illicit drug use, attitudes condoning marital violence, and marital dissatisfaction. Stith and colleagues (2004) further found moderate effect sizes for traditional sex-role ideology, anger/hostility, history of partner abuse, alcohol use, depression, and career/life stress. While this meta-analysis specifically looked at risk factors for physical IPV perpetration, another systematic review found attributions such as anger, control, self-defense, retaliation, and a desire to get attention as being reported by both men and women for their psychological IPV perpetration (Neal & Edwards, 2017). Another longitudinal study that looked at predictors of IPV for both men and women found that abuse in childhood, childhood and adolescent behaviour problems, and adolescent alcohol and substance use were significant predictors (Costa et al., 2015). Multiple longitudinal studies have also found that IPV declines with age (Capaldi et al., 2012).

Most of these risk factors identified in previous studies overlap with the “Central Eight” factors (Andrews & Bonta 1994) but the extent to which these are truly unique to IPV needs additional longitudinal research. It is possible that there is an increased salience or nuance for some of these factors for IPV. For example, factors such as traditional sex role ideology, attitudes condoning marital violence, and marital dissatisfaction could be related to other types of crimes but could also be plausibly unique to IPV. An alternative understanding is that the risk factors are not unique and that IPV is just another example of crime or violence. In a large scale systematic review of risk factors for IPV, Capaldi and colleagues (2012) found that risk factors for IPV were similar to risk factors for other risky behaviours in adolescence and adulthood, such as crime, substance use, and sexually risky behaviours. Considering the dearth of research on risk factors unique to IPV, it is important that the risk factors that have at least been shown to predict IPV significantly are present in risk assessment instruments developed for predicting IPV as well as in resulting intervention or management strategies.

1.8. Violence Risk Assessment

Violence risk assessments are conducted to gather information about individuals and use that information to predict future risk of violence and identify strategies to manage or decrease such risk (Hart & Logan, 2011). Predicting and managing risk of violence are important areas of focus in the criminal legal system. This is because of the broad implications that arise from violence risk assessment outcomes for public safety, security of correctional institutions, as well as the individuals being assessed. Evidence-based approaches to risk assessment are critical, given that the results of such evaluations are often used to impose various restrictions on individuals who have engaged in criminal behaviour and impact key decisions related to their charging, sentencing, access to treatment, parole eligibility, community supervision options, and so on (Helmus & Bourgon, 2011).

In the context of violence risk assessment with culturally diverse individuals such as Indigenous peoples, scholars have raised concerns related to the cross-cultural validity of tools. Most tools are developed and validated on samples of predominantly White males and applied to racialized and culturally diverse individuals, including Indigenous peoples (Shepherd et al., 2014). This assumption that underlying risk factors for engaging in violence are the same for Indigenous and predominantly White individuals has been challenged (Olver & Stockdale, 2021; Tamatea & Day, 2019). Scholars have argued that culture impacts human decision-making and influences how groups understand, perceive, perpetrate, and respond to violence (Hart, 2016). Further, it is “impossible to treat individuals fairly if they are treated as abstractions, unshaped by their particular contexts of social life” (Hannah-Moffat, 2009, p. 215). This becomes especially important for Indigenous individuals in Canada, given their over-representation in the criminal legal system as a function of the history and ongoing reality of colonization. Therefore, cross-cultural validation of risk assessment tools remains a focal issue.

1.8.1. Considerations for Violence Risk Assessment with Indigenous Individuals

The cross-cultural validity and predictive accuracy of risk assessment tools used with Indigenous peoples is dependent upon the risk factors contained in said tool being

equally valid for Indigenous peoples and the administration of such tools being conducted within a culturally competent and responsive framework (Shepherd et. al., 2014). Developers of risk assessment tools should determine whether a particular factor being included in the tool is in fact a criminogenic risk factor for the particular groups in society the tool is intended to be used with. This becomes more pertinent when risk tools are developed on primarily White samples and applied to ethnic minority individuals. These raise ecological fallacy concerns that correlations found within group level data will be incorrectly assumed to apply to sub-groups of individuals (Thorndike, 1939).

Additionally, two key identified psychometric issues in risk assessment with Indigenous individuals are that of structural equivalence and predictive equivalence. Structural equivalence exists when the same latent constructs underlie risk of violence across different groups and predictive equivalence exists when a risk scale predicts the outcome of interest with the same level of accuracy across different groups (Olver & Stockdale, 2021, p. 3). Although there is evidence that all the Central Eight risk factors significantly predict general and violent recidivism for Indigenous individuals, there is also evidence that often, these estimates of predictive accuracy are lower for Indigenous individuals compared to non-Indigenous individuals (Gutierrez et. al., 2013; Wilson & Gutierrez, 2014). For example, a meta-analysis found that among the Central Eight risk factors, criminal history, alcohol or drug use, and antisocial personality demonstrated significantly lower predictive accuracy for Indigenous individuals compared to non-Indigenous individuals when predicting general recidivism (Gutierrez et. al., 2013). For criminal history specifically, Indigenous individuals could score higher due to disproportionately higher levels of detection, law enforcement, prosecution, and conviction (Perley-Robertson et al, 2019). Similarly, for substance use, it could be plausible that it is used by some Indigenous individuals as a mechanism to cope with the aftermath of colonization and ongoing marginalization. Another meta-analysis that examined the predictive properties of the Level of Service (LSI) risk scales in 15 unique samples found that five of the eight subscales (criminal history, employment/education, companions, alcohol/drugs, and pro-criminal attitude-orientation) demonstrated significantly lower predictive accuracy for Indigenous individuals compared to non-Indigenous individuals (Wilson & Gutierrez, 2014).

Findings that point to a consistent pattern of lower predictive accuracy of risk scales for Indigenous versus non-Indigenous individuals are problematic and need to be

addressed. This combined with the knowledge that Indigenous individuals are disproportionately exposed to key risk factors such as poverty, physical/sexual abuse, family adversity/dysfunction (McCuish & Corrado, 2018) could indicate that the higher prevalence of risk factors point to social gaps and needs, in addition to criminogenic factors that increase the likelihood of Indigenous individuals engaging in crime. It is also important to recognize that many of the currently used static and dynamic risk factors individualize issues that are structural and systemic (Wilson & Gutierrez, 2014). To account for systemic issues, some researchers have raised concerns that current risk assessment approaches fail to consider potentially unique risk factors among Indigenous individuals (e.g., residential schools and intergenerational trauma) or why these risk factors may be demonstrated (e.g., substance use as a means to cope with cultural and linguistic disenfranchisement, Gutierrez et al., 2016). This is complicated by additional research that proposed that universally accepted risk factors may hold less and different meanings for Indigenous individuals (Babchishin et al., 2012). Additionally, even though scholars have hypothesized about culturally unique risk factors for Indigenous individuals, empirical research on this is scarce, therefore preventing a clear understanding of the role of colonization, dispossession, and intergeneration trauma on the risk of criminal onset, involvement, and recidivism. Recidivism prediction is uncertain, in the best of circumstances, but when colonial dispossession and the possible unique reasons for the presence, manifestation, interactions, and comorbidities of risk factors for Indigenous peoples are taken into account, the challenges for risk assessment are severely amplified.

1.9. Approaches to Risk Assessment

Approaches to predicting and managing risk can be either discretionary (unstructured), semi-discretionary (structured professional judgement), or non-discretionary (actuarial) and there are advantages and disadvantages associated with each, as discussed below.

1.9.1. Unstructured Professional Judgement

The first generation of risk assessment tools consist of unstructured professional or clinical judgement, where a professional (for example, probation officer, psychologist,

psychiatrist, or social worker) gathers information about an individual and forms a subjective risk assessment. This may be informed by specialized tests or personality measures, but the information to be considered is not necessarily specified in advance nor is there any guidance on how to integrate the information (Hanson & Morton-Bourgon, 2009). In this approach, there are no restrictions on the evaluator's decision-making process and reliability or justifiability of the approach is tied to evaluator qualifications and experience (Kropp & Hart, 2004). Proponents of this method argue that unstructured judgement allows for a case study approach where the unique risks and needs of the individual being evaluated can be taken into account and risk management strategies can be customized accordingly (Kropp & Hart, 2004). However, the approach is also critiqued for its overreliance on personal discretion, lack of accountability and replicability, and its proneness to error and bias (Grove et. al., 2000).

1.9.2. Actuarial Risk Assessment

The second generation of risk assessment tools consist of static actuarial risk assessment instruments (ARAIs) designed to predict the statistical likelihood that an individual will engage in a certain behaviour (e.g., reoffend with a violent offence) within a specific period of time. Described as a "mechanical and algorithmic" approach by Grove and Meehl (1996, p. 293), these tools of prediction are usually developed based on data from groups of individuals who have recidivated and who have not (reference group). These instruments are usually comprised of empirically derived risk factors and have fixed or explicit scoring rules, developed *a priori*, for each test item as well as a defined statistical algorithm for obtaining a total score that can be interpreted to predict risk of future reoffending or violence (Hanson & Morton-Bourgon, 2009).

The third generation of risk assessment tools advanced the actuarial approach by incorporating dynamic factors or changeable criminogenic needs. This shift in ARAIs is aligned with the RNR principles (i.e. efforts to rehabilitate individuals will be most effective when they match the level of risk, presence of criminogenic need, and responsivity or learning style of the individual). Proponents of ARAIs argue that the actuarial approach is generally more accurate, reliable, valid, and generalizable than unstructured or structured professional judgement (Bonta et al., 1998; Grove & Meehl, 1996; Litwack, 2001; Quinsey et al., 1998). Critiques of ARAIs include their lack of practical utility, elimination of professional discretion, minimization of unique context-

specific variables, and overall mechanistic rigidity of application (Hart, 1998; Douglas & Kropp, 2002; Litwack, 2001). ARAIs continue to be extensively used, researched, and accepted in the current correctional system.

1.9.3. Structured Professional Judgement (SPJ)

Structured professional judgement (SPJ) tools are a variation of first generation risk assessment instruments designed to build on and address the perceived limitations of unstructured professional judgement and actuarial approaches to conducting risk assessments (Lehmann et al., 2016). SPJ tools allow practitioners to consider and score risk factors (static and dynamic) according to specific rules but leave room for discretion or professional judgement in the final overall evaluation of risk (Douglas & Kropp, 2002). This implies that evaluators can incorporate contextual information such as cultural nuances into their final determination of risk for an individual. In the SPJ approach, the definition of “professional” goes beyond clinicians and psychologists to include non-clinical professionals such as police officers, probation officers, victim services or social services workers, and other practitioners who conduct risk assessments (Kropp & Hart, 2000), therefore adding a layer of accessibility. Further, evaluators can use SPJ as a "guided clinical approach" (Hanson, 1998, p. 52) to conduct risk assessments according to best practices that align with theoretical and empirical knowledge in the field. Therefore, as research advances, evaluators can incorporate those understandings immediately when using SPJ approaches whereas the same does not apply to actuarial tools where evaluators are bound by restrictions or rigid algorithms.

While proponents of SPJ commend this flexibility and fluidity, critics point out that by allowing the final evaluation of risk to be based on subjective clinical opinion, SPJ approaches are prone to error, bias, and the fallibility of human decision-making (Andrews et al., 2006). Studies that have examined clinical or professional overrides have consistently found that overrides inflate findings of risk and reduce the predictive validity of the scale in question (Cohen et al., 2020). However, previous studies also illustrate that interrater reliability is in the good to excellent range for SPJs concerning the presence of individual risk factors and overall summary ratings of risk (Kropp & Hart, 2000). SPJ approaches also discriminate well between known recidivists and non-recidivists in retrospective research (Hanson & Morton-Bourgon, 2009) and predict recidivism in prospective research (Watterworth et al., 2001). We now turn to a

discussion of the Spousal Assault Risk Assessment Guide (SARA), one of the first SPJ scales developed for use with IPV offenders.

1.10. Spousal Assault Risk Assessment Guide (SARA)

The SARA is a structured professional judgement tool designed to predict risk of spousal violence and related recidivism (Kropp, Hart, Webster, & Eaves, 1994, 1995, 1998) for both male and female individuals over the age of 18. It was first published in 1994 and was followed by a revised version in 1995 (SARA-V2; Kropp et al., 1995). Minor updates were made to the SARA in 1998 and 2008; however, these are still considered Version 2. The third and most recent version of the SARA was published in 2015 (SARA-V3). The SARA-V3 retains the core items from the previous version (V2) with some renaming and reorganization and the key difference is that risk factors related to victims were added in V3. These items pertaining to victim vulnerability in V3 include barriers to security, barriers to independence, interpersonal resources, community resources, attitudes or behaviour, and mental health.

For the purposes of this study, the second version (SARA-V2) is being validated. Ryan (2016) found concurrent validity of the SARA-V3 with SARA-V2 and reported a large positive correlation between the SARA-V3 presence numerical scores and SARA-V2 numerical scores (r = .66). Summary risk ratings (i.e. the overall level of risk for imminent harm to spouse and imminent harm to some other identifiable person) between V2 and V3 were also found to be moderately and positively correlated (r = .30). Given this empirical support for concurrent validity, findings from the validation of the SARA-V2 are arguably still relevant to risk assessment practice and policy. In effect, V3 added additional factors to consider, but the factors included in V2 remain relevant to the identification of risk for IPV. Additionally, V2 is the version still being used by British Columbia Corrections, so validations of that version are particularly relevant to correctional practice in that province.

The SARA-V2 defines spousal assault as “any actual, attempted, or threatened physical harm perpetrated by a man or woman against someone with whom he or she has, or has had, an intimate, sexual relationship” (Kropp et al, 1995, p. 1). It contains 20 items grouped into five sections: criminal history (three items), psychosocial adjustment (seven items), spousal assault history (seven items), index offence (three items), and other considerations (allows the evaluator to note rare risk factors not included in the

SARA). Items 1 to 10 are related to risk of violence in general, whereas items 11 to 20 are specifically related to risk of spousal violence (Kropp & Hart, 2000). For a breakdown of SARA-V2 items, see Table 1.

All SARA-V2 risk factors, with the exception of “Other Considerations” are coded on a 3-point Likert scale (Present, Possible or Partially Present, or Absent). Items from the “Other considerations” section are coded on a 2-point scale (Present or Absent). The developers of the SARA recommend that evaluators code the presence of each of the 20 items (including identifying if any of the 20 items are a “critical item” particularly relevant to assessing the individual’s risk) and the overall degree of risk (low, moderate, or high) posed by the individual (Kropp et al., 1995). The overall summary risk rating is for two separate outcomes: a) imminent risk of harm to spouse, and b) imminent risk of harm to some other identifiable person. The overall risk rating is meant to not only predict recidivism but also guide treatment and intervention.

Given the nature of the tool (SPJ), there is no algorithm for how evaluators come to a decision regarding an individual’s overall risk level. However, there are recommendations in the SARA coding manual for evaluator qualifications, quality assurance, assessment procedure (i.e. the types and sources of information that should be considered), and how findings of risk should be communicated and applied towards risk management strategies (Kropp et al., 1995). Considering the professional discretion that is involved in assigning summary risk ratings, it is important to examine these by comparing them to arithmetic total scores on the SARA items. Ideally, there should not be significant differences in prediction of recidivism between summary risk ratings and the summation of total scores. Summing the items into a total score is not recommended by the scale developers, but has nonetheless often been examined for research purposes (e.g., for review, see Helmus & Bourgon, 2011).

In the context of the SARA, the factors for consideration in evaluating risk were derived from empirical and clinical literature on IPV and related recidivism. Previous research on the SARA has found moderate interrater reliability for individual items (median ICC = .65) and the summary risk ratings (median ICC = .63), and high interrater reliability for the total scores (median ICC = .84; Kropp & Hart, 2000). A meta-analysis that reviewed the predictive accuracy of the SARA found that both total scores and judgements predict spousal assault recidivism moderately (k = 11, AUCs = .63 and .67; Helmus & Bourgon, 2011). While the scale has shown moderate predictive validity for general samples, it has not been specifically validated for Indigenous individuals in

Canada (S. Hart, personal communication, March 12, 2022). Despite this, the SARA guide is used by criminal justice practitioners across Canada to assess risk for Indigenous individuals who engage in IPV. Given the positionality of Indigenous individuals within the Canadian criminal legal system and the repercussions of risk assessment outcomes, it is critical to assess the predictive accuracy and cross-cultural validity of the SARA guide for this group.

1.11. Purpose of the Current Study

This study directly addresses the Supreme Court of Canada's call for validation research of risk tools used with Indigenous individuals (*Ewert v. Canada*, 2015, 2018) by validating the SARA, a risk guide developed for assessing and managing risk of spousal assault or IPV. Additionally, such research should be beneficial to all stakeholders as they work towards reconciliation and decolonization at the criminal justice level. Specifically, the Truth and Reconciliation Commission (TRC) of Canada (2015) has called upon the government of Canada to eliminate the overrepresentation of Indigenous peoples in custody and provide realistic alternatives to incarceration while recognizing the systemic issues underlying their involvement in criminal behaviour (Call to Action #30). In the field of risk assessment, a starting point to address the TRC calls would be to evaluate risk tools, factors, and constructs, ascertain their cross-cultural validity and applicability to Indigenous individuals, and then if needed, revise risk assessment tools to be more attuned to the unique needs and risk profiles of Indigenous individuals. Therefore, this study seeks to take up the TRC's call to action #30 by engaging in validation research of a risk tool used with Indigenous individuals as findings from such tools, if inaccurate, can contribute to the overrepresentation of Indigenous peoples in correctional settings.

Additionally, this study will contribute to a body of knowledge focused on improving evidence-based individual risk assessment and management. This can help achieve the goals of the TRC while also maximizing public safety. By evaluating the predictive accuracy and cross-cultural validity of risk assessment tools such as the SARA, it is possible to better identify not only how to prioritize scarce resources in reducing and managing risk (in this case, risk of spousal assault) but also promote equitable outcomes for those who come in contact with the criminal legal system (in this case, Indigenous men). It is critical to ensure that the most severe sanctions,

restrictions, and monitoring strategies are applied only to those individuals who need it to manage their risk, and prevent the unnecessary over-monitoring of low risk individuals. Finally, this study echoes the calls of numerous scholars, practitioners, and community members to ameliorate the ongoing over-representation of Indigenous individuals within the Canadian criminal legal system and decolonize practices such as risk assessment.

To explore the predictive accuracy and cross-cultural validity of the SPJ risk assessment guide, SARA (V2) with Indigenous individuals supervised by BC Corrections, this study addressed the research questions listed below.

Research Questions

1) Does the prevalence of the SARA items, summary risk ratings, total scores (overall and by sections), and Other Considerations differ across Indigenous and White persons supervised by B.C. Corrections who are known to have at least one spousal assault offence?

2) Do the SARA items, summary risk rating, total scores (overall and by sections), and Other Considerations predict domestic violence recidivism, violent recidivism, and any recidivism for Indigenous and White persons? Does the predictive accuracy differ across Indigenous and White groups?

3) What is the predictive accuracy of the sections of the SARA (Criminal History, Psychosocial Adjustment, Spousal Assault History, Index offence) across Indigenous and White groups? Do the sections add incremental predictive accuracy for both groups?

Chapter 2. Method

2.1. Sample

The original datasets obtained from B.C. Corrections contained all individuals who received a SARA assessment between January 1, 2014 and December 31, 2017. In Canada, provincial corrections (such as B.C. Corrections) is concerned with individuals who are serving sentences of less than two years and federal corrections is concerned with offenders who have been sentenced for two years or more (Public Safety Canada, 2022). Therefore, this sample would include all individuals supervised in the community at some point during 2014-2017 by the B.C. provincial corrections system who received a SARA assessment. It is possible that the dataset included individuals who had received federal sentences for domestic violence if they also had a provincial sentence in the same timeframe. In Canada, approximately 3% of all offenders receive a federal custodial sentence of two years or more (Department of Justice, 2017). The original sample (n = 14,481) included 1,650 female individuals. For the purposes of this study, I restricted the sample to males only. The sample should be considered a routine correctional sample in terms of males charged or convicted of domestic violence offences. Among the 12,829 males, 3,958 were Indigenous, 7,613 were White/Caucasian, 459 were Asian, 219 were Black, 1,183 were East Indian, and 172 were Hispanic. 877 individuals had no data on race/ethnicity[2].

After all stages of data cleaning (discussed later) and excluding individuals who were not Indigenous or White, I was left with 3,188 Indigenous and 6,550 White individuals (total n = 9,738). Among the Indigenous individuals, 13.6% had completed Grade 7, 8, or 9, 42.8% had completed Grade 10 or 11, 31% had completed Grade 12, 2.5% had university level education, and 4.8% had vocational training. Among the White individuals, 7.2% had completed Grade 7, 8, or 9, 27.4% had completed Grade 10 or 11, 39.6% had completed Grade 12, 7.8% had university level education, and 10.6% had vocational training. There was a significant association between ethnicity and educational attainment (X^2 [7] = 519.16, p < .001, φ = 0.231), with Indigenous individuals

[2] The race/ethnicity variable was provided to us by B.C. Corrections and we are unsure if this information is based on self-identification.

demonstrating lower educational attainment. In terms of marital status, 61% of Indigenous individuals were single, 20.7% were common-law, 6.4% were married, 1.5% were divorced, 8.2% were separated, and 0.1% were widowed. Among White individuals, 54.3% were single, 14.7% were common-law, 10.3% were married, 4.6% were divorced, 12.3% were separated, and 0.2% were widowed. There was a significant association between ethnicity and marital status (X^2 [6] = 207.87, $p < .001$, $\varphi = 0.146$), with Indigenous individuals more likely to be single or common-law. Further, Indigenous individuals in this sample were, on average, significantly younger at the start of their follow-up period ($M = 34.3$, $SD = 10.13$) than White individuals ($M = 38.4$, $SD = 11.36$; Cohen's $d = .375$, 95% CI of .333 to .418).

2.2. Measures

SARA-V2. The SARA-V2 (Kropp et al., 1995) is an SPJ measure designed for IPV/ spousal assault/domestic violence risk assessment among adult men or women who attempt or threaten physical harm in any intimate, sexual, or romantic relationship, regardless of legal recognition of the relationship (Kropp and Hart, 2015). It can be used by a variety of practitioners including law enforcement professionals, correctional and probation officers, psychologists, and researchers. The SARA-V2 includes 20 risk factors that are organized into four sections: i) Criminal History (3 items), ii) Psychosocial Adjustment (7 items), iii) Spousal Assault History (7 items), and iv) Index/Current Offence (3 items; Kropp et al., 2008). All SARA-V2 risk factors are coded on a 3-point scale (Present, Possible or Partially Present, and Absent). Other Consideration factors (conceptualized as rare but meaningful factors if present) can be considered and coded on a 2-point scale (Absent or Present). Evaluators exercise professional judgement in assigning overall summary risk ratings in two areas: imminent risk of harm to spouse/partner and imminent risk of harm to another person/s, and both of these are coded on a 3-point scale (Low, Moderate, High).

In BC Corrections, the SARA-V2 is part of the intake procedure for all individuals charged or convicted of an intimate partner offence against their spouse/common-law partner (Mularczyk et al., 2021). Previous research on the SARA has found moderate interrater reliability for individual items (median ICC = .65) and the summary risk ratings (median ICC = .63), and high interrater reliability for the total scores (median ICC = .84;

Kropp & Hart, 2000). A meta-analysis that reviewed the predictive accuracy of the SARA found that both total scores and judgements predict spousal assault recidivism moderately (*k* = 11, AUCs = .63 and .67; Helmus & Bourgon, 2011).

2.3. Procedure

This study is part of a larger IPV Risk Assessment Study that has been approved by B.C. Corrections' Research Application Committee. Additionally, ethics approval was obtained from Simon Fraser University's Research Ethics Board (REB) for this minimal risk study. The data required for this project includes risk assessment, demographic, and recidivism information contained in an existing B.C. Corrections database (CORNET). Offenders in the dataset did not participate in any research activity – I used administrative data collected for the purpose of administering sentences imposed by the criminal justice system. Consent is not required to collect these data, and B.C. Corrections has the authority to use their data to conduct research to improve how they carry out their mandate (including delegating that research under a research agreement). The analyses were not used to make any decisions related to the administration of individuals' sentences so there are no known risks to them.

The data were analyzed using Statistical Package for the Social Sciences (SPSS), Version 27 and R, Version 4.1.3. After converting the datasets from Microsoft Excel sheets to SPSS files, I followed multiple steps as part of data cleaning and organizing. First, for the dataset with the SARA assessments, I used the SARA-V2 coding manual and a lookup document provided by B.C. Corrections to categorize item ratings as 0, 1, 2 (low, medium, high or not present, partially present, present). Next, I created variables for each SARA item, overall SARA rating, and the "Other Consideration" factors. For restructuring, I used both offenders' unique ID and SARA completion date as the identifier variables to create an intermediate dataset with one row per SARA assessment and then a dataset with one row per offender. I deleted the assessments where offenders were assessed differently on the same item twice on the same day, assuming this was likely a data entry error. I also computed a SARA total score by adding up scores from each of the 20 SARA items as well as total scores from items for each section (criminal history, psychosocial adjustment, spousal assault, index offence, and other considerations).

In addition to all SARA assessments (*n* = 39,189) conducted in the timeframe (January 1, 2014 to December 31, 2017), the datasets obtained also included full provincial criminal history records for each individual until December 31, 2020. The criminal history information included: a list of all documents (warrants and orders) for each client and *Criminal Code* offences, offence dates for all sentenced convictions administered in B.C. (this was missing for roughly 5% of entries, typically for older convictions such as pre-2000), and sentence lengths for each document. I categorized all offence codes, created variables to flag non-mutually exclusive offence types (i.e., sexual offence, non-sexual violent, non-violent, technical, non-contact sexual, Internet sex offence, category B sex offence, break and enter, arson), and deleted offences that were records of charges or fines for non-criminal offences (e.g., dog leash laws, fishing out of season or with the wrong equipment, and so on). I then created variables to identify events that were equivalent to a charge or conviction[3] and identified associated charge and conviction dates. Next, I identified custody versus community supervision sentences[4] and calculated the associated length of each (in months). I also created variables to flag community and custody sentence end dates.

There were no clear linkages for which SARA assessments were associated with which offences or sentences in the criminal history records. Although probation officers are supposed to score the scale at intake or within two months (Mularczyk et al., 2021), it was apparent from the data that this was not consistently done. Additionally, the criminal history data included one entry for each aspect of criminal justice processing (e.g., when individual was charged, when he was convicted, when he was sentenced, when he began his community supervision, etc.) without a variable to identify which

[3] Based on the codes provided to us by B.C. Corrections, I categorized the following as charges: Bail Order (BAL), Warrant of Remand (WR), and Warrant of Detainer (WD) and the following as convictions: Diversion Order (DIV), Probation Order (PRO), Warrant of Committal (WC), Federal Parole Suspension/Revoke (FP), Provincial Parole Suspension/Revoke (PP), Conditional Sentence, Adult (COS), Alternative Measures (ALT), Recognizance Peace Bond (RPB), Intensive Supervision Order (ISP), Sentencing Order (SEN), Custody and Community Supervision (CCS), Extrajudicial Sanction (EXS), Conditional Discharge Order (CDO), and Conditional Supervision, Youth (CSU).

[4] Based on the codes provided to us by B.C. Corrections, I categorized the following as custodial sentences: Federal Parole Suspension/Revoke (FP), Provincial Parole Suspension/Revoke (PP), and Warrant of Committal (WC), and the following as community sentences: Alternative Measures (ALT), Conditional Sentence, Adult (COS), Extrajudicial Sanction (EXS), Probation Order (PRO), Recognizance Peace Bond (RPB), and Custody and Community Supervision (CCS).

aspects were part of the same offence. Additionally, in some instances, there were convictions without data on charges. Therefore, as part of data organization, wherever the offence date was available, I linked all charges, convictions, and court dates related to the same offence date as a single offence. I then organized the criminal history data into the concept of sentencing occasions as best I could following the coding rules of Static-99R (Phoenix et al., 2016), where if an individual committed numerous offences on numerous dates before being charged for one of those offences, all offences (and their associated charges, convictions, and sentences, which could have spanned many different dates) were grouped as a single offence cluster. Given how I clustered instances into sentencing occasions, a single "offence" in the criminal history dataset could include a range of offence dates, charge dates, and even conviction dates. This is meant to ensure pseudo-recidivism is not counted (Phoenix et al., 2016), which is when it looks like someone has reoffended but really they have not made a choice to reoffend after criminal justice system detection; instead, old crimes are now catching up with them.

Once the criminal history data were organized into sentencing occasion clusters, I linked the SARA assessment data to the sentence that most plausibly triggered the assessment. In doing so, at first, I used a timeframe window to look for SARA assessments three months before or six months after the follow up start date. To identify a follow-up start date, I used the following rules: if the individual received a custodial sentence, custody end date[5] from their sentence was their follow-up start date (I could not easily access information about whether they received early parole); if they did not get custody but had a conviction date, I used the latest conviction date[6] as their follow-up start date; finally, if they did not have a conviction date available, I used the latest charge date as their follow-up start date. I then tried to match a domestic violence offence[7] with

[5] We did not have access to data on time served on remand and therefore, this could have led to errors in approximations around follow-up start dates

[6] We did not account for time spent re-incarcerated during the follow-up period; however, from our inspection of the criminal history records, this is likely to have a minimal impact on the findings.

[7] The *Criminal Code of Canada* has no offence specific to intimate partner violence/domestic violence, but B.C. Corrections uses a flag ("K file" offenders) to indicate if a particular offence was related to domestic violence. It is unclear how reliable this flag is, so it is possible that the dataset may not have accurately captured all IPV instances or captured domestic violence instances that are not IPV (e.g., violence against children, foster care violence). I assumed most K files would be spousal assault, IPV, or domestic violence.

the earliest SARA completion date that fit that window (three months before or six months after the follow up start date). If I could not match a domestic violence offence with a SARA assessment in that window, I tried to identify a non-domestic violence index offence that matched a SARA completion date in our window.

In cases where offenders had multiple or duplicate offences matched with the same SARA assessments in the timeframe of the dataset, I used the most recent offence as the index[8] based on the principle that the probation officer would have been aware of all the offences when they first scored the SARA. If there were separate SARAs matched to different offences, I used a random number generator to select which offence was used as index offence for this study, with the others then categorized as either priors or recidivism.

For individuals who still did not have an index offence identified, I then broadened the timeframe window to capture more SARA assessments in the following stages: 1) conviction date to community supervision end date, as this would most plausibly reflect an assessment being conducted during community supervision; 2) six months before follow-up start date to one year after follow-up start date; 3) one year before follow-up start date to two years after follow-up start date. In doing so, I first restricted it to prioritize DV offences as an index, and then any other type of offence. Ultimately, for any unmatched offenders, I went through the criminal history timelines and assessment dates manually to identify the remaining index offences.

Given these methods for sorting, organizing, and restructuring the dataset along with the decision rules I used, the dataset has some added noise due to approximations and errors. Additionally, I have no way of assessing the quality of the scoring conducted by the probation officers, as this is a field validity dataset. However, overall I believe this dataset is generalizable to routine correctional samples of males charged or convicted of domestic violence offences.

Recidivism. This study analyzed three recidivism outcomes: any domestic violence recidivism[9], any violent recidivism, and any recidivism (i.e., all violent or

[8] If they were incarcerated for the index offence throughout the follow-up period, they were considered ‘not released’ and not part of our sample size.

[9] I recognize I am evaluating the predictive validity of the SARA by measuring domestic violence recidivism when the SARA is focused on spousal violence/IPV; however, this is an approach

nonviolent, excluding technical breaches such as fail to comply with probation). I counted either a new charge or a new conviction in British Columbia as recidivism. For survival analyses, recidivism within each category was based on the date the offence was committed (where available – this information was missing for approximately 5% of the sample) or the earliest known charge or conviction date. I verified that all of our recidivism data was after the follow-up start date from the index offence. After creating recidivism variables for each category, I created a date for each recidivism incident. Next, I created time-to-recidivism variables for each outcome (identifying time to recidivism for the first recidivism event in each category), a variable for end of follow-up (December 31, 2020), and associated length of follow-up (in years). The average length of follow-up (from start date until December 31, 2020) was not significantly different for Indigenous (*M* = 5.40 years, *SD* = 1.391) and White individuals (*M* = 5.43 years, *SD* = 1.406; Cohen's *d* = .016).

2.4. Overview of Analyses

The analyses proceeded in several stages. Below I have repeated my research questions and outlined the corresponding analyses that will answer the question/s.

Does the prevalence of the SARA items and overall score differ across Indigenous and White persons?

I used basic descriptive statistics (percentages) and AUCs to report prevalence of individual SARA items, SARA other considerations, and overall SARA rating among Indigenous and White groups. This provides a profile of risk for the entire sample. AUCs are widely used in the field of risk assessment statistics for recidivism prediction because these are not impacted by the base rate of the dichotomous grouping variable such as recidivism (Rice & Harris, 2005) and are nonparametric, making them suitable for use with dichotomous, ordinal, or continuous predictors (Helmus & Babchishin, 2017). In the context of recidivism prediction, AUC values indicate the "probability that a randomly selected recidivist would have a higher score than a randomly selected non-recidivist" (Helmus & Babchisin, 2017, p. 12). In my analyses specifically, I am predicting

commonly taken in research studies and the tool developers have also endorsed using a broad definition of IPV (Kropp and Hart, 2015).

Indigenous group membership so AUC values indicate the probability that an Indigenous person would score higher than a White person on a given item. In addition to predicting recidivism, AUCs can be used to compare groups on a variety of factors (Babchishin et al., 2012). AUCs can range from 0 to 1 and an AUC value is considered significant if the 95% confidence interval does not include .5 (i.e. an AUC of .5 suggests no discrimination; Mandrekar, 2010). An AUC value less than .5 indicates a negative relationship between the predictor and the outcome whereas an AUC value greater than .5 indicates a positive relationship between the predictor and the outcome. As a heuristic for interpretation, AUCs of .56, .64, and .71 reflect small, moderate, and large effects in the positive direction whereas AUCs of .44, .36, and .29 reflect small, moderate, and large effects in the negative direction (Rice & Harris, 2005).

To examine whether Indigenous individuals were more likely to be rated high risk on the overall summary rating after controlling for their total scores on the SARA, binary logistic regression was used (Hosmer & Lemeshow, 2000). Logistic regression estimates the odds of an event occurring. For these analyses, the overall summary rating variable (with 3 possible outcomes – low, moderate, and high) was collapsed to a dichotomous outcome variable (i.e. whether the individual was rated as “high risk”).

Does the predictive accuracy of the SARA items and overall score differ across Indigenous and White persons?

Survival analyses (Cox regression) and Harrell’s concordance index (Harrell, Lee, & Mark, 1996) were used to examine relative predictive accuracy of the SARA items, other considerations, overall SARA rating, total scores on SARA sections, and SARA total score for Indigenous and White individuals across the three recidivism outcomes: domestic violence recidivism, violent recidivism, and any recidivism. Cox regression provides a hazard ratio for each predictor in the regression model and this ratio indicates “how the rate of recidivism changes for each one-point increase in the predictor, averaged across time, and controlling for the other predictor(s) in the model” Helmus et al., 2021, p. 8). Harrell’s *C* is similar to AUCs and can be interpreted in the same way, with the key differences being that Harrell’s *C* treats the predictors as ordinal instead of continuous and is calculated based on survival analysis data, therefore taking into account varying follow-up periods (Helmus & Babchishin 2017).

Mann and colleagues (2010) proposed that to be considered an empirically supported or psychologically meaningful risk factor, the effect for the risk factor should be greater than trivial (i.e. average Cohen's *d* > 0.15). They further clarified that a trivial Cohen's *d* effect (i.e. *d* less than 0.15) would correspond to an AUC value between .46 and .54. Given that the Harrell's *C* index is equivalent to AUCs, I will consider *C* values greater than .54 as being indicative of empirically supported or psychologically meaningful risk factors and *C* values lesser than .46 as empirically supported or psychologically meaningful protective factors.

To assess if predictive accuracy was significantly different between Indigenous and White individuals, I calculated difference scores between the Harrell's *C* for the two groups, and considered differences statistically significant if the 95% confidence interval for the difference score did not include 0 (Helmus et al., 2021). The standard error for the difference score was calculated as $\sqrt{SE^2(C_1) + SE^2(C_2)}$ (Hanley & McNeil, 1983). Positive difference scores reflect higher accuracy for Indigenous individuals whereas negative difference scores reflect lower accuracy for Indigenous individuals.

For the difference in accuracy analyses, it is important to note that I would expect Type I (false-positive) errors 5% of the time. For example, if I run 20 analyses, I can expect one significant result purely by chance. In this study, I conducted 34 analyses of differences in predictive accuracy per outcome (20 SARA items, four sections, one SARA total score, one overall summary risk rating, seven other consideration factors, and total score for the other considerations). For all 3 outcomes, I conducted 34 times 3 = 102 analyses. If I expect 5% of these analyses to be a Type I error, I expect 5 results should be significant just by chance. Depending on the number of significant findings, I can ascertain if these are occurring just by chance or if there are true differences in predictive accuracy between the subgroups.

Do the sections of the SARA (Criminal History, Psychosocial Adjustment, Spousal Assault History, Index offence) add incremental predictive accuracy for Indigenous and White persons?

I used Cox regression and Harrell's *C* to examine the incremental predictive accuracy of total scores on SARA sections (i.e. which sections add incremental

predictive validity beyond the other sections) for Indigenous and White individuals across the three outcomes: domestic violence recidivism, violent recidivism, and any recidivism.

Chapter 3. Results

3.1. SARA-V2 Items and Sections.

Table 1 lists all the 20 SARA-V2 items, grouped by section/domain, as well as the seven other consideration factors. This provides a broad overview of the scale.

Table 1. SARA-V2 Items and Sections.

Section	Items
Criminal History	1) Past assault of family members 2) Past assault of strangers or acquaintances 3) Past violation of conditional release or community supervision
Psychosocial Adjustment	4) Recent relationship problems 5) Recent employment problems 6) Victim of and/or witness to family violence as a child or adolescent 7) Recent substance abuse/dependence 8) Recent suicidal or homicidal ideation/intent 9) Recent psychotic and/or manic symptoms 10) Personality disorder with anger, impulsivity, or behavioral instability
Spousal Assault History	11) Past physical assault 12) Past sexual assault/sexual jealousy 13) Past use of weapons and/or credible threats of death 14) Recent escalation in frequency or severity of assault 15) Past violation of “no contact” orders 16) Extreme minimization or denial of spousal assault 17) Attitudes that support or condone wife assault
Index Offense	18) Severe and/or sexual assault 19) Use of weapons and/or credible threats of death 20) Violation of “no contact” order
Other Considerations	• History of stalking behavior • History of disfiguring, torturing, or maiming intimate partners • History of sexual sadism • Current emotional crisis • Victim or witness of political persecution, torture, or violence • Easy access to firearms • Recent loss of social support network

3.2. Prevalence and Comparison of SARA items, total scores on sections, and SARA total score between Indigenous and White Men

Table 2 reports the prevalence (item frequencies) of individual SARA items, SARA other considerations, and overall SARA rating for Indigenous and White individuals, as well as the AUCs comparing the two groups. For interpretation purposes, AUCs above .50 indicate higher coded presence of risk items for Indigenous versus White men, whereas AUCs below .50 indicate the opposite (Babchishin et al., 2012). Indigenous men were significantly more likely to demonstrate the following risk factors: all criminal history factors including past assault of family members (AUC = .549), past assault of strangers or acquaintances (AUC = .581), and past violation of conditional release or community supervision (AUC = .608); psychological adjustment factors such as recent employment problems (AUC = .604), victim of and/or witness to family violence as a child or adolescent (AUC = .643), recent substance abuse/dependence (AUC = .590); spousal assault history factors such as past physical assault (AUC = .573), past sexual assault/sexual jealousy (AUC = .535), past use of weapon and/or credible threats of death (AUC = .533), past violation of “no contact” orders (AUC = .572), attitudes that condone or support wife assault (AUC = .514); index offence factors such as severe and/or sexual assault (AUC = .569), and violation of “no contact” order (AUC = .550). Indigenous men were significantly less likely to demonstrate the following risk factors: extreme minimization or denial of spousal assault (AUC = .471) and stalking (AUC = .472). Finally, Indigenous men differed significantly from White men on the overall SARA risk rating; specifically, Indigenous men scored higher on their overall risk rating (AUC = .585).

The items on which Indigenous and White men did not significantly differ were as follows: recent relationship problems (AUC = .506), recent suicidal or homicidal ideation/intent (AUC = .501), recent psychotic and/or manic symptoms (AUC = .493), personality disorder with anger, impulsivity, or behavioural instability (AUC = .488), recent escalation in frequency or severity of assault (AUC = .508), use of weapons and/or credible threats of death (AUC = .483), current emotional crisis (AUC = .489), history of disfiguring, torturing, or maiming intimate partners (AUC = .486), victim or witness of political persecution, torture, or violence (AUC = .504), sexual sadism (AUC =

.500), easy access to firearms (AUC = .515), and recent loss of social support network (AUC = .481).

Logistic regression analyses were used to determine whether Indigenous individuals were more likely to be rated high risk on the overall summary rating after controlling for their total scores on the SARA. The overall model was significant (p<0.001); however, ethnicity was not significant (p = .697). This suggests that after controlling for the total score on SARA items, the odds of receiving a high summary risk rating are not significantly different between Indigenous and White individuals.

Table 3 provides the means and standard deviations of total scores on each SARA section and SARA total score (adding up total scores from all SARA sections) for Indigenous and White individuals. Indigenous men scored significantly higher on all SARA sections (apart from “Other Considerations”) as well as the SARA total score. To illustrate, Indigenous men scored significantly higher (AUC = .629) on criminal history total score (M = 3.02, SD = 1.96) than White men (M = 2.12, SD = 1.88). Similarly, Indigenous men scored significantly higher than their White counterparts on total scores for psychosocial adjustment (AUC = .630), spousal assault history (AUC = .566), and index offence (AUC = .561). Finally, Indigenous men also scored significantly higher (AUC = .625) on SARA total score (M = 15.72, SD = 6.792) than White men (M = 12.734, SD = 6.56).

Table 2. Prevalence of individual SARA items, SARA other considerations, and overall SARA rating for Indigenous and White individuals (1 = Indigenous, 0 = White).

	Indigenous (*n* = 3,188)		**White (*n* = 6,550)**			**95% Confidence Interval**	
	n	%	*n*	%	AUC	Lower Bound	Upper Bound
Criminal History							
Past assault of family members					**.549***	.536	.562
0	2,114	68.8%	4,944	78.0%			
1	162	5.3%	359	5.7%			
2	797	25.9%	1,036	16.3%			
n Missing	115		211				
Past assault of strangers or acquaintances					**.581***	.569	.594
0	1,349	43.4%	3,735	58.6%			
1	153	4.9%	343	5.4%			
2	1,608	51.7%	2,294	36.0%			
n Missing	78		178				
Past violation of conditional release or community supervision					**.608***	.596	.620
0	906	29.0%	3,191	49.7%			
1	106	3.4%	230	3.6%			
2	2,116	67.6%	3,001	46.7%			
n Missing	60		128				
Psychosocial Adjustment							
Recent relationship problems					.506	.494	.519
0	765	24.5%	1,595	24.8%			
1	872	27.9%	1,865	29.0%			
2	1,490	47.6%	2,974	46.2%			
n Missing	61		116				

Table 2 (continued).

	Indigenous (*n* = 3,188)		**White (*n* = 6,550)**			**95% Confidence Interval**	
	n	%	*N*	%	AUC	Lower Bound	Upper Bound
Recent employment problems					**.604***	.592	.616
0	838	26.9%	2,804	43.8%			
1	1,331	42.7%	2,434	38.0%			
2	948	30.4%	1,162	18.2%			
n Missing	71		150				
Victim of and/or witness to family violence as a child or adolescent					**.643***	.631	.655
0	1,056	35.5%	3,686	60.8%			
1	833	28.0%	1,334	22.0%			
2	1,088	36.5%	1,039	17.1%			
n Missing	211		491				
Recent substance abuse/dependence					**.590***	.578	.602
0	499	16.1%	1,871	29.4%			
1	1,331	42.9%	2,649	41.6%			
2	1,276	41.1%	1,845	29.0%			
n Missing	82		185				
Recent suicidal or homicidal ideation/intent					.501	.470	.532
0	459	90.0%	905	90.2%			
1	38	7.5%	69	6.9%			
2	13	2.5%	29	2.9%			
n Missing	2,678		5,547				

Table 2 (continued).

	Indigenous (*n* = 3,188)		**White (*n* = 6,550)**			**95% Confidence Interval**	
	n	%	*n*	%	AUC	Lower Bound	Upper Bound
Recent psychotic and/or manic symptoms					.493	.461	.525
0	444	94.7%	864	93.4%			
1	16	3.4%	31	3.4%			
2	9	1.9%	30	3.2%			
n Missing	2,719		5,625				
Personality disorder with anger, impulsivity, or behavioral instability					.488	.457	.519
0	418	83.6%	819	80.9%			
1	35	7.0%	100	9.9%			
2	47	9.4%	93	9.2%			
n Missing	2,688		5,538				
Spousal Assault History							
Past physical assault					**.573***	.561	.585
0	732	23.6%	2,307	36.3%			
1	145	4.7%	407	6.4%			
2	2,229	71.8%	3,645	57.3%			
n Missing	82		191				
Past sexual assault/sexual jealousy					**.535***	.522	.548
0	2,099	68.4%	4,721	74.9%			
1	627	20.4%	1,136	18.0%			
2	342	11.1%	450	7.1%			
n Missing	120		243				
Past use of weapons and/or credible threats of death					**.533***	.521	.546
0	1,734	56.3%	3,898	61.5%			
1	626	20.3%	1,354	21.3%			

Table 2 (continued).

	Indigenous (*n* = 3,188)		**White (*n* = 6,550)**			**95% Confidence Interval**	
	n	%	*n*	%	AUC	Lower Bound	Upper Bound
2	718	23.3%	1,090	17.2%			
n Missing	110		208				
Recent escalation in frequency or severity of assault					.508	.496	.520
0	1,230	39.6%	2,638	41.4%			
1	1,252	40.3%	2,469	38.8%			
2	622	20.0%	1,261	19.8%			
n Missing	84		182				
Past violation of "no contact" orders					**.572***	.559	.584
0	1,546	50.4%	4,050	64.2%			
1	241	7.9%	423	6.7%			
2	1,282	41.8%	1,836	29.1%			
n Missing	119		241				
Extreme minimization or denial of spousal assault					**.471***	.458	.483
0	855	27.9%	1,549	24.5%			
1	1,659	54.2%	3,372	53.4%			
2	546	17.8%	1,394	22.1%			
n Missing	128		235				
Attitudes that support or condone wife assault					**.514****	.502	.527
0	1,404	45.9%	3,123	49.5%			
1	1,481	48.4%	2,753	43.7%			
2	176	5.7%	428	6.8%			
n Missing	127		246				

Table 2 (continued).

	Indigenous (*n* = 3,188)		White (*n* = 6,550)			95% Confidence Interval	
	n	%	*n*	%	AUC	Lower Bound	Upper Bound
Index Offense							
Severe and/or sexual assault					**.569***	.556	.581
0	837	27.3%	2,331	37.0%			
1	1,501	49.0%	3,025	48.0%			
2	725	23.7%	942	15.0%			
n Missing	125		252				
Use of weapons and/or credible threats of death					.496	.483	.508
0	1,777	58.1%	3,551	56.4%			
1	637	20.8%	1,497	23.8%			
2	643	21.0%	1,249	19.8%			
n Missing	131		253				
Violation of "no contact" order					.**550***	.538	.563
0	1,558	51.8%	3,825	61.5%			
1	220	7.3%	411	6.6%			
2	1,232	40.9%	1,986	31.9%			
n Missing	178		328				
Other Considerations							
Current emotional crisis					.489	.474	.504
0	1,921	93.0%	3,950	90.7%			
1	145	7.0%	404	9.3%			
n Missing	1,122		2,196				
History of torturing or disfiguring intimate partners					.501	.486	.517
0	1,998	99.4%	4,179	99.6%			
1	13	0.6%	17	0.4%			
n Missing	1,177		2,354				

Table 2 (continued).

	Indigenous (*n* = 3,188)		White (*n* = 6,550)		95% Confidence Interval		
	n	%	*n*	%	AUC	Lower Bound	Upper Bound
Victim or witness of political persecution, torture, or violence					.504	.489	.520
0	1,962	98.1%	4,126	99.0%			
1	38	1.9%	43	1.0%			
n Missing	1,188		2,381				
Sexual sadism					.500	.484	.515
0	1,972	99.6%	4,090	99.5%			
1	8	0.4%	20	0.5%			
n Missing	1,208		2,440				
Easy access to firearms					.515	.498	.531
0	1,651	88.7%	3,551	91.6%			
1	210	11.3%	321	8.4%			
n Missing	1,327		2,718				
Stalking					**.472***	.456	.487
0	1,849	94.1%	3,637	88.5%			
1	115	5.9%	474	11.5%			
n Missing	1,224		2,439				
Recent loss of social support network					.496	.481	.512
0	1,859	94.8%	3,788	94.0%			
1	103	5.2%	242	6.0%			
n Missing	1,226		2,520				
Overall SARA risk rating							
0	560	17.6%	1,835	28.0%	**.585***	.573	.597
1	1,624	50.9%	3,438	52.5%			
2	1,004	31.5%	1,277	19.5%			

Table 3. Comparison of total scores on SARA sections and SARA total score for Indigenous and White individuals.

	Indigenous (*n* = 3,188)		**White (*n* = 6,550)**		**95% Confidence Interval**		
	n	*M (SD)*	*n*	*M (SD)*	AUC	Lower Bound	Upper Bound
Criminal History	3,115	3.02 (1.960)	6,391	2.12 (1.880)	**.629***	.617	.641
Psychosocial Adjustment	549	4.92 (2.247)	1,115	3.90 (2.230)	**.630***	.602	.658
Spousal Assault History	3,085	5.72 (3.168)	6,347	5.01 (3.143)	**.566***	.553	.578
Index Offense	3,067	2.44 (1.657)	6,314	2.09 (1.601)	**.561***	.548	.573
Other Considerations	1,972	.28 (.569)	4,091	.31 (.620)	.492	.477	.507
SARA total score	2,949	15.72 (6.792)	6,105	12.734 (6.560)	**.625***	.613	.638

*$p < 0.001$.

1 = Indigenous, 0 = White.

3.3. Recidivism rates

Table 4 presents the number of recidivists, total number of individuals included in analyses, and the recidivism rates for each of the three outcomes (domestic violence, violent, and any recidivism) separately for Indigenous and White individuals, with a chi-square test to determine if recidivism rates differ between the two groups. For Indigenous individuals, the rates of domestic violence, violent, and any recidivism across the follow-up period were 19.1%, 31.4%, and 39.6%, respectively. Comparatively, for White individuals, the rates of domestic violence, violent, and any recidivism were 10.7%, 17.8%, and 25.5%, respectively. There were significant associations (p <0.001) between the rates of recidivism for all three outcomes and ethnicity, with Indigenous individuals demonstrating higher rates of recidivism. Considering Indigenous individuals were significantly younger at start of follow-up, this finding could be explained by the effect of age on recidivism (i.e. younger individuals are more likely to recidivate than older individuals; Huebner & Berg, 2011).

Table 5 presents recidivism rates for each of the three outcomes separately for Indigenous and White individuals based on the SARA summary risk rating (i.e. low/ moderate /high), with a chi-square test to determine if recidivism rates differ between groups within the same risk level. There were significant associations (p <0.001) between the overall SARA ratings for all three outcomes and recidivism. Among those who received overall low risk ratings across the three outcomes, Indigenous individuals demonstrated lower recidivism rates as compared to White individuals (average difference of 5%). A similar pattern was noted among those who received moderate risk ratings. However, the opposite was observed among the high risk rating group - Indigenous individuals had higher recidivism rates as compared to White individuals across the three outcomes (average difference of 9%).

Table 4. Recidivism rates for Indigenous and White individuals across the outcomes of domestic violence, violent, and any recidivism.

	Indigenous (n = 3,188)		**White (n = 6,550)**		
Outcome	n recid	% recidivism rate	n recid	% recidivism rate	X^2, φ
Domestic Violence Recidivism	609	19.1	702	10.7	129.418*, -.115
Violent Recidivism	1,002	31.4	1,116	17.8	230.140*, -.154
Any Recidivism	1,264	39.6	1,672	25.5	203.061*, -.144

*p <0.001

Table 5. Recidivism rates for Indigenous and White individuals based on SARA summary risk rating (low/moderate/high).

	Indigenous (n = 3,188)		**White (n = 6,550)**		
	n recid	% recidivism rate	n recid	% recidivism rate	X^2, φ
Domestic violence recidivism					
Low risk	57	9.4	98	14.0	249.446*, .160
Moderate risk	284	46.6	367	52.3	
High risk	268	44.0	237	33.8	
Violent recidivism					
Low risk	112	11.2	191	16.4	318.994*, .181
Moderate risk	488	48.7	596	51.1	
High risk	402	40.1	379	32.5	
Any recidivism					
Low risk	147	11.6	278	16.6	403.110*, .203
Moderate risk	614	48.6	879	52.6	
High risk	503	39.8	515	30.8	

*p <0.001

3.4. Predictive Accuracy Analyses

This section will go through the predictive accuracy analyses for each outcome individually, and then summarize across outcomes.

Domestic Violence Recidivism. Table 6 presents the results of Cox regression survival analyses examining the predictive accuracy of the SARA items, SARA other considerations, overall SARA rating, total scores on each SARA section, and SARA total score for the outcome of domestic violence recidivism for Indigenous and White individuals. For Indigenous men, all SARA items other than three items from the psychosocial adjustment section (recent suicidal or homicidal ideation/intent, recent psychotic and/or manic symptoms, personality disorder with anger, impulsivity, or behavioural instability) and two items from the index offence section (severe and/or sexual assault, use of weapons and/or credible threats of death) significantly predicted domestic violence recidivism (*C* values for significant items in the trivial to small range of .528 to .577). The only "other consideration" factor that was significant for this subgroup was easy access to firearms (*C* = .479); however, this is predicting in the negative direction (i.e. higher coded presence of this item is associated with less likelihood of domestic violence recidivism).

Total scores on all four SARA sections significantly predicted domestic violence recidivism among Indigenous men and the effect sizes were small (criminal history *C* = .586, psychosocial adjustment *C* = .572, spousal assault history *C* = .582, and index offence *C* = .555). Finally, both overall SARA risk rating and SARA total score also demonstrated significant predictive accuracy for domestic violence recidivism among this subgroup (*C* = .593 and .604, respectively); however, these are small effect sizes.

For White men, all SARA items other than three items from the psychosocial adjustment section (victim of and/or witness to family violence as a child or adolescent, recent suicidal or homicidal ideation/intent, recent psychotic and/or manic symptoms) significantly predicted domestic violence recidivism (*C* values for significant items in the trivial to small range of .523 to .608). None of the "other consideration" factors significantly predicted domestic violence recidivism for this subgroup. Total scores on all four SARA sections significantly predicted domestic violence recidivism among White men and the effect sizes were small to moderate (criminal history *C* = .616, psychosocial adjustment *C* = .655, spousal assault history *C* = .608, and index offence *C* = .588). Finally, both overall SARA risk rating and SARA total score demonstrated significant

predictive accuracy for domestic violence recidivism among White men (*C* = .617 and .637, respectively); however, these are small effect sizes.

I also calculated difference scores between the Harrell's *C* for the subgroups to assess if predictive accuracy was significantly different between Indigenous and White individuals. Differences are statistically significant if the 95% confidence interval for the difference score did not include 0. The following four SARA items demonstrated significantly lower predictive accuracy for Indigenous men for domestic violence recidivism: past violation of conditional release or community supervision, past physical assault, severe and/or sexual assault, and use of weapons and/or credible threats of death, as well as the "other consideration" of easy access to firearms. Similarly, total scores on the sections of criminal history, psychosocial adjustment, and index offence as well as SARA total score demonstrated significantly lower predictive accuracy for Indigenous men versus White men for the outcome of domestic violence recidivism.

To examine if adding age improved predictive accuracy, I ran Cox regression models separately for the overall SARA risk rating and SARA total score for the outcome of domestic violence recidivism for Indigenous and White individuals. The predictive accuracy of the overall SARA risk rating improved for both Indigenous (*C* = .610 versus .593 without age in the model) and White (*C* = .636 versus .617 without age in the model) individuals; however, the effects are still small (for White individuals, it is approaching moderate). For SARA total score, predictive accuracy improved slightly for Indigenous individuals (*C* = .611 versus .604 without age in the model) but remained the same for White individuals (*C* = .637). Additionally, upon adding age, the SARA total score did not demonstrate significantly lower predictive accuracy for Indigenous men anymore.

Table 6. Predictive Accuracy (Domestic Violence Recidivism) of SARA items, Other Considerations, Overall SARA Rating, total scores on SARA sections, and SARA total score for Indigenous and White individuals.

	Indigenous							**White**							**Differences in Cs**		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI		Diff.	95% CI	
Criminal History total score	599/ 3,115	1.170	1.122	1.220	**.586***	.564	.608	689/ 6,391	1.226	1.180	1.274	**.616***	.596	.636	**-.0300**	-.0591	-.0009
Past assault of family members	592/ 3,073	1.161	1.064	1.268	**.531***	.511	.551	674/ 6,339	1.123	1.022	1.234	**.523***	.505	.541	.0080	-.0184	.0344
Past assault of strangers or acquaintances	599/ 3,110	1.284	1.178	1.400	**.562***	.542	.582	686/ 6,372	1.354	1.254	1.463	**.575***	.555	.595	-.0130	-.0407	.0147
Past violation of conditional release or community supervision	599/ 3,128	1.395	1.259	1.545	**.567***	.549	.585	691/ 6,422	1.563	1.440	1.696	**.608***	.590	.626	**-.0410**	-.0659	-.0161
Psychosocial Adjustment total score	104/ 549	1.098	1.008	1.195	**.572***	.517	.627	110/ 1,115	1.217	1.131	1.311	**.655***	.606	.704	**-.0830**	-.1566	-.0094
Recent relationship problems	601/ 3,127	1.201	1.085	1.330	**.542***	.520	.564	690/ 6,434	1.194	1.086	1.313	**.542***	.522	.562	.0000	-.0291	.0291
Recent employment problems	601/ 3,117	1.450	1.301	1.616	**.574***	.552	.596	686/ 6,400	1.528	1.387	1.683	**.594***	.574	.614	-.0200	-.0491	.0091
Victim of and/or witness to family violence as a child or adolescent	571/ 2,977	1.165	1.057	1.285	**.537***	.513	.561	650/ 6,059	1.078	.978	1.189	.515	.495	.535	.0220	-.0086	.0526
Recent substance abuse/ dependence	592/ 3,106	1.492	1.322	1.684	**.577***	.555	.599	684/ 6,356	1.593	1.439	1.764	**.596***	.576	.616	-.0190	-.0481	.0101
Recent suicidal or homicidal ideation/intent	93/ 510	.891	.513	1.546	.494	.465	.523	94/ 1,003	.872	.507	1.497	.492	.463	.521	.0020	-.0396	.0436

Table 6 (continued).

	Indigenous							**White**							**Differences in Cs**		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI		Diff.	95% CI	
Recent psychotic and/or manic symptoms	89/ 469	1.235	.717	2.127	.502	.478	.526	94/ 925	1.274	.837	1.939	.519	.488	.550	-.0170	-.0562	.0222
Personality disorder with anger, impulsivity, or behavioral instability	95/ 500	1.080	.788	1.478	.513	.472	.554	107/ 1,012	1.375	1.060	1.782	**.545***	.500	.590	-.0320	-.0930	.0290
Spousal Assault History total score	594/ 3,085	1.096	1.068	1.124	**.582***	.558	.606	682/ 6,347	1.130	1.104	1.157	**.608***	.586	.630	-.0260	-.0579	.0059
Past physical assault	599/ 3,106	1.179	1.065	1.305	**.528***	.510	.546	678/ 6,359	1.320	1.210	1.440	**.557***	.539	.575	**-.0290**	-.0539	-.0041
Past sexual assault/sexual jealousy	587/ 3,068	1.274	1.143	1.421	**.539***	.517	.561	677/ 6,307	1.217	1.086	1.364	**.527***	.509	.545	.0120	-.0159	.0399
Past use of weapons and/or credible threats of death	593/ 3,078	1.174	1.068	1.289	**.532***	.510	.554	680/ 6,342	1.300	1.187	1.423	**.554***	.534	.574	-.0220	-.0511	.0071
Recent escalation in frequency or severity of assault	596/ 3,104	1.267	1.141	1.408	**.550***	.528	.572	686/6,367	1.308	1.187	1.441	**.557***	.537	.577	-.0070	-.0361	.0221
Past violation of "no contact" orders	591/ 3,069	1.233	1.133	1.341	**.550***	.528	.572	671/ 6,309	1.387	1.281	1.500	**.573***	.553	.593	-.0230	-.0521	.0061

Extreme minimization or denial of spousal assault	587/ 3,060	1.316	1.167	1.484	**.550***	.528	.572	676/ 6,315	1.434	1.283	1.604	**.567***	.547	.587	-.0170	-.0461	.0121
Attitudes that support or condone wife assault	585/ 3,061	1.408	1.235	1.606	**.549***	.527	.571	671/ 6,304	1.524	1.357	1.711	**.567***	.547	.587	-.0180	-.0471	.0111
Index Offense total score	588/ 3,067	1.111	1.060	1.166	**.555***	.531	.579	680/ 6,314	1.216	1.163	1.271	**.588***	.566	.610	**-.0330**	-.0649	-.0011

Table 6 (continued).

	Indigenous							**White**							**Differences in Cs**		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI		Diff.	95% CI	
Severe and/or sexual assault	589/ 3,063	1.055	.942	1.182	.513	.491	.535	676/ 6,298	1.367	1.227	1.522	**.555***	.535	.575	**-.0420**	-.0711	-.0129
Use of weapons and/or credible threats of death	583/ 3,057	1.090	.988	1.203	.521	.499	.543	680/ 6,297	1.229	1.123	1.345	**.543***	.541	.545	**-.0220**	-.0436	-.0004
Violation of "no contact" order	576/ 3,010	1.264	1.161	1.376	**.560***	.538	.582	666/ 6,222	1.336	1.235	1.446	**.573***	.553	.593	-.0130	-.0421	.0161
Other Considerations total score	377/ 1,972	.871	.719	1.055	.487	.491	.535	449/ 4,091	.991	.853	1.151	.501	.479	.523	-.0140	-.0445	.0165
Current emotional crisis	394/ 2,066	1.197	.834	1.718	.508	.494	.522	471/ 4,353	1.060	.784	1.433	.502	.488	.516	.0060	-.0134	.0254
History of torturing or disfiguring intimate partners	388/ 2,011	.779	.194	3.124	.500	.496	.504	456/ 4,196	.516	.073	3.672	.499	.497	.501	.0010	-.0034	.0054
Victim or witness of political persecution, torture, or violence	384/ 2,000	.918	.435	1.939	.499	.491	.507	454/ 4,169	.576	.185	1.793	.498	.494	.502	.0010	-.0078	.0098
Sexual sadism	379/ 1,980	2.571	.825	8.009	.503	.497	.509	447/ 4,110	1.483	.476	4.615	.501	.497	.505	.0020	-.0051	.0091
Easy access to firearms	356/ 1,861	.618	.417	.914	**.479***	.465	.493	417/ 3,832	1.204	.872	1.662	.510	.494	.526	**-.031**	-.0518	-.0102
Stalking	377/ 1,964	.948	.611	1.472	.498	.486	.510	446/ 4,111	.951	.707	1.280	.498	.482	.514	.0000	-.0196	.0196
Recent loss of social support network	378/ 1,962	.925	.576	1.485	.496	.484	.508	436/ 4,030	.985	.663	1.465	.503	.491	.515	-.0070	-.0236	. 0096
Overall SARA risk rating	609/ 3,188	1.687	1.494	1.906	**.593***	.573	.613	702/ 6,550	1.919	1.718	2.143	**.617***	.597	.637	-.0240	-.0517	.0037
SARA total score	562/ 2,949	1.053	1.040	1.066	**.604***	.580	.628	648/ 6,105	1.074	1.062	1.086	**.637***	.615	.659	**-.0330**	-.0649	-.0011

Violent Recidivism. Table 7 presents the results of Cox regression survival analyses examining the predictive accuracy of the SARA items, SARA other considerations, overall SARA rating, total scores on each SARA section, and SARA total score for the outcome of violent recidivism for Indigenous and White individuals. For Indigenous men, all SARA items other than the same three items from the psychosocial adjustment section that did not predict domestic violence recidivism (recent suicidal or homicidal ideation/intent, recent psychotic and/or manic symptoms, personality disorder with anger, impulsivity, or behavioural instability) and two additional items (past physical assault, severe and/or sexual assault), significantly predicted violent recidivism (*C* values for significant items in the trivial to small range of .517 to .578). None of the "other consideration" factors significantly predicted violent recidivism for this subgroup.

Total scores on all four SARA sections significantly predicted violent recidivism among Indigenous men and the effect sizes were small (criminal history *C* = .585, psychosocial adjustment *C* = .551, spousal assault history *C* = .558, and index offence *C* = .539). Finally, both overall SARA risk rating and SARA total score also demonstrated significant predictive accuracy for violent recidivism among this subgroup (*C* = .574 and .591, respectively); however, these are small effect sizes.

For White men, all SARA items other than recent suicidal or homicidal ideation/intent significantly predicted violent recidivism (*C* values for significant items in the trivial to small range of .516 to .615). Only one "other consideration" factor (i.e. recent loss of social support network) significantly predicted violent recidivism for this subgroup (*C* = .511). Further, total scores on all four SARA sections significantly predicted violent recidivism among White men and the effect sizes were small to moderate (criminal history *C* = .634, psychosocial adjustment *C* = .640, spousal assault history *C* = .592, index offence *C* = .584). Finally, both overall SARA risk rating and SARA total score demonstrated significant predictive accuracy for domestic violence recidivism among White men (*C* = .606 and .638, respectively).

Additionally, differences in *C*s showed that the following eight SARA items demonstrated significantly lower predictive accuracy for Indigenous men for violent recidivism: past assault of strangers or acquaintances, past violation of conditional release or community supervision, recent employment problems, recent substance abuse/dependence, past physical assault, past use of weapons and/or credible threats of death, severe and/or sexual assault, and use of weapons and/or credible threats of death (index offence). Similarly, total scores on all four sections (criminal history,

psychosocial adjustment, spousal assault history, and index offence) as well as overall SARA risk rating and SARA total score demonstrated significantly lower predictive accuracy for Indigenous men versus White men for the outcome of violent recidivism.

In a separate Cox regression model adding age as a second predictor, I found that the predictive accuracy of the overall SARA risk rating improved for both Indigenous (*C* = .599 versus .574 without age in the model) and White (*C* = .638 versus .606 without age in the model) individuals; however, the effects are still small (for White individuals, it is almost moderate). Similarly, for SARA total score, predictive accuracy improved for both Indigenous (*C* = .605 versus .591 without age in the model) and White (*C* = .654 versus .638 without age in the model) individuals. Although it is still a small effect for Indigenous individuals, the increase in predictive accuracy of the SARA total score for White individuals resulted in the effect changing from small to moderate. However, even upon adding age, overall SARA risk rating and SARA total score continued to demonstrate significantly lower predictive accuracy for Indigenous men versus White men for the outcome of violent recidivism.

Table 7. Predictive Accuracy (Violent Recidivism) of SARA items, Other Considerations, Overall SARA Rating, total scores on SARA sections, and SARA total score for Indigenous and White individuals.

	Indigenous							**White**							**Differences in Cs**		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI		Diff.	95% CI	
Criminal History total score	977/ 3,115	1.168	1.130	1.207	**.585***	.567	.603	1,141/ 6,391	1.273	1.235	1.311	**.634***	.618	.650	**-.0490**	-.0726	-.0254
Past assault of family members	961/ 3,073	1.153	1.076	1.235	**.530***	.514	.546	1,123/ 6,339	1.168	1.087	1.255	**.530***	.516	.544	.0000	-.0208	.0208
Past assault of strangers or acquaintances	977/ 3,110	1.291	1.207	1.381	**.565***	.549	.581	1,138/ 6,372	1.472	1.386	1.563	**.596***	.580	.612	**-.0310**	-.0532	-.0088
Past violation of conditional release or community supervision	984/ 3,128	1.380	1.276	1.493	**.564***	.550	.578	1,145/ 6,422	1.621	1.521	1.728	**.615***	.601	.629	**-.0510**	-.0704	-.0316
Psychosocial Adjustment total score	172/ 549	1.064	.996	1.137	**.551***	.506	.596	198/ 1,115	1.199	1.135	1.267	**.640***	.603	.677	**-.0890**	-.1475	-.0305
Recent relationship problems	981/ 3,127	1.160	1.072	1.255	**.535***	.517	.553	1,147/ 6,434	1.115	1.037	1.199	**.529***	.513	.545	.0060	-.0176	.0296
Recent employment problems	980/ 3,117	1.524	1.399	1.660	**.585***	.567	.603	1,140/ 6,400	1.705	1.581	1.838	**.614***	.598	.630	**-.0290**	-.0526	-.0054
Victim of and/or witness to family violence as a child or adolescent	928/ 2,977	1.115	1.034	1.203	**.526***	.508	.544	1,084/ 6,059	1.145	1.062	1.233	**.527***	.511	.543	-.0010	-.0246	.0226
Recent substance abuse/ dependence	972/ 3,106	1.501	1.366	1.649	**.578***	.562	.594	1,138/ 6,365	1.667	1.540	1.804	**.606***	.590	.622	**-.0280**	-.0502	-.0058
Recent suicidal or homicidal ideation/intent	153/ 510	.711	.436	1.157	.486	.462	.510	170/ 1,003	1.038	.722	1.493	.504	.480	.528	-.0180	-.0513	.0153

Table 7 (continued).

	Indigenous							White						Differences in Cs		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI	Diff.	95% CI	
Recent psychotic and/or manic symptoms	147/ 469	1.153	.738	1.801	.507	.487	.527	162/ 925	1.408	1.045	1.897	**.520***	.496	.544	-.0130	-.0436	.0176
Personality disorder with anger, impulsivity, or behavioral instability	158/ 500	1.154	.911	1.462	.522	.489	.555	181/ 1,012	1.449	1.191	1.764	**.543***	.510	.576	-.0210	-.0681	.0261
Spousal Assault History total score	967/ 3,085	1.069	1.048	1.090	**.558***	.540	.576	1,130/ 6,347	1.111	1.091	1.131	**.592***	.574	.610	**-.0340**	-.0589	-.0091
Past physical assault	978/ 3,106	1.065	.987	1.149	.509	.495	.523	1,125/ 6,359	1.236	1.157	1.320	**.545***	.531	.559	**-.0360**	-.0554	-.0166
Past sexual assault/sexual jealousy	956/ 3,068	1.116	1.021	1.221	**.517***	.501	.533	1,119/ 6,307	1.127	1.029	1.235	**.516***	.502	.530	.0010	-.0198	.0218
Past use of weapons and/or credible threats of death	965/ 3,078	1.166	1.083	1.255	**.530***	.512	.548	1,126/ 6,342	1.346	1.255	1.443	**.558***	.542	.574	**-.0280**	-.0516	-.0044
Recent escalation in frequency or severity of assault	974/ 3,104	1.146	1.054	1.245	**.528***	.510	.546	1,137/ 6,368	1.216	1.127	1.312	**.542***	.526	.558	-.0140	-.0376	.0096
Past violation of "no contact" orders	964/ 3,069	1.206	1.129	1.288	**.543***	.525	.561	1,116/ 6,309	1.344	1.264	1.429	**.566***	.550	.582	-.0230	-.0466	.0006
Extreme minimization or denial of spousal assault	960/ 3,060	1.237	1.126	1.359	**.538***	.520	.556	1,117/ 6,315	1.394	1.279	1.520	**.560***	.544	.576	-.0220	-.0456	.0016
Attitudes that support or condone wife assault	955/ 3,061	1.360	1.226	1.509	**.545***	.527	.563	1,112/ 6,304	1.438	1.313	1.575	**.557***	.541	.573	-.0120	-.0356	.0116
Index Offense total score	963/ 3,067	1.081	1.042	1.123	**.539***	.521	.557	1,128/ 6,314	1.203	1.162	1.245	**.584***	.566	.602	**-.0450**	-.0699	-.0201

Table 7 (continued).

	Indigenous							**White**							**Differences in Cs**		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI		Diff.	95% CI	
Severe and/or sexual assault	961/ 3,063	1.005	.919	1.098	.501	.483	.519	1,123/ 6,298	1.266	1.164	1.376	**.538***	.522	.554	**-.0370**	-.0606	-.0134
Use of weapons and/or credible threats of death	957/ 3,057	1.084	1.004	1.171	**.518***	.500	.536	1,124/ 6,297	1.283	1.197	1.376	**.551***	.535	.567	**-.0330**	-.0566	-.0094
Violation of "no contact" order	945/ 3,010	1.202	1.125	1.284	**.548***	.530	.566	1,106/ 6,222	1.301	1.224	1.384	**.566***	.550	.582	-.0180	-.0416	.0056
Other Considerations total score	612/ 1,972	.962	.834	1.109	.495	.477	.513	740/ 4,091	1.130	1.015	1.259	.514*	.496	.532	-.0190	-.0439	.0059
Current emotional crisis	640/ 2,066	1.186	.891	1.578	.508	.496	.520	775/ 4,354	1.257	1.007	1.569	.509*	.497	.521	-.0010	-.0176	.0156
History of torturing or disfiguring intimate partners	627/ 2,011	.948	.355	2.533	.500	.496	.504	752/ 4,196	.631	.158	2.528	.499	.497	.501	.0010	-.0034	.0054
Victim or witness of political persecution, torture, or violence	622/ 2,000	1.497	.925	2.424	.504	.498	.510	750/ 4,169	.813	.386	1.711	.498	.494	.502	.0060	-.0011	.0131
Sexual sadism	615/ 1,980	1.485	.478	4.618	.501	.497	.505	740/ 4,110	1.461	.606	3.521	.501	.499	.503	.0000	-.0044	.0044
Easy access to firearms	576/ 1,861	.882	.674	1.155	.494	.480	.508	695/ 3,832	1.089	.839	1.414	.506	.494	.518	-.0120	-.0301	.0061
Stalking	607/ 1,964	.713	.485	1.048	.492	.482	.502	744/ 4,111	1.077	.865	1.341	.502	.490	.514	-.0100	-.0253	.0053
Recent loss of social support network	612/ 1,962	1.229	.882	1.714	.504	.494	.514	720/ 4,030	1.439	1.102	1.878	**.511***	.501	.521	-.0070	-.0209	.0069
Overall SARA risk rating	1,002/ 3,188	1.504	1.371	1.651	**.574***	.558	.590	1,166/ 6,550	1.813	1.664	1.974	**.606***	.590	.622	**-.0320**	-.0542	-.0098
SARA total score	917/ 2,949	1.046	1.036	1.056	**.591***	.573	.609	1,079/ 6,105	1.074	1.065	1.084	**.638***	.620	.656	**-.0470**	-.0719	-.0221

Any Criminal Recidivism. Table 8 presents the results of Cox regression survival analyses examining the predictive accuracy of the SARA items, SARA other considerations, overall SARA rating, total scores on each SARA section, and SARA total score for the outcome of any criminal recidivism for Indigenous and White individuals. For Indigenous men, all SARA items other than the five items that did not predict violent recidivism (recent suicidal or homicidal ideation/intent, recent psychotic and/or manic symptoms, personality disorder with anger, impulsivity, or behavioural instability, past physical assault, and severe and/or sexual assault) significantly predicted any criminal recidivism (*C* values for significant items in the trivial to small range of .510 to .597). None of the "other consideration" factors significantly predicted any criminal recidivism for this subgroup.

Total scores on all four SARA sections significantly predicted any criminal recidivism among Indigenous men and the effect sizes were small (criminal history *C* = .581, psychosocial adjustment *C* = .547, spousal assault history *C* = .544, and index offence *C* = .546). Finally, both overall SARA risk rating and SARA total score also demonstrated significant predictive accuracy for violent recidivism among this subgroup (*C* = .574 and .585, respectively); however, these are small effect sizes.

For White men, all SARA items other than recent suicidal or homicidal ideation/intent, past sexual assault/sexual jealousy, and severe and/or sexual assault significantly predicted any criminal recidivism (*C* values for significant items in the trivial to moderate range of .517 to .649). Two "other consideration" factors, namely current emotional crisis and recent loss of social support network, also significantly predicted any criminal recidivism for this subgroup (*C* = .512 for both). Further, total scores on all four SARA sections as well as total score on the "other considerations" section significantly predicted any criminal recidivism among White men and the effect sizes were small to moderate (criminal history *C* = .626, psychosocial adjustment *C* = .649, spousal assault history *C* = .573, index offence *C* = .579, other considerations *C* = .511). Finally, both overall SARA risk rating and SARA total score demonstrated significant predictive accuracy for any criminal recidivism among White men (*C* = .602 and .632, respectively).

Additionally, differences in *C*s showed that the following seven SARA items demonstrated significantly lower predictive accuracy for Indigenous men for any criminal recidivism: past assault of strangers or acquaintances, past violation of conditional release or community supervision, recent employment problems, recent substance

abuse/dependence, past physical assault, past use of weapons and/or credible threats of death, and past violation of “no contact” orders. Similarly, total scores on all four sections (criminal history, psychosocial adjustment, spousal assault history, and index offence) as well as overall SARA risk rating and SARA total score demonstrated significantly lower predictive accuracy for Indigenous men versus White men for the outcome of any criminal recidivism.

In a separate Cox regression model adding for age, I found that the predictive accuracy of the overall SARA risk rating improved for both Indigenous (*C* = .601 versus .574 without age in the model) and White (*C* = .638 versus .602 without age in the model) individuals; however, the effects are still small (for White individuals, it is almost moderate). Similarly, for SARA total score, predictive accuracy improved for both Indigenous (*C* = .603 versus .585 without age in the model) and White (*C* = .653 versus .632 without age in the model) individuals. Similar to the finding for violent recidivism, although the effect for Indigenous individuals is still small, the increase in predictive accuracy of the SARA total score for White individuals resulted in the effect changing from small to moderate. However, even upon adding age, overall SARA risk rating and SARA total score continued to demonstrate significantly lower predictive accuracy for Indigenous men versus White men for the outcome of any recidivism.

Table 8. Predictive Accuracy (Any Recidivism) of SARA items, Other Considerations, Overall SARA Rating, total scores on SARA sections, and SARA total score for Indigenous and White individuals.

	Indigenous							**White**							**Differences in Cs**		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI		Diff.	95% CI	
Criminal History total score	1,233/ 3,115	1.159	1.126	1.193	**.581***	.565	.597	1,622/ 6,391	1.256	1.225	1.288	**.626***	.612	.640	**-.0450**	-.0658	-.0242
Past assault of family members	1,210/ 3,073	1.101	1.034	1.172	**.519***	.505	.533	1,603/ 6,339	1.131	1.064	1.203	**.523***	.511	.535	-.0040	-.0221	.0141
Past assault of strangers or acquaintances	1,233/ 3,110	1.295	1.220	1.375	**.564***	.550	.578	1,617/ 6,372	1.426	1.356	1.500	**.585***	.573	.597	**-.0210**	-.0391	-.0029
Past violation of conditional release or community supervision	1,243/ 3,128	1.400	1.306	1.501	**.568***	.556	.580	1,627/ 6,422	1.616	1.532	1.704	**.615***	.603	.627	**-.0470**	-.0636	-.0304
Psychosocial Adjustment total score	207/ 549	1.063	1.001	1.129	**.547***	.508	.586	279/ 1,115	1.225	1.169	1.283	**.649***	.618	.680	**-.1020**	-.1522	-.0518
Recent relationship problems	1,238/ 3,127	1.145	1.068	1.228	**.529***	.513	.545	1,629/ 6,434	1.119	1.053	1.189	**.529***	.515	.543	.0000	-.0208	.0208
Recent employment problems	1,235/ 3,117	1.610	1.491	1.738	**.597***	.581	.613	1,621/ 6,400	1.870	1.755	1.992	**.634***	.620	.648	**-.0370**	-.0578	-.0162
Victim of and/or witness to family violence as a child or adolescent	1,165/ 2,977	1.112	1.039	1.190	**.526***	.510	.542	1,532/ 6,059	1.157	1.087	1.232	**.530***	.516	.544	-.0040	-.0248	.0168
Recent substance abuse/ dependence	1,228/ 3,106	1.566	1.439	1.703	**.584***	.568	.600	1,617/ 6,365	1.814	1.696	1.940	**.624***	.612	.636	**-.0400**	-.0596	-.0204
Recent suicidal or homicidal ideation/intent	188/ 510	.867	.587	1.282	.494	.472	.516	240/ 1,003	1.053	.778	1.424	.502	.482	.522	-.0080	-.0371	.0211

Table 8 (continued).

	Indigenous							**White**							**Differences in Cs**		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI		Diff.	95% CI	
Recent psychotic and/or manic symptoms	189/ 469	1.126	.741	1.711	.504	.486	.522	227/ 925	1.357	1.039	1.772	**.517***	.497	.537	-.0130	-.0394	.0134
Personality disorder with anger, impulsivity, or behavioral instability	191/ 500	1.073	.857	1.343	.512	.483	.541	255/ 1,012	1.399	1.180	1.659	**.541***	.514	.568	-.0290	-.0692	.0112
Spousal Assault History total score	1,218/ 3,085	1.057	1.038	1.075	**.544***	.528	.560	1,605/ 6,347	1.090	1.073	1.106	**.573***	.559	.587	**-.0290**	-.0498	-.0082
Past physical assault	1,234/ 3,106	1.052	.984	1.125	.505	.491	.519	1,598/ 6,359	1.201	1.137	1.268	**.537***	.525	.549	**-.0320**	-.0501	-.0139
Past sexual assault/sexual jealousy	1,209/ 3,068	1.085	1.001	1.175	**.510***	.496	.524	1,588/ 6,307	1.072	.991	1.160	.507	.495	.519	.0030	-.0151	.0211
Past use of weapons and/or credible threats of death	1,212/ 3,078	1.147	1.074	1.225	**.525***	.509	.541	1,602/ 6,342	1.297	1.222	1.376	**.550***	.536	.564	**-.0250**	-.0458	-.0042
Recent escalation in frequency or severity of assault	1,225/ 3,104	1.154	1.072	1.243	**.528***	.512	.544	1,610/ 6,368	1.157	1.085	1.233	**.530***	.516	.544	-.0020	-.0228	.0188
Past violation of "no contact" orders	1,211/ 3,069	1.142	1.077	1.211	**.527***	.511	.543	1,584/ 6,309	1.314	1.248	1.384	**.559**	.547	.571	**-.0320**	-.0516	-.0124
Extreme minimization or denial of spousal assault	1,206/ 3,060	1.237	1.137	1.345	**.537***	.521	.553	1,586/ 6,315	1.291	1.201	1.388	**.545***	.531	.559	-.0080	-.0288	.0128
Attitudes that support or condone wife assault	1,200/ 3,061	1.303	1.187	1.430	**.536***	.520	.552	1,582/ 6,304	1.310	1.213	1.415	**.542***	.528	.556	-.0060	-.0268	.0148
Index Offense total score	1,213/ 3,067	1.100	1.064	1.137	**.546***	.530	.562	1,602/ 6,314	1.187	1.153	1.222	**.579***	.565	.593	**-.0330**	-.0538	-.0122

Table 8 (continued).

	Indigenous							**White**							**Differences in Cs**		
	n/N	Hazard ratio	95% CI		C	95% CI		*n/N*	Hazard ratio	95% CI		C	95% CI		Diff.	95% CI	
Severe and/or sexual assault	1,211/ 3,063	1.069	.987	1.156	.513	.497	.529	1,595/ 6,298	1.206	1.123	1.294	.532	.518	.546	-.0190	-.0398	.0018
Use of weapons and/or credible threats of death	1,209/ 3,057	1.130	1.056	1.209	**.526***	.510	.542	1,594/ 6,297	1.253	1.181	1.329	**.546***	.532	.560	-.0200	-.0408	.0008
Violation of "no contact" order	1,189/ 3,010	1.201	1.132	1.274	**.545***	.529	.561	1,575/ 6,222	1.308	1.242	1.376	**.565***	.551	.579	-.0200	-.0408	.0008
Other Considerations total score	763/ 1,972	1.012	.893	1.146	.500	.484	.516	1,022/ 4,091	1.119	1.020	1.227	**.511***	.497	.525	-.0110	-.0318	.0098
Current emotional crisis	804/ 2,066	1.232	.954	1.590	.510	.500	.520	1,079/ 4,354	1.296	1.074	1.564	**.512***	.502	.522	-.0020	-.0159	.0119
History of torturing or disfiguring intimate partners	786/ 2,011	.965	.400	2.324	.500	.498	.502	1,048/ 4,196	1.205	.501	2.902	.499	.497	.501	.0010	-.0018	.0038
Victim or witness of political persecution, torture, or violence	781/ 2,000	1.475	.946	2.300	.504	.498	.510	1,944/ 4,169	.948	.523	1.717	.5499	.497	.501	.0050	-.0012	.0112
Sexual sadism	772/ 1,980	1.654	.619	4.420	.501	.499	.503	1,026/ 4,110	1.865	.930	3.741	.502	.500	.504	-.0010	-.0038	.0018
Easy access to firearms	723/ 1,861	.939	.743	1.186	.494	.482	.506	963/ 3,832	1.064	.851	1.331	.505	.495	.515	-.0110	-.0263	.0043
Stalking	756/ 1,964	.740	.527	1.039	.494	.486	.502	1,027/ 4,111	1.002	.828	1.213	.498	.488	.508	-.0040	-.0166	.0086
Recent loss of social support network	760/ 1,962	1.336	.998	1.790	.506	.498	.514	1,006/ 4,030	1.449	1.154	1.818	**.512***	.504	.520	-.0060	-.0171	.0051
Overall SARA risk rating	1,264/ 3,188	1.508	1.388	1.638	**.574***	.560	.588	1,672/ 6,550	1.775	1.653	1.905	**.602***	.590	.614	**-.0280**	-.0461	-.0099
SARA total score	1,153/ 2,949	1.045	1.036	1.054	**.585***	.569	.601	1,538/ 6,105	1.070	1.063	1.078	**.632***	.618	.646	**-.0470**	-.0678	-.0262

Summary of Predictive Accuracy Analyses

Table 9 provides a broad summary of predictive accuracy findings for all three outcomes: domestic violence, violent, and any criminal recidivism across the two groups: Indigenous and White. To summarize, overall SARA risk rating and SARA total score demonstrated significant, albeit not similar predictive accuracy for the outcomes of domestic violence, violent, and any criminal recidivism across the Indigenous and White groups. Most SARA items (with the notable exception of a few from the psychosocial adjustment section) significantly predicted domestic violence, violent, and any criminal recidivism across the groups. Effect sizes were generally in the trivial to moderate range. Almost all items would meet the threshold set by Mann et al (2010) to be considered empirically supported or psychologically meaningful risk factors for both Indigenous and White individuals. In instances where items predicted differently between the subgroups, a pattern of lower predictive accuracy for Indigenous individuals was observed. There were no instances where significantly higher accuracy was observed for Indigenous offenders. This does not imply that those items are not predicting recidivism for Indigenous individuals; instead, it means that they are predicting risk better or more accurately for White individuals.

Table 9. Summary of Predictive Accuracy Analyses for SARA items, overall risk rating, total score and section total scores.

	Domestic violence recidivism			Violent recidivism			Any recidivism		
Predictor	Indigenous	White	Lower for Indigenous?	Indigenous	White	Lower for Indigenous?	Indigenous	White	Lower for Indigenous?
Criminal History total score	✓	✓	✓	✓	✓	✓	✓	✓	✓
Past assault of family members	✓	✓		✓	✓		✓	✓	
Past assault of strangers or acquaintances	✓	✓		✓	✓	✓	✓	✓	✓
Past violation of conditional release or community supervision	✓	✓	✓	✓	✓	✓	✓	✓	✓
Psychosocial Adjustment total score	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recent relationship problems	✓	✓		✓	✓		✓	✓	
Recent employment problems	✓	✓		✓	✓	✓	✓	✓	✓
Victim of and/or witness to family violence as a child or adolescent	✓			✓	✓		✓	✓	
Recent substance abuse/ dependence	✓	✓		✓	✓	✓	✓	✓	✓
Recent suicidal or homicidal ideation/intent									
Recent psychotic and/or manic symptoms					✓			✓	
Personality disorder with anger, impulsivity, or behavioral instability		✓			✓			✓	
Spousal Assault History total score	✓	✓		✓	✓	✓	✓	✓	✓
Past physical assault	✓	✓	✓		✓	✓		✓	✓
Past sexual assault/sexual jealousy	✓	✓		✓	✓		✓		
Past use of weapons and/or credible threats of death	✓	✓		✓	✓	✓	✓	✓	✓
Recent escalation in frequency or severity of assault	✓	✓		✓	✓		✓	✓	
Past violation of “no contact” orders	✓	✓		✓	✓		✓	✓	✓
Extreme minimization or denial of spousal assault	✓	✓		✓	✓		✓	✓	
Attitudes that support or condone wife assault	✓	✓		✓	✓		✓	✓	
Index Offense total score	✓	✓	✓	✓	✓	✓	✓	✓	✓
Severe and/or sexual assault		✓	✓		✓	✓			
Use of weapons and/or credible threats of death		✓	✓	✓	✓	✓		✓	
Violation of “no contact” order	✓	✓		✓	✓			✓	
Other Considerations total score					✓			✓	
Current emotional crisis					✓			✓	
History of torturing or disfiguring intimate partners									
Sexual sadism									
Easy access to firearms	✓		✓						
Stalking									
Recent loss of social support network					✓			✓	

Overall SARA risk rating	✓	✓		✓	✓	✓	✓	✓	✓
SARA total score	✓	✓	✓	✓	✓	✓	✓	✓	✓

3.5. Incremental Validity Analyses

Table 10 reports the results from Cox regression analyses for incremental predictive accuracy of total scores on SARA sections for Indigenous and White individuals across the three outcomes of domestic violence, violent, and any recidivism. It is important to note that sample size for this analysis was much smaller than the sample for previous analyses. This could be because I added the predictors (total section scores) to conduct this incremental validity analysis and since many individuals were missing scores for the psychosocial adjustment items, they might not have a total score for that section. Specifically, I had a sample size of 543 Indigenous individuals and 1,104 White individuals for this analysis. For Indigenous individuals, total scores on none of the sections added incremental predictive accuracy after controlling for the other subscales, and this finding applied to both domestic violence and violent recidivism. However, for the outcome of any recidivism, criminal history total score added significant and positive incremental predictive validity (Hazard Ratio = 1.0963, p <.05) and there was a moderate effect size for the overall model (C = .567). Specifically, controlling for total scores on the psychosocial adjustment, spousal assault history, and index offence sections, each one-point increase in total score on the criminal history section was associated with a 9.6% increase in any criminal recidivism, averaged across the follow-up period (for how to interpret hazard ratios, see Helmus & Babchishin 2017).

For White individuals, for the outcome of domestic violence recidivism, criminal history total score added significant and positive incremental predictive validity and there was a large effect size for the overall model (C = .701). Specifically, controlling for total scores on the psychosocial adjustment, spousal assault history, and index offence sections, each one-point increase in total score on the criminal history section was associated with an 18.1% increase in domestic violence recidivism, averaged across the follow-up period. Similarly, criminal history total score and psychosocial adjustment total score added significant and positive incremental validity for the outcome of violent recidivism, and there was a moderate effect size for the overall model (C = .685). Specifically, controlling for total scores on the psychosocial adjustment, spousal assault history, and index offence sections, each one-point increase in total score on the criminal history section was associated with a 20.2% increase in violent recidivism rate, averaged across the follow-up period. Similarly, after controlling for total scores on the

criminal history, spousal assault history, and index offence sections, each one-point increase in total score on the psychosocial adjustment section was associated with a 7.1% increase in violent recidivism rate, averaged across the follow-up period. Lastly, criminal history total score, psychosocial adjustment total score, and index offence total score added significant and positive incremental validity for the outcome of any recidivism, and there was a small effect size for the overall model (*C* = .676). Specifically, after controlling for total scores on the other sections, each one-point increase in total score on the criminal history section was associated with an 18.5% increase in any recidivism rate, averaged across the follow-up period. After controlling for total scores on the other sections, each one-point increase in total score on the psychosocial adjustment section was associated with a 13.2% increase in any recidivism rate, averaged across the follow-up period. Finally, after controlling for total scores on the other sections, each one-point increase in total score on the index offence section was associated with a 9.7% increase in any recidivism rate, averaged across the follow-up period.

Table 10. Incremental Predictive Accuracy of total scores on SARA sections for Indigenous and White individuals (Domestic Violence Recidivism, Violent Recidivism, and Any Recidivism).

	Indigenous (*n* = 543)							White (*n* = 1,104)						
	n recid (%)	Hazard ratio	95% CI		C	95% CI		*n* recid (%)	Hazard ratio	95% CI		C	95% CI	
Domestic Violence Recidivism														
Criminal History total score	104 (19.2)	1.067	.9467	1.202	.588	.533	.643	110 (10.1)	**1.181****	1.0529	1.324	.701	.656	.746
Psychosocial Adjustment total score		1.040	.9404	1.150					1.076	.9844	1.176			
Spousal Assault History total score		1.047	.9610	1.140					1.054	.9707	1.143			
Index Offense total score		1.015	.8874	1.162					1.129	.9772	1.304			
Violent Recidivism														
Criminal History total score	170 (31.3)	1.0828	.9884	1.186	.566	.521	.611	196 (17.8)	**1.202*****	1.1038	1.310	.685	.650	.720
Psychosocial Adjustment total score		1.0525	.9723	1.139					**1.071***	1.002	1.145			
Spousal Assault History total score		1.0095	.9454	1.078					1.050	.9874	1.116			
Index Offense total score		.9328	.8367	1.040					1.061	.9522	1.182			
Any Recidivism														
Criminal History total score	204 (37.6)	**1.0963***	1.0093	1.191	.567	.528	.606	225 (20.4)	**1.1846*****	1.1021	1.273	.676	.645	.707
Psychosocial Adjustment total score		1.0539	.9814	1.132					**1.1316*****	1.0695	1.197			
Spousal Assault History total score		.9884	.9315	1.049					.9856	.9356	1.038			
Index Offense total score		.9673	.8765	1.067					**1.0969***	1.0016	1.201			

* $p<0.05$; ** $p<0.01$; ***$p<0.001$.

Chapter 4. Discussion

This study utilized administrative data to examine the predictive accuracy and cross-cultural validity of the SPJ risk assessment guide, SARA (V2) with Indigenous and White individuals supervised by B.C. Corrections, for the outcomes of domestic violence recidivism, violent recidivism, and any criminal recidivism. To my knowledge, this is the first study examining the predictive properties of the SARA for Indigenous individuals. Given that the SARA is widely used to assess and manage IPV risk (Hanson et al., 2007; Ryan, 2016), such validation research is important. Research such as this also directly addresses the Supreme Court of Canada's call for validation research of risk tools used with Indigenous individuals (*Ewert v. Canada*, 2015, 2018). Additionally, such research responds to calls by the TRC to eliminate the overrepresentation of Indigenous peoples in custody and provide realistic alternatives to incarceration while recognizing the systemic issues underlying their involvement in criminal behaviours. It is important to recognize that risk assessments can play a role in exacerbating overrepresentation. Findings from the current study are discussed below and contextualized within existing literature.

Prevalence of SARA items and overall risk. This study found that Indigenous men were significantly more likely to demonstrate some criminal history risk factors (past assault of family members, past assault of strangers or acquaintances, past violation of conditional release or community supervision), psychological adjustment factors (recent employment problems, victim of and/or witness to family violence as a child or adolescent, recent substance abuse/ dependence), spousal assault history factors (past physical assault, past sexual assault/sexual jealousy, past use of weapon and/or credible threats of death, past violation of "no contact" orders, attitudes that condone or support wife assault), and index offence factors (severe and/or sexual assault, and violation of "no contact" orders). These findings are consistent with previous studies that have found that Indigenous individuals are significantly more likely than their White counterparts to exhibit several risk factors, particularly those related to criminal history (Olver et al., 2018; Perley-Robertson et al., 2019; Shepherd et al., 2014).

Given the ongoing impacts of colonization, it is difficult to disentangle the extent to which the higher prevalence of these risk factors is due to intergenerational trauma and higher societal exposure to adverse circumstances. Some scholars have argued

that Indigenous individuals generally exhibit more risk factors due to disproportionately higher experiences of marginalization including but not limited to childhood violence, social disorganization, fetal alcohol spectrum disorder, loss of cultural identity, systemic racism, and cumulative social and economic disadvantage (Day et al, 2022; Martel et al., 2011). Considering practitioners who conduct SARA assessments work within systems entrenched in colonization, another plausible explanation for the higher coded presence of risk factors for Indigenous individuals could be evaluator bias (i.e., they are more likely to interpret the same evidence as risky when it is exhibited by Indigenous individuals).

Of note, Indigenous men were significantly less likely to demonstrate the following risk factors: extreme minimization/denial of spousal assault and stalking. This study also found that Indigenous men scored significantly higher on their overall SARA risk rating, all SARA sections (apart from “Other Considerations”) as well as SARA total score. Considering Indigenous men had higher prevalence for individual SARA risk factors, it makes sense that when all risk factors are considered together, Indigenous individuals would receive higher ratings of overall risk. It is important to contextualize this finding of higher risk in literature that notes the problematic discrepancies in exposure to risk factors between Indigenous and non-Indigenous individuals (Rugge, 2006; Shepherd et al., 2014; Yessine & Bonta, 2009). As such inequities persist, results from violence risk assessments such as the SARA need to be understood within a broader framework of colonization and related disenfranchisement of Indigenous individuals.

Although Indigenous individuals scored significantly higher on their overall SARA risk rating as well as SARA total score, the effect size for the group differences for the SARA total score (AUC = .625) was comparatively higher than the effect size for the group differences for the overall summary risk rating (AUC = .585). This could suggest that the room for discretion in SPJ methods potentially ameliorates evaluator bias and allows for more nuanced cultural considerations than a mechanical total score would. If evaluators are taking contextual factors into account, it is possible SPJ tools can perform better for individuals from diverse marginalized backgrounds. However, this finding is in need of replication.

Predictive accuracy for Domestic Violence, Violent, and Any Recidivism. The results from this study broadly support the discrimination properties of the SARA for domestic violence, violent, and any criminal recidivism on this B.C. Corrections sample

of Indigenous and White men. Most SARA items (with the notable exception of a few from the psychosocial adjustment and index offence sections) significantly predicted domestic violence, violent, and any criminal recidivism across the subgroups.

The items that generally did not demonstrate significant predictive properties for both groups across the three recidivism outcomes were recent suicidal or homicidal ideation/intent, recent psychotic and/or manic symptoms, personality disorder with anger, impulsivity, or behavioural instability, and severe and/or sexual assault. These findings are aligned with the literature. To illustrate, in their examination of the SARA, Grann and Wedin (2002) found negative predictive accuracy for the item of severe and/or sexual assault. Another study found that appearing suicidal did not predict IPV recidivism (Hilton et al., 2004). Items such as recent psychotic and/or manic symptoms, personality disorder with anger, impulsivity, or behavioural instability could be more indicative of mental health needs than factors associated with recidivism. An explanation for their inclusion in the SARA could be that although the items do not predict criminal recidivism, their incorporation in case management and formulation of intervention strategies is important. Alternatively, it could also be that these risk factors on their own do not have a strong impact on recidivism but become significant predictors when combined with other risk factors (such as relationship/employment problems, substance abuse, criminal history and so on).

In this study, one of the “other consideration” factors (easy access to firearms) demonstrated negative predictive accuracy (i.e. the item reached statistical significance in the opposite direction than expected) for Indigenous individuals. In other words, higher coded presence of this item was associated with lower likelihood of domestic violence recidivism and as such, the inclusion of the item in the scale should be re-examined. A possible explanation for this finding could be that some Indigenous individuals use firearms to engage in traditional hunting practices (a treaty right protected under Section 35 of the *Constitution Act*) and this is facilitated by regulations such as the *Aboriginal Peoples of Canada Adaptations Regulations (Firearms)*. The regulations allow flexibility in the way firearm licensing requirements apply to Indigenous peoples and therefore, easier access to firearms could be indicative of this practice rather than being a risk factor for IPV. Additionally, as of 2016, Indigenous peoples were more likely to be located in rural areas (60%) than non-Indigenous individuals (33%) and this difference in geographical setting could also explain higher access to firearms (Smith et. al., 2008; Organization for Economic Co-operation and Development, 2020).

Effect sizes for the significant predictors were generally in the trivial to moderate range. However, the trivial to small AUCs for individual items are not necessarily indicative of the scale not performing well. Previous studies have found that individual risk items or predictors can demonstrate small effect sizes but by considering several such risk predictors together, it is still possible to come to an overall risk rating or score with moderate to large effect sizes (Hanson & Morton-Bourgon, 2009). Further, almost all SARA items would meet the threshold set by Mann et al (2010) to be considered empirically supported or psychologically meaningful risk factors for both groups. Of note, Mann et al's (2010) heuristic is a useful benchmark but ultimately, it is just one recommendation. It is entirely possible arguments could be made for different criteria about what is 'good enough' to be considered as a risk factor.

None of the "other considerations" positively predicted domestic violence, violent, or any recidivism for Indigenous individuals. For White individuals, two "other considerations", namely, current emotional crisis and recent loss of social support network significantly and positively predicted violent and any recidivism. Both of these factors are generally associated with recidivism. To illustrate, Mallik-Kane & Visher (2008), found that social networks impact other aspects of life such as housing, employment which ultimately impact recidivism. Similarly, emotional crisis, as a type of mental health condition/strain can predispose individuals, especially those who are already involved in the criminal-legal system, to higher likelihood of future recidivism (Reingle-Gonzalez & Connell, 2014).

The restriction of range in the predictor variables (i.e. dichotomous "other consideration" factors) could also partly explain the lower and non-significant findings of accuracy for these items. Although AUCs are robust across variations in the base rate/outcome, they are impacted by variations in the predictor (i.e. when there is a restriction of range in the predictor, AUCs are lower; Babchishin & Helmus, 2015). Further, Kropp and Hart (2000) have previously warned that the scoring of SARA "other consideration" items is much more prone to evaluator subjectivities and how they perceive changes in an individual's life circumstances so these items can be considered "less stable" (p. 115). Although these factors are rare, they are considered meaningful when present.

Generally, scores on all four SARA sections, the overall SARA risk rating, and SARA total score significantly predicted all recidivism outcomes for both Indigenous and White individuals, albeit there were differences in the magnitude of the effect sizes

(ranging from small to moderate). This is consistent with prior research that found SARA scores to be significantly associated with IPV, any violent, and general recidivism over time; specifically, each one-point increase in SARA score was associated with a 12% to 16% increase in the hazard of a given recidivism outcome (Olver & Jung, 2017). Similar to findings from this study, a meta-analysis examining the predictive properties of the SARA for spousal assault recidivism found that SARA total score predicted recidivism with a small effect size (AUC = .619; Hanson et al., 2007). A more recent meta-analysis found that SARA total scores and summary risk ratings predict spousal assault recidivism with moderate effect sizes, violent recidivism with small to moderate effect sizes, and any recidivism with moderate effect sizes (Helmus & Bourgon, 2011). The current study generally found smaller effect sizes; however, these are still significant, pointing to the SARA performing modestly for White and Indigenous individuals. Considering the SARA is used by B.C. Corrections for case management and formulation of intervention strategies, these modest findings suggest that a re-examination of the use of the SARA might be beneficial for both Indigenous and White individuals and help prioritize scarce resources more effectively.

To check if the SARA performed better as an SPJ or a mechanical scale, I compared the *C* values between that for the overall SARA summary risk rating (SPJ) and the SARA total score (mechanical) for each of the three outcomes. For domestic violence recidivism, the total score predicted slightly better for White individuals (*C* = .637 for total score versus .617 for summary rating) and minimally better for Indigenous individuals (*C* = .604 for total score versus .593 for summary rating), suggesting that the total score is perhaps as good, if not better, than the SPJ rating. Similarly, for violent recidivism, the total score predicted slightly better for White (*C* = .638 for total score versus .606 for summary rating) and Indigenous individuals (*C* = .591 for total score versus .574 for summary rating). Finally, for any recidivism, the total score also predicted slightly better for White (*C* = .632 for total score versus .606 for summary rating) and Indigenous individuals (*C* = .585 for total score versus .574 for summary rating). However, it is also important to consider that the differences in predictive accuracy was more pronounced for the total scores across the three outcomes, which might make the SPJ summary risk rating the more defensible option (i.e. it is better to have slightly lower but more equal predictive accuracy for the subgroups).

Generally, in instances where items predicted differently between the subgroups, a pattern of lower predictive accuracy for Indigenous individuals was observed. I

expected 5 significant findings of differential predictive accuracy across the three outcomes simply by chance (accounting for Type I error); however, I found 36 such differences, with all predicting lower for Indigenous individuals. I chose not to apply any statistical corrections (such as the Bonferroni correction) because an attempt to reduce Type I errors would increase the likelihood of Type II errors/false negatives (Perneger, 1998) and that could be equally problematic in this study.

Broadly, results showed that several individual SARA items (especially static criminal history items) along with total scores on the four sections, overall risk rating, and SARA total score demonstrated significantly lower predictive accuracy for Indigenous men across all three recidivism outcomes. These findings are aligned with previous studies that have found that even though risk tools, for the most part, are able to predict recidivism for Indigenous individuals, they demonstrate lower predictive accuracy for factors such as criminal history, substance abuse, and antisocial personality for this group (Babchishin, et al., 2012; Wilson & Gutierrez, 2014). Criminal history items such as past violation of conditional release/community supervision, past use of weapon, past physical assault etc. could be predicting recidivism weakly for Indigenous individuals due to a variety of reasons. One plausible explanation could be that the risk of recidivism declines as time goes on and old criminal history records might not predict recidivism anymore (Kurlychek et al., 2006). Alternatively, the higher presence of criminal histories could be related to the disproportionate and prejudicial policing and prosecution practices against Indigenous individuals, highlighting underlying racial profiling rather than factors related to higher risk of recidivism (see David & Mitchell, 2021 for a review on Indigenous peoples higher contact with the police in Canada). It has been found that a leading cause of racial disparities in imprisonment is racial differences in criminal history records (Hester et al. 2018).

The dynamic risk factors that did not significantly predict recidivism for Indigenous individuals but did for White individuals were recent employment problems and recent substance use/dependence. Both of these risk factors have been highlighted in literature as needs disproportionately experienced by Indigenous peoples. The legacy of colonization has resulted in lower educational attainment and higher unemployment rates for many Indigenous individuals (Statistics Canada, 2016) and can be seen as reflective of their positionality within Canadian society rather than criminogenic risk factors. The impact of residential schools has to be considered in any explanation of lower educational attainment and higher unemployment rates for this population.

Residential schools had several issues including inadequate staffing, curriculum, teaching time, parental involvement, heightened racism, maltreatment, abuse and so on (Barnes & Josefowitz, 2019). It is believed that most of the Indigenous children in residential schools never progressed beyond the elementary grade and were thus harmed in myriad ways, including in the domains of education and future employment (RCAP, 1996; TRC, 2015). Similarly, substance use (especially alcohol dependence) among Indigenous individuals is a result of historical and ongoing marginalization and has contributed to an average disparity of five years in life expectancy between Indigenous and non-Indigenous individuals in Canada (Rempel et al., 2015). Heart (2003) argued that substance abuse is a "vehicle for attempting to numb the pain associated with trauma" (p. 7). Therefore, substance use among this population should be first and foremost viewed as a critical physical and psychological health issue warranting trauma-informed supports rather than a factor for criminal recidivism.

Having said that, it is also important to highlight that these findings of lower predictive accuracy do not imply that the SARA items are not predicting for Indigenous individuals; instead, it means that they are predicting risk better or more accurately for White individuals. It is difficult to disentangle how much, if any, of this is due to test bias (Warne et al., 2014) or rather a reflection of the inequities faced by Indigenous peoples in Canada. It is likely that a combination of explanations intersect to shed light on the observed lower predictive accuracy of risk assessment tools for Indigenous individuals.

Wilson and Gutierrez (2014) proposed four plausible explanations for this observed pattern: 1) racial discrimination and systemic bias in the criminal legal system leading to inflated assessments of risk, 2) historical and current systems of disadvantage that predispose Indigenous individuals to exhibit many more risk factors, 3) risk factors holding different meanings for Indigenous versus non-Indigenous individuals (for example, substance use as a means to cope with trauma rather than an indicator of antisocial personality), and 4) lack of consideration for potentially unique and cultural risk factors such as the impact of residential schools, displacement, and loss of language. All of these need to be considered carefully and in an intersectional manner when trying to explain the higher findings of risk and lower findings of predictive accuracy on risk tools for Indigenous individuals. In our study, I would argue that explanations #2 and #3 intersect to explain the findings of higher prevalence and lower predictive accuracy of several SARA items for Indigenous individuals.

To summarize the current study's findings of predictive accuracy for the SARA, the tool is better than nothing but it is far from perfect. The lower predictive accuracy findings for Indigenous individuals is concerning and should be acknowledged when conducting assessments with this population, especially given their ongoing overrepresentation and higher exposure to adverse outcomes in the criminal legal system. Practitioners should be cognizant of the impacts of colonization and how these manifest for Indigenous individuals within the criminal legal system. Awareness, self-reflection, and cultural humility are practices that could improve risk assessment practices in general and more specifically, when working with individuals from marginalized groups.

Incremental Validity of SARA sections. This study found that for Indigenous individuals, the only section total score that added significant incremental predictive accuracy beyond total scores on the other sections was criminal history for the outcome of any recidivism; specifically, each one-point increase in total score on the criminal history section was associated with a 9.6% increase in any criminal recidivism rate, averaged across the follow-up period. For White individuals, criminal history total score added incremental predictive validity for the outcome of domestic violence, violent, and any recidivism. Similarly, psychosocial adjustment total score added incrementally for the outcome of violent and any recidivism. Additionally, index offence total score added incremental validity for the outcome of any recidivism. Each one-point increase in these SARA section scores was associated with a 7% to 20% increase in the hazard of a given recidivism outcome for White individuals. Olver and Jung (2017) also found that the criminal history and psychosocial adjustment domains of the SARA uniquely predicted any violent, IPV, and any/general recidivism, respectively, after controlling for the other SARA domains. This could be supported by the fact that the static items under the criminal history section and the dynamic items under the psychosocial adjustment section have some overlap with the widely researched Central Eight factors (Andrews & Bonta, 1994) that have been shown to reliably predict criminal recidivism. However, Olver and Jung (2017) did not find evidence for the incremental validity of the index offence section across the three recidivism outcomes in their study, suggesting that this section may be contributing the least to the predictive accuracy of the SARA.

4.1. Strengths and Limitations

In terms of strengths, this study is a step forward in validating risk assessment tools used with Indigenous peoples in Canada. The sample size was large which lends high statistical power to the analyses. Considering this is a field dataset, these findings can also be considered generalizable to routine correctional male samples who are charged or convicted of domestic violence offences. Further, the study directly assesses how well the SARA scale is performing in terms of predictive accuracy as it is currently being used in the field or within BC Corrections. Considering that within BC Corrections, probation officers administer the SARA-V2 as part of the intake procedure to all individuals convicted of an IPV offence and use these evaluations to inform case management/interventions (Mularczyk et al., 2021), it is important that the items and overall ratings are a valid indicator (as assessed by predictive accuracy) of intervention needs.

In terms of limitations of the present study, there are a few. First, I did not examine Indigenous subgroups. Indigenous peoples are immensely diverse (more than 70 distinct Indigenous languages are spoken across Canada; Statistics Canada, 2017) and categorizing them all into a single “Indigenous” group can be problematic. However, it needs to be kept in mind that there is also an overarching shared experience of colonization that is perhaps reflected in the risk and needs profile of Indigenous men in BC.

Second, use of administrative data required significant data cleaning, preparation, and approximation. In order to link SARA assessments with criminal history records and index offences, I made decisions that are fallible and could have resulted in inaccurate linkages or identification of follow-up dates. However, all reasonable steps were taken to document these processes and establish consistent decision-making practices. Third, given the nature of administrative data, I could not establish interrater reliability or verify if the SARA assessments were accurate. In an ideal world, all practitioners conducting SARA evaluations within BC Corrections are trained professionals who are following the coding manual diligently. In reality, it is more complicated than that and evaluator errors or bias could inflate or deflate risk ratings. In fact, several scholars have argued that SPJ scales such as the SARA allow for broad

discretion that might result in inaccurate assessments and reduced predictive validity (Andrews et al., 2006, Cohen et al., 2020).

Fourth, considering I did not have access to federal criminal history records, our recidivism data was limited to new charges or convictions within BC. Fifth, I summed the SARA items to compute a numeric overall total score and total section scores for the purposes of analysis. It can be argued that items in SPJ measures are not intended to be arithmetically summed up and used for predictive accuracy analyses as that represents a mechanical use of the scale and is not recommended by the scale developers. However, many studies researching the SARA have examined such computed total scores, therefore using the scale in a mechanical way (Hanson et al., 2007). Sixth, there were major differences in missing data across SARA items and this could have biased findings as we did not tackle missing information through imputations, for example. The missing data could have partly been due to the nature of some of the items (especially psychosocial adjustment items) – probation officers do not necessarily have the qualifications to code these and in the absence of a psychologist, these items were left unscored. Finally, the outcome of domestic violence recidivism used in this study is an imperfect approximation of IPV recidivism; however, this is common in research as most domestic violence recidivism would presumably be IPV recidivism. Overall, the current study has both strengths and limitations. Considering the limitations, further research is necessary to replicate and extend these findings with SARA as well as other measures of violence risk and needs.

4.2. Implications for Future Research

Future risk assessment research should examine interactions between risk factors and the potential differences between risk factors and societal needs more clearly. This should be theoretically guided and it is crucial to contextualize risk within "overlapping ecological domains at the individual, peer, school, family, and broader community levels" (Tanner-Smith et. al., 2013, p. 6). If the empirical evidence continues to not support the accuracy of those risk factors, perhaps they should be removed from the scale in question (such as the SARA) or at least, evaluators should be encouraged to give these less weight. Validation research of risk instruments (such as the SARA) used with Indigenous and other marginalized groups (including but not limited to

individuals from different racial/cultural backgrounds, females, LGBTQ2SIA+, youth, individuals with mental health issues and so on) should be conducted increasingly and meaningfully. How evaluations of risk contribute to the perpetuation of inequities for justice involved Indigenous and other marginalized individuals should be a critical consideration. In doing so, it is also important to recognize the within-group diversity of marginalized groups, the intersections of marginalized identity aspects, and the changing life contexts that play a role in bringing an individual in contact with the criminal legal system. As Audre Lorde put it: “there is no thing as a single-issue struggle because we do not live single-issue lives”.

Further, some scholars have urged practitioners to look beyond the traditional risk factors that are currently in use in order to avoid the danger of systematically ignoring risk-relevant factors for marginalized groups (Gutierrez, 2018). For Indigenous peoples specifically, factors such as the impacts of the reserve system, residential schools, cultural assimilation/isolation, loss of language/heritage, and fetal alcohol spectrum disorder have been suggested as culturally unique risk factors that should be taken into consideration to make risk scales more responsive to the impacts of colonization (Gutierrez, 2018; LaPrairie, 2002; Heckbert and Turkington, 2001; Royal Commission on Aboriginal Peoples, 1996). Such decolonization research and policy work should always be done in respectful consultation and reciprocal collaboration with Indigenous scholars, communities, and individuals who are most directly impacted by assessments of risk within the criminal legal system.

4.3. Conclusion

The results of the current study broadly support the use of SARA for Indigenous and White people charged or convicted of domestic violence offences, although there are several important caveats. There was evidence for lower predictive accuracy for Indigenous individuals, and more research is needed for this group. While such research is in the works, the use of the SARA with Indigenous individuals is a defensible choice given the current study did find that the scale predicted significantly for Indigenous individuals and that the magnitude of differences for the overall scale was not large between the two groups. As highlighted by Gutierrez and colleagues (2016): “Given that these scales still predict recidivism with moderate accuracy, abandoning their use is not

defensible, unless they are replaced with a method empirically demonstrated to have superior accuracy" (p. 103). Arguably, the threshold for what counts as "moderate" has been set low.

Although results for the SARA in this study were modest and the scale did not perform highly for either White or Indigenous individuals, it is better to use empirical and clinical risk assessment tools than nothing at all. A defensible choice is better than no choice. However, having barely defensible choices is also not enough when the overrepresentation of Indigenous individuals within Canada's criminal legal system continues to increase. There is a crucial need for better, more reliable, and culturally responsive choices when it comes to risk assessment scales. Further research is needed to better understand the contribution of any potentially unique risk factors and cultural explanations that may exist. As noted by Tamatea (2017): "Until a fuller understanding emerges, the application of psychology in the forensic and correctional space has to accommodate the issues related to cultural diversity as a central reality in the lives of offenders – and practitioners – as well as the communities with which they interact" (p. 565).

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