"Tend to the social and the individual will flourish."

Jonathan Rutherford, 2008, p. 18[*]

[*] Rutherford J. The culture of capitalism. Soundings 2008; 38: 8-18.

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Social Determinants of Alcohol, Drug and Gambling Problems
Among Urban Aboriginal Adults in Canada

by

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Abstract

Objective: Little is known about the determinants of addictive disorders within the rapidly growing urban Aboriginal population in Canada. The objectives of this dissertation were to examine whether Aboriginal enculturation, Canadian acculturation, and racial discrimination were associated with addictive problems among urban Aboriginal Canadians, and to test potential mediators of these associations.

Methods: Data were collected via in-person surveys and interviews with two community-based samples of Aboriginal adults living in a mid-sized city in western Canada. Sample 1 was recruited in 2008-09 and included Aboriginal university students (N = 60). Sample 2 was recruited in 2010 and included urban Aboriginal adults more generally (N = 381).

Results: Both samples evidenced high levels of Aboriginal enculturation and Canadian acculturation. In Sample 1, Aboriginal enculturation served as a protective factor for alcohol use problems. In Sample 2, Aboriginal enculturation served as a protective factor for illicit and prescription drug problems, as well as a resilience factor that buffered the effects of low educational attainment on illicit drug problems in this population. The protective impacts of enculturation on illicit and prescription drug problems were partially explained by elevated self-esteem among urban Aboriginal participants who were more highly enculturated. Canadian acculturation was not statistically associated with alcohol or illicit drug problems and served as a risk factor for prescription drug problems among urban Aboriginal participants. Racial discrimination served as a risk factor for

prescription drug problems and gambling problems. Mediational analyses indicate the impacts of racial discrimination on addictive outcomes were explained by elevated PTSD symptomology among those experiencing high levels of discrimination. These associations could not be explained by statistical adjustment for factors such as separation from birth parents in childhood, abuse in childhood, and exposure to poverty over the life course.

Conclusions: Findings support the growth of programs and services that encourage Aboriginal peoples to maintain their culture within the urban setting. Results also support policies and programs to reduce racism directed at Aboriginal peoples in urban areas, and services to help Aboriginal peoples cope with these experiences.

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Table of Contents

List of Tables

CHAPTER 2

CHAPTER 3

CHAPTER 4

CHAPTER 5

List of Figures

CHAPTER 1

CHAPTER 4

CHAPTER 5

List of Symbols, Nomenclature and Abbreviations

Abbreviations

AAC	Aboriginal Advisory Committee
Adj	Adjusted
AUDIT	Alcohol Use Disorders Identification Test
B	Unadjusted beta weight
CI	Confidence interval
CPGI	Canadian Problem Gambling Index
DSM-IV-R	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision
DSM-V	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
DUDIT	Drug Use Disorders Identification Test
EOD	Experiences of discrimination
GHQ-12	General Health Questionnaire 12
HPA	Hypothalamic-pituitary-adrenal
ICD-10	International Statistical Classification of Diseases and Related Health Problems, 10^{th} edition
M	Mean

N	Sample size
OR	Odds ratio
p	statistical p-value
PCL	PTSD Checklist-Civilian Version
PG	Problem gambling
PGs	Problem gamblers
PSGI	Problem Gambling Severity Index
PSS	Perceived Stress and Coping Scale
PTSD	Post traumatic stress disorder
r	Pearson's r correlation
RCAP	Royal Commission on Aboriginal Peoples
SD	Standard deviation
SE	Standard error
US	United States
VLTs	Video lottery terminals

Greek Symbols

α	Alpha coefficient
β	Adjusted beta weight

Chapter 1

Introduction and Background

What is Addiction?

Addiction is a debilitating psychiatric disorder with a complex aetiology.[1] The word addiction derives from the Latin *addicere* meaning bound to or enslaved by, and was used in Roman law to describe an individual bound to his or her creditor in lieu of debt payment.[2] Over the centuries addiction became increasingly identified with being bound to or having impaired control over intoxicating substances.[3] The word was deemed pejorative in the 1980s and replaced with the term substance *dependence* in academic and clinical circles. Use of the word *addiction* is now seeing a resurgence among experts. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), to be published in 2013, the nomenclature will change to *addictive disorders*. This change reflects both dissatisfaction with the term dependence, and recognition that gambling problems have commonalities in clinical expression, etiology, comorbidity, physiology and treatment with substance-based addictions, and may be more appropriately classified under the umbrella of addiction.[4] Taking these impending changes into consideration, addictive disorders can generally be defined by a compulsion to seek out and take a substance or gamble, loss of control over substance use or gambling, and the emergence of negative emotional states when access to a target substance or gambling behaviour is limited.[4, 5]

Addictions among Aboriginal Peoples

Aboriginal peoples[†] within North America experience a disproportionate population burden of addictive disorders with serious implications for health. Illicit and prescription drug use disorders are two to four times more prevalent among Aboriginal peoples in North America than the general population.[6-10] The prevalence of alcohol use disorders is 6% among Aboriginal Canadians compared to less than 2% among the general Canadian population, and problem gambling is more prevalent among Aboriginal peoples as well.[11- 13] To date, we do not have a common understanding of the determinants underlying these disparities.

Epidemiologic studies indicate that in established market economies suggest addictions are higher among men and those in poverty.[14-16] Although it is well documented that Aboriginal Canadians are among the poorest and most socially disadvantaged group in Canada, there remains a dearth of information about how social factors influence addictive problems in this population. This is due, in part,

[†]The term 'Aboriginal' will be used as an umbrella term to refer to Canadians who self-identify as First Nations, Métis or Inuit unless otherwise indicated.

to the ongoing acceptance of genetic and/or moralistic explanations for addictive problems among Aboriginal peoples. For example, a review of the scientific evidence indicates that alcohol use disorders and their transmission in families cannot be attributed to unique features of the Native American gene pool.[17, 18] The initial face validity of this explanation may explain its continued persistence given genetic similarities observed between Aboriginal and Asian populations. Many Asians carry variant alleles for the alcohol dehydrogenase gene cluster, but these variants confer resistance to rather than risk for alcoholism,[19] and would not explain higher levels of alcohol problems among Aboriginal peoples if genetic similarities were present. Further, this explanation does not explain elevated levels of alcohol use disorders across colonized Indigenous peoples with varied genetic backgrounds who live in different parts of the world. What these populations do share are comparable social problems rooted in the experience of colonization. If we are to make a genuine difference in reducing the population burden of addictive disorders experienced by Aboriginal peoples in colonized societies there is a need to shift attention away from race-based explanatory accounts toward the nature of the social environments that Aboriginal peoples share across these societies. A shift away from judgements about the individual characters of Aboriginal peoples is also needed. Addiction attracts shame where other illnesses often attract pity. This is due to the view that addictions represent a character flaw among those who do not possess the strength of character or willpower to resist.[20] Overall, the view that *natural causes* occurring *within individuals* (i.e., due to genetic weakness and/or personal character flaws) form the basis for addictions legitimizes the status quo and avoids uncomfortable questions about the role settler societies may play in the preponderance of addictions observed among Aboriginal peoples in Canada. The goal of this dissertation is to shine a light on the often overlooked role that social factors play in the levels of addictions experienced by Aboriginal Canadians.

This is not to deny that genetics play a role in the development and maintenance of addictions for some individuals. Addiction is no doubt a complex phenomenon and individual differences in genetics and temperament are intense areas of research.[21] While genetic studies of problem gambling are in the early stages, evidence from twin studies, adoption studies, and nonhuman animal models suggests the development of alcohol and drug use disorders have substantial genetic influences (~50%).[22, 23] However, the focus of this dissertation is not the myriad reasons why an individual Aboriginal person may have one or more addictions, which like individuals of all ethnic backgrounds, will include factors associated with their genetic background. Instead the focus is on socially-driven factors that may be particularly relevant for, and distinct to, this population and thus provide new insights on why addictions may be disproportionately high in this population.

A Public Health Perspective

It is in society's best interest that citizens are healthy. Beyond reducing the burden on the health care system, healthy people are more productive and creative, and these attributes contribute to a strong and vibrant society.[25] The broad mission of public health is to "fulfill society's interest in assuring conditions in which people can be healthy" (p. 1).[26] Public health reminds us that health is a public matter, and that patterns of health and disease intimately reflect the workings of the body politic for ill or for good within a given country.[27] A commitment to social justice is a foundation that underlies the mission of public health as it is assumed that all people are deserving of healthy social and environmental conditions in which to live.[25] Thus, public health efforts frequently focus on those who have the least power within their structural and social circumstances.

Weber argued that exploitive structural relations exist within western societies independent of individuals, resulting in an unequal distribution of *life chances* across different populations.[28] This includes unequal access to opportunities important to the development of healthy behaviours, such as the attainment of skills, knowledge, and resources.[29] Similar to what has been documented for African Americans in the US, education, income, and occupation may also "buy" Aboriginal Canadians less in the way of health and social advantages than these do for other Canadians.[30] Beyond materialist explanations for health inequities, it is also important to acknowledge that human beings are not psychologically self-sufficient. Individuals in every culture are naturally inclined to establish and maintain a profound interdependence with society. Psychosocial integration is both a psychological experience of identity and meaning and a social experience of reciprocity and obligation.[31]

The term *social dislocation* has been used by Polanyi and others to describe an enduring lack of psychosocial integration in society, an experience that is both individually painful and socially destructive.[32] Engaging in addictive behaviours may be a way of adapting to the discomfort of sustained social dislocation.[32] From this perspective, the disproportionate burden of addictions shared by Aboriginal peoples in colonized societies is a marker of the social dislocation they are experiencing. While social epidemiologists have long argued that the vast majority of health outcomes are fundamentally influenced by the social world,[33, 34] addictions may be more heavily influenced by socially dislocating experiences than other diseases and disorders given their potential to reduce psychological distress and provide the rewards socially dislocated individuals do not obtain through their social world. As Wilkinson has argued, living within a social context that denies people a sense of dignity, increases feelings of insecurity about personal worth and competence, and carries connotations of inferiority in which few people can feel respected, valued and confident will result in adverse psychological states that, in turn, will have lasting deleterious impacts on mental

and physical health.[35] It is within this context of adversity and exclusion that most Aboriginal Canadians live today; a position of chronic and intergenerational social dislocation.

An Urban Focus

Aboriginal peoples living in urban areas may experience particularly high levels of social dislocation given their proximity to mainstream, non-Aboriginal society. Urban Aboriginal peoples are one of the fastest growing segments of Canadian society.[36] Yet there remains a dearth of information about determinants that may improve or detract from their health and well-being. A challenge of this work is how the urban Aboriginal community and academic researchers can best come together to develop this research agenda, carry out this work, and use research findings to develop interventions that can make a genuine difference. Edmonton is home to the second largest Aboriginal population in Canada. This community has asked for greater learning and sharing between themselves and other willing partners.[37] Thus, I organized an urban Aboriginal Advisory Committee made up of key members of the Aboriginal community in Edmonton to set research priorities for this dissertation project, discuss variables that might be explored, and how constructs would be measured. As a group we decided that I would begin with a pilot study of Aboriginal university students in Edmonton, followed up by a larger more representative study of urban Aboriginal peoples living within the Edmonton city limits.

Key Independent Variables

Two key social determinants of health were examined in this research, each of which has been recognized by the Canadian population health framework.[38] These included the nature of the social environment (here operationalized as levels of racial discrimination) and culture (here operationalized as acculturation and enculturation).[38] These constructs were selected because they were determined to be particularly relevant for Aboriginal Canadians and, as the following review indicates, have been linked to addictions in other minority populations.

Racial Discrimination

Race as a concept refers to a form of social categorization based on phenotypic characteristics, the salience of which shifts across place and time.[39, 40] Although there are no objective biologic criteria that can be used to support a reliable or valid taxonomy of race[39, 41] as a social construct, the concept of race continues to be used to classify human variation and to justify the exploitation of groups defined as inferior. The term *racism* refers to an ideology that ranks some groups as inherently inferior to others based on their ethnic group affiliation, phenotypic characteristics, and/or alleged biological nature.[42] Although racism is an ideology, it informs *action* by justifying social norms and institutions that implement these

ideas.[43, 44] Racism leads to the development and maintenance of negative beliefs and attitudes about certain groups (racial prejudice), and unfair treatment directed at those perceived to be part of stigmatized racial groups (racial discrimination). Targets are aware of some of the discriminatory behavior directed at them, with these perceptions generating significant levels of stress.[44] Cohort studies have linked perceived racial discrimination to the development of an array of adverse outcomes including the incidence of substance use disorders, mental illness, breast cancer, uterine myomas, obesity and coronary artery calcification.[45-52] As a result, a growing number of researchers now attribute the health disparities experienced by African Americans to social stressors, most prominently the experience of racial discrimination.[45-49]

In Canada, the degree to which racial discrimination may similarly account for the health disparities observed among Aboriginal peoples has received little attention in the scientific literature. The Canadian Aboriginal population now surpasses 1 million and is rapidly urbanizing.[36] More than half of all Aboriginal Canadians now live in cities, resulting in increased contact between non-Aboriginal and Aboriginal peoples.[36] There have been historical efforts to keep Aboriginal peoples away from urban areas such as the creation of reserves and efforts unique to the prairies, such as the pass system which confined First Nations persons to reserves and required a pass from an Indian agent to leave, have helped reinforce the view that cities are 'modern' spaces reserved for settler societies and the immigrant groups they select to live there.[53-54] The result has been that Aboriginal peoples are often considered 'out of place' in urban Canada, particularly those who have not relinquished their culture.[54-55] This is due to the assumption that the choice to leave an Aboriginal community and migrate to the city is a choice to put aside Aboriginal culture and assimilate into mainstream society.[55-56] While these assumptions are being challenged by the growing demographic and cultural presence of Aboriginal peoples in urban areas, emerging research suggests that if there is a single Aboriginal experience in urban areas it is the shared experience of being stereotyped negatively.[57] A 2009 study of 11 major Canadian cities found 70% of Aboriginal adults had been teased or insulted because of their ethnic background, and more than a third did not feel accepted by non Aboriginal people.[57] The study also polled non Aboriginal urban residents and found many viewed relations with the Aboriginal population as negative and not improving. Non Aboriginal residents in Edmonton were the most pessimistic about this relationship, with 62% viewing it as negative and 79% not improving.[57] Edmonton is home to the second largest Aboriginal population in Canada making relations between Aboriginal and non Aboriginal peoples in this city important at both a local and national level. Consequently, this dissertation focused efforts on gaining a better understanding of the effects that racial discrimination may be having on Aboriginal peoples living in this city.

An additional objective of this dissertation was to examine a mechanism by which discriminatory experiences may result increased addictive problems in this

population. Social experiences are often linked to adverse outcomes via such *psychosocial stress pathways* in the social determinants of health literature Stress as a concept was first introduced in the 1950s.[58] At that time theorists suggested that the stress response differed widely between individuals independent of the social stressors they were exposed to and that what was stress for one may be stimulation to another depending on how a situation is appraised by an individual.[59] However, what appears to be differential vulnerability to stress at an individual level may actually be, on closer inspection, differential exposure to social stressors at a population level.[60] Detailed examinations of the physiology of the human stress response since that time have documented sufficient reactive physiologic regularity to suggest a more appropriate focus may be the social environment and the predictable effects it has on visceral stress reactions across individuals.[61-64] It is now well documented that the wear and tear of high unremitting stress on physiological systems can dysregulate normal biologic reactions, resulting in an inability to turn off the stress response when it is no longer needed, and hypo or hyperactive responses to environmental triggers, among other problems.[61, 65]

Stress-induced dysregulation of the autonomic nervous system and the hypothalamic-pituitary-adrenal (HPA) axis have been implicated in the development of psychiatric and physical disease in longitudinal studies.[65, 66] Unremitting, unpredictable and uncontrollable stress also exerts profound effects on the structure and function of limbic neurons that can, in combination with allostatic dysregulation, result in damage to the prefrontal cortex and the amygdala, which control addictive and risk-takingbehaviours.[21, 64, 67] McEwen fashioned the term *allostatic overload* to describe the damage that chronic activation of allostatic systems has on the body including dysregulation of the HPA axis, sympathetic nervous system and neural damage; as well as the behavioural changes that accompany this damage such as social withdrawal, difficulty sleeping, smoking, substance abuse and other risk-taking behaviour.[68]

Links can be made between Cooper's theoretical model of alcohol use and McEwen's allostatic overload model. In her seminal work, Cooper argued individuals are motivated to use alcohol to reduce negative affect and that this motive represents an important pathway linking distal variables to alcohol problems.[69] The use of drugs and gambling to cope with negative affect were confirmed in later studies.[70, 71] This theory is complimented by the concept of allostatic overload as it suggests individuals who experience extreme forms of social adversity may become motivated to engage in addictive behaviours to cope with the resulting biological and emotional consequences. Thus, McEwen's allostatic overload model provides a biological and social grounding for a key motive for addictive behaviour implicated in Cooper's theory.

Research Hypotheses: Racial Discrimination and PTSD

A particularly important stress response that can occur in reaction to social trauma is post traumatic stress disorder (PTSD). This disorder results in the intrusive recollection of events associated with trauma, detachment, efforts to avoid stimuli and feelings associated with traumatic events, and ongoing symptoms of physiologic hyperarousal.[62] It has been well documented that individuals will engage in addictive behaviours, including gambling, to cope with PTSD symptoms.[72-74] However the idea that racial discrimination could result in PTSD symptoms is more controversial. To date, the DSM has remained silent on how race-based psychological trauma should be classified. The result has been a lack of clarity on the clinical and forensic assessment of race-based traumatic stress disorders and on what exactly is being measured in research when visible minorities elicit symptoms of traumatic stress in response to discrimination.[75]

There is ongoing debate between experts on the types of qualifying events that may precede PTSD.[76-79] In its current form, the definition for PTSD qualifying events (Criterion A1) in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) is more restrictive than previous versions of the Manual; requiring a person *experience, witness or have been confronted with an event or events that involves actual injury or a threat to the physical integrity of oneself or others*.[80] As well, environmental stressors considered to precipitate a diagnoses of PTSD, acute stress or adjustment reactions in the DSM-IV-TR do not include racial events.[75] This omission may result in an underestimate of the mental health impact of racial discrimination by those relying on diagnosable psychological disorders as evidence of psychological distress,[81] and has resulted in a call for experts to expand their perspectives beyond the DSM when considering race-based traumatic stress.[82]

The International Statistical Classification of Diseases and Related Health Problems, 10th edition (ICD-10), for example, classifies PTSD not as an anxiety disorder, but in a category of reactions to severe stress. ICD-10 requires that qualifying events be *of an exceptionally threatening or catastrophic nature, which are likely to cause pervasive stress in almost anyone*.[83] Racial discrimination may more appropriately meet the definition of an ICD-10 qualifying event for PTSD as race-based discriminatory experiences are inherently threatening for most who are exposed given these acts and judgements are based on fixed features of an individual's physical appearance.

Racial discrimination is also frequently unpredictable, and ongoing, offering little opportunity for individuals to place distance between themselves and the stressor and recover from its effects. As a clinician, Butts has noted intriguing psychodynamics implicit in the refusal by European-Americans to acknowledge that the responses of minorities to racial discrimination may be clinically symptomatic.[84] He reports on the devastating emotional responses to racist acts he has witnessed in his clinical work and notes that with a fair degree to frequency,

African Americans who experience racism report symptoms consistent with a PTSD diagnosis. A key objective of this dissertation was to expand on these observations by examining whether racial discrimination was positively associated with addictive problems among urban Aboriginal Canadians, and the extent to which PTSD symptomology functioned as a mediator (i.e., a mechanistic pathway) that explained why discriminatory experiences were associated with adverse addictive outcomes in this population (Figure 1-1).

Enculturation

A second socially dislocating experience for Aboriginal peoples may be low levels of enculturation. Enculturation defines the degree to which minority groups identify with, feel a sense of pride for, and integrate the values and practices of their heritage culture.[85] Research suggests enculturation can reduce at-risk behaviour and enhance mental health across various ethnic groups including Aboriginal populations.[86-91]

The characterization of Aboriginal culture as a protective factor for health is a relatively new perspective in scientific research. At the turn of the twentieth century a 'primitivist' discourse was used to characterize Aboriginal peoples as a homogenous and childlike race, incapable of complex thought and driven by a savage and simplistic culture focused on superstition and devoid of social rules and the constraints of reason.[92,93] This primitivist categorization was juxtaposed in a crude and dualist fashion against Western culture which was assumed to be based on positivism and empiricism.[93] As stated by Memmi (1965): "the distance which colonization places between him and the colonized must be accounted for, and to justify himself, he increases his distance still further by placing the two figures irretrievably in opposition; his glorious position and the despicable one of the colonized" (p. 54-55).[94]

These comparisons resulted in the discounting of Aboriginal cultures and ways of knowing, justified the passing of legislation that prohibited Aboriginal cultural practice and legitimized actions to civilize and assimilate Aboriginal adults and children into Canadian society.[56] The primitivist discourse also pervaded scientific thought and went on to guide a great deal of research focused on the relationship between Aboriginal culture and mental health throughout the first half of the twentieth century and beyond.[93] There was a conviction among scholars that so-called 'primitive' cultures were inherently psychopathological, and that the spiritual beliefs of Aboriginal peoples were akin to magical thinking and causative of mental disorders such as schizophrenia.[95] Frequently these researchers were psychoanalysts and clinicians who used Freudian theoretical perspectives to interpret links between Indigenous cultural belief systems and mental health.[93, 96-101] These comparisons began with Freud himself whose work opened the door to a comparison of 'primitive' Aboriginal peoples to neurotics and remained

influential for a number of decades. For example, in Totem and Taboo Freud states:

> There are men still living who, as we believe, stand very near to primitive man, far nearer than we do, and whom we therefore regard as his direct heirs and representatives. Such is our view of those whom we describe as savages or half-savages; and their mental life must have a peculiar interest for us if we are right in seeing in it a well-preserved picture of an early stage of our own development. If that supposition is correct, a comparison between the psychology of primitive peoples, as it is taught by social anthropology, and the psychology of neurotics, as it has been revealed by psycho-analysis, will be bound to show numerous points of agreement and will throw new light upon familiar facts in both sciences (p. 1).[102]

Experts have since argued that despite the enormous amount of research that took place describing associations between Aboriginal culture and health in this time period, much of it was flawed. As argued by Kirmayer and Minas this work failed to see Aboriginal peoples and other minority groups clearly and instead treated their cultural worlds like funhouse mirrors that held up "distorted reflections of Eurocentric cultural preoccupations" (p. 439).[103] More recently, a rising counter-discourse led by Aboriginal writers and intellectuals has challenged the textual dehumanziation of Aboriginal peoples and their cultures by Euro-Canadian anthropologists, psychologists and other scientists.[104, 105] LaRocque has characterized this rapidly growing counter-discourse as a resistance response to gross misrepresentation.[104] These critiques have coincided with a growing Aboriginal cultural revitalization in Canada. After decades of government imposed bans on Aboriginal cultural practices such as the Sundance ceremony, and the closing of the last federally-run residential school for Aboriginal children in Canada in 1996, Aboriginal peoples and communities are now in the process of rebuilding their cultural traditions.[106] In recent decades research has begun to examine the impact that the growing Aboriginal cultural revitalization in North America was having on Aboriginal health and well-being. Many of these studies have moved away from the view that there was a single North American Aboriginal culture that was primitive, simplistic, and potentially pathogenic to health.[93] Increasingly the view that Aboriginal cultures are heterogeneous, dynamic, complex and may potentially have positive impacts on Aboriginal health and well-being has been embraced and examined. These studies have typically focused on three indicators of culture, namely traditional Aboriginal spirituality, traditional Aboriginal activities, and Aboriginal cultural identity. Recent research in these areas will now be briefly reviewed with a focus on mental health and addictive outcomes.

Traditional Spirituality

The Royal Commission on Aboriginal Peoples (RCAP) describes Aboriginal spirituality not as a system of beliefs that can be defined like a religion, but as a way of life that perceives the material world and all human behaviour as infused

in spirit.[107] This recognition is accompanied by rules of behaviour for individuals and communities that stress balance in one's life and living a life in harmony with, and in connection to, both others and the natural forces that surround the self. Research suggests traditional spirituality may play an important role in the psychological health of Aboriginal peoples. For example, a study of Aboriginal adults living on or near reservations in the US found no relationship between Christian beliefs and suicide, but a strong and persistent protective effect against suicide for those with an Aboriginal spiritual orientation that remained after sociodemographic, psychological, and substance use covariates were controlled in statistical models.[108] Their factor analyzed scale measured the degree to which respondents recognized the "connectedness of humans to all other physical and transcendental entities" (p. 1573).[108] A number of other studies have similarly found that traditional Aboriginal spirituality is protective against alcohol/drug abuse and alcohol cessation in various samples of Aboriginal peoples living within Aboriginal communities.[88-90,109] Aboriginal spirituality may reduce self destructive behaviour by emphasizing the importance of balance in one's life and by promoting a sense of connectedness among all things that can reduce feelings of isolation. It has also been argued that traditional spirituality may also provide a framework of meaning that Aboriginal peoples can use to make sense of suffering in their lives.[111]

Traditional Activities

Language is often regarded as one of the most tangible symbols of a culture. Indigenous language connects Aboriginal people with their past, shapes the way they perceive and interpret the world, and permits the passing of traditional knowledge from one generation to the next. RCAP states that a key component in the creation of healthy Aboriginal individuals and communities is the revitalization of traditional languages and notes that cultural retention is especially vigorous in Aboriginal communities where the traditional language remains strong.[107] The 2006 Census indicates that 29% of First Nation, 4% of Métis, and 69% of Inuit Canadians could converse in an Aboriginal language, and many who could not expressed a desire to learn.[112] An important recent study that extended the work of Chandler and Lalonde found youth suicide effectively dropped to zero in the few communities in which at least half the band members reported a conversational knowledge of their own Native language.[113]

However, most studies that examine the protective effects of language do so by including it as part of a scale of cultural activities. Other activities often include participation in traditional crafts like beading, attendance at cultural events, and activities on the land. RCAP states that the reinstatement of activities on the land such as powwows, hunting, and the gathering wild medicines are important because much of the traditional knowledge is transmitted during the practice of cultural and land-based activities which are needed to create the context to share specific teachings and stories.[107] Studies that have used combined measures of

cultural activities have found such cultural participant is protective effects against suicide ideation, depression, and alcohol/drug abuse, although the impact does not appear to be as powerful as traditional spirituality in reducing these problems[88,109,110,114,115] Traditional activities may reduce self destructive behaviours by re-establishing the importance of family and community in Aboriginal society and the conception of the individual's responsibility to the collective, as well as the collective's responsibility to care for its more vulnerable members.[107]

Cultural Identity

Cultural identity refers to one's perceptions about being Aboriginal and the sense of importance or attachment to an Aboriginal group.[116] Aboriginal enculturative studies have typically examined cultural identity as a construct separate from traditional spirituality and activities. Findings to date indicate the protective effects of cultural identity on self-destructive behaviours to be mixed. Some studies have found that a strong Aboriginal cultural identity is associated with reduced alcohol/drug abuse and suicide ideation, while other have found no effect.[89,114]

In summary, traditional spirituality, and to a lesser extent, traditional activities appear to be protective factors that may be protective against addictive behaviours and other mental health problems among Aboriginal people; while findings related to cultural identity have been mixed. A limitation of studies examining the impact of enculturation on addiction has been a focus on Aboriginal people living within or near First Nations communities in North America. Research is needed to determine the extent to which enculturative practices may be protective for the rapidly growing urban Aboriginal population in Canada.

The Enculturation Hypothesis

This dissertation examined the impacts that Aboriginal enculturation may have on addictive problems among urban Aboriginal Canadians. It was theorized that Aboriginal enculturation would serve as a protective factor against substance use problems by socially 'locating' urban Aboriginal peoples in an environment in which they are frequently dislocated. It was theorized that enculturation would reduce substance use problems *directly* by grounding Aboriginal peoples in a *nomic* world of personal significance, that included teachings about balance and limiting the use of mind altering substances. It was also hypothesized that enculturation would reduce substance problems *indirectly* by improving the psychological well-being of urban Aboriginal peoples (Figure 1-2).

Beyond Protection: Enculturation as a Resiliency Factor

In addition to serving as a protective factor, enculturation was also hypothesized to serve as a resilience factor that would reduce the likelihood of addictive problems in the presence of significant risk producing conditions such as poverty

and low educational attainment (Figure 1-3). A similar model was proposed by Walters and Simoni which suggested that Aboriginal culture might operate as a resilience factor that buffered the negative effects of historical and contemporary trauma on the health of Native American women, although the model was not empirically tested.[117]

Operating on a separate dimension to risk, a *resilience factor* is one that attenuates the strength of an association between a risk factor and outcome.[118] By definition, a resilience factor should be active when individuals face high levels of risk, acting to reduce the likelihood of a negative outcome. When levels of risk are low or controlled using statistical techniques, resilience is unnecessary and therefore dormant, and should not act to change the strength of an association between a risk factor and adverse outcome.[119] That is *not* what was hypothesized in the present study. Instead it was hypothesized that by providing Aboriginal peoples with a nomic world of personal significance and improving psychological well-being, enculturation would serve as a protective factor in low risk situations in addition to conferring resilience in situations of risk.

Given a resiliency hypothesis is an interaction hypothesis enculturation as a potential resiliency factor was examined using statistical interaction testing.[118] Unfortunately the substantive literature is replete with contradictory advice and confusion about the best way to test hypotheses that include interactions.[123] The most frequently endorsed approach when variables are continuous is the method recommended by Cohen and colleagues.[120, 121] It involves calculating two R^2 values, one for the main-effects-only model, and another with the product term added, with an interaction present if the difference between the two R^2 values is statistically significant using a hierarchical F test.[120, 121] This is the method that was used to test for interactions throughout this dissertation, including the testing of resiliency factors.

Aboriginal Enculturation and Gambling Problems

While enculturation was hypothesized to serve as a protective and resiliency factor for substance use problems, this premise was not extended to problem gambling. Games of chance were part of many North American Aboriginal cultures before European contact.[122, 123] While gambling for monetary gain was discouraged, gambling now occurs in a markedly different socio-political and economic context with different meanings and consequences for these populations.[124, 125] While participating in gambling activities continues to be part of the social fabric in many Aboriginal communities sanctions against gambling for personal gain have been weakened by the process of colonization and are no longer consistently understood. These changes coupled with high rates of Aboriginal unemployment and poverty have created a pull toward gambling for the chance it may offer to make ends meet and to escape one's problems. As a result, those who are highly immersed in Aboriginal social networks may gamble frequently, and those searching for ways to cope with social dislocation and

poverty may seek out gambling given it is often a more culturally acceptable form of addictive behaviour than substance use. As a result, the extent to which enculturation functioned as a protective factor for gambling problems was not examined in this dissertation.

Acculturation

Acculturation defines the degree to which minority groups identify with, feel a sense of pride for, and integrate the values and practices of mainstream culture.[126] Research suggests acculturation can enhance well-being and health,[126, 127] however most of this work has focused on immigrant groups who in most cases, do not have long-standing historical grievances with Canadian settler society. The idea that acculturation may be similarly protective for colonized Aboriginal populations is complicated by both the historical and current mistreatment of Aboriginal peoples by the settler societies who colonized their homeland. Discrimination, the loss of land and culture, forced assimilation policies, and an ongoing media emphasis on negative Aboriginal anecdotes and stereotypes have resulted in a valid distrust of the settler society that can be difficult for Aboriginal peoples to surmount. Thus, acculturation is not a hypothesized correlate of addictive behaviour among Canadians who identify as First Nation or Aboriginal in this work.

Measuring Culture

Key limitations of studies that have attempted to examine associations between Aboriginal culture and health include the use of measures that ignore the cultural heterogeneity of Aboriginal peoples and/or view the uptake of mainstream culture as necessarily accompanied by the loss Aboriginal culture, effectively ignoring the potential multidimensional nature of these concepts.[93] In this dissertation enculturation and acculturation was operationalized and measured using the Vancouver Index to circumvent these problems. This measure examines the degree to which Aboriginal peoples identify with mainstream culture and their own heritage culture on separate scales.[126] Questions permit cultural heterogeneity by asking participants how often they practice the traditions of their heritage culture and mainstream culture as they define them. I included additional open-ended questions to determine the values and activities that participants had used to determine their own level of enculturation and acculturation in the specific space and time that the data were collected.

Given two separate datasets were collected for this dissertation, one from urban Aboriginal university students, and one from Aboriginal adults living in Edmonton more generally, an alternative approach to the measurement of culture may have been to use the open-ended findings collected in the first study to build a measure of enculturation for use with the second sample. However, this method would have not only essentialized Aboriginal identity, values and practice; it

would have missed differences in the value placed on Aboriginal language as an enculturative behaviour among Aboriginal university students compared to those living in the urban community more broadly.

A second approach may have been to conduct a pilot study with Aboriginal people in Edmonton more generally and build a measure of enculturation based on behaviours identified in that survey. However, this method would have also essentialized Aboriginal culture, and may have missed important components of enculturation given the problems inherent in obtaining random, representative samples of Aboriginal peoples in urban areas to generalize from. Further, if a random sample was obtained and generalizable information collected, use of the instrument would be limited by place and time, as it is likely that what it means to be an enculturated urban Aboriginal person varies by city depending on the various Aboriginal groups that live in the surroundings areas and/or are attracted to a city. Further, as noted by Kirmayer, cultures, including Aboriginal cultures, are "…in constant contestation, invention, and renegotiation by members of a community in dialogue with other cultures, and with global systems of knowledge and practice" (p. 20). [56]

As Aboriginal Canadians continue to migrate to cities in increasing numbers they will shape, define and redefine what it means to be an enculturated urban Aboriginal person. Enculturation, in its various forms, may serve as an important protective factor for this rapidly growing urban-based population. It may be that academics can better serve this community by recognizing and acknowledging the potential protective effects of culture, and by using methods that respect the dynamic and heterogeneous nature of culture, rather than essentializing and defining what Aboriginal enculturation does or does not encompass for urban Aboriginal populations.

Summary of Hypotheses

In summary, two sets of hypotheses were proposed for urban Aboriginal adults in this dissertation. First, it was hypothesized that:

(1) Enculturation would be negatively associated with substance use problems.
(2) Enculturation would be positively associated with autonomy, competence and relatedness; and these psychological factors would partially mediate the association between enculturation and substance use problems.
(3) Enculturation would interact with significant risk producing conditions to weaken their effect on substance use problems.

In a second set of hypotheses it was predicted that:

(4) Urban Aboriginal peoples would experience high levels of racial discrimination.

(5) Racial discrimination would be positively associated with addictive problems.
(6) Racial discrimination would be positively associated with PTSD symptoms, and on the view that addictive behaviours provide a way to minimize negative affect associated with racial discrimination; PTSD symptoms would partially mediate the association between racial discrimination and addictive problems.

Overview of Methodology

Choice of study design is, to a certain extent, dependent on the amount that is already known about the determinants of a particular health outcome for a population under study. Given little is known about the extent to which enculturation and racial discrimination are associated with addictions among urban Aboriginal peoples in Canada it was determined that a prudent approach would be to employ a study design that was relatively inexpensive, that did not require an extended period of time to conduct, and that could generate hypotheses to test in more rigorous study designs. A case control study design was considered for the present work given it meets these criteria. However, the complexity of selecting suitable control groups for multiple outcomes defined by symptoms rather than biomarkers, and based within a population for whom the target outcomes were expected to be highly prevalent were key concerns. Further, the key advantage that a case control study would offer over a cross-sectional study could not be maximized in the present work given incident cases of addiction are difficult to identify accurately. Thus, an analytic cross-sectional study design was selected, with exposures and outcomes measured simultaneously in two community-based samples. Non-probability sampling was used as probability samples would have been cost prohibitive to collect given the size of the Aboriginal population in Edmonton relative to the general population.

This dissertation was written in paper format. Each of four papers includes its own introduction, methods, results and discussion so that each may be submitted for publication. The purpose of **Paper 1** was to conduct an initial test of *Hypothesis 1*. A cross-sectional study design was used to examine if enculturation was inversely associated with alcohol problems in a model adjusted for confounders using a small urban sample ($N = 60$) collected in 2008-09 as part of this dissertation.

Paper 2 tested *Hypothesis 4* by examining the extent to which the same group of Aboriginal university students experienced racial discrimination. Psychological reactions to these experiences were also explored using qualitative methods.

Paper 3 tested *Hypotheses 4 to 6* by examining the extent of racial discrimination experienced within a larger, more representative cross-sectional sample of urban Aboriginal adults living in Edmonton ($N = 381$) that was collected in 2010 as part of this dissertation. The target outcome in this paper was gambling problems.

Paper 4 examined *Hypothesis 1 to 6* with a focus on illicit and prescription drug problems in the larger, more representative sample of urban Aboriginal adults collected for this dissertation (*N* = 381).

Sample 1
Aboriginal University Students

Sampling and Procedure

An in-person survey was administered to a volunteer sample of students at the University of Alberta who lived in Edmonton and self identified as Aboriginal, Métis or Inuit (*N* = 60). An urban Aboriginal Advisory Committee made up of key members of the Aboriginal and Métis community in Edmonton was organized one year prior to data collection. Together we determined how constructs would be defined in this study, measures that would be used, how data would be collected and how participants would be compensated for their time. Data were collected over a 6-month period in 2008-09. Participants were recruited using posters on campus and ads in student e-newsletters. Written consent was obtained from all participants. The study was reviewed and approved by the Human Research Ethics Board at the University of Alberta. All students completed a questionnaire package by hand. It was determined a priori that the first half of the sample would be asked additional open-ended questions about enculturation and acculturation in an interview format after the written survey was completed. These questions were asked in the same order for all participants. Two thirds of the sample chose to write down their answers during the interview while a third opted to have the interviewer write them down (mean completion time = 20 minutes). Each participant was given an honorarium of $50 for his or her time.

Sample Description

Most students were undergraduates who self identified as First Nation or Aboriginal. The majority had lived in urban settings for 10 or more years and visited Aboriginal communities infrequently. More than a third lived in poverty with household incomes under $20,000 per year.

Analytic Strategy

A content analysis was used to categorize responses to open-ended questions about culture and racial discrimination. Descriptive statistics were used to examine the extent to which participants' experienced addictive problems. Linear regression models were used to characterize associations between enculturation, acculturation and alcohol use problems among Aboriginal university students, as well as the extent to which students who practiced Aboriginal culture experienced racism adjusting for confounders. The sample size could not accommodate mediational testing.

Sample 2
Urban Aboriginal Adults

Sampling and Procedure

An in-person survey was administered to a volunteer sample of adults who lived in Edmonton and self identified as Aboriginal, Métis or Inuit (*N* = 381). Participants were recruited using posters placed in the offices of Aboriginal organizations and organizations offering various services such as child care; educational, employment, and housing opportunities; and general publicly used spaces such as grocery stores and shopping malls. Ads in community newspapers and e-newsletters distributed by Aboriginal organizations and organizations frequently accessed by Aboriginal peoples were also used. The range and breadth of organizations and public spaces in which the study was advertised was carefully considered before and during data collection, taking into consideration the sociodemographic profile and geographic distribution of Aboriginal peoples in Edmonton.

Sample recruitment and data collection took place between May and December 2010. Written consent was obtained from all participants. Study procedures and survey instruments were reviewed and approved by the Human Research Ethics Board at the University of Alberta and the Aboriginal Advisory Committee commissioned for the project. All participants completed the questionnaire package by hand (mean completion time = 70 minutes). The survey package included questions to answer the research hypotheses of this dissertation, as well as research hypotheses that extend outside the scope of the present work. Each participant was given an honorarium of $25 for his or her time.

Sample Description

Participants had a mean age of 35.2 years (*SD* = 11.5, *range* = 18 to 79 years). Most identified as First Nations or Aboriginal and more than three quarters (77%) had Registered Indian Status. The sample included approximately 20% more women than men, which is consistent with the gender distribution of Aboriginal peoples in Edmonton.[128] The reported household income and educational attainment of participants also matched population-based estimates, however a large proportion of the sample did not disclose their income and there were more unmarried and unemployed participants then would be expected if random sampling had been used. On average participants had been living in Edmonton for 15 years (*SD* = 12.3, *range* = 0.8 to 60 years). About 70% lived in the 11 traffic zones designated as inner city by the City of Edmonton, which is somewhat higher than the actual percentage of the Aboriginal population who live in this area (62.5%).[128] About a quarter of the sample had never lived in poverty, while about 30% had lived in poverty all their lives.

Analytic Strategy

The larger sample collected for Sample 2 allowed more complex and informative statistical models to be examined. The degree to which racial discrimination was associated with each drug problem and problem gambling; and support for mediation by PTSD symptomology were examined using bootstrapped linear regression models; with a continuous outcome and 95% confidence intervals (k = 5000). Similarly, the degree to which enculturation and acculturation were associated with drug problem scores; and support for mediation by psychological well-being were examined using bootstrapped linear regression models with a continuous outcome and 95% confidence intervals (k = 5000).

Models were adjusted for the potential confounding effects of covariates selected *a priori* based on existing literature and findings from Sample 1. These included age, gender, marital status, unemployment status, and life course poverty. Models were also adjusted for childhood trauma given documented associations between these experiences and PTSD; as well as drug and gambling problems in the literature.[129-130] Potential statistical interactions between covariates were first examined using graphical representations and loess curves.[131] Graphical representations that suggested an interaction were tested by forming a product term and calculating two R^2 values, one for the main-effects-only model, and another with the product term added, with an interaction deemed present if the difference between the two R^2 values was statistically significant using a hierarchical F test.[132, 133]

Mediational Analysis

Mediators are mechanisms that explain how one variable affects another.[132] Mediation testing was an important component of the analysis strategy for Sample 2. PTSD symptomology was hypothesized to be a mechanism through which racial discrimination affected each drug problem and gambling problems (Figure 1-1). In a separate mediational analysis autonomy, competence, and relatedness, entered as one block into the analysis, were hypothesized as mechanisms through which enculturation might partially reduce drug problems (Figure 1-2).

In both cases, mediation was examined using a non-parametric bootstrapped multivariate approach to the cross-products of coefficients method developed by Preacher and Hayes.[136, 137] This method avoids a key problem implicit in the standard approach to mediation testing developed by Baron and Kenny in 1986. The Baron and Kenny method examines changes in the size of the *c* path estimate when the variance provided by the *a* and *b* path are removed (termed the *c'* path).[135] If an exposure variable has a strong effect on a mediator (the *a* pathway), there may be limited opportunity for the mediator to be significantly associated with the outcome (the *b* pathway) due to the mutuality of the *a* and *b* paths when this method is used.[133,134] The cross product of the coefficients test that is typically used is the Sobel (1982) which is overly sensitive to violations of normality

making it too conservative with small to moderately sized samples.[136, 137] Thus, rather than use a Sobel test, the Preacher and Hayes approach was used, which determines statistical significance non-parametrically, thus requiring no assumptions regarding underlying sample distributions.[133]

A total of 5,000 random samples of the original size were taken from the data with replacement, and the indirect effect (*a*b*) computed for each sample. The point estimate of the indirect effect was the mean *a*b* value computed over the samples, with 95% confidence intervals derived from the obtained distribution of *a*b* scores.[133, 134] If the upper and lower bounds of these bias corrected confidence intervals did not contain zero, the indirect effect was considered significant. Only values that reached conventional levels of significance ($p \leq 0.05$) were interpreted, unless otherwise indicated.

Figure 1-1. Hypothesized mediational pathway

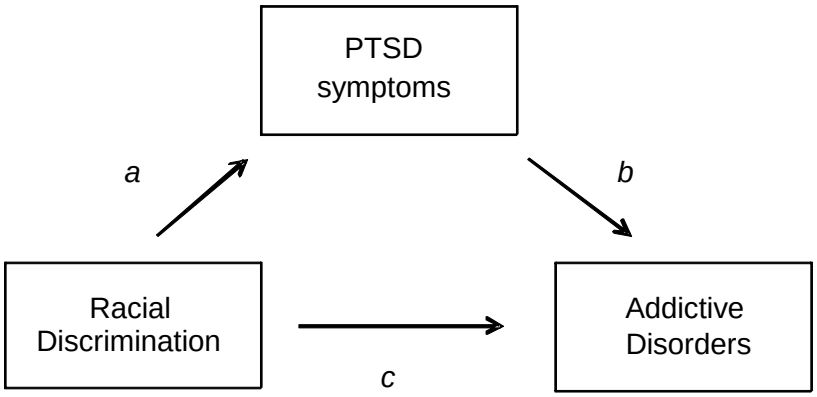


Figure 1-2. Enculturation and substance use problems: Hypothesized partial mediational pathway

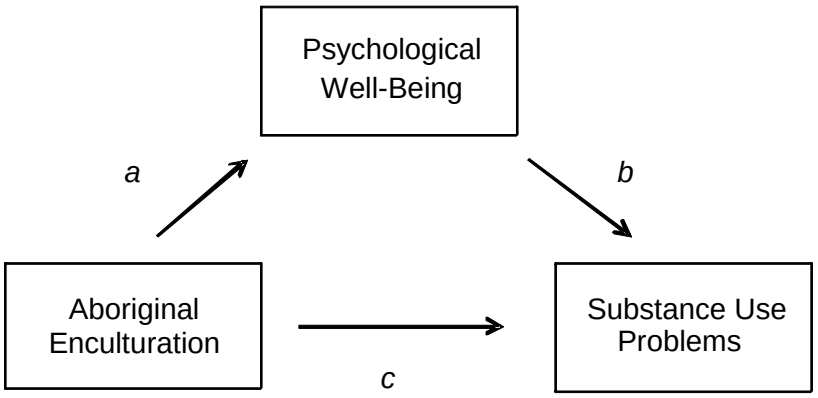
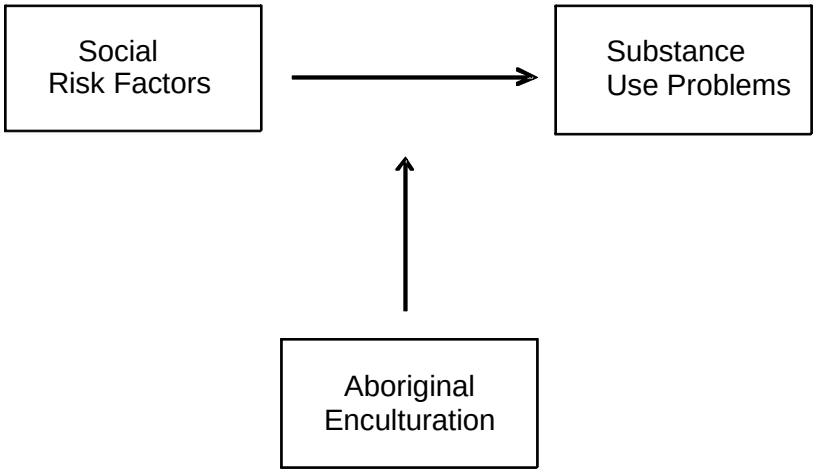


Figure 1-3. Aboriginal enculturation as a resiliency factor for substance use problems



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CHAPTER 2

Enculturation and Alcohol Use Problems among Aboriginal University Students[‡]

Introduction

Aboriginal populations in Canada remain in a long-standing position of severe social and economic disadvantage.[1, 2] Increasing the numbers of Aboriginal people who complete postsecondary training is critical to improving the employment prospects, economic well being and health of this growing population.[3] Currently 8% of Aboriginal peoples hold university degrees in Canada compared to 22% of the non-Aboriginal population.[4] While Aboriginal enrolment rates are increasing, retention remains a concern.[3]

Alcohol use problems are a considerable public health problem among university students and a well-documented impediment to academic retention and success regardless of ethnic background.[5-7] Research has documented an inverse association between college grade point average and the number of drinks consumed per week.[8] Heavy drinking is also a reliable predictor of student attrition.[5] A better understanding of the factors that protect Aboriginal students from engaging in harmful alcohol use may inform programs aimed at strengthening postsecondary retention rates.

A factor of particular interest is culture. Enculturation and acculturation describe the degree to which Aboriginal peoples identify with, feel a sense of pride for, and integrate the values and norms of their Aboriginal heritage culture and mainstream culture respectively.[9] High levels of enculturation have been shown to enhance mental health and reduce alcohol use problems in various ethnic groups, including Aboriginal populations.[9-14] A limitation of this research has been an overriding focus on First Nations communities, effectively excluding the large and rapidly growing urban Aboriginal population in Canada, of which Aboriginal university students are a part.

A study examining alcohol use found Aboriginal university students who were highly enculturated *used alcohol* less frequently than other students.[15] The degree to which enculturation is also associated with reduced *alcohol problems* remains unknown and is of interest given the documented relation between problematic alcohol use and university attrition in other populations.[5] Thus, the primary

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objective of this study was to examine whether enculturation was protective for alcohol problems among Aboriginal university students living in an urban centre. Research in other ethnic groups suggests mainstream acculturation may also enhance well-being. To date this research has focused on immigrant groups who for the most part, do not have long-standing historical grievances with Canadian settler society.[16, 17] The idea that acculturation may be similarly protective for colonized Indigenous populations is complicated by the current and historical mistreatment of Aboriginal peoples by the settler societies who migrated to their homeland. In Canada, forced assimilative policies and practices, the loss of land, racial discrimination and an ongoing media emphasis on negative Aboriginal stereotypes and anecdotes have resulted in a valid distrust of the settler society that can be difficult to surmount. A second objective of this study was to explore whether mainstream acculturation would protect Aboriginal students from alcohol problems given this social context.

Method

Sampling and Procedure

An in-person survey was administered to a volunteer sample of students at the University of Alberta who lived in Edmonton and self identified as Aboriginal, Métis or Inuit. An urban Aboriginal Advisory Committee made up of key members of the Aboriginal and Métis community in Edmonton was organized one year prior to data collection. Together we determined how constructs would be defined in this study, measures that would be used, how data would be collected and how participants would be compensated for their time. Among other useful suggestions, the Committee recommended participants be given the option to self-identify as Inuit, Métis, First Nation, *or* Aboriginal, as some individuals living in cities who are First Nations but are not affiliated with a specific First Nations community or do not have Registered Indian Status may prefer to self-identify as Aboriginal.

Data were collected over a 6-month period in 2008-09. Participants were recruited using posters and ads in student e-newsletters. Written consent was obtained from all participants. The study was reviewed and approved by the Human Research Ethics Board at the University of Alberta. All students completed the Vancouver Index, the AUDIT and demographic questions by hand (mean completion time = 20 minutes). It was determined a priori that the first half of the sample would be asked additional open-ended questions about enculturation and acculturation in an interview format after the written survey was completed. These questions were asked in the same order for all participants. Two thirds of the sample chose to write down their answers during the interview while a third opted to have the interviewer write them down (mean completion time = 20 minutes). Each participant (N = 60) was given an honorarium of $50 for his or her time.

Exposure Variable

Culture (quantitative measure). While a number of studies have attempted to measure Aboriginal enculturation key limitations have included the use of scales that measure enculturation and acculturation along a single continuum and those that ignore the dynamic and heterogeneous nature of culture.[18] The 20-item Vancouver Index has been used to circumvent these problems in various ethnic groups and has been used extensively across disparate locales.[17, 19] The scale measures enculturation and acculturation on separate continuums and permits cultural heterogeneity by asking individuals to rate the degree to which they adhere to both heritage and mainstream traditions without defining what those traditions should be. In the present study, the heritage and mainstream subscales were used as measures of Aboriginal enculturation and mainstream Canadian acculturation respectively. The Aboriginal Advisory Committee assembled for this project reviewed the measure and deemed the wording of these items culturally appropriate. Enculturation and acculturation subscales were mean centred, with a potential range of 1 to 9. Using reliability generalization, a recent meta analysis reported the average internal consistency for the Vancouver Index across 14 studies was $\alpha = 0.83$ (range: 0.66 to 0.92).[17] In the present sample internal consistency was similarly robust (heritage subscale $\alpha = 0.87$, mainstream subscale $\alpha = 0.81$).

Culture (open-ended measure). A limitation of the Vancouver Index is that it does not provide insight into the personal definitions respondents use to conceptualize culture. For this reason, the present study included additional open-ended questions to shed light on the definitions Aboriginal students used to assess their own levels of enculturation and acculturation. The first half of the sample were asked the following open-ended questions in a face-to face interview format: (1) Thinking about the Aboriginal, Métis or Inuit cultural group that you most identify with, can you name three cultural behaviours or traditions that a traditional Aboriginal person would typically engage in? (2) Thinking about the Aboriginal, Métis or Inuit cultural group that you most identify with, can you name three cultural values that a traditional Aboriginal person would consider important? (3) Can you name three cultural behaviours or traditions that a typical Canadian person would engage in? (4) Can you name three cultural values that a typical Canadian person would consider important? Students were then asked to comment on the personal significance of each behaviour/value they named by responding to the following question: (5) Why is [behaviour or value] important or not important to you?

Outcome Variable

Alcohol Problem Score. Alcohol problems were assessed using the Alcohol Use Disorders Identification Test (AUDIT), a 10-item self-report measure developed

by the World Health Organization for detecting alcohol use problems.[20] The AUDIT has been used across a variety of countries and cultures and correlates positively with biochemical measures of alcohol misuse.[21, 22] Scores range from 1 to 40. A cut-off of ≥8 has a sensitivity of 0.82 and a specificity of 0.78 to detect alcohol use problems among post secondary students.[23] Appropriate cut-off scores for Aboriginal populations have not yet been established and may be different. The internal consistency of full-scale AUDIT scores in the present study was excellent ($\alpha = 0.88$).

Demographics

Gender and exact age were measured, as well as Aboriginal group across four categories, income across five categories, marital status, and education across two categories. Given the urban focus of this study students were also asked how long they had lived in an urban setting and how frequently they visited First Nations communities in the past year.

Analytic Strategy

A linear regression model was used to examine whether enculturation and acculturation scores were associated with alcohol problem score. First, enculturation was added to provide an unadjusted estimate of the association between this key hypothesized independent variable and alcohol score. Second, acculturation was added, followed by potential confounders (age, gender, frequency of visits to First Nations communities identified a priori as potential confounding variables). There were no significant interactions between these covariates. The model was not adjusted for education given similarities across students, or income given one in four students did not report it. Due to the small sample size stratification by Aboriginal group (e.g., First Nations, Métis) was not possible. The significance level was set at $p < 0.05$ level. All statistical analyses were performed using SPSS 18.0.

A content analysis was used to categorize responses to the four main open-ended questions.[24] To account for the data in a meaningful yet manageable way, the number of categories was restricted to the four most frequently cited cultural behaviours and three most frequently cited cultural values for both Aboriginal and Canadian questions.[24] Additional open-ended comments about the personal significance of named behaviours and values did not add to the categories identified, but did provide additional depth given responses to the first four open-ended questions were typically short (1 to 4 words). To ensure statements could not be linked back to the data, participants were assigned identifiers based on the order in which they were cited in the text.

Results

Sample Description

Most students were undergraduates who self identified as First Nation or Aboriginal (Table 2-1). The majority had lived in urban settings for 10 or more years and visited Aboriginal communities infrequently. More than a third lived in poverty with household incomes under $20,000 per year. Approximately 17% reported alcohol abstinence in the past year. However, many who consumed alcohol did so at harmful levels. The mean AUDIT score for the full sample was 7.85 (SD = 6.75, range = 0 to 28).

To provide context related to alcohol score, the sample was divided into quartiles based on their score on the AUDIT. Students whose AUDIT scores fell within the first two quartiles (i.e., ≤ 6) consumed alcohol monthly or less, consumed approximately 1 to 4 drinks when drinking, and had not experienced alcohol blackouts, problems trying to stop drinking once they started, or problems doing what was normally expected of them due to drinking over the past year. In contrast, students whose AUDIT score was above 6 consumed alcohol biweekly or more, consumed 5-9 drinks when drinking, and had experienced alcohol blackouts, problems trying to stop drinking once they started, and problems doing what was normally expected of them due to drinking over the past year.

Quantitative Findings

Overall, students evidenced high levels of enculturation (mean = 7.61, SD = 1.22, range = 3.8 to 9.0) and acculturation (mean = 7.02, SD = 1.15, range = 4.3 to 9.0). These cultural constructs were statistically independent of one another (Pearson's $r = 0.12$, $P = 0.35$). In the full model Aboriginal enculturation and male gender were the strongest predictors of alcohol problems (Table 2-2). For every 1-point increase in enculturation, AUDIT scores decreased almost two full points. As well, the mean AUDIT score for males averaged almost 5 points higher than females. The full model explained 25% of the variance in alcohol problem scores among Aboriginal students ($F = 4.52$, residual $df = 53$, $p = 0.002$). Mainstream acculturation was not significantly associated with AUDIT score.

Descriptions of Culture

Consistent with quantitative findings, open-ended comments suggest many students viewed themselves as highly enculturated and acculturated, with a somewhat stronger emphasis on Aboriginal culture:

> I'm a hybrid. I conform to daily life, but when it comes to seeking help for myself I fall back on my peoples traditions to guide me. (P1)

When asked to name the cultural values that a traditional Aboriginal person would consider important students named respecting and helping others most often

(Table 2-3). Several students also cited respecting Elders and following their advice and respecting the natural environment. When asked to name cultural behaviours that a traditional person would engage in, all students named Aboriginal ceremonies such as the Sun Dance, sweat lodge or smudging. When asked why Aboriginal ceremonies were or were not important in their own lives, students indicated these ceremonies helped them cope with stress, achieve balance and connect with others:

> When I engage in ceremony I find balance in life, in school. Ceremonies connect you to your culture. You feel comfortable there with your own people all trying to unite and become healthier in the traditional way. (P2)
>
> The four areas of my life; spiritual, mental, physical and emotional are all balanced. Purification ceremonies provide me with a balanced spiritual connection. I attend sweats regularly and would go more often if I had the choice. They are revitalizing and uplifting (P3).

Smudging was often cited as a ceremonial activity that was more accessible in an urban environment:

> I find it hard to get to sweats with no car, which is a traditional practice, but I smudge sage or sweet grass just about every day" (P4).
>
> There is a smudging room on campus so I smudge three times a week when I need to relax and get in touch with myself - when things get too hectic. (P1)

Students also noted that it was not the frequency in which they participated in Aboriginal ceremony that was important but whether these rituals were available when they needed them:

> I go to sweats because I personally have to deal with something – I personally feel the need to go. The behaviour [going to sweats] helps you achieve something you need – guidance or strength. (P5)

Another frequently cited cultural activity was speaking an Aboriginal language. Students deemed language an essential part of cultural practice because it connected individuals to teachings that would be otherwise difficult to access:

> Language connects us to the culture, allowing us to understand the hidden nuances and insights of traditional knowledge (P3).
>
> I can communicate with my grandma and other elders on my reserve and hear their stories. It gives me the unique sense that I have a language of my own and I don't have to conform to the masses. (P2)

Attending Aboriginal events was also frequently cited. Many students commented on the importance of these events in their own lives:

> I love powwows – been dancing all my life. It keeps me busy on weekends in winter. Instead of going to parties, I go to round dances. (P8)

When asked about typical Canadian values most named individualism and materialism. Their statements described the impacts that the emphasis on these values in urban centres had on Aboriginal students:

> Students come to a city and have no support system due to the individualistic climate, so they go home, then come back. They end up constantly moving back and forth. (P9)

> I changed when I moved to the city. I never used to care about having things when I lived outside the city, but when I moved here in high school I got teased. Since then it's been important. I don't want people to think I can't afford things. (P5)

Several students also cited achieving a formal education as a key Canadian value. As students themselves, some discussed the ways they had internalized this value, while others reflected on the conflictual nature of formal education in their lives:

> I was brought up believing that as an Aboriginal person we have to balance the two worlds to be successful. We can't just favour one. Education is the 'modern buffalo'. It will feed us and put a roof over our head. We have to be strong in the mainstream world while having a strong self-definition of who we are spiritually, mentally and physically as Aboriginal peoples. (P10)

> When I was growing up in residential school…it was really difficult to try and fit in the system due to both discrimination and trying to understand the white culture. When I came to university I constantly had to say positive things to myself. It started up that old internal dialogue that I'm not good enough that I had when I was a kid. But I try to keep my focus about why I'm here at university – to learn about the history of what happened to my people. (P11)

There was less consensus on what it meant to practice Canadian culture. One in two students cited watching or playing hockey or other sports. Other activities included going to church, going to bars or pubs and being overly formal and polite when interacting with others. As explained by one student:

> First Nations culture is more laid back. Our conversations are more fluid, like a circle. It's not the formal stop and go, talk then listen structure of conversation typical in Canadian society. (P12)

Discussion

Alcohol use problems are a considerable public health problem among university students and a well-documented impediment to university retention and success, regardless of ethnic background.[25-27] Previous research suggests Aboriginal enculturation is associated with reduced alcohol use among Aboriginal university students.[15] The present study builds on these findings by documenting that

Aboriginal enculturation is also associated with reduced alcohol problems among Aboriginal university students. Results indicate that for every 1-point increase in Aboriginal enculturation (to a maximum of 9) AUDIT scores decrease almost 2 full points. This is a significant reduction given alcohol problems are typically defined by AUDIT scores of just 8 or more. Findings also indicate that Canadian acculturation was not associated with alcohol problems among Aboriginal students.

Why is Aboriginal Enculturation Protective?

Aboriginal enculturation may have both direct and indirect impacts on alcohol problems. Participants in this study described Aboriginal ceremonies as a key component of cultural practice. Participation in these ceremonies may have a direct effect on alcohol problems given they are often based on spiritual practices that prohibit alcohol use or recommend moderation. Enculturation may also have indirect effects by reducing motivations to drink. The alcohol literature has identified several motives for alcohol use including the need to cope, enhance mood and obtain social rewards.[28, 29] The present findings suggest students were able to meet those needs through cultural practice. Students described turning to cultural traditions when they 'personally had to deal with something', 'when things get too hectic' and to 'be connected with others'. Others described cultural participation as 'revitalizing', 'uplifting' and 'rejuvenating'.

Differences in the peer networks of highly enculturated students may also account for the observed protective effects of Aboriginal culture as these networks would include more individuals who avoid alcohol or practice moderate use. This would result in less active offers of alcohol and less modeling of alcohol misuse. Highly enculturated students may also feel less pressure to conform to university drinking norms because they perceive their salient social referents drink less than other students. Further research is needed to test these potential explanations before more definitive conclusions can be made.

Overall, these findings add support to a growing body of research indicating Aboriginal language; culture and spirituality are key sources of individual and collective healing and resilience for Aboriginal peoples.[31-34] These results support the growth of programs and services that provide a culturally supportive environment to Aboriginal students at university. Further research is needed to test the generalizability of these findings to other urban Aboriginal populations and other substance use problems (e.g., illicit and prescription drug misuse).

Strengths of this study include guidance by an Aboriginal Advisory Committee, use of measures of enculturation and acculturation that recognize the dynamic nature of culture, and the inclusion of open-ended questions that examine how participants self-defined cultural values and practice. Limitations include use of a cross-sectional design and a small volunteer sample. While the sample was made

up of more women than men, this may not be a limitation as Aboriginal women are more likely to pursue university training than their male counterparts in Canada.[35]

Conclusions

The present findings address a gap in the literature and are the first to provide empirical support for the idea that enculturation may protect Aboriginal university students against alcohol problems in Canada. These results support the growth of programs and services that encourage Aboriginal students to maintain their cultural identity within the university and urban setting.

Table 2-1. Characteristics of the study sample

Characteristic	Total *N* (%)
Total sample	60 (100)
Aboriginal Group	
First Nation	33 (55.9)
Métis	13 (22.0)
Aboriginal	10 (16.9)
Inuit	3 (5.1)
Gender	
Female	42 (70.0)
Male	18 (30.0)
Age, y	
18-24	29 (50.0)
25-34	19 (32.8)
35-44	10 (17.2)
Marital Status	
Never married	38 (64.4)
Currently or ever married	21 (35.6)
Education Status	
Undergraduate student	53 (88.3)
Graduate student	7 (11.7)
Household Income	
<$10,000	10 (16.7)
$10,000-$19,999	12 (20.0)
$20,000-$29,999	6 (10.0)
>$30,000	18 (30.0)
Don't know or want to say	14 (23.3)
Visit First Nations Communities	
Never	5 (9.1)
A few times a year	31 (56.4)
A few times a month	14 (25.5)
A few times a week	5 (9.1)
AUDIT Score (Quartiles)	
Q1: AUDIT score 0-2	15 (25.0)
Q2: AUDIT score 3-6	16 (26.7)
Q3: AUDIT score 7-12	16 (26.7)
Q4: AUDIT score 13+	13 (21.7)
Alcohol Problems	
No alcohol problems	35 (58.3)
High risk drinking (AUDIT score 8-19)	19 (31.7)
Potential alcohol dependence (AUDIT score ≥20)	6 (10.0)

Table 2-2. Linear regression model predicting alcohol use (AUDIT) scores

	b	SE	*β*	*p*	R^2 Change
Step 1					
Constant	20.80	6.28		0.002	0.07
Enculturation	-1.62	0.81	-0.27	0.05	
Step 2					
Constant	13.59	7.85		0.09	0.04
Enculturation	-1.74	0.80	-0.29	0.03	
Acculturation	1.17	0.78	0.20	0.14	
Step 3					
Constant	22.20	7.64		0.006	0.21
Enculturation	-1.96	0.82	-0.33	0.02	
Acculturation	-0.44	0.81	-0.08	0.59	
Age	-0.18	0.09	-0.24	0.06	
Gender	4.89	2.20	0.32	0.02	
Freq of visits to FN	1.32	1.21	0.15	0.28	

Table 2-3. Conceptualizations of culture by Aboriginal university students (*n* = 30)

Qualitative themes organized by open-ended questions	Total *n* (%)
Q1. Cultural behaviours that a traditional Aboriginal person would typically engage in?	
Attending Aboriginal ceremonies (e.g., Sweat Lodge, Sun Dance)	30 (100)
Speaking an Aboriginal language or trying to learn	18 (60.0)
Attending Aboriginal cultural events (e.g., round dance, powwow)	18 (60.0)
Assisting and being in close contact with family/friends	15(50.0)
Q2. Cultural values that a traditional Aboriginal person would consider important?	
Respecting and assisting others	20 (66.7)
Respecting Elders and following their advice	13 (43.3)
Respecting the natural environment	11 (36.7)
Q3. Cultural behaviours that a typical Canadian would engage in?	
Watching or playing hockey or other sports	14 (46.7)
Going to church	6 (20.0)
Going to pubs/night clubs	4 (13.3)
Being overly polite and formal when interacting with others	4 (13.3)
Q4. Cultural values that a typical Canadian would consider important?	
Materialism	15 (50.0)
Individualism	15 (50.0)
Formal education	6 (20.0)

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Chapter 3

Racial Discrimination Experienced by Canadian Aboriginal University Students*

Introduction

Race as a concept refers to a form of social categorization based on phenotypic characteristics, the salience of which shifts across place and time.[1, 2] Although there are no clear biologic criteria to formulate or support a valid and reliable taxonomy of race, as a social construct race continues to be used not only to classify human variation, but to justify the exploitation of groups defined as inferior.[1, 3] The term racism refers to an ideology that ranks some groups as inherently inferior to others and supports the social norms and institutions that implement this ideology.[4] Racism leads to the development and maintenance of negative attitudes and beliefs about certain groups (racial prejudice), as well as unfair treatment directed at those perceived to be part of a stigmatized racial group (racial discrimination). Targets are aware of some of the discriminatory behavior directed at them, with these perceptions generating significant levels of stress.[5] Longitudinal studies have prospectively linked perceived racial discrimination to an array of adverse outcomes including the incidence of substance use disorders and other forms of mental illness, breast cancer, uterine myomas, obesity and coronary artery calcification.[6-9] The impetus for much of this research has been the drive to explain the large and persistent racial health disparities observed in the United States. A growing number of US researchers now attribute the health disparities experienced by African Americans to social stressors, most prominently the experience of racial discrimination.[5, 10-14] Research also suggests a high proportion of urban Aboriginal youth and adults in Australia experience racism, with significant impacts on physical health and mental well-being.[15-17]

In Canada, the degree to which racial discrimination may similarly account for the disproportionate burden of health disparities observed among Aboriginal peoples has received little attention in the scientific literature. The dearth of Canadian research in this area is surprising given traditional risk factors like income, education, employment and lifestyle choices do not adequately account for observed Aboriginal health inequities.[18] Other avenues of inquiry are needed if we are to develop a more comprehensive picture of the mechanisms that underlie these disparities and make informed decisions to reduce them.

The Aboriginal population in Canada now surpasses 1 million and is rapidly urbanizing resulting in increased contact between Aboriginal and non Aboriginal

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peoples.[19] Current evidence suggests approximately 625,000 Aboriginal Canadians live in cities.[20] Historical efforts to keep Aboriginal peoples out of urban areas, such as the creation of reserves and efforts unique to the prairies, such as the pass system which confined First Nations to reserves and required a pass from an Indian agent to leave, have helped reinforce the view that cities are 'modern' spaces reserved for settler societies and the immigrant groups they select to live there.[21, 22] Aboriginal peoples have been considered 'out of place' in urban areas, particularly those who have not relinquished their culture.[23] The choice to leave an Aboriginal community and migrate to the city has often been interpreted as a choice to put aside Aboriginal culture and assimilate into mainstream society.[24] Although these assumptions are being challenged by the growing demographic and cultural presence of Aboriginal peoples in urban areas, emerging research suggests that if there is a single urban Aboriginal experience it is the shared perception that they are stereotyped negatively.[26] A 2009 study of 11 Canadian cities found seven in ten Aboriginal adults had been teased or insulted because of their ethnic background, and more than a third did not feel accepted by non Aboriginal people.[25] The study also polled urban non Aboriginal residents and found many viewed relations with the Aboriginal population in their city as both negative and not improving. Non Aboriginal residents in Edmonton were the most pessimistic about this relationship, with 62% viewing it as negative and 79% not improving.[25]

Edmonton is home to the second largest Aboriginal population in Canada, making relations between Aboriginal and non Aboriginal peoples in this city important at both a local and national level. The city's Aboriginal community has asked for greater learning and sharing between themselves and other willing partners.[26] This study organized an Aboriginal Advisory Committee made up of key members of the Edmonton Aboriginal and Métis community to work collaboratively with researchers to set research priorities, determine the measures that would be used for this study and how data would be collected. It was determined that university students would be the target for the present study given the need to increase the numbers who complete university training.

Currently 8% of Aboriginal peoples hold university degrees compared to 22% of the general Canadian population.[27] While Aboriginal enrolment is increasing retention remains a concern.[28] Racial discrimination may be a social determinant that is particularly relevant for Aboriginal university students given they often live in urban or peri-urban areas as they work to complete their studies. A better understanding of the extent to which Aboriginal university students experience racism can help inform policies and programs aimed at strengthening student retention. The objectives of this study were (1) to examine the extent to which Aboriginal students experienced racism using a validated measure of discrimination and to triangulate this evidence with US data and qualitative findings, (2) determine if the extent to which students had not relinquished their Aboriginal culture partially explained racism frequency, and (3) examine student reactions to the discrimination they were experiencing.

Methods

Data Collection

An urban Aboriginal Advisory Committee made up of key members of the Aboriginal and Métis community in Edmonton was organized one year prior to data collection. Together we determined how constructs would be defined in this study, measures that would be used, how data would be collected and how participants would be compensated for their time. Among other useful suggestions, the Committee recommended participants be given the option to self-identify as Inuit, Métis, First Nation, *or* Aboriginal, as some individuals living in cities who are First Nations but are not affiliated with a specific First Nations community or do not have Registered Indian Status may prefer to self-identify as Aboriginal.

An in-person survey was administered to a volunteer sample of university students, aged 18 to 49, who self identified as Aboriginal, Métis or Inuit and lived within Edmonton. Data were collected over a 6-month period in 2008-09. Participants were recruited using posters and ads in e-newsletters. Written consent was obtained from all participants. The study was approved by the Human Research Ethics Board at the University of Alberta. Participants (N = 60) completed measures by hand in an office on campus and were given an honorarium of $50 for their time.

Study participants for the US sample were drawn from a cohort of working adults, aged 25 to 64, recruited for the United for Health Study.[29-30] The purpose of this study was to examine the health impacts of physical and social risk factors at work for individuals employed in a variety of manufacturing and retail sites in Boston, Massachusetts and surrounding areas in 2003-04. Data were collected via in-person interviews in private rooms at individual worksites. Multiple studies have been published from this cohort. Participants eligible for the present comparative study by Krieger and colleagues had to have been born in the US, have at least 1 parent born in the US, and had to self-identify as Latino or African American.[29] These criteria were employed to distinguish African Americans from those who immigrated from or were first generation immigrants from diverse Caribbean or African nations as perceptions, experiences, and responses to racial discrimination in the US have been shown to differ across these groups.[29] More detailed data collection protocols are available elsewhere.[29-30]

Measures

Racial Discrimination: The Experiences of Discrimination (EOD) Scale measured self-reported discrimination due to Aboriginal race across 9 situations.[29] The situation score counts the number of situations racism was experienced. High discrimination is defined by scores of 3-9, and moderate discrimination by scores of 1-2.[30] The frequency score assigns values of 0, 1, 2.5 and 5 to responses of never, once, 2-3 times and 4 or more times for each situation, respectively.[29] In the present study the internal consistency of each subscale was good ($\alpha = 0.82$ for

each). The Aboriginal Advisory Committee assembled for this project reviewed the measure and deemed the wording of items culturally appropriate. Based on feedback from the first five participants, 9 open-ended questions (one for each situation) were included in the survey package to allow students to share their experiences. For example, students were asked 'Is there anything you would like to share about discrimination experienced at school? '

Covariates

Gender and exact age were measured as well as Aboriginal group across four categories (i.e., First Nations, Métis, Inuit, or Aboriginal). Students were asked if they considered themselves traditional or cultural Aboriginal persons on a 5-point scale from 'not at all' to 'very much'.

Data Analysis

Descriptive analyses were used to examine demographic characteristics and the extent to which students experienced discrimination using SPSS 19. To put findings in context, permission to use data on corresponding variables from a US reference study was obtained.[29] Linear regression models examined if the extent to which students were cultural persons partially explained racism frequency. A content analysis was used to identify qualitative themes.[31] To account for data in a meaningful yet manageable way, the number of situations was restricted to the four commented on most frequently. To ensure statements could not be linked back to the data, participants were assigned identifiers based on the order they were cited in the text.

Results

Sample Description

Most students were undergraduates who self identified as First Nations or Aboriginal (Table 3-1). The mean age was 27.5 years (SD = 9.0, range = 18 to 49 years). More than a third lived in poverty with household incomes under $20,000/year.

Experiences of Racial Discrimination

Overall, 80% of students had experienced discrimination due to Aboriginal race in their lives. Two thirds had experienced high levels of racism (≥3 situations). In comparison, about a third of African Americans and a quarter of Latino Americans have experienced racism across 3 or more situations in their lifetime (Table 3-2). Aboriginal university students also experienced racism 2 to 3 times more frequently across life situations than African and Latino Americans in the US. The extent to which students were cultural or traditional Aboriginal persons explained 15% of the variance in racism frequency (Table 3-3). The situation students had experienced the most frequent racism was school, followed by public places. As shown in Table 3-4, a common theme in open-ended comments was the discrimination and pressure to assimilate students had experienced in

elementary and junior high:

> In elementary school I had several teachers tell me that it's no point in being Native because that's not the way things are and I should adapt to white life (P1).

> I looked Aboriginal growing up as a kid in the city and I was picked on and beat up all through junior high. One on one wasn't so bad but then it started to be groups of kids beating me up and the groups started getting bigger. I couldn't defend myself anymore… I dyed my hair lighter and changed my clothes. It bugs me, but it's necessary to survive and thrive. For an Aboriginal kid growing up in the city it's so hard. There are these massive steps you have to climb. Why take the big steps when you can take the little ones and conform to what this society – white society wants. It's easier to become 'white-washed' then to keep on trying to look and act stereotypically Indian. (P2)

Students described less assimilative pressure in university. Many commented on the efforts the university made to respect their traditions and the importance of the Aboriginal Student Centre on campus. Discrimination at university often involved assumptions other students made about their academic legitimacy and exposure to racial slurs about their ethnic group:

> Elementary I got into fights about 'Indianness'. Secondary was name calling and racial slurs. University is 'invisible' racial discrimination to outright racial slurs (P3)

> Generally, in casual conversation when I tell people I am Métis they assume I am here on funding/scholarships/reserved seating and that I do not work to pay for school or work hard for my grades or to get admission – not true at all! (P4)

Some of the most intense and frequent discrimination took place in public spaces. Students noted differences in the racism Aboriginal males and females experienced in public and this was reflected in the experiences they shared. Female students reported shame-based experiences in public such as being perceived as prostitutes or on social assistance:

> Almost all the time if I am at a bus stop people look at me as if I were a hooker. It makes me feel like I can't go anywhere without that label. (P5)

> I took my daughter to the movie during the day and she was behaving herself but once she started getting out of hand we left with her. A man came up to us and said we were disrespectful and then said "was it welfare day?" for our reason for going to the movie. (P6)

In contrast, male university students often described experiences in public that were threatening and at times violent:

> Before I couldn't even walk down the street without someone yelling "go back to where you come from [expletive] Indian" or being stared down by cops. It is unsafe for us sometimes. (P7)

> I was called a savage and attacked by a group of guys. (P8)

The majority of students (60%) also experienced discrimination when attempting

to access goods and services. Students described difficulties getting service at restaurants, being followed by in-store detectives, and the demeaning behaviour directed at them by store and medical personnel:

> [At an optometrist's office] "Oh we don't cover Indians here. Do you have insurance? Can you pay? Can we refer you to someone else? These are what Indian Affairs covers" – assuming that I can't afford glasses off the shelf. (P9)

> It is really unfair to discriminate against someone who is sick - assuming someone is drunk / drugged just because it says aboriginal on their file. (P10)

More than a quarter of the sample had also experienced discrimination related to housing. Students described making appointments to see apartments and being told none were available when they provided an Aboriginal surname or arrived to see the unit. Others described the discriminatory remarks building managers made to them, and how they assisted one another with these problems:

> When I was looking for a place to rent I was asked if "I drank" because the lady said "you people are known to do that" so I just walked away and didn't say anything to her. (P6)

> An ex-landlord commented my partner and I weren't typical Natives, as I was a university student and my partner has a job. (P11)

> I've helped friends with dark skin get apartments, because I have a light skin colour. (P12)

Reactions to Discrimination

Students described a number of visceral reactions to the racism they were experiencing including shock and frustration. The most common reactions were feelings of helplessness and hopelessness:

> Being a minority is like being in a cage with no help. Sometimes it's better to accept than to fight. (P10)

> It sucks, really sucks… but because it always happened since childhood, you numb out. (P7)

> We are all not drunks and addicts and gamblers and we don't go through life on welfare and education-less. We are people. I sometimes feel so stereotyped by this. (P13)

Students commented that they often "suffered in silence" and that the unpredictable and uncontrollable nature of these experiences made it difficult to concentrate and want to succeed. A second theme was the difficulties students had feeling at home in the city and in combining their mainstream and cultural identities in the urban environment given the discrimination they were experiencing:

> Being Aboriginal in Canada is hard – originals but foreigners, second class citizens to white Canadians. I am part of Canadian culture but when I go back home [to my First

> Nation] I am a somewhat different person – there is freedom at home to just be myself, and not try to fit into the "good Indian" that is not like "those Indians". (P14)
>
> There is still a lot of racism and apathy in Alberta, Canada. Negative treatment from white society happens almost daily on some level. It reminds that I am an Aboriginal and not a white Canadian. I often feel like I walk 'two paths'; the Native way – my culture vs. Canadian way – dominant culture. (P10)

Discussion

The present findings provide empirical support for the idea that Canadian Aboriginal university students may experience high levels of discrimination in the urban environment. The frequency of racism experienced by Aboriginal students in this study was two to three times higher than a reference sample of African and Latino Americans in the US.[29] The extent to which students had not relinquished their traditional culture was statistically associated with more frequent racism.

Qualitative findings suggest student reactions to discrimination were symptomatic of what has been termed *racial battle fatigue* among African American college students in the US. Racial battle fatigue describes the depletion of mental and physical resources caused by stress response systems that are constantly "switched on" as individuals strive to cope with ongoing discrimination.[33] A growing number of researchers now attribute the health disparities experienced by African Americans and Aboriginal Australians to chronic stressors, most prominently the experience of racial discrimination.[5, 10-13, 15-17, 33] This risk factor may contribute to our understanding of the large and persistent health disparities observed among Aboriginal peoples in Canada, as well as high university attrition among Aboriginal students, and deserves more serious treatment in the scientific literature.

The idea that discrimination may affect health and well-being is not new. It has long been acknowledged that living within a social context that denies people a sense of dignity, increases feelings of insecurity about personal worth and competence, and carries connotations of inferiority in which few people can feel respected, valued and confident results in adverse psychological states that, in turn, have lasting deleterious impacts on health.[34] Reitz has suggested that pride in Canadian multiculturalism has led to a reluctance to examine whether minority groups, including Aboriginal peoples, experience discrimination in this country.[35] As a result, the suffering of Aboriginal peoples has and continues to be visible on a national stage, but an important and underlying reason for this suffering remains hidden to the collective national consciousness.[36] Accepting the reality that some Aboriginal Canadians may experience high levels of discrimination opens the door to the development and implementation of positive action to reduce this problem.[36, 37]

Strengths of this study include guidance by an Aboriginal Advisory Committee, use of a validated measure of racial discrimination and the inclusion of open-ended questions to examine how students were reacting to discrimination.

Limitations include use of a cross-sectional design and a small volunteer sample. While the Canadian sample was made up of more women than men, this may not be a limitation as Aboriginal women are more likely to pursue university training than their male counterparts in Canada.[38] The US reference sample was older than the Canadian sample, which should bias US findings toward higher mean levels of discrimination given a lifetime measure of racism was used. The US sample was also somewhat less educated than the Canadian sample. US African Americans with more education report more discrimination than their less educated peers.[29] The extent to which this may also be true for Aboriginal Canadians and the extent to which educated minorities may actually experience more frequent racism than their less educated counterparts remain unknown.

Conclusions

Aboriginal students in this study experienced more frequent racism across a greater number of life situations than a reference sample of African and Latino Americans in the US. Findings suggest students who practiced their culture faced push back from mainstream society through more frequent experiences of racism. The frequency and unpredictability of racist experiences were extremely stressful for Aboriginal students. There is an urgent need for further research to determine if high levels of racism directed at Aboriginal peoples in the urban environment may explain elevated university attrition among Aboriginal students, and to determine other potential pathogenic consequences of these experiences.

Table 3-1. Characteristics of the Canadian sample

Characteristic	Total N (%)
Total sample	60 (100)
Aboriginal group	
First Nation	33 (55.9)
Métis	13 (22.0)
Aboriginal	10 (16.9)
Inuit	3 (5.1)
Gender	
Female	42 (70.0)
Male	18 (30.0)
Age, y	
18-24	29 (50.0)
25-34	19 (32.8)
35-44	10 (17.2)
Marital status	
Never married	38 (64.4)
Married/cohabiting	17 (28.8)
Divorced/separated/widowed	4 (6.8)
Education status	
Undergraduate student	53 (88.3)
Graduate student	7 (11.7)
Household income	
<$10,000	10 (16.7)
$10,000-$19,999	12 (20.0)
$20,000-$29,999	6 (10.0)
$30,000-$39,999	7 (11.7)
>$40,000	11 (18.3)
Don’t know	6 (10.0)
Don’t want to say	8 (13.3)
Traditional or cultural Aboriginal person	
Not at all	0 (0.0)
A little	10 (16.9)
Somewhat	26 (44.1)
Much	14 (23.7)
Very much	9 (15.3)

Table 3-2. Discrimination experienced by Aboriginal University Students compared to US racial minorities*

Discriminatory Experiences	Canadian Aboriginal (%) N = 60	US Black (%) N = 156	US Latino (%) N = 299
Number of situations			
0: No discrimination	20.0	33.3	52.8
1-2: Moderate	13.3	28.8	23.1
3+: High	66.7	37.8	24.0
Mean situation score (SD)	3.67 (2.67)	2.31 (2.46)	1.44 (2.06)
Mean frequency score (SD)	12.18 (10.00)	6.46 (8.92)	3.37 (5.72)
At school			
Once	5.1	3.8	3.5
2-3 times	23.7	7.7	3.1
4 or more times	42.4	9.0	2.2
In a public setting			
Once	5.0	5.1	8.7
2-3 times	16.7	17.3	10.5
4 or more times	38.3	9.6	4.8
In a store or restaurant			
Once	8.3	11.5	7.9
2-3 times	15.0	14.1	8.3
4 or more times	35.0	15.4	3.5
At work			
Once	11.7	6.4	6.1
2-3 times	15.0	6.4	5.2
4 or more times	16.7	6.4	0.4
Getting hired			
Once	8.3	10.9	7.9
2-3 times	20.0	9.6	6.1
4 or more times	10.0	7.0	5.7
From the police/courts			
Once	6.7	6.4	7.9
2-3 times	11.7	6.4	6.6

4 or more times	13.3	9.0	3.1
Getting housing			
Once	8.3	10.9	4.8
2-3 times	15.0	10.9	5.2
4 or more times	3.3	3.8	0.4
Getting medical care			
Once	8.3	8.3	8.3
2-3 times	11.7	4.5	3.5
4 or more times	5.0	4.5	2.2

*Comparison data were drawn from a cohort of working class adults in the US, age 25–64, recruited for United for Health, which examined the health impacts of social and physical risks at work.[29] A permission licence was obtained from *Elsevier Limited* to include the US data contained in this table.

Table 3-3. Linear regression model predicting the frequency of racial discrimination (n = 57)*

	b	*β*	*p*	R^2 Change
Unadjusted Model				
Traditional Aboriginal person	4.14	0.39	0.003	0.15
Constant	-1.85		0.70	
Adjusted Model				
Traditional Aboriginal person	3.93	0.37	0.005	0.12
Aboriginal/First Nation or Métis	4.37	0.20	0.12	
Gender	4.37	0.17	0.20	
Age	0.27	0.24	0.05	
Constant	-4.34		0.57	

*Inuit participants excluded from analysis (n = 3).

Table 3-4. Qualitative results: Racial discrimination experienced by Aboriginal university students

	n (%)
Discriminatory school experiences (*n* = 24)	
Theme A: Grade school - racism/pressure to assimilate	11 (45.8)
Theme B: Post-Secondary - assumptions made about academic legitimacy/exposure to racial slurs	10 (41.7)
Discriminatory experiences in public (*n* = 14)	
Theme A: Females - shame-based racial discrimination	10 (100.0)
Theme B: Males - threatening racism / actual violence	4 (100.0)
Discrimination experienced accessing services (*n* = 17)	
Theme A: Difficulties getting service at restaurants, demeaning treatment by store/medical personnel	13 (76.5)
Discrimination experienced related to urban housing (*n* = 7)	
Theme A: Described discriminatory experiences related to housing	7 (100.0)
Qualitative reactions to discrimination (*n* = 33)	
Theme A: Helplessness/hopelessness	9 (27.3)
Theme B: Shock/frustration/distrust	7 (21.2)
Theme C: Difficulty assuming combined identity	7 (21.2)
Theme D: Pretend to be non Aboriginal	3 (9.1)

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Chapter 4

Racial Discrimination, Post Traumatic Stress, and Gambling Problems among Urban Aboriginal Adults*

Introduction

Problem gambling is more prevalent among Aboriginal peoples in North America than the general population.[1] While games of chance were part of Aboriginal cultures before European contact, gambling for monetary gain was discouraged.[2, 3] Gambling now occurs in a markedly different socio-political and economic context with different meanings and consequences for this population.[4] While participating in gambling activities continues to be part of the social fabric in many Aboriginal communities,[5] sanctions against gambling for personal gain have been weakened by the process of colonization and are no longer consistently understood. These changes coupled with high rates of Aboriginal poverty and unemployment have created a pull toward gambling for the chance it may offer to escape life problems and make ends meet.

After adjustment for income, minority status itself is also an independent predictor of problem gambling among Aboriginal peoples and other ethnic groups (Asians, African Americans).[1, 6-8] While this association is often attributed to residual confounding or culturally-based beliefs in luck and superstition,[9] racial discrimination may also be an important, albeit overlooked, factor that may help to explain disproportionate problem gambling rates among minority populations.

Race as a concept refers to a form of social categorization based on phenotypic characteristics, the salience of which shifts across place and time.[10, 11] Although there are no clear biologic criteria to formulate or support a valid and reliable taxonomy of race,[10, 12] as a social construct race continues to be used not only to classify human variation, but to justify the exploitation of groups defined as inferior. The term *racism* refers to an ideology that ranks some groups as inherently inferior to others and in doing so, supports the social norms and institutions that implement this ideology.[13] Racism leads to the development and maintenance of negative attitudes and beliefs about certain groups (racial prejudice), as well as unfair treatment directed at those perceived to be part of a stigmatized racial group (racial discrimination). Targets are aware of some of the discriminatory behavior directed at them, with these perceptions generating significant levels of stress.[14] A growing number of US researchers now attribute the health disparities experienced by African Americans to social stressors, most prominently the experience of racial discrimination.[14-18] Prospective studies have

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temporally linked perceived racial discrimination to an array of adverse outcomes including the incidence of substance use disorders, mental illness, breast cancer, uterine myomas, obesity and coronary artery calcification.[19-22] Research also suggests urban Aboriginal youth and adults in Australia experience high levels of racial discrimination, with significant impacts on their physical health and mental well-being.[23-25]

In Canada, the degree to which racial discrimination may similarly account for the disproportionate burden of health disparities observed among Aboriginal peoples has received little attention in the scientific literature. The Canadian Aboriginal population now surpasses 1 million and is rapidly urbanizing.[26] More than half now live in urban areas resulting in increased contact between Aboriginal and non-Aboriginal populations.[26] Historical efforts to keep Aboriginal peoples away from urban areas, including the creation of reserves and efforts unique to the prairies, such as the 'pass system' which confined First Nations persons to reserves and required a pass from an Indian agent to leave, have helped reinforce the view that cities are 'modern' spaces reserved for settler societies and the immigrant groups they select to live there.[27, 28] As a result, Aboriginal peoples are often considered 'out of place' in urban Canada.[29] While these assumptions are being challenged by the growing demographic and cultural presence of Aboriginal peoples in urban areas, emerging research suggests that if there is a single urban Aboriginal experience it is the shared perception that they are stereotyped negatively.[30] A 2009 study of 11 Canadian cities found seven in ten Aboriginal adults had been teased or insulted because of their ethnic background, and more than a third did not feel accepted by non Aboriginal people.[30] The study also polled urban non Aboriginal residents and found many viewed relations with the Aboriginal population in their city as both negative and not improving. Non Aboriginal residents in Edmonton were the most pessimistic about this relationship, with 62% viewing it as negative and 79% not improving.[30]

Edmonton is home to the second largest Aboriginal population in Canada making relations between Aboriginal and non Aboriginal peoples in this city important at both a local and national level. A 2009 pilot study conducted as a precursor to the present work found that the frequency of racism experienced by urban Aboriginal university students in Edmonton was two to three times higher than a reference sample of African and Latino Americans in the US.[31, 32] Building on this pilot, the present study examined the extent to which racial discrimination was associated with problem gambling across a broader sample of urban Aboriginal peoples, and the extent to which this link was explained by traumatic stress. Surprisingly, potential links between racial discrimination and problem gambling have not yet been examined in the scientific literature; despite the plausibility of this association. Studies have shown that similar to alcohol individuals will use gambling to cope with negative affect,[33] which discriminatory experiences have been shown to elicit in both observational and experimental studies.[14, 15, 17, 25, 33-36]

In the social determinants of health literature, experts often link social experiences to adverse outcomes via such *psychosocial stress pathways*. Stress is an

ambiguous term that has been characterized in several ways since it was first introduced in the 1950s.[37] Stress and coping theorists have advocated that the stress response was a property of individual and differed widely between them independent of the social stressors they were exposed to.[38] From the perspective of differential vulnerability, which it is often termed, what was stress for one was stimulation to another depending on how a situation is appraised by an individual.[38]

However, what appears to be differential vulnerability to stress at an individual level may actually be, on closer inspection, differential exposure to social stressors at a population level.[39] More detailed examinations of the physiology of the human stress response since the 1950s have documented sufficient reactive physiologic regularity to suggest a more appropriate focus is the social environment and the reliable effects it has on visceral stress reactions across individuals.[40-43] It is now well documented that the wear and tear of high unremitting stress on physiological systems can dysregulate normal biologic reactions, causing hyper or hypoactive responses to environmental triggers and an inability to turn off the stress response when it is no longer needed, among other problems.[40, 44] Stress-induced dysregulation of allostatic systems, particularly the autonomic nervous system and the hypothalamic-pituitary-adrenal (HPA) axis, have been implicated in the development of psychiatric and physical illness in prospective studies.[44, 45]

Chronic uncontrollable and unpredictable stress also exerts profound effects on the structure and function of limbic neurons that can, in combination with allostatic dysregulation, result in physiological damage to key brain regions (the prefrontal cortex and the amygdala) associated with risk-taking and addictive behaviours.[43, 46, 47] McEwen fashioned the term *allostatic overload* to describe the damage that chronic activation of allostatic systems has on the body (i.e., dysregulation of the sympathetic nervous system and the HPA axis, neural damage) as well as the behavioural changes that accompany this damage (e.g., difficulty sleeping, social withdrawal, smoking, substance abuse and other risk-taking behaviour).[48]

Links can be made between McEwen's allostatic overload model and Cooper's theoretical model of alcohol use. In her seminal work, Cooper argued individuals are motivated to use alcohol to reduce negative affect (i.e., to cope or escape), and that this motive represents a pathway linking distal variables to alcohol problems.[49] The use of gambling and illicit drugs to cope with negative affect has been confirmed in subsequent studies.[33, 50] The concept of allostatic overload compliments this theory by suggesting that individuals who experience extreme forms of social adversity can become highly motivated to engage in addictive behaviours to cope with the resulting biological and emotional sequelae. Thus, McEwen's allostatic overload model provides a social and biological grounding for a key motive for addictive behaviour implicated in Cooper's theory.

Racial Discrimination and PTSD

A particularly potent stress response that can occur in reaction to social trauma is post traumatic stress disorder (PTSD). PTSD results in the intrusive recollection of events associated with trauma, efforts to avoid stimuli and feelings associated with traumatic events, detachment, and ongoing symptoms of physiologic hyperarousal (e.g., hyper-vigilance, difficulty sleeping, exaggerated startle response).[41] While it is well documented that individuals will engage in addictive behaviours, including gambling, to escape PTSD symptoms,[51-53] the idea that racism could result in PTSD symptomology is more controversial. Although ubiquitous in North American society, the DSM has remained silent on the correct classification of race-based psychological trauma. The result has been a lack of clarity on the clinical and forensic assessment of race-based traumatic stress disorders and on what exactly is being measured in scientific research when visible minorities elicit symptoms of traumatic stress in response to discriminatory experiences.[34]

There is long-standing and heated debate between experts on the types of qualifying events that precipitate PTSD.[54-57] In its most current form, the definition for PTSD qualifying events (Criterion A1) in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) is more restrictive than previous versions of the Manual; requiring a person *experience, witness or have been confronted with an event or events that involves actual injury or a threat to the physical integrity of oneself or others*.[58] As well, the current list of 52 environmental stressors considered to precipitate a diagnoses of PTSD, acute stress, or adjustment reactions in the DSM-IV-TR does not include racial events. This omission may result in an underestimate of the true psychological impact of racial discrimination by those relying on diagnosable psychological disorders as evidence of emotional distress,[34] and has resulted in a call for experts to expand their perspectives beyond the DSM when considering race-based traumatic stress.[59]

The International Statistical Classification of Diseases and Related Health Problems, 10th edition (ICD-10), for example, classifies PTSD not as an anxiety disorder, but in a category of reactions to severe stress. ICD-10 requires that qualifying events be *of an exceptionally threatening or catastrophic nature, which are likely to cause pervasive stress in almost anyone*.[60] It may be argued that racial discrimination meets the definition of an ICD-10 qualifying event for PTSD race-based discriminatory experiences are inherently and exceptionally threatening for most individuals given they are based on fixed features of an individual's physical appearance. Racial discrimination is also typically uncontrollable, unpredictable and ongoing, offering little opportunity for individuals to place distance between themselves and the stressor and recover from its effects. Research suggests minorities rank the distress caused by discrimination as extreme, similar to the effects of major life events like the death of a loved one, divorce, and job loss. [61] Studies that have linked discrimination to major depression and generalized anxiety disorder have documented effect sizes comparable to that of traumatic life events, such as sexual assault and combat

exposure.[39, 61] As a clinician, Butts notes there are intriguing psychodynamics implicit in the refusal by European-Americans to acknowledge and accept that the responses of minorities to racial discrimination should be viewed as clinically symptomatic.[62] He reports on the devastating emotional responses to racist acts he has seen in his clinical work. He argues that with a fair degree to frequency, African Americans who experience racial discrimination report symptoms consistent with a PTSD diagnosis. The overall objective of the present research was to expand on these observations by testing whether exposure to racial discrimination was positively associated with PTSD symptomology and problem gambling in a community-based sample of urban Aboriginal Canadians.

Summary of Hypotheses

In summary, it was hypothesized that: (1) racial discrimination would be positively associated with problem gambling; (2) racial discrimination would also be positively associated with PTSD symptoms; and (3) on the view that gambling provides a way to minimize negative affect associated with racial discrimination, PTSD symptomology would partially mediate the association between racial discrimination and problem gambling.

Methods

Sample and Procedure

This study organized an Aboriginal Advisory Committee made up of key members of the Edmonton Aboriginal community to work collaboratively with university researchers to set study priorities, determine measures that would be used and decide how data would be collected. Among other useful suggestions, the Committee recommended participants be given the option to self-identify as Inuit, Métis, First Nation, *or* Aboriginal, as some individuals living in cities who are First Nations but are not affiliated with a specific First Nations community or do not have Registered Indian Status may prefer to self-identify as Aboriginal. As a group we determined that after completing a pilot study with Aboriginal university students, I would administer an in-person survey to a community-based convenience sample of adults in Edmonton who self-identified as Aboriginal, Métis or Inuit and lived.

Data were collected from May to December of 2010. Participants were recruited using posters placed in the offices of Aboriginal organizations and organizations offering various services such as child care; educational, employment, and housing opportunities; and general publicly used spaces such as grocery stores and shopping malls. Ads in community newspapers and e-newsletters distributed by Aboriginal organizations and organizations frequently accessed by Aboriginal peoples were also used. The range and breadth of organizations and public spaces in which the study was advertised was carefully considered before and during data collection, taking into consideration the sociodemographic profile and geographic distribution of Aboriginal peoples in Edmonton. To increase the generalizability

of findings snowball sampling techniques were avoided. No advertising took place in gaming establishments or addiction treatment centres.

Written consent was obtained from all participants. Study procedures and survey instruments were reviewed and approved by the Human Research Ethics Board at the University of Alberta and the Aboriginal Advisory Committee commissioned for the project. All participants completed a questionnaire package by hand (mean completion time = 70 minutes). Questions included those described here, as well as additional questions designed to address research questions outside the scope of this paper. Each participant was given an honorarium of $25 for his or her time.

Outcome Variable

Gambling behaviour was examined using the Canadian Problem Gambling Index (CPGI). Problem gambling was assessed using the Problem Gambling Severity Index (PGSI); a nine-item subset of the CPGI that measures problem gambling in population-based samples.[63] PG was defined by scores of 3 or more on the PGSI, and at-risk gambling by scores of 1 to 2. Those reporting no gambling in the past year were coded non cases. In the present study, PGSI scores ranged from 0 to 27 (M = 3.0, SD = 4.9); internal consistency was excellent (α = 0.92). Given that using gambling to reduce or avoid negative emotions is an important predictor of PG,[34] participants were also asked if they gambled to escape (yes or no) as a second adverse gambling outcome in this study.

Exposure Variable

The Experiences of Discrimination (EOD) Scale measured self-reported discrimination due to Aboriginal race across nine situations.[32] The *situation subscale* counts the number of situations racism is experienced, while the *frequency subscale* asks participants to report how many times racism was experienced in each situation. The situation subscale is scored by counting the number of situations (1 to 9) that racial discrimination is experienced. The frequency subscale, assigns values of 0, 1, 2.5 and 5 to responses of never, once, 2 to 3 times and 4 or more times for each situation.[32] Although the original measure examines lifetime discrimination, a preliminary study conducted as a precursor to the present work suggested Aboriginal peoples may experience very high levels of racism and that a 12-month measure may be more appropriate to ensure sufficient data variability. Thus, each question on the situation subscale was worded as follows, with information in brackets reflecting the information added that was not included in the original measure, and X reflecting each of the 9 situations tested: *(In the past 12 months) have you experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior at X because of your race, ethnicity or colour?* Wording on the frequency subscale was as follows, with information in brackets reflecting the modification made to each question: *If yes, how many times did this happen (in the past year)?*

Krieger and colleagues define high discrimination by situation scores of 3 to 9, and moderate discrimination by scores of 1 to 2.[64] In the present study, the

situation subscale ranged from 0 to 9 situations in the past year (M = 3.3, SD = 2.7). The frequency subscale scores ranged from 0 to 45 (M = 10.0, SD = 10.5). The internal consistency of each subscale was good (α = 0.82 and 0.86 for the situation and frequency subscale, respectively). The EOD also includes questions about the extent to which individuals worry about discrimination targeted at themselves and their racial group, and how frequently they experienced and worried about discrimination in childhood. These items were also included in the present study.

Mediating Variable

The PTSD Checklist-Civilian Version (PCL) was used to assess current PTSD symptoms. Participants were asked how often they were bothered by each of 17 symptoms in the last month using a five-point Likert scale ranging from 1 (not at all) to 5 (extremely). A total symptom severity score (range = 17 to 85) can be obtained by summing the 17 items. The PCL can also be used to assess symptom clusters for PTSD including intrusive recollection, avoidance/numbing, and hyper-arousal. More than 20 validation studies across a range of populations suggest the internal consistency (alpha) of the measure is in the mid- to high .90s.[65] In the present study, scores ranged from 17 to 85 (M = 40.0, SD = 15.9) and internal consistency was excellent (α = 0.95). The internal consistency of the PCL subscales were also good (α = 0.91, 0.88 and 0.86 for intrusive recollection, avoidance/numbing and hyper-arousal subscales, respectively).

Covariates

Gender and exact age were was assessed as well as marital status across three categories, education across four categories and employment across five categories. Current household income was also examined; however, consistent with previous studies conducted with Aboriginal populations, a large percentage left this question blank.[4, 5] As this was anticipated, participants were also asked if they had experienced poverty in their lifetime. Response options included ‘never’, ‘as a child only’, ‘as an adult only’ and ‘all my life’. Few participants left this question blank (2.0%), and this variable was used to adjust for poverty across the life course in multivariate models. To allow for the control of other forms of trauma that may influence PTSD and PG symptomology, participants were asked if they had been separated from their parents in childhood (yes or no) and if they had experienced physical or sexual abuse in childhood (yes or no).

Analysis Strategy

Descriptive analyses were used to examine demographic characteristics and the extent to which participants experienced problem gambling and racial discrimination in the past year. Racial discrimination was operationalized as the number of situations racism was experienced in the past year. The degree to which racial discrimination was associated with 12-month problem gambling, and support for mediation by PTSD, were examined using bootstrapped linear regression models and 95% confidence intervals (k = 5000).[65, 66] All variables were examined in the continuous form.

These analyses were adjusted for the potential confounding effects of covariates selected *a priori* based on existing literature. These included age, gender, education, marital status, unemployment status and life course poverty. Models were also adjusted for childhood trauma given documented associations between these experiences and both PTSD and PG in the literature.[68-70] Potential statistical interactions between racial discrimination and covariates were examined using graphical representations and loess curves.[71] Graphical representations that suggested an interaction were to be tested by forming a product term and calculating two R^2 values, one for the main-effects-only model, and another with the product term added, with an interaction deemed present if the difference between the two R^2 values was statistically significant using a hierarchical F test;[72, 73] However, no interactions were indicated by loess graphical representations, and this testing procedure did not take place.

Mediational Analysis

A mediator is a mechanism that explains how one variable affects another.[74] It in the present study, PTSD symptomology was hypothesized to be a mechanism through which racial discrimination influenced problem gambling score (Figure 4-1). Mediation was examined using a non-parametric bootstrapped multivariate approach to the cross-products of coefficients method developed by Preacher and Hayes.[75] A key advantage of examining mediation using the Preacher and Hayes approach is a single test of the mediation (*a*b*) pathway. This method avoids a key problem with the standard approach to mediation testing originally developed by Baron and Kenny in 1986. The Baron and Kenny method examines the reduction in size of the *c* path estimate when the variance provided by the *a* and *b* path are removed (termed the *c'* path).[76] Using this method, if an exposure variable has a strong effect on a mediator (the *a* pathway), there may be limited opportunity for the mediator to be significantly associated with the outcome (the *b* pathway) due to the mutuality of the *a* and *b* paths.[77] However, the best known cross product of the coefficients test is the Sobel (1982) which is sensitive to violations of normality making it overly conservative with small to moderately sized samples.[78] Thus, rather than use a Sobel test, the Preacher and Hayes approach was used, which requires no assumption regarding underlying sample distributions as statistical significance is determined non-parametrically.[68]

A total of 5,000 random samples of the original size were taken from the data with replacement, and the indirect effect (*a*b*) computed for each sample.[75] The point estimate of the indirect effect was the mean *a*b* value computed over the samples, with 95% confidence intervals derived from the obtained distribution of *a*b* scores.[75] If the upper and lower bounds of these bias corrected confidence intervals did not contain zero, the indirect effect was considered significant. Only a value that reached conventional levels of significance ($p \leq 0.05$) was interpreted, unless otherwise specified.

Results

Sample Characteristics

Participants had a mean age of 35.2 years (SD = 11.5, range = 18 to 79 years). As shown in Table 4-1 most identified as First Nations or Aboriginal. More than three quarters had Registered Indian Status (77%). The sample included approximately 20% more women than men, which is consistent with the gender distribution of Aboriginal peoples in Edmonton.[79] The reported household income and educational attainment of participants also matched population-based estimates, however a large proportion of the sample did not disclose their income and there were more unmarried and unemployed participants then would be expected if random sampling had been used.[80] On average participants had been living in Edmonton for 15 years (SD = 12.3, range = 0.8 to 60 years). About 70% lived in the 11 traffic zones designated as inner city by the City of Edmonton, which is somewhat higher than the actual percentage of the Aboriginal population who live in this area (62.5%).[80] About a quarter of the sample had never lived in poverty, while about 30% had lived in poverty all their lives.

Gambling Involvement and Problems

Overall, 93% of the sample gambled in the past year. Participants engaged in an average of four types of gambling activities in the past year, most typically purchasing lottery, instant win tickets, gambling in casinos, and participating in raffles (Figure 4-2). Males and older participants gambled more frequently than females ($t = 4.54$, $df = 303$, $p = .001$) and younger participants ($r = .20$, $p = .001$). A third of the sample met criteria for problem gambling and an additional 17.2% were at-risk gamblers. PGs were more likely than non PGs to participate in all forms of gambling measured; particularly VLTs, bingo and gambling on the internet (Figure 4-3). The mean number of games played monthly or more by PGs was 2.5 (SD = 2.2) compared to 0.9 (SD = 1.3) among non PGs.

As shown in Table 4-2, participants who gambled to escape evidenced significantly higher problem gambling scores than participants who did not. After adjustment for confounders, respondents who gambled to escape were more than 9 times more likely to meet criteria for PG compared to participants who did not gamble to achieve this effect (70.6% versus 29.4%, *OR* = 9.53, *95% CI* = 4.33-20.96 adjusting for sociodemographics and childhood trauma).

Overall, 17.4% of PGs and 1% of non PGs had sought help for gambling in their lifetime, most frequently through Gamblers Anonymous (45.5%), treatment centres (36.4%) counsellors (36.4%) and by talking to family members (31.8%). While the same percentage of problem and non problem gamblers had made a suicide attempt in their lifetime (33.3% of PGs compared to 33.8% of non PGs); a higher percentage of current problem gamblers had made a suicide attempt in the past year compared to participants without current gambling problems (10.4% versus 6.6%, *OR* = 2.97, *95% CI* = 1.03-8.56 in a model adjusted for sociodemographics, childhood trauma, and lifetime suicide attempts).

Racial Discrimination

Overall, 81.8% of participants had experienced discrimination due to Aboriginal race in the past year. More than half (51.3%) had experienced high levels of racism (≥ 3 situations) in that time period (M = 3.3 situations, SD = 2.70, range = 0 to 9). Aboriginal participants experienced racial discrimination most frequently in public spaces, in stores and restaurants, and in seeking employment. About 60% of those who identified as First Nation or Aboriginal and 50% of those who identified as Métis or mixed heritage worried some or most of the time about experiencing racism in their day-to-day lives (Table 4-3). About 70% of the full sample also worried some or most of the time about the racism that other people in their Aboriginal group may be experiencing.

In childhood, about 75% of Aboriginal or First Nations participants, and 65% of Métis or mixed heritage participants had experienced racial discrimination some or most of the time. The majority of participants had worried frequently about racism in childhood. Levels of racial discrimination experienced in the past year were positively correlated with levels experienced in childhood ($r = .49$, $p < .001$) highlighting the importance of viewing discrimination as a life course variable.

Mediation Analysis

As hypothesized, 12-month racial discrimination was significantly and positively associated PTSD symptomology and problem gambling score in unadjusted and adjusted analyses (Tables 4-4, 4-5). Specifically, in a bootstrapped fully adjusted linear regression model, PTSD score increased an average of 1.12 points for each additional situation racism was experienced in the past year (Figure 4-4). In a separate bootstrapped and fully adjusted linear regression model, problem gambling score increased one quarter of a point for each additional situation that racism had been experienced in the past year. However, PTSD symptomology did not predict PG score in either unadjusted or adjusted analyses, and as a consequence, PTSD was not a significant mediator of the association between racial discrimination and problem gambling in this sample.

Post Hoc Analyses

In the field of alcohol research, drinking to reduce negative affect is an important motive for alcohol use behaviour and is theorized to represent an important mechanism linking distal variables to the development of alcohol problems.[49] Drinking to reduce negative effect has been shown to remain associated with alcohol problems regardless of the level of alcohol consumed.[49, 81] Stewart and Zack (2008) similarly demonstrated that gambling to reduce negative affect remains associated with problem gambling regardless of how often or varied levels of gambling may be.[33] These findings suggest gambling to reduce negative affect is inherently maladaptive and may preferentially predict the development of gambling problems independent of gambling involvement.[33]

Given this literature, gambling to escape was measured in the present study as a second adverse gambling outcome that may, theoretically, represent a pathway linking PTSD symptoms occurring in reaction to racial discrimination to the development of gambling problems. The plausibility of gambling to escape as an outcome for PTSD is highlighted by the central role of avoidance/numbing behaviour in PTSD symptomology. The PTSD avoidant/numbing subscale examines the extent to which individuals take efforts to avoid thoughts, feelings, places, activities and people associated with the social trauma they have experienced. This may, theoretically, include the use of gambling to escape the memories and feeling associated with race-based social trauma. To explore these ideas, a post hoc analysis examined the PTSD avoidance/numbing subscale as a mechanism through which racial discrimination might increase the use gambling to escape, and consequently, increase the development of gambling problems.

This post hoc analysis unfolded in several steps, beginning with the replication of findings by Stewart and Zack (2008) in this sample. As shown in Figure 4-4, problem gambling scores remained, on average, 3.65 points higher for Aboriginal participants who gambled to escape compared to those who did not in a bootstrapped linear regression model adjusted for sociodemographic covariates, gambling frequency, and number of gambling activities in the past year (e.g., bingo, VLTs, lottery). This is a noteworthy increase in PG score given scores of 3 or more meet criteria for problem gambling using this measure. Thus, it appears that similar to the findings of Stewart and Zack, gambling to escape was intrinsically maladaptive for this sample of urban Aboriginal adults, regardless of how often or varied their gambling was.

Next, a bootstrapped logistic regression model adjusted for sociodemographic covariates determined if racial discrimination was associated with gambling to escape. As shown in Figure 4-5, there was a 13% increase in the odds of gambling to escape for each additional situation that racism had been experienced in the past year.

Finally, the extent to which increased PTSD avoidance/numbing symptomology helped to explain the association between racial discrimination and gambling to escape was tested. A bootstrapped multivariate approach to the cross-products of the coefficients could not be used to test mediation in this case given gambling to escape is a dichotomous outcome, thus providing coefficients set on different scales within the mediational analysis.[74] Coefficients can be made comparable by use of an additional set of equations and SPSS macro applications created for this purpose, with statistical significance tested using a Sobel test.[78, 82, 83] The significance level was set at $p < 0.10$ for this test as it is well documented that the Sobel test is an overly conservative measure in small to moderately sized samples due to its use of a normal approximation, which presumes a symmetric distribution, despite the highly skewed nature of the *ab* distribution.[84] Findings from the Sobel test indicate increased PTSD avoidant/numbing symptomology was a significant mediator that helped to explain how racial discrimination

increased the use of gambling to escape in this sample of urban Aboriginal adults (*Sobel test* = 1.81, SE = 0.06, $p = 0.07$).

Discussion

This study documents high levels of problem gambling in a sample of urban Aboriginal peoples living in Canada. The devastating impact of problem gambling on Aboriginal participants in this study was highlighted by a three-fold increase in past year suicide attempts by current Aboriginal problem gamblers compared to non problem gamblers, despite a similar percentage of suicide attempts by PGs and non PGs over their life course.

More than 80% of urban Aboriginal adults in this study had experienced discrimination due to Aboriginal race in the past year, with more than half reporting high levels racism in that time period. To place these findings in context, Aboriginal participants in this study experienced more frequent racism across a greater number of situations in a one-year period than same-aged African and Latino Americans in the US report in their lifetime using the same measure.[32] Urban Aboriginal participants worried continually about the racism they may experience in their day-to-day lives, with more than half worrying frequently about themselves, and 70% worrying frequently about Aboriginal family members and friends.

Previous studies have shown that discrimination is temporally associated with the development of substance-based addictions in minority populations.[19,35] The present findings extend this evidence to a process-based addiction, and are the first to provide empirical support for the idea that racial discrimination may be associated with increased problem gambling, as well as increased use of gambling to escape negative affect. Findings also suggest a positive association between racial discrimination and PTSD symptomology that could not be explained by other events or factors such as separation from birth parents in childhood, abuse in childhood, and exposure to poverty over the life course. Yet, contrary to what had been hypothesized, PTSD symptomology was not associated with problem gambling, and as a consequence, PTSD did not mediate the association between racial discrimination and PG in this study. However, post hoc analyses suggest PTSD avoidance/numbing symptomology did mediate the association between racial discrimination and the increased use of gambling to escape.

A model that may be derived from these findings posits that racial discrimination results in a state of physiological and psychological distress that is consistent with PTSD symptoms, including the desire to avoid thoughts and feelings associated with racist events. As a result, Aboriginal peoples who experience high levels of discrimination are at increased risk of using gambling to escape the visceral emotional reactions they have to racist experiences, with gambling to escape forming a pathway that links racism to increased problem gambling among urban Aboriginal adults over time.

It is acknowledged that the present study cannot infer the temporal sequence of these events. However, given the form of discrimination measured in this study is based on race, a characteristic that does not vary within individuals over time, it may be argued that race-based discrimination is a fixed marker over the course of a person's life, making it, by definition, an antecedent to outcomes such as PTSD and maladaptive gambling behaviour.[85] The present findings support this assertion, documenting a positive correlation ($r = 0.49$) between levels of racism experienced in childhood and levels of racism experienced by adults in the past year. That said, prospective studies are needed to replicate the cross-sectional associations documented in this study and to test the temporal sequence of events implied in the theoretical model derived from these findings.

Strengths of this study include guidance by an Aboriginal Advisory Committee and the use of validated measures of racial discrimination, problem gambling and PTSD. Limitations include the use of a cross-sectional design and a relatively small volunteer sample of participants. Further research is needed to test the generalizability of these findings to other Aboriginal populations and other adverse outcomes.

Conclusions

The findings of this study address a gap in the literature and are the first to suggest that racial discrimination may be an important social determinant of problem gambling for urban Aboriginal peoples. Findings suggest gambling may be a coping response that some Aboriginal adults use to escape the negative affect that experiencing racism can elicit. Consistent with previous research, gambling to escape was strongly associated with PG among Aboriginal participants, independent of gambling involvement, and may represent an important pathway linking high levels of discrimination directed at Aboriginal peoples to the high levels of problem gambling observed within this population. Results support policies aimed at reducing racism targeted at Aboriginal peoples in urban areas, and the growth of services to help Aboriginal peoples cope with racist events. Results also underline the need for further research to determine if racial discrimination may help to explain the prevalence of other addictive disorders observed among Aboriginal peoples.

Figure 4-1. Hypothesized mediational pathway

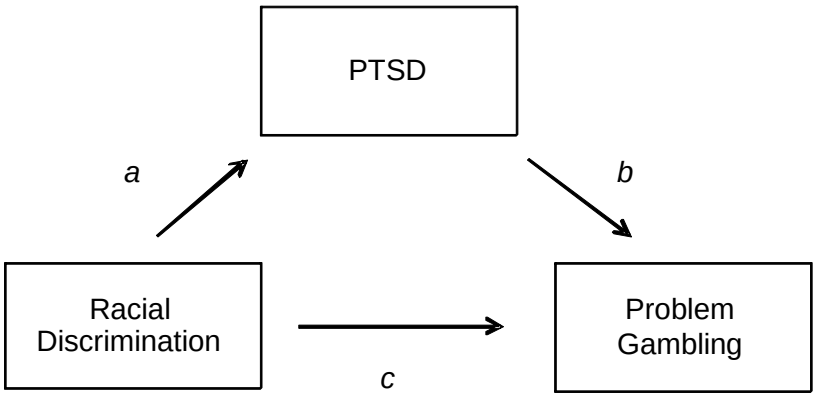


Table 4-1. Description of the sample and prevalence of 12-month problem gambling (PG) by sociodemographic variables

Characteristic	Total sample *N* (%)	PGs *N* (%)
Total sample	371 (100)	117 (33.3)
Aboriginal group		
First Nation/Aboriginal	275 (76.6)	91 (33.5)
Métis/mixed ancestry	81 (22.6)	25 (31.3)
Inuit	3 (0.3)	0 (0.0)
Gender		
Male	150 (41.4)	53 (35.6)
Female	212 (58.6)	62 (29.7)
Age quartiles		
18-24	83 (23.3)	13 (15.7)
25-34	92 (25.8)	21 (23.3)
35-44	97 (27.2)	40 (41.7)
≥45	84 (23.6)	38 (45.8)
Marital status		
Never married	156 (43.2)	45 (28.8)
Married/cohabiting	139 (41.3)	51 (34.7)
Not currently married	56 (15.5)	19 (35.2)
Where do you live in Edmonton		
Inner city neighbourhood	225 (70.1)	77 (34.5)
Non inner city neighbourhood	96 (29.9)	29 (30.5)
Education		
<High school diploma	159 (45.2)	60 (37.7)
High school diploma	39 (11.1)	9 (23.1)
Some university/college	85 (24.1)	25 (29.8)
University/college degree	69 (19.6)	19 (28.4)
Employment		
Employed full/part-time	96 (26.7)	32 (33.3)
Unemployed	159 (44.2)	59 (37.3)
Student	86 (23.9)	15 (18.1)
Retired or homemaker	19 (5.3)	8 (42.1)
Household income		
< $10,000	54 (24.4)	23 (42.6)
$10,000 – 19,999	48 (21.7)	18 (38.3)
$20,000 – 39,999	57 (25.3)	17 (30.4)
$40,000 – 59,999	24 (10.9)	9 (37.5)
≥ $60,000	39 (10.5)	12 (31.6)
Question not answered	150 (40.4)	79 (36.1)
Lived in poverty		
Never	92 (26.0)	24 (26.4)
As a child	97 (27.4)	31 (32.0)
As adult	60 (16.9)	21 (35.6)
All my life	105 (29.7)	36 (35.0)

Figure 4-2. Gambling involvement by Aboriginal participants in study (full sample)

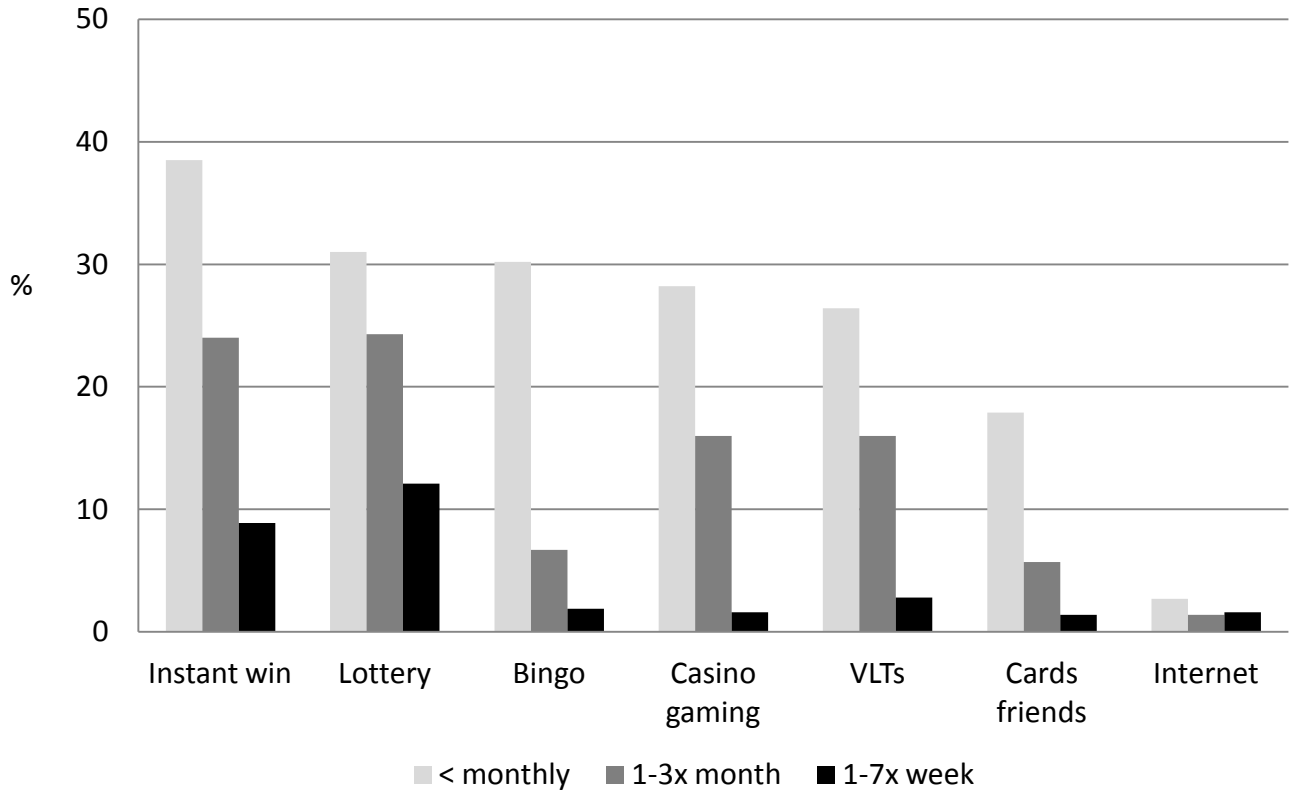


Figure 4-3. Gambling involvement among Aboriginal participants who met criteria for problem gambling (*N* = 117)

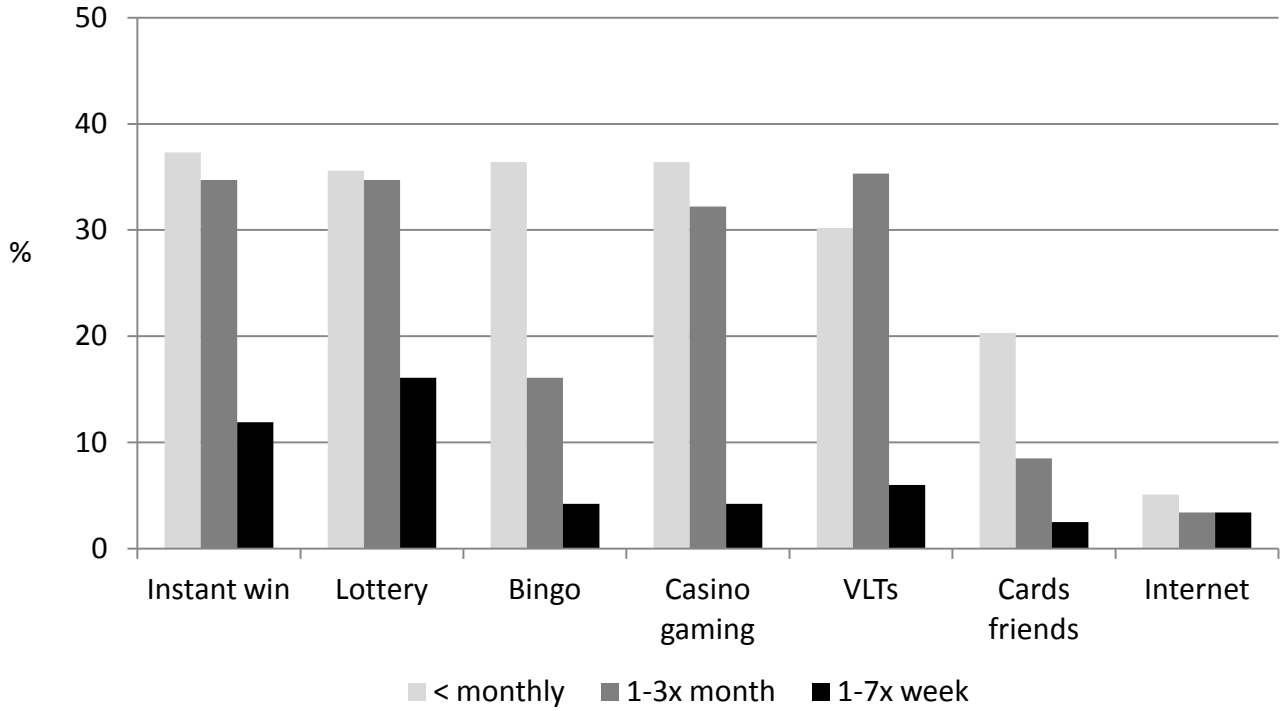


Table 4-2. Differences between participants who gamble and do not gamble to escape on key study variables

	Gamble to escape	*N*	Mean Score	*SD*	SE Mean	t-test	*p*
Racism situation score (range 0-9)	no	308	3.08	2.67	.15	-1.93	0.05
	yes	48	3.87	2.50	.36		
PTSD score (range 18-85)	no	302	38.42	15.46	.89	-2.05	0.05
	yes	49	43.37	16.71	2.39		
PG score (range 0-27)	no	314	2.25	4.14	.23	-7.57	0.001
	yes	52	7.40	6.49	.90		

Table 4-3. Experiences of discrimination (EOD) among urban Aboriginal participants

EOD	Identify as Aboriginal or First Nations (%) *N* = 275	Identify as Métis or Mixed Ancestry (%) *N* = 81
Number of situations, past yr		
0: No discrimination	15.7	29.1
1-2: Moderate	30.3	25.3
3+: High	53.9	45.6
Mean situation score (SD)	3.35 (2.60)	2.76 (2.78)
Mean frequency score (SD)	10.61 (10.46)	8.47 (10.82)
At school, past yr		
Once	6.7	7.4
2-3 times	24.4	16.0
4 or more times	22.6	21.0
In a public setting, past yr		
Once	5.9	12.5
2-3 times	25.4	16.3
4 or more times	22.4	16.3
In a store or restaurant, past yr		
Once	12.1	10.0
2-3 times	21.2	12.5
4 or more times	14.3	5.0
At work, past yr		
Once	10.3	9.9
2-3 times	11.7	9.9
4 or more times	11.4	17.3
Finding work, past yr		
Once	12.9	13.6
2-3 times	18.4	11.1
4 or more times	12.1	8.6
From the police/courts, past yr		
Once	11.0	6.3
2-3 times	12.9	12.5
4 or more times	13.2	8.8
Finding housing, past yr		
Once	13.6	11.3
2-3 times	13.9	10.0
4 or more times	12.1	10.0
Seeking medical care, past yr		
Once	8.5	11.3

2-3 times	11.0	7.5
4 or more times	10.3	7.5
Getting bank loans/mortgage/credit, past yr		
Once	4.8	1.3
2-3 times	7.3	7.5
4 or more times	3.3	6.3
How often are Aboriginal groups discriminated against in Canada		
Rarely or never	9.6	9.9
Sometimes	41.5	35.8
Often	48.9	54.3
How often do you feel discriminated against because of your Aboriginal ethnicity?		
Rarely or never	28.8	39.2
Sometimes	50.4	49.4
Often	20.8	11.4
Worry about experiencing racism, past yr		
Rarely or never	39.9	50.0
Some of the time	42.8	38.8
Most of the time	17.3	11.3
Worry about your Aboriginal group experiencing racism, past yr		
Rarely or never	28.5	30.0
Some of the time	46.7	47.5
Most of the time	24.8	22.5
Frequency of racism, in childhood		
Rarely or never	22.3	35.0
Some of the time	48.7	43.8
Most of the time	28.9	21.3
Worry about experiencing racism, as child		
Rarely or never	23.6	40.0
Some of the time	45.8	42.5
Most of the time	30.6	17.5
Worry about your Aboriginal group experiencing racism, as child		
Rarely or never	23.4	27.5
Some of the time	50.9	43.8
Most of the time	25.6	28.7

Table 4-4. Pearson's *r* correlations between main study variables

	1	2	3
1. Racial discrimination score	1.0	0.15*	0.22**
2. PG score	0.20**	1.0	0.01
3. PTSD full score	0.31**	0.05	1.0

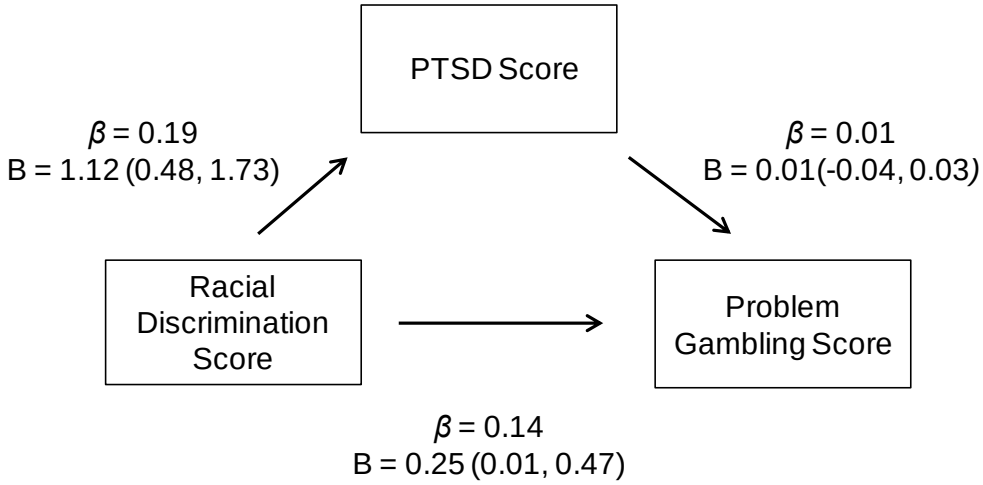
Zero order correlations are represented below the diagonal; partial correlations adjusted for age, gender, education, employment, marital status and life course poverty are represented above it.
**p < 0.001, *p = 0.007

Table 4-5. Bootstrapped point estimates and bias-corrected 95% confidence intervals (CIs) for the direct effects of racial discrimination and hypothesized covariates on problem gambling scores

Variables	Model 1 ($adj\ R^2$ = 0.04)			Model 2 ($adj\ R^2$ = 0.09)			Model 3 ($adj\ R^2$= 0.09)		
	B (95% CI)	*SE*	β	B (95% CI)	*SE*	β	B (95% CI)	*SE*	β
Racism score	**0.38 (0.17 – 0.57)**	0.11	0.20	**0.30 (0.09, 0.54)**	0.12	0.16	**0.26 (0.05, 0.48)**	0.11	0.14
Age				**0.11 (0.07, 0.16)**	0.03	0.26	**0.12 (0.07, 0.17)**	0.03	0.28
Gender				0.39 (-1.41, 0.66)	0.52	0.04	0.22 (-1.28, 0.87)	0.55	0.02
Education				-0.44 (-0.93, 0.04)	0.09	-0.10	-0.38 (-0.84, 0.11)	0.24	-0.09
Unemployed				0.01 (-1.03, 1.36)	0.67	0.02	0.28 (-0.88, 1.52)	0.62	0.03
Divorced/separated				-0.27 (-1.97, 1.59)	0.87	0.01	-0.22 (-1.84, 1.41)	0.85	-0.02
Life course poverty				-0.06 (-0.58, 0.42)	0.24	-0.06	-0.06 (-0.61, 0.33)	0.23	-0.03
Parental separation							-0.42 (-1.44, 0.61)	0.53	-0.04
Abuse in childhood							0.09 (-1.03, 1.25)	0.57	0.01

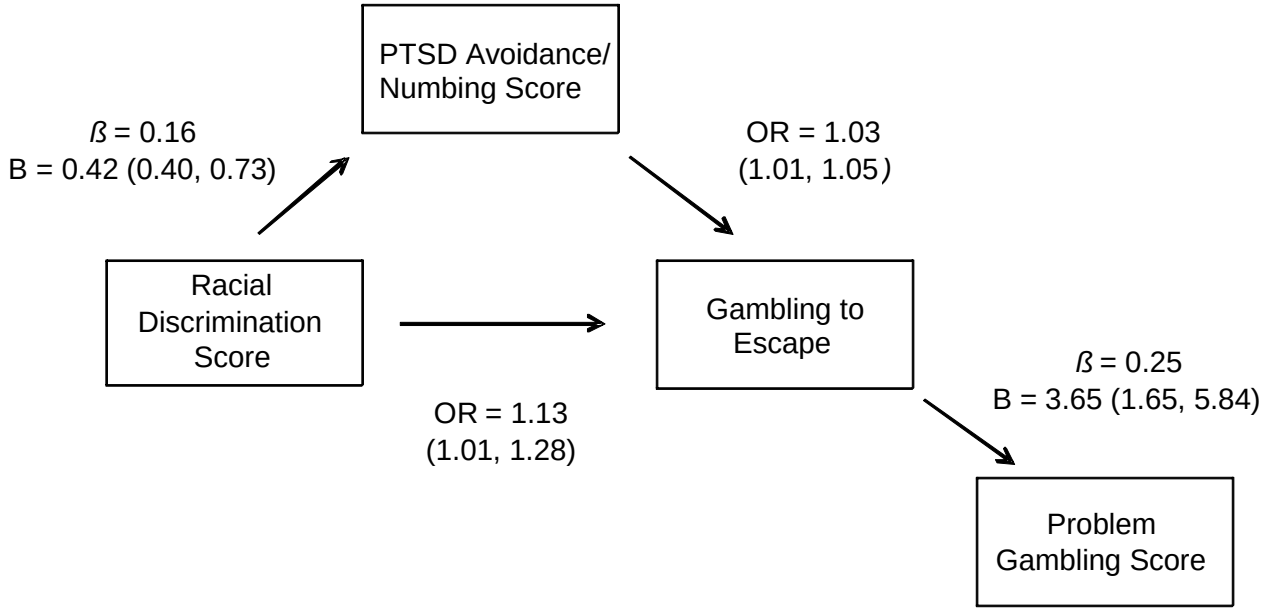
* Significant results ($p < 0.05$) are provided **in bold**. Model 1 provides an unadjusted estimate of the association between racial discrimination score and problem gambling score. Model 2 provides an estimate adjusted for sociodemographic covariates (age, gender, education, unemployment status, marital status, and life course poverty). Model 3 provides includes additional adjustment for childhood trauma (parental separation and abuse).

Figure 4-4. Testing hypothesized mediation of association between racial discrimination and problem gambling through increased PTSD using adjusted unstandardized bootstrapped regression coefficients (95% confidence intervals)*



*Regression models adjusted for age, gender, education, marital status, unemployment, life course poverty, separation from parents in childhood, abuse in childhood.

Figure 4-5. Post hoc mediation test of association between racial discrimination and gambling to escape through increased PTSD using adjusted bootstrapped regression models (95% confidence intervals)



*Regression models were adjusted for age, gender, education, marital status, unemployment, life course poverty, separation from parents in childhood, abuse in childhood; with additional control for gambling frequency and variety in the regression model predicting problem gambling score.

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Chapter 5

Impacts of Enculturation, Acculturation and Racial Discrimination on Drug Use Problems among Urban Aboriginal Adults*

Introduction

To date, we do not have a common understanding of the determinants underlying the burden of drug use disorders experienced by Aboriginal peoples in Canada.[1-7] Research suggests that substance use problems in established market economies are higher among those living in poverty and among men.[8-11,12] Aboriginal Canadians are among the poorest and most socially excluded group in Canada. Yet there remains a dearth of information about how social determinants influence drug use problems in this population.

Human beings are not psychologically self-sufficient; individuals in every culture are naturally inclined to establish and maintain a profound interdependence with society. Psychosocial integration is both an experience of meaning and identity and a social experience of obligation and reciprocity.[13] The term *social dislocation* has been used by Polanyi and others to describe an enduring lack of psychosocial integration in society, an experience that is both individually painful and socially destructive.[14] Engaging in addictive behaviours may be a way of adapting to ongoing social dislocation.[14] From this perspective, the inequitable burden of addictions shared by Aboriginal peoples in colonized societies is a marker of the social dislocation they are experiencing. While social epidemiologists have long argued that the vast majority of health outcomes are fundamentally influenced by the social world,[15, 16] addictions may be more heavily influenced by negative social environments than other diseases and disorders (e.g., cardiovascular illness, cancer) given their potential to reduce psychological distress and provide rewards that disadvantaged individuals may not be able to obtain through their social experiences.

Race-based discrimination may be a particularly important dislocating experience for Indigenous peoples. *Race* as a concept refers to a form of social categorization based on phenotypic characteristics, the salience of which shifts across place and time.[17, 18] The term *racism* refers to an ideology that ranks some groups as inherently inferior to others based on their ethnic identity and phenotypic characteristics.[19] Although racism is an ideology, it informs action by justifying actions, institutions, and social norms that implement this ideology.[20, 21] Racism leads to the development and maintenance of negative attitudes and beliefs about

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certain groups (racial prejudice), and unfair treatment directed at those perceived to be part of stigmatized racial groups (racial discrimination).Targets may become aware of some of the racial discrimination directed at them, with these perceptions generating significant levels of stress.[21] A growing number of researchers now attribute the health disparities experienced by African Americans to social stressors, particularly the experience of racial discrimination.[21-25] Longitudinal studies have associated perceived racial discrimination to an array of adverse outcomes including the development of addictive disorders, psychiatric illness, uterine myomas, breast cancer, obesity and coronary artery calcification.[26-29] Emerging research also suggests that urban Aboriginal peoples in Australia experience high levels of racial discrimination, with significant impacts on their health and well-being.[30-32]

In Canada the scientific literature has paid little attention to the degree to which racial discrimination may similarly account for the disproportionate burden of health disparities observed among Aboriginal peoples. The Canadian Aboriginal population is rapidly urbanizing and growing, resulting in increased contact with non-Aboriginal populations.[33] There have been a number of historical efforts to keep Aboriginal peoples away from urban areas. The creation of reserves is one example, as is the pass system, which confined First Nations persons to reserves in the prairies by requiring a pass from an Indian agent to leave.[34, 35] These are examples of efforts that have helped reinforce the view that cities are 'modern' spaces reserved for settler societies and the immigrant groups they select to live there. As a result, Aboriginal peoples are often considered 'out of place' in urban Canada, particularly those who have not relinquished their culture.[35-37] These assumptions are being challenged by the growing demographic and cultural presence of Aboriginal peoples in urban areas.[38] However, emerging research suggests that if there is a single urban Aboriginal experience it is the shared perception that they are stereotyped negatively.[38] A 2009 study of 11 Canadian cities found seven in ten Aboriginal adults had been teased or insulted because of their ethnic background, and more than a third did not feel accepted by non Aboriginal people.[38] The study also polled non Aboriginal residents and found those in Edmonton were the most pessimistic about the relationship between Aboriginal and non Aboriginal people in their city, with 62% viewing it as negative and 79% not improving.[38]

Relations between Aboriginal and non Aboriginal peoples are particularly important in Edmonton given the city is home to the second largest Aboriginal population in Canada. A 2009 pilot study conducted as a precursor to the present work found urban Aboriginal university students experienced high levels of racial discrimination in this city.[39,40] Building on this pilot, the present study examined the extent to which racial discrimination was associated with illicit and prescription drug use problems across a broader sample of urban Aboriginal adults, and the extent to which these associations were explained by increased symptoms of traumatic stress.

Stress is an ambiguous term that has been characterized in a number of ways since

it was introduced in the 1950s.[41] Stress and coping theorists introduced the concept of differential vulnerability which advocated that what was stress for one individual was stimulation to another, depending on how a situation is appraised by an individual.[42] However, what appears on the surface to be differential vulnerability to stress at an individual level may actually be, on closer inspection, differential exposure to social stressors at a population level.[43] Detailed examinations of the human stress response since the 1950s have documented sufficient reactive physiologic regularity to suggest a more appropriate focus is the social environment and the reliable effects it has on physiological stress reactions across individuals.[45-47] It is now well documented that the wear and tear of high unremitting stress on physiological systems can dysregulate normal biologic reactions and an inability to turn off the stress response when it is no longer needed, among other problems.[44, 48] Stress-induced dysregulation of the autonomic nervous system and the hypothalamic-pituitary-adrenal (HPA) axis has been implicated in the development of disease in prospective studies.[48, 49] Ongoing, uncontrollable, and unpredictable stress also exerts important effects on limbic neurons that in combination with allostatic dysregulation, can result in damage to key brain regions associated with addictive behaviours.[47, 50, 51] McEwen fashioned the term *allostatic overload* to describe the damage that chronic activation of allostatic systems has on the body and the behavioural changes that accompany this damage such as smoking, substance abuse, and social withdrawal.[48, 49]

Links can be made between McEwen's allostatic overload model and Cooper's theoretical model of alcohol use. Cooper theorized that individuals are motivated to use alcohol to cope or escape, and that this motive represents one of several 'final common pathways' linking distal variables to alcohol problems.[53] The use of drugs to deal with negative affect has since been confirmed.[54, 55] The concept of allostatic overload compliments this theory by suggesting that individuals who experience extreme social adversity may become highly motivated to engage in addictive behaviours to escape the resulting biological and emotional consequences. Thus, McEwen's allostatic overload model provides a biological and social grounding for a key motive for addictive behaviour suggested by Cooper's theory.

Racial Discrimination and PTSD

Post traumatic stress disorder (PTSD) is described by efforts to avoid stimuli and feelings associated with traumatic events, detachment, intrusive recollection of events associated with trauma, and ongoing symptoms of physiologic hyperarousal (e.g., such hyper-vigilance and an exaggerated startle response).[45] It is an especially powerful stress response that can occur in reaction to social trauma. It is well documented that individuals will engage in substance use behaviours to cope with symptoms of disorder.[56-58] However, the idea that racism could result in symptoms of PTSD is more contentious. The DSM has remained silent on the on the correct classification of race-based psychological trauma, despite its ubiquitousness in North American society. As a result, there has been ambiguity regarding what is being measured in research when symptoms of

traumatic stress are elicited by visible minorities in response to experiences of discrimination.

The types of qualifying events that precede PTSD continue to be debated among experts.[59-62] In the most current version of the DSM, the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR), a PTSD qualifying event (Criterion A1) requiring a person *experience, witness or have been confronted with an event or events that involves actual injury or a threat to the physical integrity of oneself or others*.[63] Further, the environmental stressors considered to precede PTSD, acute stress, or adjustment reactions in the DSM-IV-TR does not include racially-based events. This omission may result in an underestimate of the true psychological impact of racial discrimination by those relying on diagnosable psychological disorders as evidence of emotional distress,[64] and has resulted in a call for experts to expand their perspectives beyond the DSM when considering race-based traumatic stress.[65]

The International Statistical Classification of Diseases and Related Health Problems, 10th edition (ICD-10), for example, classifies PTSD not as an anxiety disorder, but in a category of reactions to severe stress. ICD-10 requires that qualifying events be *of an exceptionally threatening or catastrophic nature, which are likely to cause pervasive stress in almost anyone*.[66] It may be argued that racial discrimination meets the definition of an ICD-10 qualifying event for PTSD as race-based discriminatory experiences are inherently and exceptionally threatening for most individuals given they are based on fixed features of an individual's physical appearance. Racial discrimination is also typically uncontrollable, unpredictable and ongoing, offering little opportunity for individuals to place distance between themselves and the stressor and recover from its effects. More than a dozen experimental studies have now documented that experiences of discrimination cause visceral physiological and psychological stress responses across racial groups.[67] As a clinician, Butts notes there are intriguing psychodynamics implicit in the refusal by European-Americans to acknowledge and accept that the responses of minorities to racial discrimination should be viewed as clinically symptomatic.[68] He reports on the devastating emotional responses to racist acts he has witnessed in his clinical work. He argues that with a fair degree to frequency, African Americans who experience racial discrimination report symptoms consistent with a PTSD diagnosis. A key objective of the present study was to expand on these observations by testing whether racial discrimination was positively associated with PTSD symptomology and drug problems within a community sample of urban Aboriginal adults in Canada.

Acculturation and Enculturation

Low levels of acculturation and enculturation may be a second socially dislocating experience for urban Aboriginal peoples. *Acculturation* is defined by the degree to which minority groups identify with, feel a sense of pride for, and integrate the values and practices of the mainstream culture they live within.[69] Moderate to high levels of acculturation have been found to enhance mental

health and wellbeing in ethnic groups. Most of this work, however, has focused on immigrant groups who do not, for the most part, have historical grievances with Canadian settler society.[70, 71] The suggestion that mainstream acculturation may be similarly protective for Indigenous populations is complicated by the historical and current mistreatment of Aboriginal peoples by the settler societies who colonized their homeland. Discrimination, loss of land, forced assimilation policies, and an ongoing media emphasis on negative Aboriginal anecdotes have resulted in a valid distrust of settler society that can be difficult for Aboriginal peoples to surmount. As a result, hypotheses regarding associations between Canadian acculturation and drug use problems among urban Aboriginal peoples were not developed for this study.

In contrast to acculturation, *enculturation* defines the degree to which minority groups identify with, feel a sense of pride for, and integrate the values and practices of their heritage culture.[69] High levels of enculturation have been shown to reduce addictive problems and strengthen mental health across a number of ethnic groups, including Aboriginal populations.[72-77] Although effect sizes are sometimes small, enculturation is an important factor to examine in public health given it is more easily modified than other health determinants. It is also a determinant that can empower and foster pride among Indigenous peoples; resulting in an intrinsic motivation to strengthen this factor.

Unfortunately, many Aboriginal Canadians experience a pervasive sense of cultural loss and *anomie* as they attempt to re-establish cultural norms and traditions from remnants of the past.[78] The loss of land and control over living conditions; the suppression of language, belief systems, and spirituality; and racial discrimination have damaged confidence in the traditional ways of understanding life that once guided Aboriginal peoples and their communities.[79] Despite these difficulties, the Royal Commission on Aboriginal Peoples (RCAP) has concluded there remains an *Aboriginal worldview* that is consistent in important ways among Aboriginal traditions across the country, and that restoring collective confidence in distinctly Aboriginal ways of apprehending reality and governing collective and individual behaviour would empower Aboriginal peoples and foster self-determination.[79]

In the present study it was hypothesized that Aboriginal enculturation would serve as a protective factor for illicit and prescription drug problems by socially 'locating' urban Aboriginal peoples in an environment in which they are frequently dislocated. It was theorized that enculturation would reduce both illicit and prescription drug problems *directly* by grounding Aboriginal peoples in a *nomic* world of personal significance, including teachings about balance and limiting the use of mind altering substances. It was also hypothesized that enculturation would reduce drug problems *indirectly* by providing an alternative social milieu that meets their basic psychological needs in an urban environment that otherwise would not. It was theorized that enculturation would improve the psychological well-being of urban Aboriginal peoples by offering a social milieu that encouraged them to see the many strengths that exist within their culture and

its history, to hold high esteem for themselves and their ethnic ancestry, and to socialize with others who are also highly enculturated and thus view other Aboriginal persons in a similarly positive and esteemed light.

Beyond Protection: Enculturation as a Resiliency Factor Against Drug Problems

In addition to serving as a protective factor with direct and indirect effects on drug problems, enculturation was also hypothesized to serve as a resilience factor that would reduce the likelihood of addictions in the presence of risk producing conditions. Operating on a separate dimension to risk, a *resilience factor* attenuates the strength of an association between a risk factor and outcome.[80] Just as a risk factor has an inverse that is protective, a resilience factor has an inverse that amplifies risk.[81] Using interaction terms, enculturation was tested as a resilience factor that would weaken the impact that statistically significant risk producing conditions have on illicit and prescription drug problems for urban Aboriginal adults.

By definition, a resilience factor should be active when individuals face high levels of risk, acting to reduce the likelihood of a negative outcome. When levels of risk are low or controlled using statistical techniques, resilience is unnecessary and therefore dormant, and should not change the strength of the association between risk and adverse outcomes.[80, 81] That is *not* what was hypothesized in the present study. By providing Aboriginal peoples with a nomic world of personal significance and strengthening psychological well-being, enculturation was expected to serve as a protective factor in low risk situations, in addition to conferring resilience in the face of demonstrable risk.

Summary of Hypotheses

In summary, two sets of hypotheses were proposed, each grounded in the theme of the social dislocation of Aboriginal adults in the urban environment. First, it was hypothesized that: (1) racial discrimination would be positively associated with illicit and prescription drug problems; (2) racial discrimination would be positively associated with PTSD symptoms; and (3) on the view that psychoactive drugs provide a way to minimize negative affect associated with racial discrimination, PTSD symptoms would partially mediate the association between racial discrimination and drug problems.

Second, it was hypothesized that: (1) enculturation would be negatively associated with illicit and prescription drug problems; (2) enculturation would be positively associated with autonomy, competence and relatedness; (3) these psychological factors would partially mediate the association between enculturation and each drug problem; and (4) enculturation would interact with significant risk producing conditions to reduce the likelihood of current drug problems.

Methods

Sample and Procedure

I organized and worked collaboratively with an Aboriginal Advisory Committee made up of key members of the Edmonton Aboriginal community. Together we set study priorities, determined measures that would be used and decided how data would be collected. Among other useful suggestions, the Committee recommended participants be given the option to self-identify as Inuit, Métis, First Nation, *or* Aboriginal as some individuals living in cities who are First Nations but do not have Registered Indian Status and/or are not affiliated with a specific First Nations community may prefer to self-identify as Aboriginal. As a group we determined that after completing a pilot study with Aboriginal university students, I would administer an in-person survey to a community-based convenience sample of adults in Edmonton who self-identified as Aboriginal, Métis or Inuit and lived.

Data were collected from May to December of 2010. Participants were recruited using posters placed in the offices of Aboriginal organizations and organizations and public spaces frequently used by Aboriginal peoples in Edmonton. These included organizations offering various social services, educational, employment, and housing opportunities; and general public spaces such as grocery stores and shopping malls. Ads in community newspapers and e-newsletters distributed by Aboriginal organizations and organizations frequently accessed by Aboriginal peoples were also used. The range and breadth of organizations and public spaces in which the study was advertised was carefully considered before and during data collection, taking into consideration the sociodemographic profile and geographic distribution of Aboriginal peoples in Edmonton. To increase the generalizability of findings snowball sampling techniques were avoided. No advertising took place in gaming or drinking establishments or addiction treatment centres.

Written consent was obtained from all participants. Study procedures and survey instruments were reviewed and approved by the Human Research Ethics Board at the University of Alberta and the Aboriginal Advisory Committee commissioned for the project. All participants completed a questionnaire package by hand (mean completion time = 70 minutes). Questions included those described here, as well as additional questions designed to address research questions outside the scope of this paper. Each participant was given an honorarium of $25 for his or her time.

Outcome Variables

Drug Problems. Participants were asked how frequently they used a range of illicit and psychoactive prescriptions drugs. To determine the extent of nonmedical prescription drug use, participants were asked if they had used a psychoactive prescription drug beyond what was prescribed (dose or length of time prescribed) or without a prescription in the past year. A separate question asked how often they used these substances to get high. Each of these two questions was asked for each drug class examined (prescription painkillers, sedatives/tranquillizers, prescription stimulants). Participants were classified as

using prescription drugs nonmedically if they went beyond what was prescribed, had used at least one of these substances without a prescription, or had used one of them for the purposes of getting high.

The extent of illicit and prescription drug use problems were each assessed using two applications of the Drug Use Disorders Identification Test (DUDIT), an 11-item self-report measure developed to screen individuals for drug problems. [82, 83] In the present study, DUDIT questions were modified to ensure participants answered questions about their involvement in prescription drug use and illicit drug use separately. To measure prescription drug use, the first DUDIT question was modified from 'How often do you use drugs other than alcohol' to: '*How often did you use prescription pain killers, sedatives, tranquilizers or stimulants?*' The remaining ten DUDIT items were modified by including the word 'prescription' before the word 'drug' for each question (e.g., How often over the past year have you taken *prescription* drugs and then neglected to do something you should have done?). To differentiate a second DUDIT screen for illicit drugs, question 1 was modified to: '*How often did you use illegal drugs?*' Questions to subsequent questions were modified by included in the word 'illegal' in front of the word 'drug' for each question.

The DUDIT screen includes nine questions scored on a 5-point scale ranging from 0 to 4, and two questions scored on a 3-point scale with values of 0, 2, and 4. Total DUDIT scores range from 0 to 44, with higher scores suggestive of a more severe drug problem. Cut-off score for drug use problems in population-based samples have not been clearly established in the literature. Authors of the original validation study recommend scores two standard deviations above the mean DUDIT score as a cut-off suggestive of drug-related problems.[82] In the original validation studies for the DUDIT, this recommendation translated to cut-off scores of 6 or greater for men and 2 or greater for women in the Swedish general population, and 25 or more for clinical samples with severe drug abuse histories.[83] A score of 8 has been recommended as an optimal cut-off for identifying those who may be experiencing drug problems in clinical samples with less severe drug abuse histories.[84] Appropriate cut-off scores for North American Aboriginal populations have not yet been established and may be different. In the present study, the internal consistency of full-scale DUDIT scores was excellent ($\alpha = 0.91$ and 0.92 for the prescription and illicit drug versions of the measure, respectively).

Exposure Variables

Racial Discrimination. The Experiences of Discrimination (EOD) Scale measured self-reported discrimination due to Aboriginal race across nine situations.[40] The *situation subscale* counts the number of situations racism is experienced, while the *frequency subscale* asks participants to report how many times racism was experienced in each situation. The situation subscale is scored by counting the number of situations (1 to 9) that racial discrimination is experienced. The frequency subscale, assigns values of 0, 1, 2.5 and 5 to responses of never, once, 2 to 3 times and 4 or more times for each situation.[40]

Although the original measure examines lifetime discrimination, a preliminary study conducted as a precursor to the present work suggested Aboriginal peoples may experience very high levels of racism and that a 12-month measure may be more appropriate to ensure sufficient data variability. Thus, each question on the situation subscale was worded as follows, with information in brackets reflecting the information added that was not included in the original measure, and X reflecting each of the 9 situations tested: *(In the past 12 months) have you experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior at X because of your race, ethnicity or colour?* Wording on the frequency subscale was as follows, with information in brackets reflecting the modification made to each question: *If yes, how many times did this happen (in the past year)?*

Krieger and colleagues define high discrimination by situation scores of 3 to 9, and moderate discrimination by scores of 1 to 2.[85] In the present study, the situation subscale ranged from 0 to 9 situations in the past year (M = 3.3, SD = 2.7). The frequency subscale scores ranged from 0 to 45 (M = 10.0, SD = 10.5). The internal consistency of each subscale was good ($\alpha = 0.82$ and 0.86 for the situation and frequency subscale, respectively). The EOD also includes questions about the extent to which individuals worry about discrimination targeted at themselves and their racial group, and how frequently they experienced and worried about discrimination in childhood. These items were also included in the present study.

Enculturation and Acculturation. In the present study, the heritage and mainstream subscales of the Vancouver Index were used as measures of Aboriginal enculturation and mainstream Canadian acculturation respectively.[71] Enculturation and acculturation subscales were mean centred, with a potential range of 1 to 9. Using reliability generalization, a recent meta analysis reported the average internal consistency for the Vancouver Index across 14 studies was $\alpha = 0.83$ (range: 0.66 to 0.92).[71] In the present sample internal consistency was similarly robust (heritage subscale $\alpha = 0.86$, mainstream subscale $\alpha = 0.80$).

A limitation of the Vancouver Index is that it does not shed light on the definitions respondents use to conceptualize cultural participation. For this reason, the present study included additional open-ended questions to shed light on the definitions urban Aboriginal participants used to assess their own levels of enculturation and acculturation. As part of the questionnaire package, the second half of the sample was asked to answer the following questions after completing the Vancouver Index: (1) Thinking about the Aboriginal, Métis or Inuit cultural group that you most identify with, can you name three cultural behaviours or traditions that a traditional Aboriginal person would typically engage in? (2) Thinking about the Aboriginal, Métis or Inuit cultural group that you most identify with, can you name three cultural values that a traditional Aboriginal person would consider important? (3) Can you name three cultural behaviours or traditions that a typical Canadian person would engage in? (4) Can you name three cultural values that a typical Canadian person would consider important?

Mediating Variables

PTSD. The PTSD Checklist-Civilian Version (PCL) was used to assess current PTSD symptoms.[86] Participants were asked how often they were bothered by each of 17 symptoms in the last month using a five-point Likert scale ranging from 1 (not at all) to 5 (extremely). A total symptom severity score (range = 17 to 85) can be obtained by summing the 17 items. The PCL can also be used to assess symptom clusters for PTSD including intrusive recollection, avoidance/numbing and hyper-arousal. More than 20 validation studies across a range of populations suggest the internal consistency (alpha) of the measure is in the mid- to high .90s.[87] In the present study, scores ranged from 17 to 85 (M = 40.0, SD = 15.9) and internal consistency was excellent (α = 0.95). The internal consistency of the PCL subscales were also good (α = 0.91, 0.88 and 0.86 for intrusive recollection, avoidance/numbing and hyper-arousal subscales, respectively).

Psychological Stress and Distress. Two additional measures, the Perceived Stress and Coping Scale and the General Health Questionnaire, were used to examine mediation by psychological stress and distress more generally to allow for comparison with PTSD mediation models, and to determine if PTSD remained a significant mediator after adjustment for these psychological factors. The 10-item Perceived Stress and Coping Scale is one of the most widely used psychological measures of perceived psychological stress. Items assess the extent to which individuals experienced psychological and physical symptoms of stress in the past month on a 5-point scale ranging from 'never' to 'often'.[88] Scores have a potential range of 0 to 40. In the present study scores ranged from 2 to 37 (M = 19.0, SD = 5.90) and the internal consistency was good (α = 0.85).

The 12-item General Health Questionnaire (GHQ-12) is a screening measure aimed at detecting those experiencing current symptoms of psychological distress/problems.[89] Each item assesses the severity of general psychological distress in the past few weeks using a four point scale ranging from 'much less than usual' to 'more than usual'.[89] Scores have a potential range of 0 to 36. In the present study scores ranged from 0 to 34 (M = 15.6, SD = 6.16) and the internal consistency was acceptable (α = 0.82).

Psychological Well-Being. Using a 7-point scale, the Basic Psychological Needs Scale was used to assess psychological well-being across three domains: feeling that one's choices and activities are autonomous (7 items), feelings of competence in one's activities (6 items), and feeling a sense of relatedness to others (8 items).[90, 91] Correlations between the subscales ranged from .52 to .65 and internal consistency was good (α = 0.91, 0.88 and 0.86 for autonomy, competence and relatedness subscales, respectively).

Data were gathered on a secondary measure of psychological well-being, self-esteem, using the 10-item Rosenberg Self-Esteem Scale.[92] This measure has been used extensively across disparate cultural groups and is considered a reliable and valid tool for self-esteem assessment.[92] The measure assesses self-esteem by asking participants to reflect on the feelings they have about themselves using a 4-

point scale ranging from strongly agree to strongly disagree. In the present study scores ranged from 5 to 30 (M = 21.3, SD = 5.31) the internal consistency of the measure was good (α = 0.85).

Covariates

Gender and exact age were was assessed as well as marital status across three categories, education across four categories and employment across five categories. Current household income was also examined; however, consistent with previous studies conducted with Aboriginal populations, a large percentage left this question blank.[94, 95] As this was anticipated, participants were also asked if they had experienced poverty in their lifetime. Response options included 'never', 'as a child only', 'as an adult only' and 'all my life'. Few participants left this question blank (2.0%), and this variable was used to adjust for poverty across the life course in multivariate models. To allow for the control of other forms of trauma that may influence PTSD and PG symptomology, participants were asked if they had been separated from their parents in childhood (yes or no) and if they had experienced physical or sexual abuse in childhood (yes or no).

Analysis Strategy

Descriptive analyses were used to examine demographic characteristics and the extent to which participants experienced drug problems, racial discrimination, enculturation and acculturation in the past year. The degree to which racial discrimination (operationalized as the number of situations racism was experienced in the past year) was associated with each drug problem score; and support for mediation by PTSD symptomology were examined using bootstrapped linear regression models; with a continuous measure of each drug problem score as an outcome and 95% confidence intervals (k = 5000).[96, 97] Similarly, the degree to which enculturation and acculturation were associated with drug problem scores; and support for mediation by autonomy, competence and relatedness were examined using bootstrapped linear regression models; with a continuous measure of each drug score as an outcome and 95% confidence intervals (k = 5000).[96, 97]

Models were adjusted for the potential confounding effects of covariates selected *a priori* based on existing literature. These included age, gender, marital status, unemployment status and life course poverty. Models were also adjusted for childhood trauma given documented associations between these experiences and both PTSD and drug problems in the literature.[98-100] Potential statistical interactions were first examined using graphical representations and loess curves.[101] Graphical representations that suggested an interaction were tested by forming a product term and calculating two R^2 values, one for the main-effects-only model, and another with the product term added, with an interaction deemed present if the difference between the two R^2 values was statistically significant using a hierarchical F test.[102, 103]

Mediational Analysis

Mediators are mechanisms that explain how one variable affects another.[104] It in the present study, PTSD symptomology was hypothesized to be a mechanism through which racial discrimination influenced drug problems (Figure 5-1). Psychological stress and distress were also examined as alternate mediators of these associations separately and in an omnibus model. In a separate mediational analysis, autonomy, competence and relatedness, entered as one block into the analysis, were hypothesized as mechanisms through which enculturation partially reduced drug problems. In both instances, mediation was examined using a non-parametric bootstrapped multivariate approach to the cross-products of coefficients method developed by Preacher and Hayes.[97, 105] A key advantage of examining mediation using the Preacher and Hayes approach is a single test of the mediation (*a*b*) pathway. This method avoids a key problem with the standard approach to mediation testing originally developed by Baron and Kenny which examines changes in the size of the *c* path when the variance provided by the *a* and *b* path are removed (termed the *c'* path).[106] Using this method, if an exposure variable has a strong effect on a mediator (the *a* pathway), there may be limited opportunity for the mediator to be significantly associated with the outcome (the *b* pathway) due to the mutuality of the *a* and *b* paths.[107] Instead the Preacher and Hayes approach was used as it requires no assumptions regarding underlying sample distributions as statistical significance is determined non-parametrically.[97] A total of 5,000 random samples of the original size were taken from the data with replacement, and the indirect effect (*a*b*) computed for each sample.[97, 105] The point estimate of the indirect effect was the mean *a*b* value computed over the samples, with 95% confidence intervals derived from the obtained distribution of *a*b* scores.[97, 105] If the upper and lower bounds of these bias corrected confidence intervals did not contain zero, the indirect effect was considered significant. Only a value that reached conventional levels of significance ($p \leq 0.05$) was interpreted.

Results

Sample Characteristics

Participants had a mean age of 35.2 years (SD = 11.5, range = 18 to 79 years). As shown in Table 5-1, most identified as First Nations or Aboriginal. More than three quarters (77%) had Registered Indian Status. The sample included approximately 20% more women than men, which is consistent with the gender distribution of Aboriginal peoples in Edmonton.[108] The reported household income and educational attainment of participants also matched population-based estimates, however a large proportion of the sample did not disclose their income and there were more unmarried and unemployed participants then would be expected if random sampling had been used.[109] On average participants had been living in Edmonton for 15 years (SD = 12.3, range = 0.8 to 60 years). About 70% lived in the 11 traffic zones designated as inner city by the City of Edmonton, which is somewhat higher than the actual percentage of the Aboriginal population

who live in this area (62.5%).[108] About a quarter of the sample had never lived in poverty, while about 30% had lived in poverty all their lives.

Substance Use and Problems

Overall, 62.5% of adults had used illicit drugs in the last year; most typically cannabis (56.1%), cocaine (32.5%), and hallucinogens (14.6%). Cannabis was the substance used most frequently, with 16.2% of the sample reporting daily or almost daily use, and another 8.7% reporting weekly use (Figure 5-2). Use of illicit amphetamines, inhalants and heroin were less common (6.7%, 3.7% and 3.1%; respectively).

The average illicit drug problem score was high (M = 8.45, SD = 11.02, range = 0 to 44) relative to non Aboriginal community-based samples. Using a cut-off two standard deviations above the mean of the present sample (i.e., scores $\geq$ 30.5) as recommended by the authors of the original DUDIT validation study, findings suggest 7.3% of the sample had scores that suggested an illicit drug problem. However, given the high sample mean this cut-off may result in a number of false negatives. Using a cut-off of $\geq$25, which is the highest and most sensitive cut-off recommended for this screen, 9.8% of the sample met criteria for a probable illicit drug use disorder. This cut-off is typically reserved to categorize clinical populations.

Almost a quarter of the sample (24.8%) reported past year nonmedical prescription drug use; defined here as use without a prescription, beyond what was prescribed, and/or use for the purposes of intoxication. Categories of prescriptions most frequently misused matched that of the general population, but at considerably higher levels (13.8% opiates, 6.0% sedatives/tranquilizers, 4.6% stimulants).[110] Among those using prescription drugs nonmedically, 56.5% did so across one drug class, 24.7% across two drug classes, and 18.8% across all three drug classes examined. The mean prescription drug problem score was 4.63 (SD = 8.53, range = 0 to 44). Findings suggest 5.9% of participants had scores that suggested a prescription drug problem using a cut-off two standard deviations above the sample mean ($\geq$ 21.69); while 4.8% met criteria for probable prescription drug dependence using the most sensitive cut-off recommended for this screen (scores $\geq$ 25).

Enculturation and Acculturation

Participants evidenced high levels of enculturation (M = 7.35, SD = 1.31, range = 1.2 to 9.0) and acculturation (M = 7.14, SD = 1.16, range = 2.1 to 9.0). These variables were significantly correlated with one another (r = 0.40, p = 0.001). Responses to open-ended questions were used to describe the values and behaviours urban Aboriginal adults used to assess their own levels of enculturation and acculturation. When asked to name the cultural values that a traditional Aboriginal person who lived in an urban environment would consider important, participants named respecting others, the earth, and themselves most often (Table 5-2). Spirituality, family, and sharing what one has with others were

values that were also frequently named. When asked to name cultural behaviours that a traditional Aboriginal person who lived in an urban area would engage in, most participants named attending Aboriginal cultural events and Aboriginal spiritual ceremonies despite the travel outside the city this might require. Smudging was also frequently cited as an important cultural activity in the urban environment.

Aboriginal participants named family, materialism, career, and religion most frequently when asked about mainstream Canadian values. There was less consensus among Aboriginal participants about what it meant to practice Canadian culture. Watching or playing hockey was frequently named, as well as observing special days like Christmas and Thanksgiving, and socializing with others.

Racial Discrimination

Overall, 81.8% of participants had experienced discrimination due to Aboriginal race in the past year. More than half (51.3%) had experienced high levels of racism ($\geq$ 3 situations) in that time period (M = 3.3 situations, SD = 2.70, range = 0 to 9). Participants experienced discrimination most frequently in public spaces, stores and restaurants, and in seeking employment. About 60% of those who identified as First Nation or Aboriginal and 50% of those who identified as Métis or mixed heritage worried some or most of the time about experiencing racism in their day-to-day lives (Table 5-3). About 70% of respondents also worried some or most of the time about other people in their Aboriginal group experiencing racism. The extent to which participants were cultural or traditional Aboriginal persons was significantly associated with more frequent discrimination in the past year (*partial r* = 0.15, p = 0.008 adjusting for age, gender, education, unemployment, marital status and lifetime poverty). In childhood, about 75% of Aboriginal or First Nations participants, and 65% of Métis or mixed heritage participants had experienced racial discrimination some or most of the time. The majority of participants had worried frequently about racism in childhood. Levels of racial discrimination experienced in the past year were positively correlated with levels experienced in childhood (r = .49, p < .001), highlighting the importance of viewing discrimination as a life course variable.

Racial Discrimination and Drug Use Problems

Illicit Drug Problems

As shown in Table 5-4, racial discrimination was significantly and positively associated with illicit drug problem score in an unadjusted model (B = 0.59, 95% CI = 0.12 to 1.10). However, racial discrimination was no longer a significant predictor of illicit drug problems once other covariates were included in the statistical model.

Prescription Drug Problems

As shown in Table 5-5, racial discrimination was significantly and positively associated with prescription drug problem score in unadjusted and an adjusted model. Prescription drug score increased a half point for each additional situation discrimination had been experienced in the past year, adjusting for other covariates.

Mediation Testing

The extent to which the association between racial discrimination and illicit drug score was mediated by PTSD symptoms was not tested given the *c* pathway was not significant. A mediational analysis of the association between racial discrimination and prescription drug score began with a test of pathway *a* (Figure 5-1). Using the Preacher and Hayes method, the level of discrimination experienced in the past year (exposure) and PTSD symptomology (outcome) was tested in a separate bootstrapped and fully adjusted model. As shown in Figure 5-3, PTSD score increased an average of 1.22 points for each additional situation racism was experienced in the past year. PTSD symptomology was also a significant predictor of prescription drug problem score (i.e., pathway *b*).

The final mediational step was an analysis of the indirect *ab* pathway computed across 5,000 random samples of the original size taken from the data with replacement. The indirect effect (*ab*) was automatically computed for each sample.[98, 106] Findings indicate the mean *ab* value (point estimate) obtained from the bootstrapped distribution of *ab* scores was 0.18 (bootstrapped SE = 0.06, bias corrected 95% CI = 0.07 to 0.31). Given the upper and lower bounds of the confidence interval did not contain zero, the indirect effect was considered significant, indicating PTSD symptomology was a significant mediator of the association between racial discrimination and prescription drug problem score. Racial discrimination was no longer a significant predictor of prescription drug problems once PTSD score was included in the linear regression model (B = 0.33, $p = 0.06$) which by definition suggests PTSD symptomology accounted for the full association between racism and prescription drug problems.

A measure of psychological *stress* assessed using the Perceived Stress and Coping Scale, and *distress* assessed using the General Health Questionnaire, were examined as alternate mediators of the association between racial discrimination and prescription drug problem score. Zero-order and partial correlations between these psychological variables, racial discrimination, and prescription drug use score are displayed in Table 5-6. The mediational analysis to examine these effects unfolded in three steps. First the Preacher and Hayes method was used to determine if psychological *stress* functioned as mediator of the association between racial discrimination and prescription drug score in separate models adjusted for sociodemographics and childhood trauma. As shown in Figure 5-4, psychological stress (i.e., the PSS score) was not significantly associated with racial discrimination, but was significantly and positively associated with increased prescription drug problems. The indirect mean *ab* value obtained from

the bootstrapped distribution of *ab* scores was 0.05 (bootstrapped SE = 0.03, bias corrected 95% CI = -0.01, 0.13). The upper and lower bounds of this confidence interval contain zero indicating the indirect effect was not significant.

In the second step, the Preacher and Hayes method was used to determine if psychological *distress* (i.e., GHQ-12 score) functioned as a mediator of the association between racial discrimination and prescription drug score following the steps followed for PTSD score and psychological stress. As shown in Figure 5-5, psychological distress was not significantly associated with racial discrimination, but was significantly and positively associated with increased prescription drug problems. The indirect mean *ab* value obtained from the bootstrapped distribution of *ab* scores for psychological distress was 0.007 (bootstrapped SE = 0.05, bias corrected 95% CI = -0.09, 0.09). Thus, this indirect effect was also not significant.

In a final step PTSD score, psychological stress score, and psychological distress score were examined as mediators of the association between racial discrimination and prescription drug problem score together in the same model, thus adjusting for the covariance between them (Figure 5-6). Findings indicate PTSD score remained a significant mediator of the association between racial discrimination and prescription drug problems after adjustment for psychological stress and distress scores in the model (indirect mean ab value = 0.15, bootstrapped SE = 0.06, bias corrected 95% CI = 0.05, 0.29). Neither psychological stress nor distress were significant mediators in this omnibus model.

Enculturation, Acculturation and Drug Use Problems

Illicit Drug Problems

As hypothesized Aboriginal enculturation was inversely associated with past year illicit drug problems. Every 1-point increase in enculturation resulted in a 1.70 point decrease in illicit DUDIT scores in a fully adjusted model (Table 5-4). Current unemployment, life course poverty and separation from parents in childhood were significant risk factors for illicit drug problems in the past year. Interactions between enculturation and these exposure variables were not significant, indicating enculturation did not moderate the effects of these risk factors on problems with illicit drugs.

As shown in Table 5-4, enculturation did serve as a significant resilience factor for those with lower educational attainment (*F change statistic* with interaction in model = 4.53, $p = 0.03$). To illustrate these findings graphically, the effect of not completing high school on illicit drug problems was plotted at three levels of enculturation (low = below 1 standard deviation of the mean, average = within 1 standard deviation of the mean, high = above 1 standard deviation of the mean). As shown in Figure 5-7, the more enculturated an Aboriginal person was relative to others in the sample, the less impact that not completing high school had on

current illicit drug problems. In fact, respondents with high levels of Aboriginal enculturation who did not complete high school had illicit drug problem scores (M = 6.3) that were comparable to that of respondents low in enculturation who had completed high school (M = 6.2). Enculturation also reduced illicit drug problems among those with a high school education or greater, suggesting enculturation operated as both a resilience and protective factor. Indeed, the lowest drug problem scores were found among those who had completed high school and were highly enculturated (M = 3.4).

Prescription Drug Problems

As hypothesized, Aboriginal enculturation was inversely associated with prescription drug problems for urban Aboriginal adults. Every 1-point increase in enculturation resulted in an almost 1-point decrease in prescription drug scores in a fully adjusted model (Table 5-5). Educational attainment, current unemployment, life course poverty, and racial discrimination also served as significant risk factors for prescription drug problems in the adjusted model. One unanticipated finding was that acculturation also served as a significant risk factor for prescription drug problems once other covariates were accounted for. Interactions between enculturation and each of these risk producing conditions were not significant.

Mediational Analysis

Mediational analyses of the association between enculturation and each drug problem score began with a test of the hypothesized *a* pathways (Figure 5-1). Using the Preacher and Hayes method, enculturation (exposure) and each of autonomy, competence and relatedness (outcomes) were tested in separate bootstrapped and fully adjusted models. Findings indicate enculturation did not predict increased autonomy or competence, but was weakly associated with increased relatedness (β = 0.09, p = 0.13; β = 0.09, p = 0.13; and β = 0.12, p = 0.04 for autonomy, competence and relatedness, respectively)

Testing the *b* pathway with illicit drug score as the outcome indicates autonomy, competence and relatedness were each inversely associated with illicit drug problems (β = 0.17, p = 0.01; β = 0.13, p = 0.02; and β = 0.10, p = 0.05; respectively). Testing the *b* pathway with prescription drug score as the outcome indicates all but relatedness were inversely associated with prescription drug problems (β = 0.13, p = 0.03; β = 0.14, p = 0.02; and β = 0.08, p = 0.16; for autonomy, competence and relatedness; respectively).

The final mediational step was an analysis of the indirect *ab* pathway for illicit drug score and for prescription drug score. Beginning with illicit drug score as the outcome, the ab pathway was computed with autonomy, competence and relatedness included together as mediators in the same regression model, which was computed across 5,000 random samples of the original size taken from the data with replacement. Using the Preacher and Hayes method, the indirect effect (*ab*) was automatically computed for each sample.[98, 106] Findings indicate the mean *ab* value (point estimate) obtained from the bootstrapped distribution of *ab* scores

for was 0.09 (bootstrapped SE = 0.11, bias corrected 95% CI = -0.37 to 0.05) for autonomy; 0.05 (bootstrapped SE = 0.08, bias corrected 95% CI = -0.22 to 0.10) for competence; and 0.05 (bootstrapped SE = 0.11, bias corrected 95% CI = -0.15 to 0.30) for relatedness. Given the upper and lower bounds of the confidence intervals all contained zero, the indirect effects of these psychological constructs were not significant. Thus, autonomy, competence, and relatedness were not significant mediators of the association between enculturation and illicit drug problem scores.

This process was repeated with prescription drug score as the outcome. Findings indicate the mean *ab* value was 0.05 (bootstrapped SE = 0.07, bias corrected 95% CI = -0.22 to 0.05) for autonomy; 0.05 (bootstrapped SE = 0.06, bias corrected 95% CI = -0.20 to 0.06) for competence; and 0.05 (bootstrapped SE = 0.11, bias corrected 95% CI = -0.15 to 0.28) for relatedness. Thus, similar to findings for illicit drug problems, these psychological constructs did not mediate the association between enculturation and prescription drug problem scores.

Post Hoc Analysis

Data were collected on self-esteem as a secondary measure of psychological well-being. Autonomy, competence and relatedness are theorized to form the basis for self-esteem and most studies find these constructs highly related.[91, 111, 112] Correlations between self-esteem and autonomy, competence, and relatedness were correlated in the present study as well (r = 0.62. 0.55, 0.54, respectively).

Using the same Preacher and Hayes mediational method, a post hoc analysis found self-esteem was a significant mediator of the inverse association between enculturation and illicit drug problems (point estimate = -0.20, bootstrapped SE = 0.13, bias corrected 95% CI = -0.47, -0.02). Self-esteem was also a significant mediator of the inverse association between enculturation and prescription drug problems (point estimate = -0.12, bootstrapped SE = 0.08, bias corrected 95% CI = -0.031, -0.03). Associations between these variables are modeled in Figures 5-8 and 5-9. Findings indicate Aboriginal enculturation remained a significant protective factor for illicit (B = -1.44, p = 0.002) and prescription drug problems (B = -0.75, p = 0.05) after self-esteem was accounted for in statistical models, suggesting that Aboriginal enculturation had additional protective effects against drug use problems beyond its impact on self-esteem.

Discussion

Findings highlight high levels of illicit and prescription drug use problems in a sample of urban Aboriginal adults in Canada. Illicit drug problems were more prominent in this sample with 9.8% of participants meeting criteria for probable illicit drug dependence using the most sensitive and least specific cut-off recommended for the DUDIT screen. This cut-off is typically reserved to categorize clinical populations and may result in a number of false negatives in community-based samples. It is likely that the true number of urban Aboriginal adults struggling with illicit drug problems in this study was well above 10%.

Approximately a quarter of the sample had used psychoactive prescription drugs nonmedically in the past year; and almost half of these individuals did so across two or more drug categories increasing the potential for adverse consequences. Like the general population, analgesics were the most frequently misused drug class, followed by sedatives/tranquilizers and prescription stimulants.[110] Most participants gained access to these drugs using prescriptions written for them by physicians; however a sizable proportion also gained access by purchasing them illicitly and/or by using a prescription written for someone else. Using the most sensitive and least specific cut-off recommended for the DUDIT screen, findings suggest 4.8% of participants met criteria for probable prescription drug use disorder; however, the true percentage of Aboriginal adults struggling with prescription drug problems in this study was likely well above 5%.

Racial Discrimination, Traumatic Stress, and Drug Use Problems

Aboriginal participants in this study experienced more frequent racism across a greater number of situations over a one-year period than same-aged African and Latino Americans in the US reported in their lifetime using the same measure.[45] Overall, 80% of the sample had experienced racial discrimination in the past year, with more than half reporting high levels racism in that time period. Participants frequently worried about experiencing racism in their day-to-day lives, with more than half worrying about themselves frequently and 70% worrying frequently about Aboriginal family and friends.

Preceding studies indicate that discrimination is associated prospectively with alcohol and illicit drug problems, and cross-sectionally with lifetime psychoactive prescription drug *use* in minority populations.[113] The present study builds on these findings by documenting a cross-sectional association between racial discrimination and past-year psychoactive prescription drug *problems* in a minority sample. However, in contrast to previous studies, racial discrimination was no longer associated with illicit drug problems after adjustment for other covariates. Further research is needed to confirm the reliability of this finding given prospective studies with larger samples have documented a positive association between discrimination and illicit drug problems in other minority groups.

More than a dozen experimental studies have now documented that experiences of discrimination cause visceral physiological and adverse psychological responses across racial groups.[67] The present study builds on these findings by documenting a positive association between racial discrimination experienced in the past year and PTSD symptomology that could not be explained by other events or factors such as separation from birth parents in childhood, abuse in childhood, and exposure to poverty over the life course. Increased PTSD symptomology was found to be a significant mechanism through which racial discrimination affected prescription drug problems among urban Aboriginal adults. In contrast psychological stress as measured by the Perceived Stress and Coping Scale, and psychological distress as measured by the General Health Questionnaire were not

significant mediators of this association. Further, PTSD score remained a significant mediator of the association between racial discrimination and prescription drug problems after adjustment for general levels psychological stress and distress. This suggests symptoms of psychological stress and distress unique to post traumatic stress disorder (for example feeling jumpy, watchful or on guard, feeling ones future may be cut short) may underlie the association between racial discrimination and prescription drug use problems rather than symptoms of stress shared between them (for example loss of interest in normal activities, difficulty concentrating, feeling stressed and worried). Further research using prospective designs are needed to shed light on the temporal sequencing of racial discrimination, these psychological constructs, and prescription drug problems.

Enculturation, Acculturation and Drug Use Problems

Urban Aboriginal adults evidenced high levels of Aboriginal enculturation and Canadian acculturation. Studies have documented a reduction in alcohol and illicit drug problems among Aboriginal adults who are highly enculturated and live in rural Indigenous communities in Canada and the US.[69, 114, 115] As Aboriginal populations continue to urbanize rapidly around the globe, the role traditional beliefs and practices may play in reducing or even preventing substance use problems for Aboriginal peoples living within urban landscapes is becoming increasingly relevant. The present findings extend current evidence to Aboriginal peoples living in urban environments by documenting a significant inverse association between enculturation and both illicit and prescription drug use problems in an urban Aboriginal sample. Further, despite the adversity and deprivation associated with achieving less than a high school diploma in Canada, urban Aboriginal adults who were highly enculturated but without a high school diploma had levels of illicit drug problems that matched those of their peers who had completed high school but were low in enculturation. Aboriginal enculturation also reduced illicit drug problems among those with higher educational attainment, suggesting Aboriginal enculturation operated as both a resilience and protective factor. Indeed, the lowest levels of drug problems were found among those who had completed high school *and* were highly enculturated.

It was also hypothesized that enculturation would reduce drug problems *indirectly* by providing an alternative social milieu that meets their basic psychological needs for autonomy, competence, and relatedness in an urban environment. In contrast to this hypothesis, autonomy, competence and relatedness, did not mediate the association between Aboriginal enculturation and each drug problem. This occurred because enculturation was not associated with feelings of autonomy or competence, and was only weakly associated with feelings of relatedness to others. This result was surprising given many Aboriginal cultures often appear to emphasize a sociocentric perspective, with the self defined relationally to others.[37] However, it was also documented that Aboriginal peoples who practiced their culture experienced more frequent racial discrimination in the urban environment. This could result in reduced feelings of relatedness to others in this environment generally. Thus it may be that those who participate in Aboriginal culture may

feel more strongly related to other Aboriginal peoples, but due to increased discrimination, feel less related to those who discriminate against them. This may have weakened associations between enculturation and feelings of relatedness in general. Further studies that ask targeted questions about the extent to which Aboriginals feel related to other Aboriginal peoples versus non Aboriginal peoples in urban centres are needed to examine these effects separately.

A post hoc analysis found associations between enculturation and each drug problem were instead partially mediated by increased self-esteem. Enculturation remained a protective factor against each drug problem after self-esteem was accounted for in statistical models. It is theorized that Aboriginal enculturation improved self-esteem and reduced drug problems by socially `locating` urban Aboriginal peoples in an environment in which they are frequently dislocated. While Aboriginal cultural teachings are often based on spiritual practices that promote abstinence from or moderation in the use of psychoactive substances, which may have also provided a measure of protection for respondents in this study. The socially integrative nature of Aboriginal enculturative practices may also be shielding. Indeed, a set of beliefs and practices were identified by participants across this study that together pointed toward a sufficiently intense collective life to support the protective and resilience effects observed in this study. Commonly identified values included respect for self, others and the earth; spirituality; family; and sharing what one had with others. Commonly identified practices included participation in Aboriginal cultural events, Aboriginal ceremonies, smudging and Aboriginal feasts.

It is of interest that few named Aboriginal language as a part of urban Aboriginal cultural practice. It may be that speaking an Aboriginal language is not a criterion that urban Aboriginal adults use to judge themselves enculturated. This may be more reflective of the impracticalities of speaking an Aboriginal language in an urban environment than the value placed on Aboriginal language as an expression of Aboriginal culture. Aboriginal language was cited as a component of cultural practice among Aboriginal university students in Edmonton.[116] However, more than a third of students in that study visited First Nations communities frequently compared to 14.4% of adults in the present city-wide sample. It may be that stronger links to First Nations communities provide Aboriginal university students greater access to others they can converse with, resulting in greater emphasis placed on language use as a component of cultural practice.

Strengths of this study include guidance by an Aboriginal Advisory Committee, the use of validated measures, and the inclusion of open-ended questions to determine how urban Aboriginal adults self-defined enculturation and acculturation. Limitations include the use of a cross-sectional design and a relatively small volunteer sample of participants.

Conclusions

Aboriginal culture was a protective factor that promoted resiliency, high self-regard, and protection against drug problems among urban Aboriginal adults. These results support the growth of programs and services that enable Aboriginal peoples to maintain their cultural traditions within the urban setting. Racial discrimination was a psychosocial stressor frequently experienced by urban Aboriginal adults that helped to explain elevated prescription drug problems among participants. Racial discrimination may contribute to our understanding of other Aboriginal health disparities and deserves more serious treatment in the scientific literature. Improved policies to reduce racism directed at Aboriginal peoples in urban areas, and services to help Aboriginal peoples cope with racist events are critically needed to reduce the burden of addictions in this population.

Table 5-1. Description of the sample

Characteristic	Sample *N* (%)
Total Sample	371 (100)
Aboriginal Group	
First Nation/Aboriginal	275 (76.6)
Métis/mixed ancestry	81 (22.6)
Inuit	3 (0.3)
Gender	
Male	150 (41.4)
Female	212 (58.6)
Age Quartiles	
18-24	83 (23.3)
25-34	92 (25.8)
35-44	97 (27.2)
≥45	84 (23.6)
Marital Status	
Never married	156 (43.2)
Married/cohabiting	139 (41.3)
Not currently married	56 (15.5)
Where do you live in Edmonton	
Inner city neighbourhood	225 (70.1)
Non inner city neighbourhood	96 (29.9)
Education	
<High school diploma	159 (45.2)
High school diploma	39 (11.1)
Some university/college	85 (24.1)
University/college degree	69 (19.6)
Employment	
Employed full/part-time	96 (26.7)
Unemployed	159 (44.2)
Student	86 (23.9)
Retired or homemaker	19 (5.3)
Household Income	
< $10,000	54 (24.4)
$10,000 – 19,999	48 (21.7)
$20,000 – 39,999	57 (25.3)
$40,000 – 59,999	24 (10.9)
≥ $60,000	39 (10.5)
Question not answered	150 (40.4)
Lived in poverty	
Never	92 (26.0)
As a child	97 (27.4)
As adult	60 (16.9)
All my life	105 (29.7)

Figure 5-1. Hypothesized mediational pathway

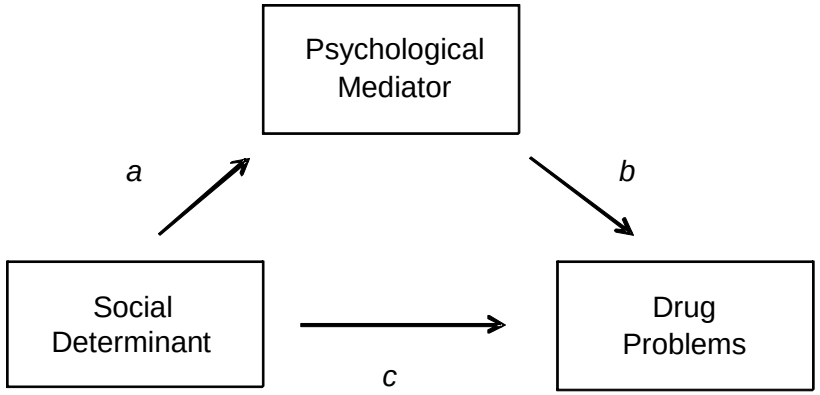


Figure 5-2. Substance use involvement in the past 12 months by study participants (full sample)

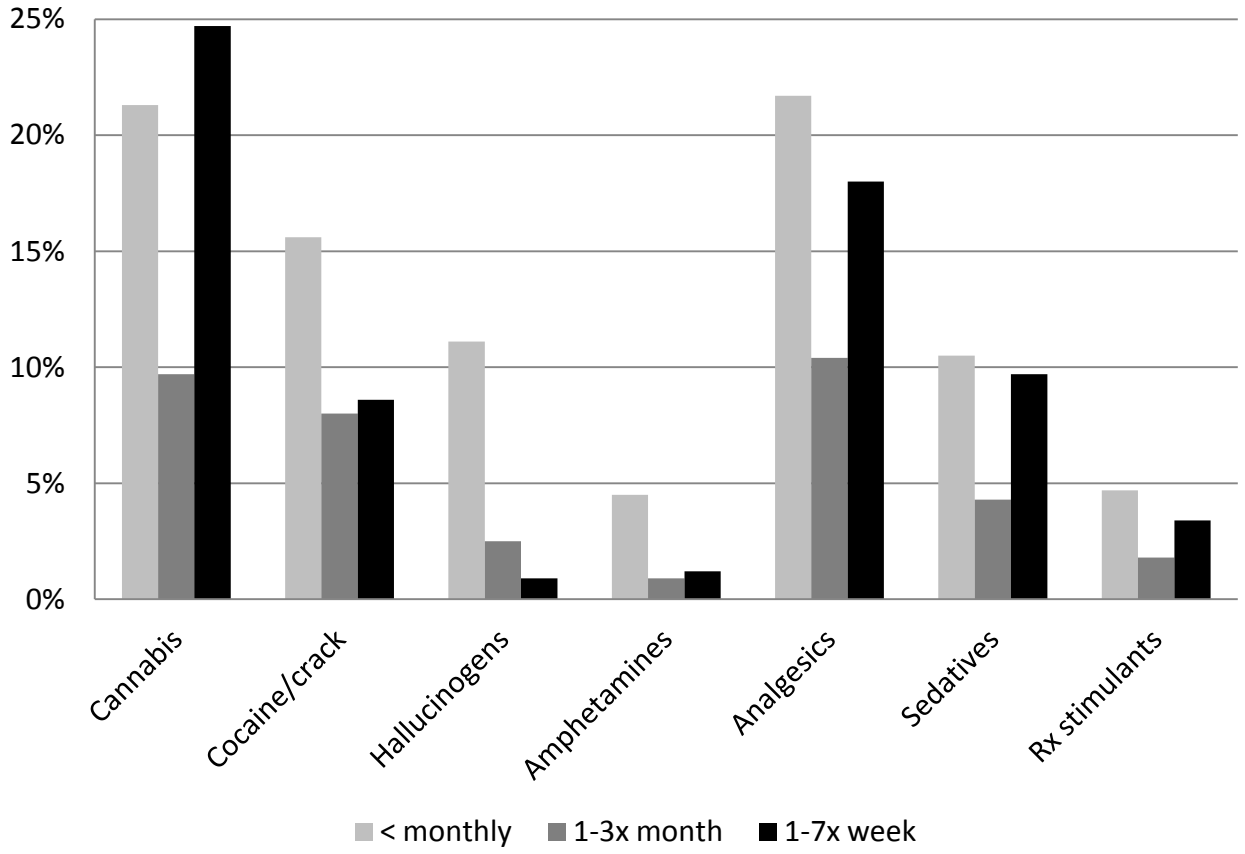


Table 5-2. Conceptualizations of enculturation and acculturation by participants (*n* = 149)

Qualitative themes organized by open-ended questions	Total *n* (%)
Q1. Cultural behaviours that a traditional Aboriginal person who lives in an urban environment would typically engage in	
Attending Aboriginal cultural events (e.g., round dances, powwows)	97 (66.4)
Participating in Aboriginal spiritual ceremonies (e.g., Sweat Lodge, Sun Dance)	83 (55.7)
Smudging alone or with others	49 (33.3)
Feasts, preparing traditional foods	20 (13.7)
Aboriginal dancing/music (e.g., throat singing, jigging)	20 (13.7)
Living off the land (hunting, camping, gathering wild plants)	16 (11.0)
Helping family and friends, sharing what you have, having a sense of community	15 (10.1)
Q2. Cultural values that a traditional Aboriginal person who lives in an urban environment would consider important	
Respecting others, the Earth, myself	48 (34.3)
Spirituality	34 (24.3)
Family	31 (22.1)
Sharing	26 (18.6)
Q3. Cultural behaviours that a typical Canadian would engage in	
Watching or playing hockey	49 (38.9)
Observing special days (e.g., Canada Day, Thanksgiving, Christmas)	35 (27.8)
Socializing, going out for drinks	26 (20.6)
Engaging in religious practices (e.g., going to church)	24 (19.0)
Engaging in recreation generally	20 (15.9)
Spending time with family	18 (14.3)
Q4. Cultural values that a typical Canadian would consider important	
Family	35 (28.9)
Materialism	29 (21.6)
Career	24 (19.8)
Religion	18 (15.0)

Table 5-3. Experiences of discrimination (EOD) among urban Aboriginal participants (full sample)

EOD	Identify as Aboriginal or First Nations (%) *N* = 275	Identify as Métis or Mixed Ancestry (%) *N* = 81
Number of situations, past yr		
0: No discrimination	15.7	29.1
1-2: Moderate	30.3	25.3
3+: High	53.9	45.6
Mean situation score (SD)	3.35 (2.60)	2.76 (2.78)
Mean frequency score (SD)	10.61 (10.46)	8.47 (10.82)
At school, past yr		
Once	6.7	7.4
2-3 times	24.4	16.0
4 or more times	22.6	21.0
In a public setting, past yr		
Once	5.9	12.5
2-3 times	25.4	16.3
4 or more times	22.4	16.3
In a store or restaurant, past yr		
Once	12.1	10.0
2-3 times	21.2	12.5
4 or more times	14.3	5.0
At work, past yr		
Once	10.3	9.9
2-3 times	11.7	9.9
4 or more times	11.4	17.3
Finding work, past yr		
Once	12.9	13.6
2-3 times	18.4	11.1
4 or more times	12.1	8.6
From the police/courts, past yr		
Once	11.0	6.3
2-3 times	12.9	12.5
4 or more times	13.2	8.8
Finding housing, past yr		
Once	13.6	11.3
2-3 times	13.9	10.0
4 or more times	12.1	10.0
Seeking medical care, past yr		
Once	8.5	11.3

2-3 times	11.0	7.5
4 or more times	10.3	7.5
Getting bank loans/mortgage/credit, past yr		
Once	4.8	1.3
2-3 times	7.3	7.5
4 or more times	3.3	6.3
How often are Aboriginal groups discriminated against in Canada		
Rarely or never	9.6	9.9
Sometimes	41.5	35.8
Often	48.9	54.3
How often do you feel discriminated against because of your Aboriginal ethnicity?		
Rarely or never	28.8	39.2
Sometimes	50.4	49.4
Often	20.8	11.4
Worry about experiencing racism, past yr		
Rarely or never	39.9	50.0
Some of the time	42.8	38.8
Most of the time	17.3	11.3
Worry about your Aboriginal group experiencing racism, past yr		
Rarely or never	28.5	30.0
Some of the time	46.7	47.5
Most of the time	24.8	22.5
Frequency of racism, in childhood		
Rarely or never	22.3	35.0
Some of the time	48.7	43.8
Most of the time	28.9	21.3
Worry about experiencing racism, as child		
Rarely or never	23.6	40.0
Some of the time	45.8	42.5
Most of the time	30.6	17.5
Worry about your Aboriginal group experiencing racism, as child		
Rarely or never	23.4	27.5
Some of the time	50.9	43.8
Most of the time	25.6	28.7

Table 5-4. Bootstrapped point estimates and bias-corrected 95% confidence intervals (CIs) for the direct effects of enculturation, acculturation and racial discrimination on illicit drug problem scores*

	Unadjusted Models			Adjusted Model 1 *Adj* R^2 = 0.21			Adjusted Model 2 *Adj* R^2 = 0.26		
	B (95% CI)	*SE*	*β*	B (95% CI)	*SE*	*β*	B (95% CI)	SE	*β*
Enculturation	**-1.56 (-2.65, -0.68)**	**0.43**	**-0.19**	**-1.70 (-2.90, -0.72)**	**0.54**	**-0.20**	-1.62 (-2.69, -0.69)	0.54	-0.19
Acculturation	-0.70 (-1.56, 0.15)	0.50	-0.07	0.61 (-2.80, 1.49)	0.46	0.07			
Racism score	0.59 (0.12 – 1.10)	0.22	0.14	0.18 (-0.32, 0.66)	0.24	0.04			
Age				-0.08 (-0.17, 0.03)	0.05	0.08			
Gender				-1.13 (-3.28, 1.32)	1.16	0.05			
Unemployed				**6.29 (4.11, 8.46)**	**1.13**	**0.28**			
Divorced/separated				-2.95 (-5.84, 0.04)	1.53	0.10			
Life course poverty				**2.27 (1.30, 3.21)**	**0.49**	**0.24**			
Parental separation				**2.44 (0.03, 4.89)**	**1.22**	**0.11**			
Abuse as child				0.33 (-2.18, 2.70)	1.26	0.01			
Education							-2.03 (-3.13, -0.99)	0.53	-0.22
Educ*Enculturation							**0.85 (0.04, 1.71)**	**0.40**	**0.11**

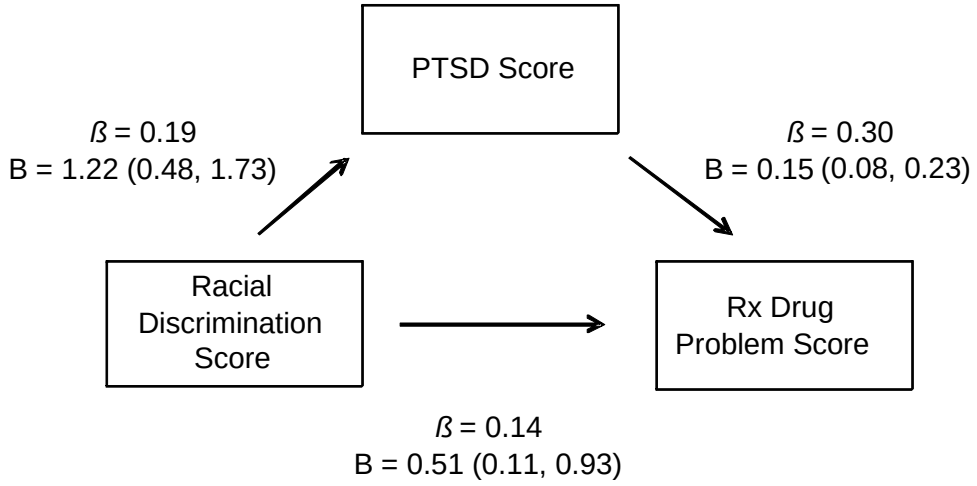
*Significant results are provided **in bold**. Model 1 provides unadjusted estimates of main exposures. Model 2 provides estimates adjusted for all covariates, Model 3 introduces education and the interaction between education and enculturation adjusting for all other variables in the model.

Table 5-5. Bootstrapped point estimates and bias-corrected 95% confidence intervals (CIs) for the direct effects of enculturation, acculturation and racial discrimination on prescription drug problem scores*

	Unadjusted Models			Adjusted Model 1 *Adj* R^2 = 0.17			Adjusted Model 2 *Adj* R^2 = 0.17		
	B (95% CI)	*SE*	β	B (95% CI)	*SE*	β	B (95% CI)	SE	β
Enculturation	-0.66 (-1.48, 0.08)	0.38	-0.10	**-0.78 (-1.70, -0.07)**	**0.41**	**-0.13**	-0.78 (-1.66, -0.09)	0.40	-0.13
Acculturation	-0.20 (-0.88, 0.44)	0.34	-0.03	**0.90 (0.21, 1.63)**	**0.35**	**0.13**			
Racism score	0.74 (0.35, 1.15)	0.21	0.23	**0.51 (0.11, 0.93)**	**0.20**	**0.17**			
Age				0.06 (-0.02, 0.15)	0.04	0.08			
Gender				-0.38 (-1.52, 2.27)	0.94	-0.02			
Unemployed				**2.62 (0.68, 4.43)**	**0.97**	**0.16**			
Divorced/separated				-0.70 (-3.20, 1.90)	1.30	-0.03			
Life course poverty				**1.01 (0.128 1.85)**	**0.40**	**0.13**			
Parental separation				1.45 (-0.42, 3.33)	0.95	0.09			
Abuse as child				-0.86 (-2.83, 1.16)	0.97	-0.05			
Education				**-1.36 (-2.08, -0.71)**	**0.36**	**-0.20**	-1.38 (-2.17, -0.59)	0.53	-0.22
Educ*Enculturation							0.14 (-0.49,0.76)	0.40	0.11

*Significant results are provided **in bold**. Model 1 provides unadjusted estimates of main exposures. Model 2 is adjusted for all covariates including education given no significant interaction between education and enculturation was identified.

Figure 5-3. Testing hypothesized mediation of association between racial discrimination and prescription drug problem scores through increased PTSD using adjusted unstandardized bootstrapped regression coefficients (95% confidence intervals)*



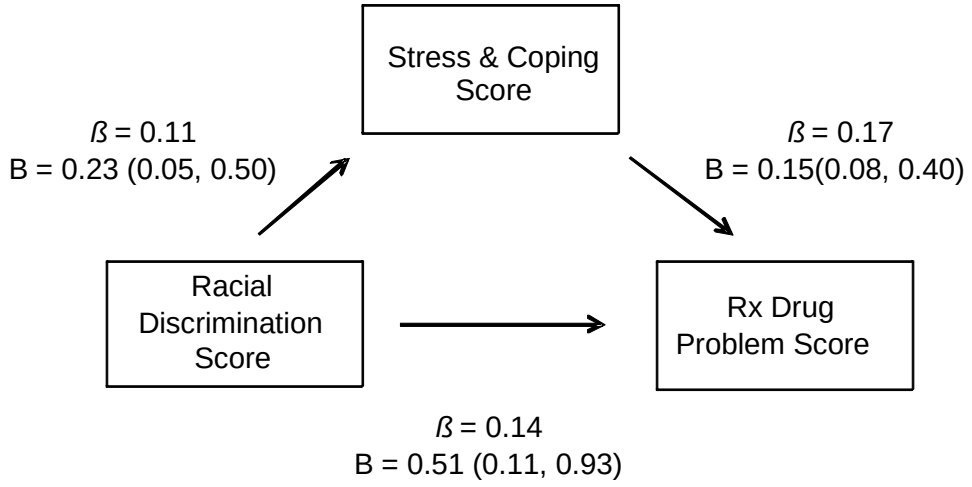
*Regression models adjusted for age, gender, marital status, education, unemployment, life course poverty, separation from parents in childhood, abuse in childhood.

Table 5-6. Pearson's *r* correlations between racial discrimination, prescription drug problem score, and potential psychological mediators

	1	2	3	4	5
1. Racial Discrimination Score	1.0	0.16*	0.20**	0.09	0.01
2. Prescription Drug Problem Score	0.23**	1.0	0.31**	0.18*	0.24**
3. PTSD Full Scale Score	0.31**	0.36**	1.0	0.48**	0.32**
4. Perceived Stress and Coping Score	0.21**	0.27**	0.57**	1.0	0.41**
5. General Health Questionnaire Score	0.09	0.27**	0.37**	0.45**	1.0

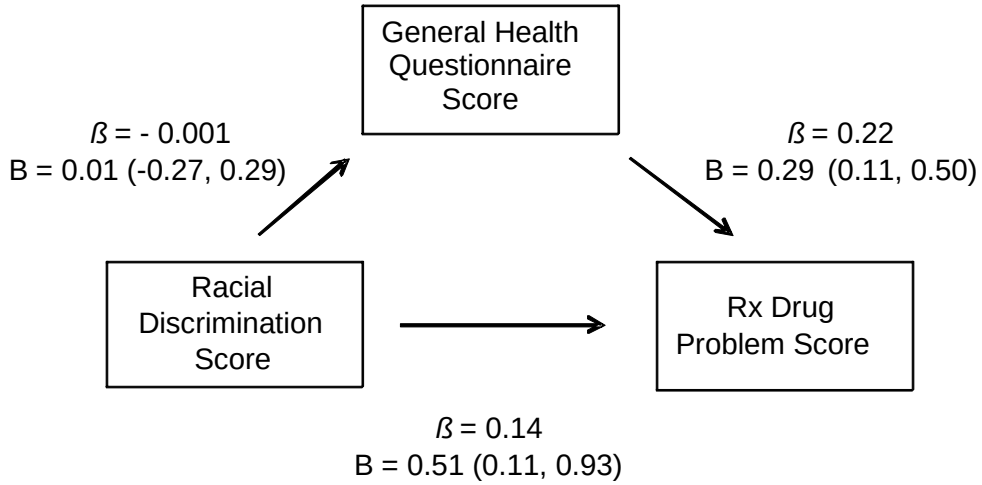
Zero order correlations are represented below the diagonal; partial correlations adjusted for age, gender, education, employment, marital status, life course poverty, enculturation, acculturation, separation from parents in childhood, and abuse in childhood are represented above it. **$p < 0.001$, *$p < 0.05$

Figure 5-4. Testing hypothesized mediation of association between racial discrimination and prescription drug problem scores through increased general psychological stress using adjusted unstandardized bootstrapped regression coefficients (95% confidence intervals)*



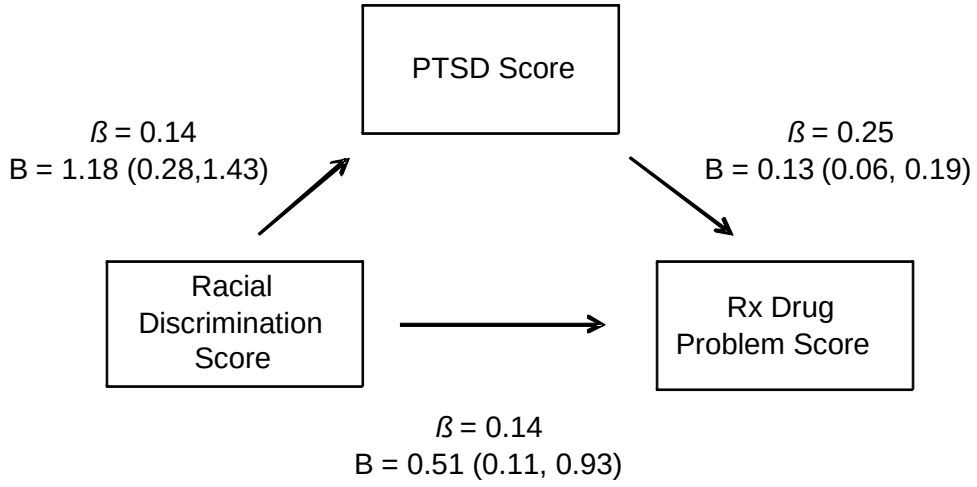
*Regression models adjusted for age, gender, marital status, education, unemployment, life course poverty, separation from parents in childhood, abuse in childhood.

Figure 5-5. Testing hypothesized mediation of association between racial discrimination and prescription drug problem scores through increased general psychological distress using adjusted unstandardized bootstrapped regression coefficients (95% confidence intervals)*



*Regression models adjusted for age, gender, marital status, education, unemployment, life course poverty, separation from parents in childhood, abuse in childhood.

Figure 5-6. Testing hypothesized mediation of association between racial discrimination and prescription drug problem scores through increased PTSD using adjusted unstandardized bootstrapped regression coefficients (95% confidence intervals) with adjustment for psychological stress and distress*



*Regression models adjusted for age, gender, marital status, education, unemployment, life course poverty, separation from parents in childhood, abuse in childhood, stress and coping (i.e., PSS score), and psychological distress (i.e., GHQ score).

Figure 5-7 Aboriginal enculturation reduces the effect of low educational attainment on illicit drug problems

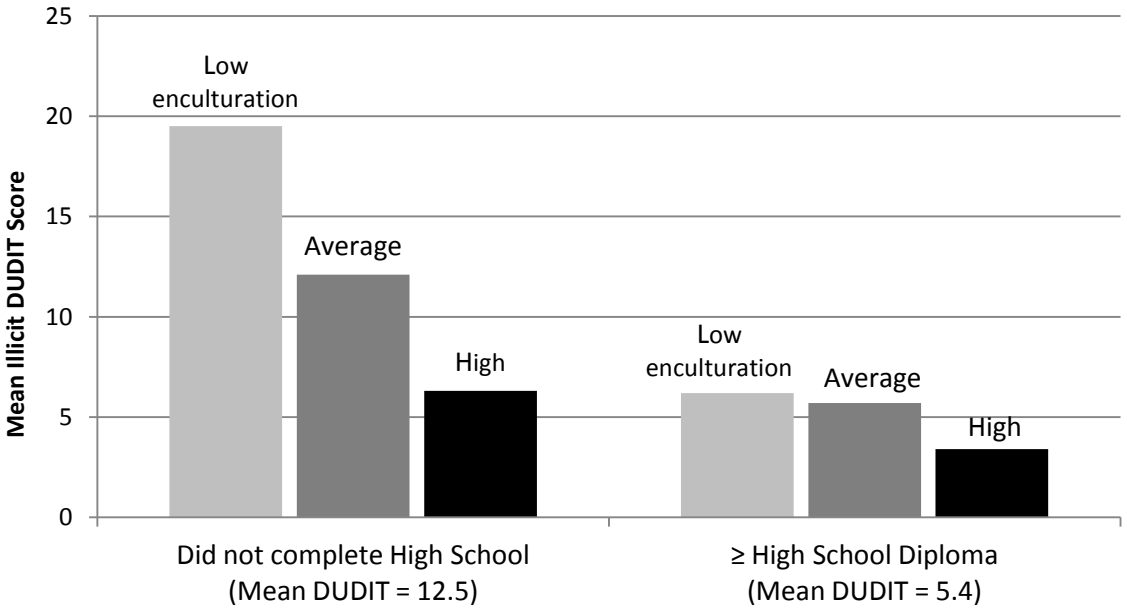
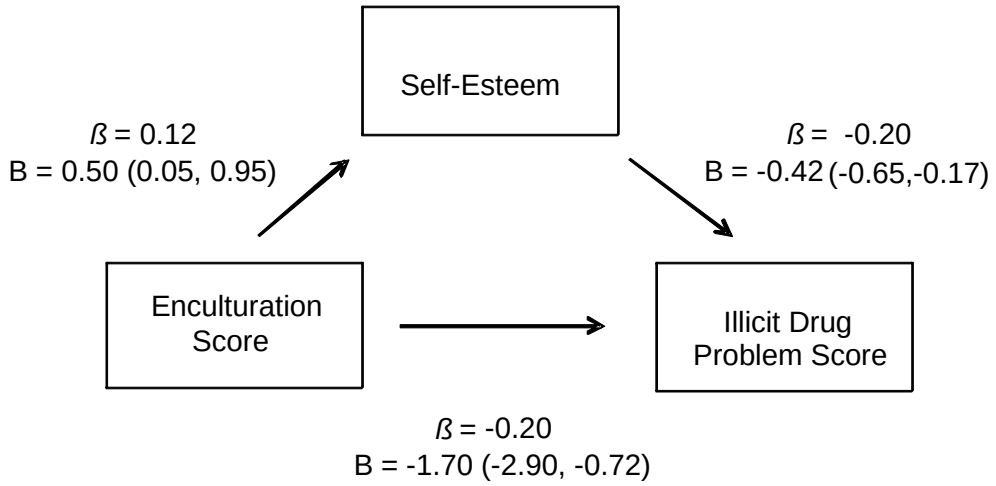
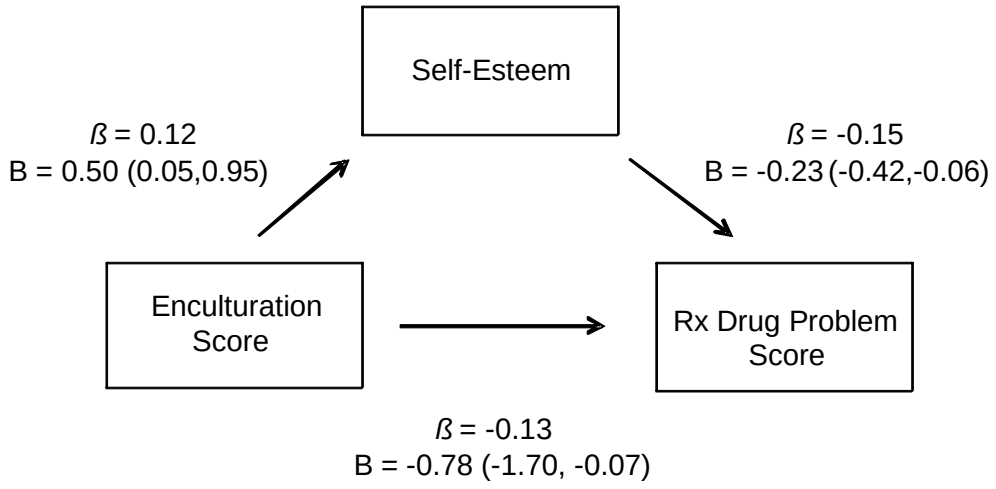


Figure 5-8. Mediation of association between enculturation and drug problem scores through increased self-esteem using adjusted unstandardized bootstrapped regression coefficients (95% confidence intervals)*



*Regression models adjusted for acculturation, racial discrimination, age, gender, marital status, unemployment, life course poverty, separation from parents in childhood, and abuse in childhood.

Figure 5-9. Mediation of association between enculturation and prescription (Rx) drug problem scores through increased self-esteem using adjusted unstandardized bootstrapped regression coefficients (95% confidence intervals)*



*Regression models adjusted for acculturation, racial discrimination, age, gender, marital status, unemployment, life course poverty, separation from parents in childhood, and abuse in childhood.

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CHAPTER 6

General Discussion and Conclusions

Aboriginal peoples in North America experience a disproportionate burden of addictive disorders with serious implications for health.[1-4] Using a public health framework, this dissertation examined why Aboriginal peoples may experience high levels of addiction in Canada. The broad mission of public health is to "fulfill society's interest in assuring conditions in which people can be healthy" (p. 1).[5] Public health reminds us that disease is a public matter, and that patterns of health and disease intimately reflect the workings of the body politic for ill or for good within a given country.[6] The goal of this dissertation was to shine a light on the often overlooked role that social factors play in the levels of addictive disorders experienced by Aboriginal Canadians, with a focus on two factors that may be particularly relevant for this population; namely racial discrimination and Aboriginal enculturation. An additional goal was to examine mechanistic pathways that may explain why racial discrimination and Aboriginal enculturation may be linked to adverse addictive outcomes. The focus of this research was urban Aboriginal peoples given they currently form one of the fastest growing segments of Canadian society and little is known about determinants that may improve or detract from their health.

Enculturation

As Aboriginal populations continue to urbanize rapidly around the globe, the role traditional beliefs and practices may play in reducing or even preventing substance use problems for urban Aboriginal peoples is becoming increasingly relevant. Studies have documented a reduction in alcohol and illicit drug problems among enculturated Aboriginal adults living in rural Indigenous communities in Canada and the US.[7-11] The results of this dissertation extend these findings to an urban Aboriginal population.

Overall, the research conducted for this dissertation suggests Aboriginal enculturation was protective for substance use problems within a sample of urban Aboriginal university students, as well as a sample of community-based urban Aboriginal adults more generally. Enculturation had the strongest protective effects for alcohol problems among Aboriginal university students (*adj* β = 0.33). Every 1-point increase in enculturation resulted in alcohol problem (AUDIT) scores that fell 1.96 points for Aboriginal university students. This is a considerable decrease given the enculturation scale had a range from 1 to 9, and alcohol problems in university samples are typically defined by AUDIT scores of 8 or more. Findings suggest AUDIT scores for Aboriginal university students who were the most enculturated (i.e., ranked in the highest quartile) were, on average, 15 points lower than those who were the least enculturated after accounting for other covariates.

Enculturation also had a strong protective effect against illicit drug problems within a community-based sample of urban Aboriginal adults. Every 1-point increase in enculturation resulted in illicit drug problem (DUDIT) scores that fell by 1.70 points. This is also a noteworthy decrease. Illicit DUDIT scores differed more than 13 points between urban Aboriginal adults who were the most and least enculturated after adjusting for other covariates. Further, despite the adversity and deprivation associated with achieving less than a high school diploma in Canada, urban Aboriginal adults who were highly enculturated but did not have a high school diploma exhibited illicit drug problems that matched those of their peers who had completed high school but were low in enculturation. Aboriginal enculturation also reduced illicit drug problems among those with higher educational attainment, suggesting that enculturation may operate as both a resilience and protective factor. Indeed, the best outcomes were found among those who had completed high school *and* were highly enculturated. The effects of Aboriginal enculturation on reduced prescription drug problems were significant, but smaller. A 1-point increase in enculturation resulted in a decrease of about three quarters of a point in prescription drug problem (DUDIT) scores. Still, this suggests a difference of more than 6 points in prescription DUDIT scores between urban Aboriginal adults who were the most and least enculturated after adjusting for other covariates.

Why is Aboriginal Enculturation Protective?

In this dissertation it was theorized that Aboriginal enculturation would reduce substance use problems by socially `locating` urban Aboriginal peoples in an environment in which they are frequently dislocated. It was hypothesized that enculturation would reduce substance use problems *directly* by grounding Aboriginal peoples in a nomic world of personal significance, including teachings about balance and limiting the use of mind altering substances. However, few participants named teachings about balance and limiting the use of mind altering substances as key features of urban Aboriginal cultural practice. Instead, the socially integrative nature of Aboriginal enculturation was emphasized across both samples. Durkheim argued that if religion protects individuals against the desire for self-destruction, it is not because it preaches respect for one's person; but because it creates a society, with the essential protective element being the ability of a set of beliefs and practices to support a sufficiently intense collective life.[12] This is not to imply that Aboriginal culture is a religion, but that there may be a dynamic set of beliefs and practices that urban Aboriginal peoples in Edmonton engage in that taken together support a sufficiently intense collective life that is protective against substance-based addictions. In 1996, The Royal Commission on Aboriginal Peoples concluded there remains an *Aboriginal worldview* that is consistent in important ways across Aboriginal groups in Canada.[13] Commonly identified values across the present studies included respect for self, others and the earth; spirituality; family; and sharing what one had with others. Commonly identified practices included participation in Aboriginal cultural events, Aboriginal ceremonies, smudging and participating in or holding Aboriginal feasts. These values and activities emphasize the importance of social

relationships and integration. It is of interest that few participants in the larger Edmonton sample named Aboriginal language as a part of urban Aboriginal cultural practice. It may be that speaking an Aboriginal language is not a criterion that urban Aboriginal adults used to judge whether they are enculturated. This may be more reflective of the impracticalities of speaking an Aboriginal language in an urban environment than the value placed on Aboriginal language as an expression of culture. Aboriginal language was frequently cited as a component of cultural practice by Aboriginal university students in the pilot sample.[14] However, more than a third of these students visited First Nations communities frequently compared to less than 15% of adults in the city-wide sample. Stronger links to First Nations communities may have provided Aboriginal university students greater access to others they could converse with, resulting in greater emphasis placed on language as a component of cultural practice.

In this dissertation, it was also hypothesized that enculturation would reduce substance use problems *indirectly*, by providing an alternative social milieu that would meet an Aboriginal person's basic psychological needs for autonomy, competence, and relatedness in an urban environment that may otherwise not meet these needs. This hypothesis was tested in the larger Edmonton sample. In contrast to what had been hypothesized, enculturation was not associated with feelings of autonomy or competence, and was weakly associated with feelings of relatedness to others. As a result, these variables did not mediate associations between enculturation and each drug problem (i.e., illicit drug problems and prescription drug problems).

A post hoc analysis found associations between enculturation and each drug problem were instead partially mediated by increased self-esteem. That relatedness was not strongly associated with enculturation was surprising given many Aboriginal cultural traditions emphasize a sociocentric perspective, with the self defined relationally to others.[15] However, results from both samples found Aboriginal peoples who practiced their culture experienced more frequent racial discrimination in the urban environment. This may have resulted in reduced feelings of relatedness to others in this environment generally, particularly toward individuals who represent groups who discriminate against them most frequently. Qualitative findings from the pilot study suggest this group was individuals of Caucasian ancestry. Thus it may be that those who participate in Aboriginal culture do feel more strongly related to other Aboriginal peoples, but due to increased discrimination, feel less related to those who discriminate against them. Given Caucasians represent the population majority in Edmonton, this may have weakened associations between enculturation and general feelings of relatedness to others. Further research that includes targeted questions about the extent to which Aboriginals feel related to other Aboriginal peoples versus non Aboriginal peoples in urban areas are needed to separate these effects and examine them in more detail.

The Paradoxical Role of Acculturation

Acculturation defines the degree to which minority groups identify with, feel a sense of pride for, and integrate the values and practices of the mainstream culture they live within.[10] In contrast to the protective effects of Aboriginal enculturation, Canadian acculturation was not associated with alcohol or illicit drug problems and served as a risk factor for prescription drug problems for urban Aboriginal adults in fully adjusted models. When urban Aboriginal participants across the two samples were asked how they defined Canadian culture the values most frequently cited were family, career, individualism, materialism, and religion. There was less agreement on how Canadian cultural activities should be defined. Participating in sporting events like hockey, maintaining an active social life, and observing special days such as Christmas and Thanksgiving were cited by urban Aboriginal adults most frequently.

While research in other ethnic groups suggests moderate to high levels of acculturation can enhance mental health and wellbeing, most of this work has focused on immigrant groups who for the most part, do not have long-standing historical grievances with Canadian settler society.[16, 17] The idea that mainstream Canadian acculturation may be similarly protective for colonized Indigenous populations is complicated by the current and historical mistreatment of Aboriginal peoples by the settler societies who migrated to their homeland. Forced assimilation policies, the loss of land, discrimination and an ongoing media emphasis on negative Aboriginal stereotypes and anecdotes have resulted in a valid distrust of settler society that can be difficult for Aboriginal peoples to surmount.

Evidence supporting this argument was documented in the present research. Urban Aboriginal peoples reported high levels of racial discrimination in the past year and over their life course, with those who practiced their culture reporting more frequent experiences of racism. Qualitative findings from the pilot sample suggested negative treatment from mainstream society made it difficult for Aboriginal participants to feel they were an integrated part of Canadian culture and society. These experiences may help to explain why Canadian acculturation was not protective for substance use problems in the present work; however, further research with more rigorous study designs are needed before more definitive conclusions can be made.

Racial Discrimination and Addictive Problems

Urban Aboriginal adults across both studies experienced high levels of discrimination due to Aboriginal race in the past year. To put these findings in context, urban Aboriginal adults in the larger urban sample experienced more frequent racism over a 1-year period than African and Latino Americans in the US report in their lifetime using the same measure. Most participants worried frequently about experiencing racism in their day-to-day lives. In open-ended comments Aboriginal university students described the helplessness and hopelessness they felt in reaction to ongoing discrimination. Previous studies

indicate discrimination is associated prospectively with alcohol and illicit drug problems, and cross-sectionally with lifetime psychoactive prescription drug use in minority populations.[18] The present work builds on these findings by documenting a cross-sectional association between racial discrimination and past-year psychoactive prescription drug problems, as well as gambling problems among Aboriginal adults.

More than a dozen experimental studies have documented that experiences of discrimination cause visceral physiological and psychological stress responses across racial groups.[19] Stress reactions that have been documented in randomized control trials include changes in systolic and diastolic blood pressure, mean arterial pressure, and total peripheral resistance; as well as changes in feelings of stress, worry, depression, anxiety, and anger. The present study builds on these findings by documenting a significant and positive association between levels of racial discrimination experienced in the past year and PTSD symptomology among Aboriginal adults that could not be explained by other events or factors such as separation from parents in childhood, abuse in childhood, and exposure to poverty over the life course. In the present work, increased PTSD symptomology was found to be a significant mechanism through which racial discrimination affected prescription drug problems and problematic gambling behaviour among urban Aboriginal adults.

These findings suggest Aboriginal peoples who experience high levels of discrimination may use prescription drugs or gamble to escape the symptoms of PTSD they develop in reaction to racist experiences. It is acknowledged that this research cannot infer cause or the temporal sequence of these events. However, given the form of discrimination measured in this study is based on Aboriginal race, a characteristic that does not vary within individuals over time, it may be argued that race-based discrimination is a fixed marker over the course of an individual's life, making it, by definition, an antecedent to outcomes such as PTSD and problematic prescription drug use.[20] The present findings support this assertion, documenting a positive correlation between levels of racism experienced in childhood and levels experienced in the past year ($r = 0.49$). That said, prospective studies are needed to replicate the cross-sectional associations documented in this research and to test the temporal sequence of these events.

Strengths, Limitations, and Future Directions

A strength of this study was the incorporation of an urban Aboriginal Advisory Committee (AAC) made up of key members of the Aboriginal and Métis community in Edmonton. The ACC was organized one year prior to data collection. Together we determined how constructs would be defined in this study, what measures that would be used, how data would be collected and how participants would be compensated for their time. Feedback from the AAC played an important role in shaping this research project. For example, the Committee suggested racial discrimination as an important exposure that should be examined as a health determinant for urban Aboriginal peoples. The Committee also

suggested the pilot study focus on urban Aboriginal university students as these individuals would voice critical and careful feedback regarding the measures and procedures being used. This advice proved to be correct; Aboriginal university students in the pilot study not only completed the questionnaire package with few missing items, but provided a great deal of feedback on the measures themselves and how they could be improved. For example, participants recommended that the time frame encompassed by the racial discrimination measure be reduced from lifetime exposure to past year exposure given the high levels of racism they were experiencing. The Aboriginal Advisory Committee also provided critical advice and warnings about questions that may be problematic. For example, pre-data collection the AAC voiced concerns about the response categories that were to be provided to respondents when asked why they participated in particular cultural activities. These questions were edited based on recommendations by the Committee but they cautioned the questions may still be problematic. As the AAC had predicted, Aboriginal university students who participated in the study also voiced concerns about the culturally inappropriate nature of these questions. Given these questions were already labeled as problematic by the ACC, they were removed from the Sample 2 questionnaire package rather reworked or edited.

Given time and funding constraints, the AAC could not be brought back together at the end of this dissertation project to provide critical feedback on the findings and to provide insights on how the results might best be used by the urban Aboriginal community. This is a limitation of this work. However, after the completion of this dissertation I will submit a proposal for funding to bring the group together to discuss dissemination activities.

Other limitations of this research include the use of a convenience sample and a limited geographic locale, which precluded the generalization of these findings to broader populations of urban Aboriginal peoples in Canada. The use of a cross-sectional design limited conclusions that could be made about the temporal sequence of associations documented in this research. Additional studies with randomly selected samples of urban Aboriginal peoples and prospective study designs are needed to confirm the temporal sequence of associations documented suggested by this research. The use of self report measures may have also introduced bias.

It is also recognized that individuals who identify as First Nations, Métis and Inuit form three distinct groups of Aboriginal peoples in Canada, each with its own unique set of cultural systems and historical experiences, and each of which is itself made up of smaller Aboriginal ethnic groups who vary between one another. However, the samples obtained for this research could not accommodate stratification by Aboriginal group. There may be important differences in the ways that enculturation is defined by Métis and Inuit Canadians who live in urban centres as compared to those who identify as First Nation. For example, cultural identity may be more salient for Métis people as they are currently engaged in a continuing struggle to gain recognition for their unique identity as a people in Canada. The Métis have also inherited a cultural identity and traditions from both

Aboriginal and European (usually French) ancestors, and combined them in a distinctive way,[13] which may have differing effects on their health and well-being and deserve focused study. It may also be that acculturation is less conflictual for Métis Canadians, given the Métis were typically not placed in geographically defined communities after the imposition of the Indian Act in 1896 and few experienced residential school.[13] Today most live in urban or peri-urban communities and may experience less discrimination in these environments given their ethnicity is more difficult to discern. Given these differences in their heritage and history, there may be less dilution of the protective impacts of acculturation for Métis Canadians. Studies that examine the meaning of enculturation and acculturation for Métis and Inuit peoples who live in urban environments are needed, separate from Canadians who identify as First Nations; as well as studies that examine the extent of discrimination experienced by members of these groups in urban areas, and the resulting health effects.

Another drawback of this dissertation was the limited analyses that could be performed using data from the pilot study given the limited sample size. I selected alcohol as the outcome that would be examined in this preliminary study as it is a key addictive outcome I sought to examine in this dissertation work. There were few missing items on questions related to alcohol in the pilot study. The few participants that left these questions blank noted they had because they were alcohol abstinent. These individuals, as a number of other students noted it was inappropriate that all participants were asked to complete questions related to alcohol in the survey as this assumed all Aboriginal people consumed alcohol which was incorrect.

Thus, an option to skip alcohol-related questions for those who were abstinent was included in the questionnaire package for the larger study. As a result, a fifth of Sample 2 (20.2%) left AUDIT questions blank. A question about alcohol abstinence was included (yes or no) in the survey package as well as a second question that asked how many years participants had been abstinent. It was determined a priori that those who had not consumed alcohol for one or more years would be considered abstinent and given a zero on the AUDIT. However, many who left the AUDIT blank did not indicate whether they were alcohol abstinent. Those who stated they were alcohol abstinent did not indicate for how long, and many of these chose to complete the AUDIT. It may be these individuals were completing the AUDIT based on past alcohol use behaviour, however the timeframe for this behaviour cannot be confirmed. As a result of these multiple measurement problems I decided against using alcohol problem scores as an outcome for Sample 2 within this dissertation.

Data was also collected on smoking as an outcome across both samples. However, the breadth of data collected across these studies as a whole was too large to be included in their entirety in this dissertation. Given smoking outcomes were not a primary or central interest of my PhD program of research, I will reserve this analysis for a separate paper outside the scope of this dissertation.

Conclusions and Public Health Implications

The findings of this research suggest Aboriginal culture was a protective factor that promoted resiliency, high self-regard, and protection against substance use problems among urban Aboriginal adults. Enculturation is a factor that is more easily modified than other determinants of addictions making it an important factor to consider in public health efforts to reduce alcohol, illicit drug, and prescription drug problems among urban Aboriginal peoples. It is also a social determinant that empowers Aboriginal people; one that they may be intrinsically motivated to strengthen. Results support the growth of programs and services that enable Aboriginal peoples to maintain their cultural traditions within the urban setting.

Results also suggest that racial discrimination was an ongoing source of stress for urban Aboriginal peoples, as well as a factor that contributed to increased prescription drug problems and gambling problems among participants. Racial discrimination may contribute to our understanding of other Aboriginal health disparities and deserves more serious treatment in the scientific literature. These findings support improved policies to reduce racism directed at Aboriginal peoples in urban areas, and services to help Aboriginal peoples cope with these events.

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APPENDIX 1-1: INFORMATION AND CONSENT PACKAGE FOR SAMPLE 1

UNIVERSITY OF ALBERTA

Information Letter

Title of Project: *Addictive Behaviours among Urban Aboriginals: Resiliency and Cultural Accommodation*

Investigators: Dr. Cameron Wild, Associate Professor, School of Public Health
Dr. Malcolm King, Professor, Faculty of Medicine & Dentistry
Dr. Paul Veugelers, Professor, School of Public Health
Dr. Brenda Parlee, Assistant Professor, School of Native Studies
Ms. Cheryl Currie, Doctoral Student, School of Public Health

The purpose of this study is to: 1) look for factors that may increase or decrease addictive behaviour; and 2) find out if the questions we are asking are suitable and clear.

If you meet the following conditions, you may participate in the study:

- You are 18 years of age or older
- You currently live in Edmonton
- You identify yourself as Aboriginal, Métis or Inuit
- You are able to write in English

If you choose to participate, you will be asked to complete 7 questionnaires. This will take about 1½ hours. You may complete the questionnaires by hand or have the research coordinator read the questions to you and mark down your answers. Your name will not appear on any questionnaire. You will be identified by number only. You will receive $50 in exchange for participating in this study today.

There are no risks associated with taking part in this study. You have the right to skip any question that you do not wish to answer. You may withdraw from the study at any time without giving a reason. All of your information will be confidential except when codes of ethics and/or laws require reporting. Only the research team will have access to your answers. All of the data will be stored on a secured computer or in a locked cabinet for a period of seven years. After this time, it will be destroyed.

If you have questions about this study, please contact:
Name: Cam Wild, Associate Professor, School of Public Health
Phone: (780) 492-6752
Name: Cheryl Currie, Doctoral Student, School of Public Health
Phone: (780) 492-6753

If you have concerns about how this research is done or your rights as a participant, you may contact the Health Research Ethics Board at 780-492-0302.

UNIVERSITY OF ALBERTA

Consent Form

Part 1:
Title of Project: Addictive Behaviours among Urban Aboriginals: Resiliency and Cultural Accommodation

Investigators: Cam Wild Phone Number: 492-6752
Cheryl Currie Phone Number: 492-6753

Part 2 (to be completed by the research subject):

	Yes	No
Do you understand that you have been asked to be in a research study?	☐	☐
Have you read and received a copy of the attached Information Letter?	☐	☐
Do you understand the benefits and risks involved in taking part in this research study?	☐	☐
Have you had an opportunity to ask questions and discuss this study?	☐	☐
Do you understand that you are free to withdraw from the study at any time without having to give a reason and without any impact on your university education?	☐	☐
Has the issue of confidentiality been explained to you?	☐	☐

Who explained this study to you? _____

I agree to take part in this study: YES ☐ NO ☐

Signature of Research Subject _____

(Printed Name) _____

Date:_____

THE INFORMATION SHEET MUST BE ATTACHED TO THIS CONSENT FORM AND A COPY GIVEN TO THE RESEARCH SUBJECT

UNIVERSITY OF ALBERTA
Centre for Health Promotion Studies
School of Public Health

Written debriefing form

Addictive Behaviours among Urban Aboriginals:
Resiliency and Cultural Accommodation

Thank you for taking part in this study. The purpose of this study was to: 1) look for factors that may increase or decrease addictive behaviour among Aboriginal people living in Edmonton; and 2) find out if the questions we are asking were suitable and clear. We have provided references (below) if you would like to learn more about this topic.

Sometimes answering questions can make a person feel uneasy or depressed. If you would like to talk to someone, free counselling is available for you on campus at: **Student Counselling Services**

Phone: 492-5205
Hours: Weekdays from 8:30am to 4:30pm (Sept to April)
Address: 2-600 SUB
Note: If you would like to be seen quickly, drop in hours are 11am and 3pm weekdays.

If you would like to speak to an Aboriginal Elder, **Elder Jerry Wood** is available on campus at:

Phone: 492-5677
Hours: 8:30am to 12 noon weekdays.
Address: Aboriginal Student Services Centre at 2-400 SUB

If you would like information about the results of the study once completed, feel free to contact Cheryl Currie at cheryl.currie@ualberta.ca. We would be happy to share them with you. Thanks so much for your interest and your help today.

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Sample 1: Recruitment Ad

Aboriginal Health Study

Attention: Aboriginal University Students

Researchers in the School of Public Health are looking for Aboriginal students for a study on health.

Time requirement: 1.5 hours or less
What you will be asked to do: Complete a survey package

A cash honorarium will be provided for your time

If interested or for more info, please contact: Cheryl at: cheryl.currie@ualberta.ca or 780-248-1503.

APPENDIX 1-2: FULL QUESTIONNAIRE FOR SAMPLE 1

Vancouver Index

Please answer each question as carefully as possible. Please circle *one* of the numbers to the right of each question to indicate how much you disagree or agree with each statement. Many of these questions will refer to your Aboriginal culture, meaning Aboriginal, First Nation, Métis and/or Inuit culture (as a short form, the word *Aboriginal* will be used to refer to Aboriginal, First Nation, Métis and Inuit culture).

	Disagree Agree
1. I often participate in my Aboriginal cultural traditions.	1 2 3 4 5 6 7 8 9
2. I often participate in mainstream Canadian cultural traditions.	1 2 3 4 5 6 7 8 9
3. I would be willing to marry a person from my Aboriginal culture.	1 2 3 4 5 6 7 8 9
4. I would be willing to marry a non-Aboriginal Canadian person	1 2 3 4 5 6 7 8 9
5. I enjoy social activities with people from the same Aboriginal culture as myself.	1 2 3 4 5 6 7 8 9
6. I enjoy social activities with typical Canadian people.	1 2 3 4 5 6 7 8 9
7. I am comfortable interacting with people of the same Aboriginal culture as myself.	1 2 3 4 5 6 7 8 9
8. I am comfortable interacting with typical Canadian people.	1 2 3 4 5 6 7 8 9
9. I enjoy entertainment (e.g. movies, music) from my Aboriginal culture.	1 2 3 4 5 6 7 8 9
10. I enjoy Canadian entertainment (e.g. movies, music).	1 2 3 4 5 6 7 8 9
11. I often behave in ways that are typical of my Aboriginal culture (e.g., sharing with others)	1 2 3 4 5 6 7 8 9
12. I often behave in ways that are 'typically Canadian.'	1 2 3 4 5 6 7 8 9
13. It is important for me to maintain or develop the practices of my Aboriginal culture.	1 2 3 4 5 6 7 8 9
14. It is important for me to maintain or develop Canadian cultural practices	1 2 3 4 5 6 7 8 9
15. I believe in the values of my Aboriginal culture.	1 2 3 4 5 6 7 8 9

16. I believe in mainstream Canadian values.	1 2 3 4 5 6 7 8 9
17. I enjoy the jokes and humor of my Aboriginal culture	1 2 3 4 5 6 7 8 9
18. I enjoy mainstream Canadian jokes and humor.	1 2 3 4 5 6 7 8 9
19. I am interested in having friends from my Aboriginal culture.	1 2 3 4 5 6 7 8 9
20. I am interested in having non-Aboriginal Canadian friends	1 2 3 4 5 6 7 8 9

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

Aboriginal Cultural Practices and Values
Interview Questions[7]

1. What Aboriginal cultural group do you most identify with?

_____ Aboriginal
_____ First Nations
_____ Métis
_____ Inuit

2. Do you consider yourself a traditional or cultural Aboriginal person?

1	2	3	4	5
Not at all		Somewhat		Very much

3. Thinking about the Aboriginal cultural group that you most identify with, please name **four cultural behaviours or traditions** that a traditional Aboriginal person would typically engage in? (An example might be speaking an Aboriginal language).

1. _____

2. _____

3. _____

4. _____

4. Thinking about the Aboriginal cultural group that you most identify with, please name **3 cultural values** that a traditional Aboriginal person would consider important? (An example might be sharing with others).

1. _____

2. _____

3. _____

5a. How often do you engage in _____?

1	**2**	**3**	**4**	**5**
Never	Not very often	Somewhat often	Very often	Almost all the time

5b. How important is engaging in this behaviour to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

[7] Aboriginal and Western Cultural Practices and Values questions were administered in an interview format by Cheryl Currie to the first 30 participants.

5c. Why do you or would you engage in this behaviour?

I would engage in this behaviour because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because I have thought about it and it personally makes sense to me to do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because people around me would approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

5d. Why is this important or not important to you? (continue answer on back page)

_____

_____

_____

6a. How often do you engage in _____?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

6b. How important is engaging in this behaviour to you?

1	2	3	4	5
Not at all important	Somewhat important	Important	Very Important	Extremely important

6c. Why do you or would you engage in this behaviour?

I would engage in this behaviour because I personally believe it is important and worthwhile.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because I have thought about it and it personally makes sense to me to do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because people around me would approve of me doing so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

6d. Why is this important or not important to you? (continue answer on back of page)

_____

_____

_____

7a. How often do you engage in _____?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

7b. How important is engaging in this behaviour to you?

1	2	3	4	5
Not at all important	Somewhat important	Important	Very Important	Extremely important

7c. Why do you or would you engage in this behaviour?

I would engage in this behaviour because I personally believe it is important and worthwhile.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because I have thought about it and it personally makes sense to me to do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because people around me would approve of me doing so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

7d. Why is this important or not important to you? (continue answer on back page)

_____
_____
_____

8a. How often do you engage in _____?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

8b. How important is engaging in this behaviour to you?

1	2	3	4	5
Not at all important	Somewhat important	Important	Very Important	Extremely important

8c. Why do you or would you engage in this behaviour?

I would engage in this behaviour because I personally believe it is important and worthwhile.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because I have thought about it and it personally makes sense to me to do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because people around me would approve of me doing so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

8d. Why is this important or not important to you? (continue answer on back page)

_____
_____
_____

9a. How often do you practice the VALUE of _____?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

9b. How important is this value to you?

1	2	3	4	5
Not at all important	Somewhat important	Important	Very Important	Extremely important

9c. Why is this value important to you?

Because I personally believe it is important and worthwhile.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because I have thought about it and it personally makes sense to me to do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because people around me would approve of me having this value.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I hold this value to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

9d. Why is this important or not important to you? (continue answer on back page)

_____
_____
_____

10a. How often do you practice the VALUE of _____

1	**2**	**3**	**4**	**5**
Never	Not very often	Somewhat often	Very often	Almost all the time

10b. How important is this value to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

10c. Why is this value important to you?

Because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because I have thought about it and it personally makes sense to me to do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because people around me would approve of me having this value.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I hold this value to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

10d. Why is this important or not important to you? (continue answer on back page)

_____
_____
_____

11a. How often do you practice the VALUE of _____

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

11b. How important is this value to you?

1	2	3	4	5
Not at all important	Somewhat important	Important	Very Important	Extremely important

11c. Why is this value important to you?

Because I personally believe it is important and worthwhile.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because I have thought about it and it personally makes sense to me to do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because people around me would approve of me having this value.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I hold this value to gain a reward, avoid a punishment or because someone in my life insists that I do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

11d. Why is this important or not important to you? (continue answer on back page)

_____
_____
_____

Western Cultural Practices and Values
Interview Questions

1. Can you name 3 cultural behaviours or traditions that a typical Canadian person would engage in?

1. _____

2. _____

3. _____

4. Can you name 3 cultural values that a typical Canadian person would consider important?

1. _____

2. _____

3. _____

6a. How often do you engage in _____?

1	**2**	**3**	**4**	**5**
Never	Not very often	Somewhat often	Very often	Almost all the time

5b. How important is engaging in this behaviour to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

5c. Why do you or would you engage in this behaviour?

I would engage in this behaviour because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because I have thought about it and it personally makes sense to me to do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because people around me would approve of me doing so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

5d. Why is this important or not important to you? (continue answer on back page)

_____

_____

6a. How often do you engage in _____?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

6b. How important is engaging in this behaviour to you?

1	2	3	4	5
Not at all important	Somewhat important	Important	Very Important	Extremely important

6c. Why do you or would you engage in this behaviour?

I would engage in this behaviour because I personally believe it is important and worthwhile.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because I have thought about it and it personally makes sense to me to do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because people around me would approve of me doing so.

1	2	3	4	5
Not at all because of this		Somewhat because of this		Completely because of this

reason	reason	reason

I would engage in this behaviour to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

6d. Why is this important or not important to you? (continue answer on back)

_____

_____

7a. How often do you engage in _____?

1	**2**	**3**	**4**	**5**
Never	Not very often	Somewhat often	Very often	Almost all the time

7b. How important is engaging in this behaviour to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

7c. Why do you or would you engage in this behaviour?

I would engage in this behaviour because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because I have thought about it and it personally makes sense to me to do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour because people around me would approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I would engage in this behaviour to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

7d. Why is this important or not important to you? (continue answer on back)

_____

_____

8a. How often do you practice the VALUE of _____?

1	**2**	**3**	**4**	**5**
Never	Not very often	Somewhat often	Very often	Almost all the time

8b. How important is this value to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

8c. Why is this value important to you?

Because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because I have thought about it and it personally makes sense to me to do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because people around me would approve of me having this value.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I hold this value to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

8d. Why is this important or not important to you? (continue answer on back)

_____

_____

9a. How often do you practice the VALUE of _____?

1	**2**	**3**	**4**	**5**
Never	Not very often	Somewhat often	Very often	Almost all the time

9b. How important is this value to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

9c. Why is this value important to you?

Because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because I have thought about it and it personally makes sense to me to do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because people around me would approve of me having this value.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I hold this value to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

9d. Why is this important or not important to you? (continue answer on back)

_____

_____

10a. How often do you practice the VALUE of _____?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

10b. How important is this value to you?

1	2	3	4	5
Not at all important	Somewhat important	Important	Very Important	Extremely important

10c. Why is this value important to you?

Because I personally believe it is important and worthwhile.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because I have thought about it and it personally makes sense to me to do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

Because people around me would approve of me having this value.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

I hold this value to gain a reward, avoid a punishment or because someone in my life insists that I do so.

1	2	3	4	5
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

10d. Why is this important or not important to you? (you may continue answer on back)

_____

_____

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

Cultural Practices[8]

1. What Aboriginal cultural group do you most identify with?
_____ Aboriginal
_____ First Nations
_____ Métis
_____ Inuit

2. Do you consider yourself a traditional Aboriginal person or someone who participates in the culture?

1	**2**	**3**	**4**	**5**
Not at all		Somewhat		Very much

3a. In the past 12 months, how often did you speak **an Aboriginal language** or try to learn an Aboriginal language?

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

3b. How important is speaking an Aboriginal language to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

3c. Please explain why speaking an Aboriginal language or trying to learn to speak one is important or not important to.

_____
_____
_____
_____

[8] These questions were administered to participants 31 to 60. They were created based on open-ended questions shared by participants 1 to 30 on the Cultural Practices and Values Interview Questions for research hypotheses outside the scope of this dissertation.

Please indicate how much you agree or disagree with the following statements (if you do not speak an Aboriginal language and are not trying to learn to speak one, please skip to question 4a).

3d1. I speak an Aboriginal language or I am trying to learn one because I personally believe it is important and worthwhile

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

3d2. I speak an Aboriginal language or I am trying to learn one because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

3d3. I speak an Aboriginal language or I am trying to learn because people around me approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

3d4. I speak an Aboriginal language or I am trying to learn to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

3d5. Are there any other reasons that motivate you to speak an Aboriginal language or try to learn one?

_____
_____
_____
_____

4a. In the past 12 months, how often did you **speak with an Aboriginal Elder** to gain advice or guidance?

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

4b. How important is speaking to an Aboriginal Elder to gain advice or guidance to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

4c. Please explain why speaking with an Aboriginal Elder to gain advice or guidance is important or not important to you.

_____
_____
_____
_____

Please indicate how much you agree or disagree with the following statements (if you have not sought advice from an Elder in the past year, please skip to question 5a):

4d1. I consult Aboriginal Elders to gain advice or guidance because I personally believe it is important and worthwhile

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

4d2. I consult Aboriginal Elders to gain advice or guidance because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

4d3. I consult Aboriginal Elders because people around me approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

4d4. I consult Aboriginal Elders to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

4d5. Are there any other reasons that motivate you to consult an Aboriginal Elder?

_____
_____
_____
_____

5a. In the past 12 months, how often did you **engage in smudging**?

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

5b. How important is smudging to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

5c. Please explain why smudging is important or not important to you.

_____
_____
_____
_____

Please indicate how much you agree or disagree with the following statements (if you have not smudged in the past year, please skip to question 6a):

5d1. I smudge because I personally believe it is important and worthwhile

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

5d2. I smudge because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

5d3. I smudge because people around me approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

5d4. I smudge to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

5d5. Are there any other reasons that motivate you to engage in smudging?

_____
_____
_____
_____

6a. In the past 12 months, how often did you participate in **Aboriginal cultural events** like pow wows, round dances or other activities?
(please list other activities you would include in this category): _____

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

6b. How important is participating in Aboriginal cultural events to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

6c. Please explain why participating in Aboriginal cultural events are important/not important to you.

_____
_____
_____
_____

Please indicate how much you agree or disagree with the following statements (if you have not attended Aboriginal cultural events in the past year, please skip to question 7a).

6d1. I participate in Aboriginal cultural events because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

6d2. I participate in Aboriginal cultural events because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

6d3. I participate in Aboriginal cultural events because people around me approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

6d4. I participate in Aboriginal cultural events to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

6d5. Are there any other reasons that motivate you participate in Aboriginal cultural events like pow wows and round dances?

_____
_____
_____
_____

7a. In the past 12 months, how often did you participate in **Aboriginal ceremonies or spiritual activities** such as attending sweat lodges, Sun Dances, or other activities?
(please list other activities you would include in this category):_____

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

7b. How important is participating in Aboriginal ceremonies or spiritual activities to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

7c. Please explain why participating in Aboriginal ceremonies or spiritual activities is important or not important to you.

_____
_____
_____
_____

Please indicate how much you agree or disagree with the following statements (if you have not participated in Aboriginal ceremonies or spiritual activities in the past year, please skip to question 8a).

7d1. I participate in Aboriginal ceremonies or spiritual activities because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

7d2. I participate in Aboriginal ceremonies or spiritual activities because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

7d3. I participate in Aboriginal ceremonies or spiritual activities because people around me approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

7d4. I participate in Aboriginal ceremonies or spiritual activities to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

7d5. Are there any other reasons that motivate you to participate in Aboriginal ceremonies or spiritual activities?

_____
_____
_____
_____

8a. In the past 12 months, how often did you **work or volunteer in the Aboriginal community,** either in Edmonton, or somewhere else?

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

8b. How important is working or volunteering in the Aboriginal community to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

8c. Please explain why working or volunteering in the Aboriginal community is important or not important to you.

_____
_____
_____
_____

Please indicate how much you agree or disagree with the following statements (if you have not worked or volunteered in the Aboriginal community in the past year, please skip to question 9a).

8d1. I work or volunteer in the Aboriginal community because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

8d2. I work or volunteer in the Aboriginal community because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

8d3. I work or volunteer in the Aboriginal community because people around me approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

8d4. I work or volunteer in the Aboriginal community to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

8d5. Are there any other reasons that motivate you to work or volunteer in the Aboriginal community?

_____
_____
_____
_____

9a. In the past 12 months, how often did you **maintain contacts with or socialize with other Aboriginal people**?

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

9b. How important is maintaining contacts with or socializing with other Aboriginal people to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

9c. Please explain why maintaining contacts with or socializing with other Aboriginal people is important or not important to you.

_____
_____
_____
_____

Please indicate how much you agree or disagree with the following statements:

9d1. I maintain contacts with or socialize with other Aboriginal people because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

9d2. I maintain contacts with or socialize with other Aboriginal people because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

9d3. I maintain contacts with or socialize with other Aboriginal people because people around me would approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

9d4. I maintain contacts with or socialize with other Aboriginal people to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

9d5. Are there any other reasons that motivate you to maintain contacts with or socialize with other Aboriginal people?

_____

_____

_____

_____

10a. In the past 12 months, how often did you **eat traditional Aboriginal foods** or used traditional Aboriginal methods of gathering or preparing foods? (please provide examples of food eaten, or traditional methods used to gather or make foods.

Examples of foods eaten/prepared/gathered:_____

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

10b. How important is eating traditional Aboriginal foods to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

10c. Please explain why eating traditional Aboriginal food or using traditional methods to gather or prepare food is important or not important to you.

_____
_____
_____
_____

Please indicate how much you agree or disagree with the following statements (if you have not eaten traditional foods in the past year, please skip to question 11a).

10d1. I eat traditional Aboriginal foods because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

10d2. I eat traditional Aboriginal foods because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

10d3. I eat traditional Aboriginal foods because people around me would approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

10d4. I eat traditional Aboriginal foods to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

10d5. Are there any other reasons that motivate you to eat, gather or prepare traditional Aboriginal foods?

_____
_____
_____
_____

11a. In the past 12 months, how often did you **follow traditional Aboriginal protocols** like respecting the earth or respecting Elders?

(please list other protocols you would include in this category):_____

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

11b. How important is following traditional Aboriginal protocols to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

11c. Please explain why following traditional Aboriginal protocols is important or not important to you.

_____
_____
_____
_____

Please indicate how much you agree or disagree with the following statements (if you have not adhered to traditional Aboriginal protocols in the past year, please skip to 12a):

11d1. I follow traditional Aboriginal protocols because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

11d2. I follow traditional Aboriginal protocols because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

11d3. I follow traditional Aboriginal protocols because people around me would approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

11d4. I follow traditional Aboriginal protocols to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

11d5. Are there any other reasons that motivate you to follow traditional Aboriginal protocols?

_____
_____
_____
_____

12. In the past 12 months, did you **participate in another Aboriginal traditional or social activity** that was not included in this questionnaire? If no, please skip to the next questionnaire.

If yes, please list the activity: _____and answer the following questions:

12a. How often did you engage in this activity?

1	**2**	**3**	**4**	**5**
Never	A few times a year	About once a month	A few times a month	A few times a week or daily

12b. How important is this activity to you?

1	**2**	**3**	**4**	**5**
Not at all important	Somewhat important	Important	Very Important	Extremely important

12c. Please explain why this activity is important or not important to you.

_____
_____
_____
_____

12d1. Please indicate how much you agree or disagree with the following statements:

I participate in this activity because I personally believe it is important and worthwhile.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

12d2. I participate in this activity because I enjoy doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

12d3. I participate in this activity because people around me would approve of me doing so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

12d4. I participate in this activity to gain an external reward, avoid a punishment or because someone in my life insists that I do so.

1	**2**	**3**	**4**	**5**
Not at all because of this reason		Somewhat because of this reason		Completely because of this reason

12d5. Are there any other reasons that motivate you to participate in this activity?

_____
_____
_____
_____

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

Bicultural Identity Integration

How well does this statement describe your own experience as an Aboriginal Canadian?

I am a bicultural who keeps mainstream Canadian culture and Aboriginal cultures separate and feels conflicted about these two cultures. I am simply an Aboriginal who lives in Canada (vs. an Aboriginal-Canadian), and I feel as someone who is caught between two cultures.

1	2	3	4	5
Definitely Not true				Definitely True

Is there anything you would like to share about your answer?

_____
_____
_____
_____

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

Cultural Practices[9]

Now I would like to ask you a few questions about activities you may participate in. Thinking about the last 12 months…

1. How often would you say you use an **Aboriginal language** to communicate with your family and friends?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

2. Still thinking about the past 12 months, how often would you say that you ate **traditional Aboriginal foods** or used traditional methods of gathering or preparing food?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

3. In the past 12 months, how often would you say you **used traditional Aboriginal medicines or herbs?**

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

4. How often would you say that you participated in traditional **Aboriginal ceremonies or spiritual practices** in the past 12 months?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

5. How often would you say that you **worked or volunteered in the Aboriginal community** in the past 12 months?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

6. Again thinking about the past 12 months, how often would you say that you had **contact with one or more First Nations communities?**

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

7. In the past 12 months, how often would you say that you **participated in Aboriginal community events within or outside the city?**

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

[9] These questions were administered to the first 30 participants.

8. Lastly, in the past 12 months how often would you say that you **talked to an Aboriginal Elder to gain advice or guidance** on an issue?

1	2	3	4	5
Never	Not very often	Somewhat often	Very often	Almost all the time

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

Fagerstrom Nicotine Dependence Scale

Now I am going to ask some questions about smoking. Please put a checkmark beside the right answer for you:

1. Have you ever smoked cigarettes daily?

____ Yes ____ No (skip to next questionnaire)

2. At what age did you begin to smoke cigarettes daily? ____ years old.

3. If you stopped smoking cigarettes daily, what age did you stop? _____ years old.

4. At the present time do you smoke cigarettes daily, occasionally, or not at all?

____ Daily
____ Weekly (skip to question 6)
____ Monthly (skip to question 6)
____ Not at all (skip to next questionnaire)

5. How many cigarettes do you smoke each day now? _____ cigarettes.

6. How soon after waking do you smoke your first cigarette?

____ Within 5 minutes ____ In an hour
____ In half an hour ____ After an hour

7. Do you find it difficult to refrain from smoking in places where it is forbidden?

____ Yes ____ No

8. Which cigarette would you hate to give up most?

____ The first one in the morning ____ Any other

9. Do you smoke more frequently during the first hours after waking than during the rest of the day?

____ Yes ____ No

10. Do you smoke even when you are so ill that you are in bed most of the day?

____ Yes ____ No

11. Are you currently trying to quit smoking?

____ Yes ____ No

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

Gambling

Next, we would like to ask some questions about activities you may participate in.

1a. In the **past 12 months**, how often did you buy **lottery tickets** like the 649, Super 7, or Pick 3? Would you say:

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

b. In the **past 12 months**, how often did you buy **instant win or scratch tickets** like break open, pull tab, or Nevada strips?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

c. In the **past 12 months**, how often did you buy **raffle or fundraising tickets**?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

d. In the **past 12 months**, how often did you **bet on horse races** (i.e. live at the track and/or off-track)?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

e. In the **past 12 months**, how often did you **play bingo**?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

f. In the **past 12 months**, did you **gamble in a casino**?

____ Yes
____ No (**skip to question i**)

g. If yes, how often did you gamble in a casino **in the past 3 months?**

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Once or twice over the past three months
____ Never

h. In the past 12 months, what games have you played in a casino? (check all that apply):

____ Card games
____ Roulette
____ Slot machines
____ Keno

i. In the past 12 months, did you play VLTs?

____ Yes
____ No (**skip to question k**)

j. If yes, how often did you play VLTs **in the past 3 months?**

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Once or twice over the past three months
____ Never

k. In the **past 12 months**, how often did you play a **sports lottery** like Sport Select (e.g. Pro Line, Over/Under, Point Spread)?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

l. In the **past 12 months**, how often did you bet or spend money on **sports pools or use a bookie**?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

m. In the **past 12 months**, how often did you **bet on cards or board games** with family or friends?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

n. In the **past 12 months**, how often did you bet or spend money on **games of skill** such as pool, bowling, or darts?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

o. In the **past 12 months**, how often did you **gamble on the Internet for money**?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

p. In the **past 12 months**, have you used alcohol or drugs while gambling?

____ Yes
____ No

q. Do you smoke more cigarettes when you gamble?

____ Yes
____ No ____ I don't smoke

2. In the past 12 months, how often have you bet more than you could really afford to lose? Would you say never, sometimes, most of the time, or almost always?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

3. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

4. In the past 12 months, when you gambled, did you go back another day to try to win back the money you lost?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

5. In the past 12 months, have you borrowed money or sold anything to get money to gamble?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

6. In the past 12 months, have you felt that you might have a problem with gambling?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

7. In the past 12 months, has gambling caused you any health problems, including stress or anxiety?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

8. In the past 12 months, have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

9. In the past 12 months, has your gambling caused any financial problems for you or your household?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

10. In the past 12 months, have you felt guilty about the way you gamble or what happens when you gamble?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

11. In the past 12 months, have you lied to family members or others to hide your gambling?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

12. In the past 12 months, have you bet or spent more money than you wanted to on gambling?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

13. In the past 12 months, have you wanted to stop betting money or gambling, but didn't think you could?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

14. After losing many times in a row when you are gambling, you are more likely to win.

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

15. The longer you sit at a slot machine or VLT the more likely it is to pay out.

____ This is definitely true
____ This is might be false

____ This might be true
____ I'm not sure if this is true
____ This is definitely false

16. Slot machines and VLTs "go cold" after a win. They are less likely to pay out than other machines.

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

17. The odds of winning on a slot machine or VLT change as you play?

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

18. Winning when you play bingo has to do with skill

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

19. Winning when you play slot machines or VLTs has to do with skill

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

20. Do you remember a big WIN or LOSS when you first started gambling?

____ No ____ Yes, a big win _____ Yes, a big loss

21. Why do you gamble? (check all that apply)

____ For the excitement and fun of it
____ To socialize with friends and family
____ To win money
____ To escape from problems for a little while or to cope
____ Other reasons: _____

22. Have you ever sought help for problems with gambling? (if no, skip to question 25) _____ Yes _____ No

23. If yes, where did you seek help from? (check all that apply)

____ Gamblers anonymous
____ Counselors
____ Aboriginal Elders
____ Aboriginal healers
____ Friends and family members
____ Treatment centre- name: _____
____ Aboriginal spiritual practices – specify: _____
____ Other – specify:_____

24. How old were you when first developed a gambling problem?
I was _____ years old

26. Has anyone in your family EVER had a gambling problem? (if no, skip to next questionnaire)

____ No
____ Yes – mother
_____ Yes - father
_____Other family members

27. Whose gambling habits have you been negatively affected by? (check all that apply)

____ Mother or father when I was a child
____ Mother or father when I was an adult
____ Sister or brother
____ Grandparent
____ Spouse or partner
____ Daughter or son
____ Other relative
____ In-Laws
____ Friend
____ Co-worker
____ Other
_____

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

AUDIT

For the questions in this section a "drink" means a can or bottle of beer or wine cooler, a 4 ounce glass of wine, a shot of liquor (like whiskey, vodka, or tequila), or a mixed drink.

1. Over the past year, how often did you have a drink containing alcohol?	☐ Never	☐ Monthly or less	☐ 2-4 times a month	☐ 2-3 times a week	☐ 4 times a week or more
2. Over the past year, how many drinks containing alcohol did you have on a typical day when you are drinking?	☐ 1 or 2	☐ 3 or 4	☐ 5 or 6	☐ 7 to 9	☐ 10 or more
3. Over the past year, how often did you have six or more drinks on one occasion?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
4. How often during the last year have you found that were not able to stop drinking once you had started?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
8. How often during the last year have you been unable to remember what	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily

happened the night before because of your drinking?					
9. Have you or someone else been injured because of your drinking?	☐ No		☐ Yes, but not over the last year		☐ Yes, over the last year
10. Has a relative, friend, doctor, or other heath care worker been concerned about your drinking or suggested you cut down?	☐ No		☐ Yes, but not over the last year		☐ Yes, over the last year

11. Are you currently abstinent from alcohol?
__ No ____ Yes: years abstinent? _____

12. In the last 12 months, if something painful or stressful happened in your life, did you have the urge to have a drink?
____ No ____ Yes

13. Have you ever had an alcohol problem in your life? (if no, skip to question 17)
____ No ____ Yes

14. How old were you when first thought alcohol was a problem for you?
I was _____ years old

15. Did you seek help for the problem? (if no, skip to 17)
____ No ____ Yes

16. Where did you seek help from? (check all that apply)
____ Alcoholics anonymous
____ Counselors
____ Aboriginal Elders
____ Aboriginal healers
____ Friends and family members
____ Treatment centre- name: _____
____ Aboriginal spiritual practices – specify:
_____
____ Other – specify:_____

18. Have you ever been negatively affected by another person's drinking (if no, skip to next questionnaire)
____ Yes ____ Don't know

____ No ____ Don't want to say

19. Whose drinking habits have you been negatively affected by? (check all that apply)

____ Mother or father when I was a child
____ Mother or father when I was an adult
____ Sister or brother
____ Grandparent
____ Spouse or partner
____ Daughter or son
____ Other relative
____ In-Laws
____ Friend
____ Co-worker
____ Other _____

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

DUDIT

How often do you use drugs other than alcohol? (see list of drugs)	☐ Never	☐ Once a month or less often	☐ 2-4 times a month	☐ 2-3 times a week	☐ 4 times a week or more often
Do you use more than one type of drug on the same occasion?	☐ Never	☐ Once a month or less often	☐ 2-4 times a month	☐ 2-3 times a week	☐ 4 times a week or more often
How many times do you take drugs on a typical day when you use drugs?	☐ 0	☐ 1-2	☐ 3-4	☐ 5-6	☐ 7 or more
How often are you influenced heavily by drugs?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
Over the past year, have you felt that your longing for drugs was so strong that you could not resist it?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
Has it happened over the past year that you have not been able to stop taking drugs once you started?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
How often over the past year have you taken drugs and then neglected to do something you should have done?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
How often over the past year have you needed to take a drug the morning after heavy drug use the day before?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
How often over the past year have you had guilt feelings or a bad conscience because you had used drugs?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
Have you or anyone	☐ No		☐ Yes, but not		☐ Yes, over the past

else been hurt (mentally or physically) because you used drugs?		over the past year	year
Has a relative, or a friend, a doctor, or a nurse or anyone else been worried about your drug use or said to you that you should stop using drugs?	☐ No	☐ Yes, but not over the past year	☐ Yes, over the past year

Has anyone in your family EVER had a drug problem?

____ No
____ Yes – mother
____ Yes – father
____ Yes – both parents
____ Brother or sister
____ Don't know
____ Don't want to say

Have you ever sought help for problems with drugs? (check all that apply)

____ No
____ Yes – illicit drugs
____ Yes – prescription drugs
____ Don't know
____ Don't want to say

If yes, where did you seek help from?

_____

If you have had a drug problem, how old were you when first developed the problem?
I was _____ years old

Have you ever been negatively affected by another person's drug use?

____ Yes
____ No
____ Don't know
____ Don't want to say

Whose drug use have you been negatively affected by? (check all that apply)

____ Mother or father when I was a child
____ Mother or father when I was an adult
____ Sister or brother
____ Grandparent
____ Spouse or partner
____ Daughter or son
____ Other relative
____ Friend
____ Co-worker
____ Other _____

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

Feelings I Have

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you.

1. I feel like I am free to decide for myself how to live my life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

2. I really like the people I interact with.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

3. Often, I do not feel very competent.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

4. I feel pressured in my life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

5. People I know tell me I am good at what I do.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

6. I get along with people I come into contact with.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

7. I pretty much keep to myself and don't have a lot of social contacts.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

8. I generally feel free to express my ideas and opinions.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

9. I consider the people I regularly interact with to be my friends.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

10. I have been able to learn interesting new skills recently.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

11. In my daily life, I frequently have to do what I am told.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

12. People in my life care about me.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

13. Most days I feel a sense of accomplishment from what I do.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

14. People I interact with on a daily basis tend to take my feelings into consideration.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

15. In my life I do not get much of a chance to show how capable I am.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

16. There are not many people that I am close to.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

17. I feel like I can pretty much be myself in my daily situations.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

18. The people I interact with regularly do not seem to like me much.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

19. I often do not feel very capable.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

20. There is not much opportunity for me to decide for myself how to do things in my daily life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

21. People are generally pretty friendly towards me.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

Edmonton Questions

1. I feel I have a lot in common with other Aboriginal people living in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

2. I feel strong ties to other Aboriginal people living in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

3. I feel that I really fit in with other Aboriginal people living in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

4. I don't feel good about being an Aboriginal person in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

5. I find it difficult to form a bond with other Aboriginal people in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

6. I feel a sense of being connected with other Aboriginal people in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

7. Are there things that could be done to increase feelings of community and connectedness among Aboriginal people living in Edmonton? ___ Yes ___ No

8. What are some of the things you would like to see in Edmonton to increase feelings of community and connectedness among Aboriginal people living here?

_____

_____

9. How do you feel the media portrays Aboriginal people in Edmonton?

1	2	3	4	5	6
Very Negatively					Very Positively

10. Do you agree with this portrayal? Does the media impact how you feel about living in Edmonton as an Aboriginal person?

_____
_____
_____

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

HISTORICAL BACKGROUND

These next questions will give us a better picture of the people who took part in this study. Your responses are completely confidential, so feel free to answer honestly.

1 a). To which ethnic group do you belong? Please put a check mark beside all that apply:

____ First Nations
____ Métis
____ Inuit
____ Aboriginal
____ Other
____ Don't know
____ Don't want to say

b). Are you:

____ Non-status
____ Treaty or status
____ Don't know
____ Don't want to say

2. Who do you identify as First Nation, Aboriginal, Inuit or Métis in your family? (check all that apply)

_____ Mother
_____ Father
_____ One or both of my grandmothers
_____ One or both of my grandfathers
____ Don't know
____ Don't want to say

3. Where were you brought up as a child?

____ In a city
____ In a First Nations community
____ In both a city and a First Nation
____ In a rural community
____ Don't know
____ Don't want to say

4. How many years of your life have you spent living in a city or cities in Canada?

____ Less than a year
____ 1 to 5 years
____ 6 to 10 years
____ 11 to 20 years
____ All my life
____ Don't know
____ I have never lived in a city

5a. How many years of your life have you spent living in one or more First Nations communities in Canada?

____ Less than a year
____ 1 to 5 years
____ 6 to 10 years
____ 11 to 20 years
____ All my life
____ Don't know
____ I have never lived in a First Nation

5b. How many years of your life have you spent living in one or more Métis settlements in Canada?

____ Less than a year
____ 1 to 5 years
____ 6 to 10 years
____ 11 to 20 years
____ All my life
____ Don't know
____ I have never lived in a Métis Settlement

6a. Do you return to a First Nations community or Métis settlement a few times a year or more? (check all that apply)

____ No
____ Yes – First Nations Community
____ Yes – Métis settlement
____ Don't know
____ Don't want to say

6b. About how many times do you visit a First Nations communities/Métis settlements?

____ Daily
____ A few times a week
____ A few times a month
____ A few times a year
____ Never
____ Don't know
____ Don't want to say

6c. Why do you typically visit a First Nations community/Métis settlement? (check all that apply)

____ To visit family and/or friends
____ To work or volunteer
____ To seek band benefits
____ To attend to personal business
____ Other: Please specify: _____

7. Who would you say you were raised as a child by? (check all that apply)

_____ Mother
_____ Father
_____ My grandmother(s)
_____ My grandfathers(s)
_____ Another relative
_____ Step parents or foster parents
____ Don't know
____ Don't want to say

8. Were you separated from your birth family as a child or teenager? (check all that apply)

____ No
____ Yes – as a child
____ Yes – as a teenager
____ Don't know
____ Don't want to say

9. Were you ever in foster care as a child or teenager? (check all that apply)?

____ No
____ Yes – as a child
____ Yes – as a teenager
____ Don't know
____ Don't want to say

10. Were you adopted as a child or teenager? (check all that apply)

____ No
____ Yes – as a child
____ Yes – as a teenager
____ Don't know
____ Don't want to say

11a. Did your parents or grandparents attend residential school? (check all that apply)

_____ Mother
_____ Father
_____ One or both of my grandmothers
_____ One or both of my grandfathers
____ Don't know
____ Don't want to say

b. If yes, would you say that attending a residential school for your family member(s) was a:

_____ Very negative experience
_____ Somewhat negative experience
_____ Somewhat positive experience
_____ Very positive experience
____ Don't know
____ Don't want to say

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

SD Scale

Please read the pairs of statements, one pair at a time, and think about which statement seems more true to you at this point in your life, and indicate the degree to which on the 5-point scale shown after each pair.

1. A. I always feel like I choose the things I do.
   B. I sometimes feel that it's not really me choosing the things I do.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

2. A. My emotions sometimes seem alien to me.
   B. My emotions always seem to belong to me.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

3. A. I choose to do what I have to do.
   B. I do what I have to, but I don't feel like it is really my choice.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

4. A. I feel that I am rarely myself.
   B. I feel like I am always completely myself.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

5. A. I do what I do because it interests me.
   B. I do what I do because I have to.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

6. A. When I accomplish something, I often feel it wasn't really me who did it.
   B. When I accomplish something, I always feel it's me who did it.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

7. A. I am free to do whatever I decide to do.
   B. What I do is often not what I'd choose to do.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

8. A. My body sometimes feels like a stranger to me.
   B. My body always feels like me.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

9. A. I feel pretty free to do whatever I choose to.
   B. I often do things that I don't choose to do.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

10. A. Sometimes I look into the mirror and see a stranger.
    B. When I look into the mirror I see myself.

1	2	3	4	5
Only A feels true		The two statements feel equally true		Only B feels true

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

EOD Survey

1. If you feel you have been treated unfairly, do you usually:
   Accept it as a fact of life ____
   Try to do something about it ____

2. If you have been treated unfairly, do you usually:
   Talk to other people about it ____
   Keep it to yourself ____

3a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior <u>at school</u> because of your race, ethnicity or colour?

Yes ____
No ____

3b. If yes, how many times did this happen?
   Once ____
   Two or three times ____
   Four or more times ____

3c. Is there anything you would like to share about discrimination experienced at school?

_____
_____
_____

4a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior <u>getting hired or getting a job</u> because of your race, ethnicity or colour?

Yes ____
No ____

4b. If yes, how many times did this happen?
   Once ____
   Two or three times ____
   Four or more times ____

4c. Is there anything you would like to share about discrimination experienced getting hired or getting a job?

_____
_____
_____

5a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior <u>at work</u> because of your race, ethnicity or colour?

Yes ____
No ____

5b. If yes, how many times did this happen?

Once ____
Two or three times ____
Four or more times ____

5c. Is there anything you would like to share about discrimination experienced at work?

_____
_____
_____

6a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior <u>getting housing</u> because of your race, ethnicity or colour?

Yes ____
No ____

6b. If yes, how many times did this happen?

Once ____
Two or three times ____
Four or more times ____

6c. Is there anything you would like to share about discrimination experienced getting housing?

_____
_____
_____

7a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior <u>getting medical care</u> because of your race, ethnicity or colour?

Yes ____
No ____

7b. If yes, how many times did this happen?

Once ____
Two or three times ____
Four or more times ____

7c. Is there anything you would like to share about discrimination experienced getting medical care?

_____
_____
_____

8a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting service in a store or restaurant because of your race, ethnicity or colour?

Yes ____
No ____

8b. If yes, how many times did this happen?

Once ____
Two or three times ____
Four or more times ____

8c. Is there anything you would like to share about discrimination experienced getting service is a store or restaurant?

_____
_____
_____

9a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting credit, bank loans, or a mortgage because of your race, ethnicity or colour?

Yes ____
No ____

9b. If yes, how many times did this happen?

Once ____
Two or three times ____
Four or more times ____

9c. Is there anything you would like to share about discrimination experienced getting credit, bank loans, or a mortgage?
v

10a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior on the street or in a public place because of your race, ethnicity or colour?

Yes ____
No ____

10b. If yes, how many times did this happen?

Once ____
Two or three times ____
Four or more times ____

10c. Is there anything you would like to share about discrimination experienced on a street or in a public place?

_____
_____
_____

11a. Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior from the police or in the courts because of your race, ethnicity or colour?

Yes ____
No ____

11b. If yes, how many times did this happen?

Once ____
Two or three times ____
Four or more times ____

11c. Is there anything you would like to share about discrimination experienced from the police or in the courts?

_____
_____
_____

FEEDBACK FORM

1. What did you think of the questionnaire you just completed?

_____
_____
_____

2. Were there any questions that were unclear?

_____
_____
_____

3. Where there any questions that were inappropriate or offensive?

_____
_____
_____

4. Were there other questions you think we should have asked about this topic?

_____
_____
_____

5. About how long did it take you to fill in this questionnaire? ____ minutes.

6. Is there anything else you would like to say about this questionnaire?

_____
_____
_____

6. DEMOGRAPHIC QUESTIONNIARE

These next questions will give us a better picture of the people who took part in this study. Please place a checkmark beside the correct answer:

1. What is your gender?
   - ____ Male
   - ____ Female

2. Could you tell me your age? _____

3. What is your current marital status?
   - ____ Married
   - ____ Common-Law
   - ____ Separated, divorced or widowed
   - ____ Single and never married
   - ____ Don't know
   - ____ Don't want to say

4. Which one of the following best describes your current employment status?
   - ____ Employed 30 hours per week or more (including self-employed)
   - ____ Employed less than 30 hours per week (including self-employed)
   - ____ Unemployed
   - ____ Don't know
   - ____ Don't want to say

5. What is the highest level of education that you have obtained?
   - ____ Grade 9 or less
   - ____ Some high school
   - ____ High school diploma
   - ____ Some university/college/technical school (e.g., NAIT, SAIT)
   - ____ University degree/college diploma/technical school diploma
   - ____ Other (specify) _____
   - ____ Don't know
   - ____ Don't want to say

6. How many years you have lived in Edmonton? _____

7. What was your total income, before taxes, last year?
   - ____ Under $10,000
   - ____ $10,000 - 19,999
   - ____ $20,000 - 29,999
   - ____ $30,000 - 39,999
   - ____ $40,000 - 49,999
   - ____ $50,000 or more
   - ____ Don't know
   - ____ Don't want to say

APPENDIX 2-1: INFORMATION AND CONSENT PACKAGE FOR SAMPLE 2

UNIVERSITY OF ALBERTA

Centre for Health Promotion Studies
School of Public Health

Information Letter

Title of Project: *Risk and Protective Factors for Problem Gambling among Urban Aboriginals in Edmonton*
Investigators: Dr. Cameron Wild, Associate Professor, School of Public Health
Ms. Cheryl Currie, Doctoral Student, School of Public Health

The purpose of this study is to: 1) look for factors that may increase or decrease addictive behaviour. If you meet the following conditions, you may participate in the study:

- You are 18 years of age or older
- You currently live in Edmonton
- You identify yourself as Aboriginal, Métis or Inuit
- You are able to write in English

Participation in this study is voluntary. You do not have to participate. If you choose to participate, you will be asked to complete a questionnaire package. This will take about 2 hours. You may take a break whenever you would like. You may complete the questionnaires by hand or have the research coordinator read the questions to you and mark down your answers. Your name will not appear on any questionnaire - you will be identified by number only. You will receive $25 in exchange for participating in this study today.

You will be asked to answer questions about gambling, smoking, alcohol and drug use. You will also be asked to answer questions about feeling you may have, cultural practices you may participate in, and discrimination you may have experienced. It is possible that some of the questions may make you feel uneasy. You have the right to skip any question that you do not wish to answer. You may withdraw from the study at any time without giving a reason and still receive $25. All of your information will be confidential except when codes of ethics and/or laws require reporting. Only the research team will have access to your answers. All of the data will be stored on a secured computer or in a locked cabinet for a period of seven years. After this time, it will be destroyed.

If you have questions about this study, please contact:
Name: Cam Wild, Associate Professor, School of Public Health Phone: (780) 492-6752
Name: Cheryl Currie, Doctoral Student, School of Public Health Phone: (780) 248-1503

If you have concerns about how this research is done or your rights as a participant, you may contact the Health Research Ethics Board at 780-492-0302.

Consent Form

Part 1:

Title of Project: *Risk and Protective Factors for Problem Gambling among Urban Aboriginals in Edmonton*

Investigators: Cam Wild Phone Number: 492-6752
Cheryl Currie Phone Number: 248-1503

Part 2 (to be completed by the research subject):

	Yes	No
Do you understand that you have been asked to be in a research study?	☐	☐
Have you read and received a copy of the attached Information Letter?	☐	☐
Do you understand the benefits and risks involved in taking part in this research study? ☐ ☐		
Have you had an opportunity to ask questions and discuss this study?	☐	☐
Do you understand that you are free to withdraw from the study at any time, without having to give a reason?	☐	☐
Has the issue of confidentiality been explained to you?	☐	☐
Do you understand who will have access to the information you provide?	☐	☐

Who explained this study to you? _____

I agree to take part in this study: YES ☐ NO ☐

Signature of Research Subject _____

(Printed Name) _____

Date:_____

THE INFORMATION SHEET MUST BE ATTACHED TO THIS CONSENT FORM AND A COPY GIVEN TO THE RESEARCH SUBJECT

Written debriefing form

Risk and Protective Factors for Problem Gambling among Urban Aboriginal People in Edmonton

Thank you for taking part in this study. The purpose of this study was to look for factors that may increase or decrease addictive behaviour among Aboriginal people living in Edmonton.

Sometimes answering questions can make a person feel uneasy or depressed. If you would like to talk to someone, drop-in counseling is available for you in Edmonton through **The Support Network**. This service is free to those who make $35,000 a year or less. You may call ahead, but no appointment is necessary.

Phone: 780-482-0198
Hours: Mon: 4pm - 8pm, Tues - Wed: 1pm -8pm. Thurs - Friday: 10am - 3pm.
Address: 400 Baker Centre, 10025 106 Street, Edmonton T5J 1G4

If you would like information about the results of the study once completed, feel free to contact Cheryl Currie at cheryl.currie@ualberta.ca. We would be happy to share them with you. Thanks so much for your interest and your help today.

Sample 2: Recruitment Ad

Risk and Protective Factors for Gambling among Urban Aboriginals in Edmonton

Aboriginal Health Study

Researchers at the University of Alberta are looking for Aboriginal and Métis adults for a study on health.

Time requirement: 2 hours or less
What you will be asked to do: Complete a questionnaire package

A cash honorarium will be provided for your time

If interested or for more info, please contact Alex at: ab7@ualberta.ca or 780-492-9793

APPENDIX 2-2: FULL QUESTIONNAIRE FOR SAMPLE 2

Vancouver Index

Please answer each question as carefully as possible. Please circle *one* of the numbers to the right of each question to indicate how much you disagree or agree with each statement. Many of these questions will refer to your Aboriginal culture, meaning Aboriginal, First Nation, Métis and/or Inuit culture (as a short form, the word *Aboriginal* will be used to refer to Aboriginal, First Nation, Métis and Inuit culture).

	Disagree Agree
1. I often participate in my Aboriginal cultural traditions.	1 2 3 4 5 6 7 8 9
2. I often participate in mainstream Canadian cultural traditions.	1 2 3 4 5 6 7 8 9
3. I would be willing to marry a person from my Aboriginal culture.	1 2 3 4 5 6 7 8 9
4. I would be willing to marry a non-Aboriginal Canadian person	1 2 3 4 5 6 7 8 9
5. I enjoy social activities with people from the same Aboriginal culture as myself.	1 2 3 4 5 6 7 8 9
6. I enjoy social activities with typical Canadian people.	1 2 3 4 5 6 7 8 9
7. I am comfortable interacting with people of the same Aboriginal culture as myself.	1 2 3 4 5 6 7 8 9
8. I am comfortable interacting with typical Canadian people.	1 2 3 4 5 6 7 8 9
9. I enjoy entertainment (e.g. movies, music) from my Aboriginal culture.	1 2 3 4 5 6 7 8 9
10. I enjoy Canadian entertainment (e.g. movies, music).	1 2 3 4 5 6 7 8 9
11. I often behave in ways that are typical of my Aboriginal culture (e.g., sharing with others)	1 2 3 4 5 6 7 8 9
12. I often behave in ways that are 'typically Canadian.'	1 2 3 4 5 6 7 8 9
13. It is important for me to maintain or develop the practices of my Aboriginal culture.	1 2 3 4 5 6 7 8 9
14. It is important for me to maintain or develop Canadian cultural practices	1 2 3 4 5 6 7 8 9
15. I believe in the values of my Aboriginal culture.	1 2 3 4 5 6 7 8 9
16. I believe in mainstream Canadian values.	1 2 3 4 5 6 7 8 9

17. I enjoy the jokes and humor of my Aboriginal culture	1 2 3 4 5 6 7 8 9
18. I enjoy mainstream Canadian jokes and humor.	1 2 3 4 5 6 7 8 9
19. I am interested in having friends from my Aboriginal culture.	1 2 3 4 5 6 7 8 9
20. I am interested in having non-Aboriginal Canadian friends	1 2 3 4 5 6 7 8 9

Cultural Practices and Values[10]

1. Thinking about the Aboriginal, Métis or Inuit cultural group that you most identify with, please name 3 cultural behaviours or traditions that a traditional Aboriginal person would typically engage in?
1. _____
2. _____
3. _____

2. Thinking about the Aboriginal, Métis or Inuit cultural group that you most identify with, please name 3 cultural values that a traditional Aboriginal person would consider important?
1. _____
2. _____
3. _____

3. Thinking about mainstream Canadian culture, please name 3 cultural behaviours or traditions that a typical Canadian would engage in?
1. _____
2. _____
3. _____

4. Thinking about mainstream Canadian culture, please name 3 cultural values that a typical Canadian would consider important?
1. _____
2. _____
3. _____

[10] Cultural Practices and Values questions (1 to 4) were administered to participants 228 to 381 (*n* = 154).

Bicultural Identity

	Disagree				Agree
1. I keep Aboriginal and Canadian cultures separate.	1	2	3	4	5
2. I am simply an Aboriginal who lives in Canada (rather than Aboriginal Canadian).	1	2	3	4	5
3. I feel I am Aboriginal Canadian.	1	2	3	4	5
4. I feel part of a combined culture.	1	2	3	4	5
5. I am conflicted between the Canadian and Aboriginal ways of doing things	1	2	3	4	5
6. I feel like someone moving between two cultures.					
7. I feel caught between Aboriginal and Canadian cultures.	1	2	3	4	5
8. I don't feel trapped between Aboriginal and Canadian cultures	1	2	3	4	5
9. I feel social pressure from non-Aboriginal society to move away from Aboriginal culture and Aboriginal ways of doing things.	1	2	3	4	5
10. I feel social pressure from non-Aboriginal society to conform to Canadian culture.	1	2	3	4	5

11. Is there anything you would like to share about your answers?

_____
_____
_____
_____
_____

Tobacco

Now I am going to ask some questions about tobacco use. Please put a checkmark beside the right answer for you:

1. Have you ever smoked cigarettes daily?
   ____ Yes ____ No (skip to question 8)

2. At what age did you begin to smoke cigarettes daily? ____ years old.

3. If you stopped smoking cigarettes daily, what age did you stop? _____ years old.

4. At the present time do you smoke cigarettes daily, occasionally, or not at all?
   ____ Daily
   ____ Weekly (skip to question 6)
   ____ Monthly (skip to question 6)
   ____ Not at all (skip to question 8)

5. How many cigarettes do you smoke each day now? _____ cigarettes.

6. Would you like to quit smoking? ____ Yes ____ No

7. Are you currently trying to quit smoking?
   ____ Yes ____ No

8. Do you use tobacco in a traditional way (offering tobacco in Aboriginal ceremonies for example?)
   ____ Yes ____ No

9. Do you have any comments you would like to share about use of tobacco in traditional ceremonies versus smoking recreationally among Aboriginal people?

_____
_____
_____
_____
_____

Gambling

Next, we would like to ask some questions about activities you may participate in.

1a. In the **past 12 months**, how often did you buy **lottery tickets** like the 649, Super 7, or Pick 3? Would you say:

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

b. In the **past 12 months**, how often did you buy **instant win or scratch tickets** like break open, pull tab, or Nevada strips?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

c. In the **past 12 months**, how often did you buy **raffle or fundraising tickets**?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

d. In the **past 12 months**, how often did you **bet on horse races** (i.e. live at the track and/or off-track)?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

e. In the **past 12 months**, how often did you **play bingo**?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

f. In the **past 12 months**, did you **gamble in a casino**?

____ Yes
____ No (**skip to question i**)

g. If yes, how often did you gamble in a casino **in the past 3 months?**

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Once or twice over the past three months
____ Never

h. In the past 12 months, what games have you played in a casino? (check all that apply):

____ Card games
____ Roulette
____ Slot machines
____ Keno

i. In the past 12 months, did you play VLTs?

____ Yes
____ No (**skip to question k**)

j. If yes, how often did you play VLTs **in the past 3 months?**

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Once or twice over the past three months
____ Never

k. In the **past 12 months**, how often did you play a **sports lottery** like Sport Select (e.g. Pro Line, Over/Under, Point Spread)?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

l. In the **past 12 months**, how often did you bet or spend money on **sports pools or use a bookie**?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

m. In the **past 12 months**, how often did you **bet on cards or board games** with family or friends?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

n. In the **past 12 months**, how often did you bet or spend money on **games of skill** such as pool, bowling, or darts?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

o. In the **past 12 months**, how often did you **gamble on the Internet for money**?

____ Daily
____ 2 to 6 times a week
____ About once a week
____ 2-3 times a month
____ About once a month
____ Between 6-11 times a year
____ Between 1-5 times a year
____ Never

p. In the **past 12 months**, have you used alcohol or drugs while gambling?

____ Yes
____ No

q. Do you smoke more cigarettes when you gamble?

____ Yes
____ No ____ I don't smoke

2. In the past 12 months, how often have you bet more than you could really afford to lose? Would you say never, sometimes, most of the time, or almost always?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

3. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

4. In the past 12 months, when you gambled, did you go back another day to try to win back the money you lost?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

5. In the past 12 months, have you borrowed money or sold anything to get money to gamble?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

6. In the past 12 months, have you felt that you might have a problem with gambling?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

7. In the past 12 months, has gambling caused you any health problems, including stress or anxiety?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

8. In the past 12 months, have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

9. In the past 12 months, has your gambling caused any financial problems for you or your household?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

10. In the past 12 months, have you felt guilty about the way you gamble or what happens when you gamble?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

11. In the past 12 months, have you lied to family members or others to hide your gambling?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

12. In the past 12 months, have you bet or spent more money than you wanted to on gambling?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

13. In the past 12 months, have you wanted to stop betting money or gambling, but didn't think you could?

____ Never
____ Sometimes
____ Most of the time
____ Almost always

14. After losing many times in a row when you are gambling, you are more likely to win.

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

15. The longer you sit at a slot machine or VLT the more likely it is to pay out.

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

16. Slot machines and VLTs "go cold" after a win. They are less likely to pay out than other machines.

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

17. The odds of winning on a slot machine or VLT change as you play?

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

18. Winning when you play bingo has to do with skill

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

19. Winning when you play slot machines or VLTs has to do with skill

____ This is definitely true
____ This might be true
____ I'm not sure if this is true
____ This is might be false
____ This is definitely false

20. Do you remember a big WIN or LOSS when you first started gambling?

____ No ____ Yes, a big win _____ Yes, a big loss

21. Why do you gamble? (check all that apply)

____ For the excitement and fun of it
____ To socialize with friends and family
____ To win money
____ To escape
____ Other reasons: _____

22. Have you ever sought help for problems with gambling? (if no, skip to question 25)

____ Yes ____ No

23. If yes, where did you seek help from? (check all that apply)

____ Gamblers anonymous
____ Counselors
____ Aboriginal Elders
____ Aboriginal healers
____ Friends and family members
____ Treatment centre- name: _____
____ Aboriginal spiritual practices – specify: _____
____ Other – specify:_____

24. How old were you when first developed a gambling problem?
I was _____ years old

25. Do you believe Aboriginal spiritual or cultural practices are important in recovery from problems with gambling or avoiding problems with gambling? How?

_____
_____
_____
_____

26. Has anyone in your family EVER had a gambling problem? (if no, skip to next questionnaire)

____ No
____ Yes – mother
_____ Yes - father
_____Other family members

27. Whose gambling habits have you been negatively affected by? (check all that apply)

____ Mother or father when I was a child
____ Mother or father when I was an adult
____ Sister or brother
____ Grandparent
____ Spouse or partner
____ Daughter or son
____ Other relative
____ In-Laws
____ Friend
____ Co-worker
____ Other _____

Edmonton Questions

1. I feel I have a lot in common with other Aboriginal people living in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

2. I feel strong ties to other Aboriginal people living in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

3. I feel that I really fit in with other Aboriginal people living in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

4. I don't feel good about being an Aboriginal person in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

5. I find it difficult to form a bond with other Aboriginal people in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

6. I feel a sense of being connected with other Aboriginal people in Edmonton.

1	2	3	4	5	6
Strongly Disagree					Strongly Agree

7. Are there things that could be done to increase feelings of community and connectedness among Aboriginal people living in Edmonton? ___ Yes ___ No

8. What are some of the things you would like to see in Edmonton to increase feelings of community and connectedness among Aboriginal people living here?

_____

_____

9. How do you feel the media portrays Aboriginal people in Edmonton?

1	2	3	4	5	6
Very Negatively					Very Positively

10. Do you agree with this portrayal? Does the media impact how you feel about living in Edmonton as an Aboriginal person?

_____

_____

_____

Cultural Activities[11]

Next, we would like to ask some questions about cultural activities you may participate in. There will be space at the end to list Aboriginal cultural activities that you participate in that we may have missed.

1. How would you rate your ability to speak an Aboriginal language?

_____ Speak very well
_____ Speak relatively well
_____ Speak with effort
_____ Speak a few words
_____ Not at all

2. How would you rate your ability to understand an Aboriginal language?

_____ Understand very well
_____ Understand relatively well
_____ Understand with effort
_____ Understand a few words
_____ Not at all

3. How would you rate your ability to read an Aboriginal language?

_____ Read very well
_____ Read relatively well
_____ Read with effort
_____ Read a few words
_____ Not at all

4. How would you rate your ability to write an Aboriginal language?

_____ Write very well
_____ Write relatively well
_____ Write with effort
_____ Write a few words
_____ Not at all

5. How often do you use an Aboriginal language…

	All of the time	Most of the time	Some of the time	Very seldom	Not at all
a) In your household?					
b) At work?					
c) At school?					
d) Elsewhere?					

6. Did you speak an Aboriginal language as a child?

_____ Yes
_____ No

7. How important is it that you keep, learn or re-learn your Aboriginal language?

_____ Very important
_____ Somewhat important
_____ Not very important
_____ Not important

8. How important is it, or would it be to you for your children to learn a First Nation, Inuit or Métis language?

_____ Very important
_____ Somewhat important
_____ Not very important
_____ Not important

[11] The majority of these cultural questions match those included on the Aboriginal Peoples Survey 2006 and were included for research questions outside the scope of this dissertation.

9. How important is it, or would it be to you for your children to learn about Aboriginal or Inuit culture and history?

_____ Very important _____ Not very important
_____ Somewhat important _____ Not important

10. Do you consider yourself a traditional Aboriginal person or someone who participates in the culture?

_____ Very much _____ A little
_____ Much _____ Not at all
_____ Somewhat

11. a) In the past 12 months, how often did you participate in *Aboriginal cultural events* like powwows, round dances or other activities? (please list other activities you would include in this category):

_____ A few times a week or more _____ A few times a year
_____ A few times a month _____ Never
_____ Once a month

11. b) How important is maintaining a close relationship with your family to you?

_____ Very important _____ Not very important
_____ Somewhat important _____ Not important

12. a) How frequently are you in contact with your family (by phone, email or in person)?

_____ A few times a week or more _____ A few times a year
_____ A few times a month _____ Never
_____ Once a month

13. a) In the past 12 months, how often did you work or volunteer in the Aboriginal community, either in Edmonton, or somewhere else?

_____ A few times a week or more _____ A few times a year
_____ A few times a month _____ Never
_____ Once a month

b) How important is working or volunteering in the Aboriginal community to you?

_____ Very important _____ Not very important
_____ Somewhat important _____ Not important

Do you feel connected to the Aboriginal community in Edmonton?

_____ Very much
_____ Much
_____ Somewhat
_____ A little
_____ Not at all

b) How important is feeling connected to the Edmonton Aboriginal community to you?

_____ Very important _____ Not very important
_____ Somewhat important _____ Not important

14. a) Do you feel connected to an Aboriginal community outside Edmonton?

_____ Very much
_____ Much
_____ Somewhat
_____ A little
_____ Not at all

b) How important is feeling connected to an Aboriginal community outside Edmonton to you?

_____ Very important _____ Not very important
_____ Somewhat important _____ Not important

15. a) How frequently do you participate in traditional Aboriginal, Métis or Inuit storytelling (sharing stories or listening to them)?

_____ A few times a week or more _____ A few times a year
_____ A few times a month _____ Never
_____ Once a month

b) How important is participating in traditional storytelling to you?

_____ Very important _____ Not very important
_____ Somewhat important _____ Not important

17. How spiritual or religious a person do you consider yourself to be? (please check one):

_____ Very spiritual
_____ Moderately spiritual
_____ Not very spiritual
_____ Not at all spiritual

18. Do you practice and feel connected to Aboriginal spirituality?

_____ Yes – very much
_____ Yes – somewhat
_____ Yes – a little
_____ No – not at all

19. How do you maintain your religious or spiritual well-being?	Often	Sometimes	Not at all
a) Talking with Elders			
b) Smudging			
c) Sacred use of tobacco			
d) Sweat lodges			
e) Sun dances			
f) Prayer or meditation			
g) Respecting the natural environment			
h) Going to church			
i) Other – Specify: _____			

20. Are First Nations, Métis or Inuit traditional ceremonies available to you in or near Edmonton?
    _____ Yes, available in Edmonton
    _____ No, but I can travel to nearby communities to participate
    _____ No, I have limited access to traditional ceremonies in or near Edmonton

21. Do you follow traditional Aboriginal teachings or protocols?
    _____ Yes
    _____ No

Can you share some of the teachings or protocols you follow?

_____
_____
_____

How often do you follow traditional Aboriginal teachings or protocols...	All of the time	Most of the time	Some of the time	Very seldom	Not at all
a) In your household?					
b) At work?					
c) At school?					
d) Elsewhere?					

22. Do you find it difficult to follow traditional Aboriginal teachings or protocols while living in Edmonton?
    _____ Very difficult
    _____ Difficult
    _____ Not too difficult
    _____ Not difficult at all

23. When was the last time you saw an Aboriginal healer?
    _____ Less than a year ago
    _____ 1 – 2 years ago
    _____ 2 – 3 years ago
    _____ 3 – 4 years ago
    _____ 4 – 5 years ago
    _____ More than 5 years ago
    _____ Never

24. Are First Nations, Métis or Inuit traditional medicines, healing or wellness practices available to you in Edmonton?
    _____ Yes, available in Edmonton
    _____ No, but I can travel to nearby communities for traditional medicines, healing or wellness
    _____ No, I do not have any access to traditional medicines, healing or wellness

25. In the past 12 months how often, did you use peyote for ceremonial and healing purposes?

____ Never ____ about once a month
____ A few times a year ____ a few times a month

26. In the past 12 months, how often have you eaten the following traditional foods?

	Not at all	A few times	Often
a) Land based animals such as moose, caribou, bear, deer or bison?			
b) Berries or other wild vegetation, such as wild rice?			
c) Bannock or fry bread?			
d) Other traditional Aboriginal foods? Specify:_____			

Land-based activities	Yes	No
a) Did you hunt in the past 12 months?		
b) Did you hunt for medicinal or ceremonial use?		
c) Did you fish in the past 12 months?		
d) Did you fish for medicinal or ceremonial use?		
e) Did you trap in the past 12 months?		
f) Did you trap for medicinal or ceremonial use?		
g) Did you gather wild plants in the past 12 months?		
h) Did you gather wild plants for medicinal or ceremonial use		

27. Do you do any art or craftwork in traditional Aboriginal or Métis styles or motifs?

_____ Yes
_____ No

28. If yes, what type of traditional art or craftwork do you do? (check all that apply)

_____Leatherwork _____ Weaving _____ Embroidery
_____ Beadwork _____ Sewing _____ Carving in stone, wood or bone
_____ Pottery _____ Woodwork _____ Tanning hides/preparing furs
_____ Sculpting _____ Painting _____ Other – *Specify:* _____

29. When was the last time you attended a Métis cultural event, festival, pilgrimage, or seen Métis artists perform?

_____ Less than a year ago
_____ 1 – 2 years ago
_____ 2 – 3 years ago
_____ 3 – 4 years ago
_____ 4 – 5 years ago
_____ More than 5 years ago
_____ Never

30. Do you own a sash, a traditional Métis shirt or other articles traditionally associated with Métis culture?

_____ Yes
_____ No

31. How often do you participate in meetings or activities of Métis cultural, social or political organizations in the past 12 months? If you belong to more than one group, just think of the one is which you are the most active

_____ At least once a week
_____ At least once a month
_____ At least 3 – 4 times a year
_____ At least once a year
_____ Not at all

32. How important is it, or would it be to you for your children to learn about Métis culture and history?

_____ Very important
_____ Somewhat important
_____ Not very important
_____ Not important

33. Are there any other Aboriginal, Métis or Inuit cultural practices or traditions that you participate in that were not listed here?

_____
_____
_____
_____
_____
_____

34. Thinking about all the ways you engage in your Aboriginal heritage. Please select **one answer** that best describes why you engage in Aboriginal cultural activities:

____ Because I personally believe it is important
____ Because I enjoy doing so
____ Because someone insists that I do
____ To avoid feeling guilty or ashamed
____ Other: Please describe:_____

Experiences of Discrimination Survey

This next section is going to ask about how you and others like you are treated, and how you typically respond. Please place a check mark beside the correct answer for you:

1. If you feel you have been treated unfairly, do you usually:

Accept it as a fact of life	____
Try to do something about it	____

2. If you have been treated unfairly, do you usually:

Talk to other people about it	____
Keep it to yourself	____

3a. In the **past 12 months**, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior <u>at school</u> because of your race, ethnicity or colour?

Yes	____
No	____

3b. If yes, how many times did this happen in the past year?

Once	____
Two or three times	____
Four or more times	____

3c. Is there anything you would like to share about discrimination experienced at school?

_____
_____
_____

4a. In the **past 12 months**, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior <u>getting hired or getting a job</u> because of your race, ethnicity or colour?

Yes	____
No	____

4b. If yes, how many times did this happen in the past year?

Once	____
Two or three times	____
Four or more times	____

4c. Is there anything you would like to share about discrimination experienced getting hired or getting a job?

_____
_____
_____

5a. In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior at work because of your race, ethnicity or colour?

Yes ____
No ____

5b. If yes, how many times did this happen in the past year?

Once ____
Two or three times ____
Four or more times ____

5c. Is there anything you would like to share about discrimination experienced at work?

_____
_____
_____

6a. In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting housing because of your race, ethnicity or colour?

Yes ____
No ____

6b. If yes, how many times did this happen in the past year

Once ____
Two or three times ____
Four or more times ____

6c. Is there anything you would like to share about discrimination experienced getting housing?

_____
_____
_____

7a. In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting medical care because of your race, ethnicity or colour?

Yes ____
No ____

7b. If yes, how many times did this happen in the past year?

Once ____
Two or three times ____
Four or more times ____

7c. Is there anything you would like to share about discrimination experienced getting medical care?

_____
_____
_____

8a. In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting service in a store or restaurant because of your race, ethnicity or colour?

Yes ____
No ____

8b. If yes, how many times did this happen in the past year?

Once ____
Two or three times ____
Four or more times ____

8c. Is there anything you would like to share about discrimination experienced getting service is a store or restaurant?

_____
_____
_____

9a. In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior getting credit, bank loans, or a mortgage because of your race, ethnicity or colour?

Yes ____
No ____

9b. If yes, how many times did this happen this year?

Once ____
Two or three times ____
Four or more times ____

9c. Is there anything you would like to share about discrimination experienced getting credit, bank loans, or a mortgage?

_____
_____
_____

10a. In the past 12 months, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior on the street or in a public place because of your race, ethnicity or colour?

Yes ____
No ____

10b. If yes, how many times did this happen this year?

Once ____
Two or three times ____
Four or more times ____

10c. Is there anything you would like to share about discrimination experienced on a street or in a public place?

_____
_____
_____

11a. In the **past 12 months**, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior from the police or in the courts because of your race, ethnicity or colour?

Yes ____
No ____

11b. If yes, how many times did this happen this year?

Once ____
Two or three times ____
Four or more times ____

11c. Is there anything you would like to share about discrimination experienced from the police or in the courts?

_____
_____
_____

12. **When you were a child or teenager** (up to age 18), how much did you experience unfair treatment because of your Aboriginal ethnicity?

____ Most of the time ____ Some of the time ____ Rarely or never

13. **When you were a child or teenager**, how much did you worry about experiencing unfair treatment because of your Aboriginal ethnicity?

____ Most of the time ____ Some of the time ____ Rarely or never

14. **When you were a child or teenager**, how much did you worry about people in your Aboriginal group experiencing unfair treatment because of their Aboriginal ethnicity?

____ Most of the time ____ Some of the time ____ Rarely or never

15. **In the past year**, how much did you worry about your experiencing unfair treatment because of your Aboriginal ethnicity?

____ Most of the time ____ Some of the time ____ Rarely or never

16. **In the past year**, how much did you worry about people in your Aboriginal group experiencing unfair treatment because of their Aboriginal ethnicity?

____ Most of the time ____ Some of the time ____ Rarely or never

17. How often do you feel that Aboriginal groups are discriminated against in Canada? (choose the answer that best represents how you feel).

____ Never ____ Sometimes

____ Rarely ____ Often

18. How often do you feel that you, personally, have been discriminated against because of your Aboriginal ethnicity? (choose the answer that best represents how you feel)

____ Never ____ Sometimes

____ Rarely ____ Often

18. Have you ever filed a formal complaint because of racial discrimination?

____ Yes
____ No

19. What impact do you think racial discrimination is having on the health and well-being of Aboriginal people in Canada?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Rosenberg Self-Esteem Scale

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, please indicate with a check how often you felt or thought a certain way. *(Mark only one response for each):*

	Strongly agree	**Agree**	**Disagree**	**Strongly Disagree**
1. On the whole, I am satisfied with myself.				
2. At times I think I am no good at all.				
3. I feel that I have a number of good qualities.				
4. I am able to do things as well as most other people.				
5. I feel 1do not have much to be proud of.				
6. I certainly feel useless at times.				
7. I feel that I'm a person of worth.				
8. I wish I could have more respect for myself.				
9. All in all, I am inclined to think that I am a failure.				
10. I take a positive attitude toward myself.				

Perceived Stress & Coping Scale

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, please indicate with a check how often you felt or thought a certain way. *(Mark one response for each)*

	Never	Almost Never	Sometimes	Fairly Often	Often
1. How often have you been upset because of something that happened unexpectedly?					
2. How often have you felt that you were unable to control the important things in your life?					
3. How often have you felt nervous and stressed?					
4. How often have you felt confident about your ability to handle your personal problems?					
5. How often have you felt that things were going your way?					
6. How often have you found that you could not cope with all the things that you had to do?					
7. How often have you been able to control irritations in your life?					
8. How often have you felt that you were on top of things?					
9. How often have you been angered because of things that were outside of your control?					
10. How often have you felt difficulties were piling up so high that you could not overcome them?					

AUDIT

For the questions in this section a "drink" means a can or bottle of beer or wine cooler, a 4 ounce glass of wine, a shot of liquor (like whiskey, vodka, or tequila), or a mixed drink.

1. Over the past year, how often did you have a drink containing alcohol? (if never skip to question 9)	☐ Never	☐ Monthly or less	☐ 2-4 times a month	☐ 2-3 times a week	☐ 4 times a week or more
2. Over the past year, how many drinks containing alcohol did you have on a typical day when you are drinking?	☐ 1 or 2	☐ 3 or 4	☐ 5 or 6	☐ 7 to 9	☐ 10 or more
3. Over the past year, how often did you have six or more drinks on one occasion?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
4. How often during the last year have you found that were not able to stop drinking once you had started?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily

before because of your drinking?					
9. Have you or someone else been injured because of your drinking?	☐ No		☐ Yes, but not over the last year		☐ Yes, over the last year
10. Has a relative, friend, doctor, or other heath care worker been concerned about your drinking or suggested you cut down?	☐ No		☐ Yes, but not over the last year		☐ Yes, over the last year

11. Are you currently abstinent from alcohol?
__ No ____ Yes: years abstinent? _____

12. In the last 12 months, if something painful or stressful happened in your life, did you have the urge to have a drink?
____ No ____ Yes

13. Have you ever had an alcohol problem in your life? (if no, skip to question 17)
____ No ____ Yes

14. How old were you when first thought alcohol was a problem for you?
I was _____ years old

15. Did you seek help for the problem? (if no, skip to 17)
____ No ____ Yes

16. Where did you seek help from? (check all that apply)
____ Alcoholics anonymous
____ Counselors
____ Aboriginal Elders
____ Aboriginal healers
____ Friends and family members
____ Treatment centre- name: _____
____ Aboriginal spiritual practices – specify: _____
____ Other – specify:_____

17. Do you believe Aboriginal spiritual or cultural practices are important in recovery from problems with alcohol or avoiding problems with alcohol? Can you explain why?
_____
_____
_____
_____

18. Have you ever been negatively affected by another person's drinking (if no, skip to next questionnaire)

____ Yes ____ Don't know
____ No ____ Don't want to say

19. Whose drinking habits have you been negatively affected by? (check all that apply)

____ Mother or father when I was a child
____ Mother or father when I was an adult
____ Sister or brother
____ Grandparent
____ Spouse or partner
____ Daughter or son
____ Other relative
____ In-Laws
____ Friend
____ Co-worker
____ Other _____

A. PAIN RELIEVERS

The next questions are about your use of various **pain relievers**. We are NOT interested in ordinary pain relievers such as Aspirin, Advil, regular Tylenol, etc. In these questions, when we use the term PAIN RELIEVERS, we mean products that a doctor or dentist may prescribe such as Percodan, Demerol, OxyContin OR pain relievers WITH CODEINE that may be obtained from a pharmacist without a prescription such as Robaxacet 8, 222 Tablets or others. Some people use these medications to treat pain resulting from an illness, injury or for some other reason.

1. In the past 12 months how often, if at all, have you used any such pain relievers?

____ Never (skip to next page)	____ 2 or 3 times a month
____ Once or twice	____ About once or twice a week
____ 3 to 11 times a year	____ 3 to 4 times a week
___ About once a month	____ Daily or almost daily

2. Why do you take prescription pain killers?

_____
_____
_____
_____

3. Sometimes people do not take their pills as directed by a physician or pharmacist. Thinking about ALL the pain relievers you have used during the past 12 months, did you ever take more pills**, more often or for a longer period of time than you were supposed to**?
   ____ Yes
   ____ No

4. During the past 12 months, did you ever use pain relievers to get high?
   ____ Yes
   ____ No

5. Thinking about ALL the pain relievers you have used during the past 12 months, did you get any of them (check all that apply):
   _____ From a pharmacist, without a prescription?
   _____ From a prescription written for you ?
   _____ From a prescription written for someone else such as a family member or a friend?
   _____ Bought from someone else, without a prescription?
   _____Bought from the internet?
   _____ From any other source? Please specify: _____

A. STIMULANTS

The next few questions are about your use of **prescription stimulants**. In these questions, when we use the term STIMULANTS, we mean products that can be obtained from a doctor such as Ritalin, Concerta, Adderall, Dexedrine, or others. Stimulants are sometimes prescribed by doctors to help people who have attention or concentration problems.

1. In the past 12 months how often, if at all, have you used any such stimulants?
   - ____ Never (skip to next page)
   - ____ Once or twice
   - ____ 3 to 11 times a year
   - ___ About once a month
   - ____ 2 or 3 times a month
   - ____ About once or twice a week
   - ____ 3 to 4 times a week
   - ____ Daily or almost daily

2. Why do you take prescription stimulants?
   _____
   _____
   _____
   _____

3. Sometimes people do not take their pills as directed by a physician or pharmacist. Thinking about ALL the stimulants you have used during the past 12 months, did you ever take more pills, take them **more often or for a longer period of time than you were supposed to**?
   - ____ Yes
   - ____ No

4. During the past 12 months, did you ever use STIMULANTS to get high?
   - ____ Yes
   - ____ No

5. Thinking about ALL the STIMULANTS you have used during the past 12 months, did you get any of them (check all that apply):
   - _____ From a pharmacist, without a prescription?
   - _____ From a prescription written for you ?
   - _____ From a prescription written for someone else such as a family member or a friend?
   - _____ Bought from someone else, without a prescription?
   - _____Bought from the internet?
   - _____ From any other source? Please specify: _____

B. SEDATIVES

The next few questions are about your use of various **sedatives or tranquillizers** in the past 12 months. In these questions, when we use the term SEDATIVES or tranquillizers, we mean products that can be obtained from a doctor such as Valium, Ativan, Xanax or others. Sedatives or tranquillizers are sometimes prescribed by doctors to help people sleep, calm down, or to relax their muscles.

1. In the past 12 months how often, if at all, have you used any such SEDATIVES or tranquillizers?

____ Never (skip to next page)	____ 2 or 3 times a month
____ Once or twice	____ About once or twice a week
____ 3 to 11 times a year	____ 3 to 4 times a week
___ About once a month	____ Daily or almost daily

2. Why do you take prescription sedatives or tranquilizers?

_____
_____
_____
_____

3. Sometimes people do not take their pills as directed by a physician or pharmacist. Thinking about ALL the sedatives or tranquillizers you have used during the past 12 months, did you ever take more pills, take them more often or **for a longer period of time than you were supposed to**?

____ Yes
____ No

4. During the past 12 months, did you ever use sedatives or tranquillizers to get high?

____ Yes
____ No

5. Thinking about ALL the sedatives or tranquillizers you have used during the past 12 months, did you get any of them (check all that apply):

_____ From a pharmacist, without a prescription?
_____ From a prescription written for you ?
_____ From a prescription written for someone else such as a family member or a friend?
_____ Bought from someone else, without a prescription?
_____Bought from the internet?
_____ From any other source? Please specify: _____

1. **Over the past year**, how often did you use *prescription* pain killers, sedatives, tranquilizers or stimulants (if never skip to question 10)?	☐ Never	☐ Once a month or less often	☐ 2-4 times a month	☐ 2-3 times a week	☐ 4 times a week or more often
2. Over the past year, did you use more than one type of prescription drug on the same occasion?	☐ Never	☐ Once a month or less often	☐ 2-4 times a month	☐ 2-3 times a week	☐ 4 times a week or more often
3. Over the past year, how many times did you take prescription drugs on a typical day when you use them?	☐ 0	☐ 1-2	☐ 3-4	☐ 5-6	☐ 7 or more
4. Over the past year, how often are you influenced heavily by prescription drugs?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
5. Over the past year, have you felt that your longing for prescription drugs was so strong that you could not resist it?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
6. Has it happened over the past year that you have not been able to stop taking prescription drugs once you started?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
7. How often over the past year have you taken prescription drugs and then neglected to do something you should have done?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
8. How often over the past year have you needed to take a prescription drug the morning after heavy drug use the day before?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
9. How often over the past year have you had guilt feelings or a bad conscience because you had used prescription drugs?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
10. Have you or anyone else been hurt (mentally or physically) because you used prescription drugs?	☐ No		☐ Yes, but not over the past year		☐ Yes, over the past year

11. Has a relative, or a friend, a doctor, or a nurse or anyone else been worried about your drug use or said to you that you should stop using prescription drugs?	☐ No	☐ Yes, but not over the past year	☐ Yes, over the past year

In the past 12 months how often, did you use **marijuana or hashish**?

____ Never
____ Once or twice
____ 3 to 11 times a year
___ About once a month
____ 2 or 3 times a month
____ About once or twice a week
____ 3 to 4 times a week
____ Daily or almost daily

Where did you get marijuana from (check all that apply):

_____ From a prescription written for you?
_____ From a prescription written for someone else such as a family member/friend?
_____ Bought on the street (dealer)?
_____ From any other source? Please specify: _____

In the past 12 months how often, did you use **LSD or other hallucinogens**? (magic mushrooms, ecstasy)

____ Never
____ Once or twice
____ 3 to 11 times a year
___ About once a month
____ 2 or 3 times a month
____ About once or twice a week
____ 3 to 4 times a week
____ Daily or almost daily

How about **cocaine**, crack or free base in the past year?

____ Never
____ Once or twice
____ 3 to 11 times a year
___ About once a month
____ 2 or 3 times a month
____ About once or twice a week
____ 3 to 4 times a week
____ Daily or almost daily

In the past 12 months, did you use **inhalants** you sniff or breathe to get high or to feel good? (e.g. Freon, whippets, gasoline, spray paint)

____ Never
____ Once or twice
____ 3 to 11 times a year
___ About once a month
____ 2 or 3 times a month
____ About once or twice a week
____ 3 to 4 times a week
____ Daily or almost daily

In the past 12 months, did you use **heroin**?

____ Never
____ Once or twice
____ 3 to 11 times a year
___ About once a month
____ 2 or 3 times a month
____ About once or twice a week
____ 3 to 4 times a week
____ Daily or almost daily

In the past 12 months how often, did you use illicit **amphetamines** (like crystal meth, speed)?

____ Never
____ Once or twice
____ 3 to 11 times a year
___ About once a month
____ 2 or 3 times a month
____ About once or twice a week
____ 3 to 4 times a week
____ Daily or almost daily

1. **Over the past year**, how often did you use illegal drugs (if never skip to question 10)?	☐ Never	☐ Once a month or less often	☐ 2-4 times a month	☐ 2-3 times a week	☐ 4 times a week or more often
2. Over the past year, did you use more than one type of illegal drug on the same occasion?	☐ Never	☐ Once a month or less often	☐ 2-4 times a month	☐ 2-3 times a week	☐ 4 times a week or more often
3. Over the past year, how many times did you take illegal drugs on a typical day when you use drugs?	☐ 0	☐ 1-2	☐ 3-4	☐ 5-6	☐ 7 or more
4. Over the past year, how often are you influenced heavily by illegal drugs?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
5. Over the past year, have you felt that your longing for illegal drugs was so strong that you could not resist it?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
6. Has it happened over the past year that you have not been able to stop taking illegal drugs once you started?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
7. How often over the past year have you taken illegal drugs and then neglected to do something you should have done?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
8. How often over the past year have you needed to take an illegal drug the morning after heavy drug use the day before?	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day
9. How often over the past year have you had guilt feelings or a bad conscience because you had used illegal	☐ Never	☐ Less often than once a month	☐ Every month	☐ Every week	☐ Daily or almost every day

drugs?					
10. Have you or anyone else been hurt (mentally or physically) because you used illegal drugs?	☐ No		☐ Yes, but not over the past year		☐ Yes, over the past year
11. Has a relative, or a friend, a doctor, or a nurse or anyone else been worried about your drug use or said to you that you should stop using illegal drugs?	☐ No		☐ Yes, but not over the past year		☐ Yes, over the past year

12. Do you think you have ever had a problem with drugs?

____ No
____ Yes – illicit drugs
____ Yes – prescription drugs

13. Have you ever sought help for problems with drugs? (check all that apply) (if no, skip to 16)

____ No
____ Yes – illicit drugs
____ Yes – prescription drugs

14. If yes, where did you seek help from?

____ Narcotics anonymous
____ Counselors
____ Aboriginal Elders
____ Aboriginal healers
____ Friends and family members
____ Treatment centre- name: _____
____ Aboriginal spiritual practices – specify: _____
____ Other – specify:_____

15. If you have had a drug problem, how old were you when first developed the problem? I was _____ years old

16. Do you believe Aboriginal spiritual or cultural practices are important in recovery from problems with drugs or avoiding problems with drugs? Can you explain how?

_____
_____
_____
_____

17. Have you ever been negatively affected by another person's drug use?

____ No ____ Yes (if no, skip to next questionnaire)

18. Whose drug use have you been negatively affected by? (check all that apply)

_____ Mother or father when I was a child
____ Mother or father when I was an adult
____ Sister or brother
____ Grandparent
____ Spouse or partner
____ Daughter or son
____ Another relative
____ Friend
____ Co-worker
____ Another: _____

General Health Questionnaire[12]

We would like to know how your health has been in general **over the past few weeks**. Please mark the answer that best applies to you *(mark one response for each question)*

	Much less than usual	Less than usual	Same as usual	More than usual
1. Been able to concentrate on whatever you are doing?				
2. Lost much sleep over worry?				
3. Felt that you were playing a useful part in things?				
4. Felt capable of making decisions about things?				
5. Felt constantly under strain?				
6. Felt that you couldn't overcome your difficulties?				
7. Been able to enjoy your normal day-to-day activities?				
8. Been able to face up to your problems?				
9. Been feeling unhappy and depressed?				
10. Been losing self-confidence in yourself?				
11. Been thinking of yourself as a worthless person?				
12. Been feeling reasonably happy, all things considered?				

[12] Included to match questions on the Aboriginal Peoples Survey for research questions outside the scope of this dissertation.

Depression Questions[13]

The following questions concern your mental or emotional health and may raise sensitive issues.
You can choose not to answer them.

1. During the past 12 months, was there ever a time when you felt sad, blue or depressed for 2 weeks or more in a row?

_____Yes
_____ No (please skip to question 4)

2. Please think of the 2-week period during the past 12 months when those feelings were the worst. How often did you feel this way during those two weeks?

_____ Everyday
_____ Almost everyday
_____ Less often

3. What would you say was the main cause of your sadness or depression? (please mark only one):

_____Family problems?
_____ Relationship with spouse, boyfriend / girlfriend?
_____ Medical condition?
_____ Personal finances?
_____ Employment or work situation?
_____Other:_____

4. Have you ever seriously considered committing suicide or taking your own life?

_____ Yes
_____ No

5. Have you ever attempted to commit suicide?

_____ Yes
_____ No (please skip to next questionnaire)

6. Has this occurred in the last 12 months?

_____ Yes
_____ No

[13] Included to match questions on the Aboriginal Peoples Survey for research questions outside the scope of this dissertation.

Social Support Questionnaire[14]

Next are some questions about social supports that are available to you.

People sometimes look to others for companionship, assistance, guidance or other types of support. Could you tell me how often each of the following kinds of support is available
to you when you need it: *(Mark one response for each)*

1) About how many close friends and close relatives do you have (people you feel at ease with and can talk to about what is on your mind)? Write in number: _____

How often is this available to you?	**All of the time**	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
2) Someone you can count on to listen to you when you need to talk.					
3) Someone you can count on when you need advice.					
4) Someone to take you to the doctor or a nurse if you need it.					
5) Someone who shows you love and affection.					
6) Someone to have a good time with.					
7) Someone to confide in or talk about yourself or your problems.					
8) Someone to get together with for relaxation.					
9) Someone to do something enjoyable with.					

[14] Included to match questions on the Aboriginal Peoples Survey for research questions outside the scope of this dissertation.

Demographic Questionnaire

These next questions will give us a better picture of the people who took part in this study. Please place a checkmark beside the correct answer:

1. What is your gender?
   - ____ Male
   - ____ Female

2. Could you tell me your age? _____

3. What is your current marital status?
   - ____ Married
   - ____ Living with a partner / Common law
   - ____ Separated, divorced or widowed
   - ____ Single and never married

4. Which one of the following best describes your current employment status?
   - ____ Employed 30 hours per week or more (including self-employed)
   - ____ Employed less than 30 hours per week (including self-employed)
   - ____ Full-time student
   - ____ Part-time student
   - ____ Full-time homemaker
   - ____ Retired
   - ____ Unemployed

5. What is the highest level of education that you have obtained?
   - ____ Grade 9 or less
   - ____ Some high school
   - ____ High school diploma
   - ____ Some university (undergraduate)
   - ____ University undergraduate degree
   - ____ University graduate degree (completed a Master's or PhD)
   - ____ Some college or technical school (e.g., NAIT, SAIT)
   - ____ College diploma or technical school diploma
   - ____ Other (specify) _____

6. Do you have a disability?
   - _____ No
   - _____ Yes – physical disability
   - _____ Yes – learning disability
   - _____ Yes – other disability: _____

6b. Do you have diabetes?
   - _____ No (skip to question 7)
   - _____ Yes – Type I diabetes
   - _____ Yes – Type II diabetes
   - _____ Don't know

6c. When were you diagnosed with diabetes? _____ years of age

7. How many years have you lived in Edmonton? _____

8. How many dependent children under the age of 15 do you have living in your home? _____

9. How many people aged 15 and older live in your home? ____

10. How many people living in your home contribute money to help pay the monthly bills, (including yourself)? _____ people

11. What was the total household income of all wage earners in your home last year before taxes?

____	Under $10,000	____	$50,000 – 59,999
____	$10,000 - 19,999	____	More than $60,000
____	$20,000 - 29,999	____	Don't know
____	$30,000 - 39,999	____	Don't want to say
____	$40,000 - 49,999		

12. What percentage of your household income is spent on housing each month (rent or mortgage payments)?

____	None	____	About three quarters
____	About one quarter	____	Almost all of my income is spent on housing each month

13. In the past 12 months, did you or anyone else in your household not have enough food to eat because of lack of money?
    _____ Yes
    _____ No

14. In the past 12 months, have you or anyone else in your household obtained food from a food bank or other charitable source?
    _____ Yes
    _____ No

15. Which traffic district do you live in? District name or number: _____
    please use map on next page to select your neighbourhood
    If you are currently homeless, please write zero (0) in the space above.

15. If Canadian society were divided into 5 groups, which category do you think you would belong to based on your income? (please check one)
    ____ Upper income
    ____ Upper-middle income
    ____ Middle income
    ____ Lower-middle income
    ____ Lower income

34 St

Historical Background Questionnaire

These next questions will give us a better picture of the people who took part in this study. Your responses are completely confidential, so feel free to answer honestly.

1 a). To which ethnic group do you belong? Please put a check mark beside all that apply:

____ First Nations
____ Métis
____ Inuit
____ Aboriginal

b). Are you:

____ Non-status
____ Treaty or status

c**)** What Aboriginal cultural group do you most identify with?

_____ Aboriginal
_____ First Nations
_____ Métis
_____ Inuit

2. Who do you identify as First Nation, Aboriginal, Inuit or Métis in your family? (check all that apply)

_____ Mother
_____ Father
_____ One or both of my grandmothers
_____ One or both of my grandfathers

3. Where were you brought up as a child?

____ In a city
____ In a First Nations community
____ In both a city and a First Nation
____ In a rural community

4. How many years of your life have you spent living in a city or cities in Canada?

____ I have never lived in a city
____ Less than a year
____ 1 to 5 years
____ 6 to 10 years
____ 11 to 20 years
____ All my life

5a. How many years of your life have you spent living in one or more First Nations communities in Canada?

____ I have never lived in a First Nation
____ Less than a year
____ 1 to 5 years
____ 6 to 10 years
____ 11 to 20 years
____ All my life

5b. How many years of your life have you spent living in one or more Métis settlements in Canada?

____ I have never lived in a Métis Settlement
____ Less than a year
____ 1 to 5 years
____ 6 to 10 years
____ 11 to 20 years
____ All my life

6a. Do you return to a First Nations community or Métis settlement a few times a year or more? (check all that apply)

____ No
____ Yes – First Nations Community
____ Yes – Métis settlement

6b. About how many times do you visit a First Nations communities/Métis settlements?

____ Daily
____ A few times a week
____ A few times a month
____ A few times a year
____ Never

6c. Why do you typically visit a First Nations community/Métis settlement? (check all that apply)

____ To visit family and/or friends
____ To work or volunteer
____ To seek band benefits
____ To attend to personal business
____ Other: Please specify: _____

7. Who would you say you were raised as a child by? (check all that apply)

_____ Mother
_____ Father
_____ My grandmother(s)
_____ My grandfathers(s)
_____ Another relative
_____ Aboriginal step parents, foster parents or adoptive parents
_____ Non-Aboriginal step parents, foster parents or adoptive parents

8a. Were you separated from your birth family as a child or teenager? (check all that apply)

____ No
____ Yes – as a child
____ Yes – as a teenager

b. Were you ever in foster care as a child or teenager? (check all that apply)

____ No
____ Yes – as a child
____ Yes – as a teenager

c. Were you adopted as a child or teenager? (check all that apply)

____ No
____ Yes – as a child
____ Yes – as a teenager
____ Don't know
____ Don't want to say

9. Have you experienced poverty in your life? (check all that apply)

____ No
____ Yes – as a child only
____ Yes – as a teenager only
____ Yes – as an adult only
____ Yes – all my life

10a. Did you ever experience abuse or neglect **as a child**?

____ No (skip to 10c)
____ Yes – physical abuse
____ Yes – emotional abuse
____ Yes – sexual abuse
____ Yes - neglect

10b. Where did this abuse take place? (check all that apply)

____ Residential school
____ Foster or adoptive home
____ Family home
____ Relatives home
____ Other: _____

10c. Have you experienced abuse **as an adult**? (check all that apply)

____ No (skip to 11a)
____ Yes – physical abuse
____ Yes – emotional abuse
____ Yes – sexual abuse

10d. Where did this abuse take place?

_____
_____
_____

11a. Did you attend residential school?

____ No (skip to 12a)
____ Yes – as a child
____ Yes – as a teenager

11b. Would you say that attending a residential school was a:

_____ Very negative experience
_____ Somewhat negative experience
_____ Somewhat positive experience
_____ Very positive experience

12a. Did your parents or grandparents attend residential school? (check all that apply)

_____ Mother
_____ Father
_____ One or both of my grandmothers
_____ One or both of my grandfathers
_____ No relatives attended

12b. If yes, would you say that attending a residential school for your family member(s) was a:

_____ Very negative experience
_____ Somewhat negative experience
_____ Somewhat positive experience
_____ Very positive experience
____ Don't know

PTSD Checklist

Below is a list of problems and complaints that people sometimes have in response to stressful experiences in their lives. **Is there one or more stressful experiences that happened in your life (in childhood or as an adult) that continue to bother you now?** Please answer the following questions thinking about those experiences.

1. In the past month, how much have you been bothered by repeated, disturbing memories, thoughts, or images of a stressful experience from your past?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

2. In the past month, how much have you been bothered by repeated, disturbing dreams of a stressful experience?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

3. How much have you suddenly acted or felt as if a stressful experience were happening again (as if you were reliving it)?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

4. In the past month, how much have you felt very upset when something reminded you of a stressful experience?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

5. In the past month, how much have you had physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

6. In the past month, how much have you avoided thinking about or talking about a stressful experience or avoided having feelings related to it?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

7. In the past month, how much have you avoided activities or situations because they reminded you of a stressful experience?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

8. Have you had trouble remembering important parts of a stressful experience?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

9. Have you had loss of interest in activities that you used to enjoy?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

10. Have you felt distant or cut off from other people?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

11. Have you felt emotionally numb or being unable to have loving feelings for those close to you?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

12. Have you felt as if your future will somehow be cut short?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

13. Have you had trouble falling or staying asleep?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

14. Have you felt irritable or had angry outbursts?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

15. Have you had difficulty concentrating?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

16. Have you been "super-alert" or watchful or on guard?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

17. Have you felt jumpy or easily startled?

_____ Not at all _____ Moderately _____ Extremely
_____ A little bit _____ Quite a bit

18. Would you be willing to share what stressful experiences you were thinking about while you completed these questions?

_____
_____
_____
_____

Feelings I Have

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you.

2. I feel like I am free to decide for myself how to live my life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

2. I really like the people I interact with.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

3. Often, I do not feel very competent.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

4. I feel pressured in my life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

5. People I know tell me I am good at what I do.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

6. I get along with people I come into contact with.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

7. I pretty much keep to myself and don't have a lot of social contacts.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

8. I generally feel free to express my ideas and opinions.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

9. I consider the people I regularly interact with to be my friends.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

10. I have been able to learn interesting new skills recently.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

11. In my daily life, I frequently have to do what I am told.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

12. People in my life care about me.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

13. Most days I feel a sense of accomplishment from what I do.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

14. People I interact with on a daily basis tend to take my feelings into consideration.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

15. In my life I do not get much of a chance to show how capable I am.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

16. There are not many people that I am close to.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

17. I feel like I can pretty much be myself in my daily situations.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

18. The people I interact with regularly do not seem to like me much.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

19. I often do not feel very capable.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

20. There is not much opportunity for me to decide for myself how to do things in my daily life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

21. People are generally pretty friendly towards me.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

SD Scale

1. I never hesitate to go out of my way to help someone in trouble.
   _____ True
   _____ False

2. I have never intensely disliked anyone.
   _____ True
   _____ False

3. When I don't know something I don't at all mind admitting it.
   _____ True
   _____ False

4. I am always courteous, even to people who are disagreeable.
   _____ True
   _____ False

5. I would never think of letting someone else be punished for my wrong doings.
   _____ True
   _____ False

6. I sometimes feel resentful when I don't get my way.
   _____ True
   _____ False

7. There have been times when I felt like rebelling against people in authority even though I knew they were right.
   _____ True
   _____ False

8. I can remember "playing sick" to get out of something.
   _____ True
   _____ False

9. There have been times when I was quite jealous of the good fortune of others.
   _____ True
   _____ False

10. I am sometimes irritated by people who ask favours of me.
    _____ True
    _____ False

Thank you for completing this survey