8-19-2015 12:00 AM

The Cultural Connectedness Scale and its Relation to Positive Mental Health among First Nations Youth

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Psychology
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THE CULTURAL CONNECTEDNESS SCALE AND ITS RELATION TO
POSITIVE MENTAL HEALTH AMONG FIRST NATIONS YOUTH

(Thesis format: Monograph)

by

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Graduate Program in Psychology

A thesis submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

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Abstract

The mental health and wellbeing of youth is one of the most urgent concerns affecting

many First Nations communities across Canada. Despite a growing recognition that

cultural connectedness (i.e., the extent to which an individual is integrated within his or

her First Nations culture) is an important factor for promoting the mental health of First

Nations youth, there remains a clear need for a conceptual model that organizes, explains,

and leads to an understanding of the resiliency mechanisms underlying this construct.

Study 1 involved the development of the Cultural Connectedness Scale (CCS) with a

sample of 319 First Nations, Métis, and Inuit youth (*M* age = 15.3; 147 male, 162 female;

10 unspecified) enrolled in grades eight through 12 from urban and reserve schools in

Saskatchewan and Ontario. Study 2 explored the relationships between the components

of cultural connectedness and a number of mental health indicators using a brief version

of the CCS with a sample of 290 participants (*M* age = 14.4; 140 male, 140 female, and

10 unspecified). The CCS development combined rational expert judgments and

empirical data to refine the item pool to a representative set. Exploratory factor analysis

(EFA) was used to examine the latent structure of the cultural connectedness items and a

confirmatory factor analysis (CFA) was used to test the fit of the final 29-item EFA

model. A more parsimonious version was then proposed to improve the practical utility

of the CCS. The resulting 10-item Cultural Connectedness Scale – Short Version (CCS-

S) supported the invariance of the major structural elements of the construct and the

relationships between the CCS-S and a number of mental health indicators were

examined using hierarchical multiple linear (HML) regression analyses. The results

revealed that cultural connectedness was positively associated with self-efficacy, sense of self (present and future), school connectedness, and life satisfaction and, in some cases, predicted mental health above and beyond other established social determinants of health. This research initiative provides a foundation for future strengths-based work in the area of First Nations youth resilience. The findings have a number of potential applications for research, prevention, and program evaluation.

Keywords: First Nations, youth, cultural connectedness, mental health, assessment, resilience

Acknowledgements

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CHAPTER ONE: GENERAL INTRODUCTION

This manuscript describes the creation of a cultural connectedness scale and examination of its link to a number of mental health indicators for First Nations youth. The author uses the term *cultural connectedness* to refer to the extent to which a First Nations youth is integrated within his or her First Nations culture. The term *First Nations* is used throughout the manuscript to reflect the Canadian context but other terms used by the authors of the studies described are also adopted to avoid masking any differences that may exist between study samples. Since the current research initiative was conducted as part of a larger program evaluation of the Aboriginal Fourth R©, the author, a non-status First Nations and Métis scholar and the lead on the scale development and testing, refers to *the research team* throughout the manuscript to reflect knowledge production as a collective and relational process. The current work on the role of cultural connectedness for positive mental health among First Nations youth is an example of an Indigenous quantitative methodology in action (i.e., a quantitative methodology that embodies First Nations peoples' standpoint) through the identification of a culturally specific protective factor using a community- and strengths-based approach within a First Nations epistemology that can be scientifically measured and verified (Walter & Andersen, 2013). This work supports the premise that scientific measurement tools should utilize approaches that enable First Nations youth, their families, and their communities to heal by undertaking research with methods that are culturally responsive, ethically sound, and work towards decolonizing agendas.

This manuscript will begin by reviewing the historical and social realities facing First Nations youth in our society (Chapter One) and by introducing the Indigenous

quantitative methodological framework (Chapter Two) to contextualize the two main research objectives: (a) the development of a conceptual and operational model of cultural connectedness for First Nations youth, and (b) the examination of the relationships among the components of the cultural connectedness construct and mental health indicators among First Nations youth. The author relied heavily on American findings due to the absence of previous cultural connectedness studies within a Canadian context. In Study 1 (Chapter Three), the specific scale development objectives are addressed, which includes an analysis of the underlying structure of cultural connectedness as measured by the Cultural Connectedness Scale (CCS; Snowshoe, Crooks, Tremblay, Craig, & Hinson, 2014), an examination of the item pool characteristics to assess how each item functions, and an assessment of the criterion validity of the scale using measures of positive mental health. In Study 2 (Chapter Four), the factor stability of the cultural connectedness construct is confirmed using a shortened version of the original scale (i.e., Cultural Connectedness Scale – Short Version; CCS-S) and its usefulness as a predictor of positive mental health among First Nations youth in Canada is demonstrated. Lastly (Chapter Five), the utility of the scale is discussed in terms of potential contributions to the field of cross-cultural psychology and program evaluation, and researchers are strongly encouraged to begin to incorporate cultural connectedness into their models of First Nations peoples' mental health and wellness.

Social and Historical Context of First Nations Youth in Canada

First Nations youth in many communities throughout Canada continue to experience higher risk of mental health problems than their non-First Nations counterparts (First Nations Information Governance Centre, 2012). These

disproportionate risks have arisen within the context of an extensive history of aversive

treatment of First Nations peoples borne of political policies aimed at suppression,

oppression, and marginalization of First Nations cultures (Kirmayer, Tait, & Simpson,

2009). Accordingly, the role of culture for the mental health of First Nations peoples has

received considerable attention in the literature (Mental Health Commission of Canada,

2009; Mussel, Cardiff, & White, 2004; Royal Commission on Aboriginal Peoples, 1996).

In many communities, high rates of a variety of mental health problems have been

identified among First Nations, Native American, and American Indian youth including,

but not limited to, depression and low self-esteem (Jackson & Lassiter, 2001; Twenge &

Crocker, 2002), suicide and suicide-related behaviours (Alcantra & Gone, 2007; Chandler

& LaLonde, 1998; Kirmayer, 1994; LaFromboise, Medoff, Lee & Harris, 2007),

antisocial behaviour and panic disorder (Stiffman, Alexander-Eitzman, Silmere, Osborne,

& Brown, 2007), as well as substance abuse and conduct disorders (Hawkins, Cummins,

& Marlatt, 2004; Whitbeck, Yu, Johnson, Hoyt, & Walls, 2008).

The over-representation of mental health issues among First Nations peoples have

been linked to wide range of negative emotional responses associated with thoughts of

cultural loss[1] and oppression, such as feelings of sadness and depression, anger, anxiety

and nervousness, shame, loss of concentration, isolation or distance from other people,

loss of sleep, rage, feeling uncomfortable around Caucasian people, feelings of re-living

traumatic experiences, and avoiding certain places or people (Whitbeck, Chen, Hoyt, &

Adams, 2004). Research suggests that perceived cultural losses (i.e., loss of land,

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[1] Other commonly used terms for *cultural loss* include *cultural genocide, historical loss, historical trauma*, and *intergenerational trauma*. Although some minor conceptual differences have been proposed by researchers over the years, these terms are often used interchangeably. The author refers to the term *cultural loss* to describe the impact of both historical and remnant colonial processes on the current generation of First Nations people.

language, and spiritual ways; loss of family and family ties; loss of people through early death; loss of self-respect; loss of trust; and loss of respect for traditional Elders and traditional ways) are still on the minds of the current generation of First Nations youth; in fact, one in five American Indian peoples have reported experiencing thoughts pertaining to intergenerational cultural loss at least once on a daily basis (Whitbeck et al., 2004). This high frequency of harmful thoughts regarding cultural loss has been shown to be triggered and exacerbated by discriminatory acts and on-going forms of systemic acculturation (i.e., the extent to which individuals are influenced, assimilated, or adopted into cultures other than their own), leading to further diminished mental health outcomes among American Indian youth (LaFromboise, Albright, & Harris, 2010) and their families (see Figure 1, Whitbeck et al., 2004). All too often, these negative mental health trajectories are not identified (let alone treated) until they digress into clinical disorders and externalizing behaviours (e.g., academic failures, legal problems) that tend to persist into adulthood (Little Soldier, 1985; McQuaid, Bombay, McInnis, Matheson, & Anisman, 2014; Whitbeck et al., 2004; Whitbeck, Hoyt, Stubben, & LaFromboise, 2001; Whitbeck et al., 2008). Furthermore, these highly visible social problems serve to reinforce stereotypical notions and dominant narratives of First Nations people that sustain damaging oppressive policies and attitudes directed towards an already disenfranchised group of people (Goodman, 2015).

Strengths-based Approaches in First Nations Peoples' Research

While research on the impact of colonization and acculturation has made some inroads in the area of cross-cultural psychology, much of this research has been driven by a deficit-based model. Repeated research findings of youth achieving better-than-

Figure 1. The cultural (historical) loss model predicting alcohol abuse among First

Nations female adults (Whitbeck et al., 2004).
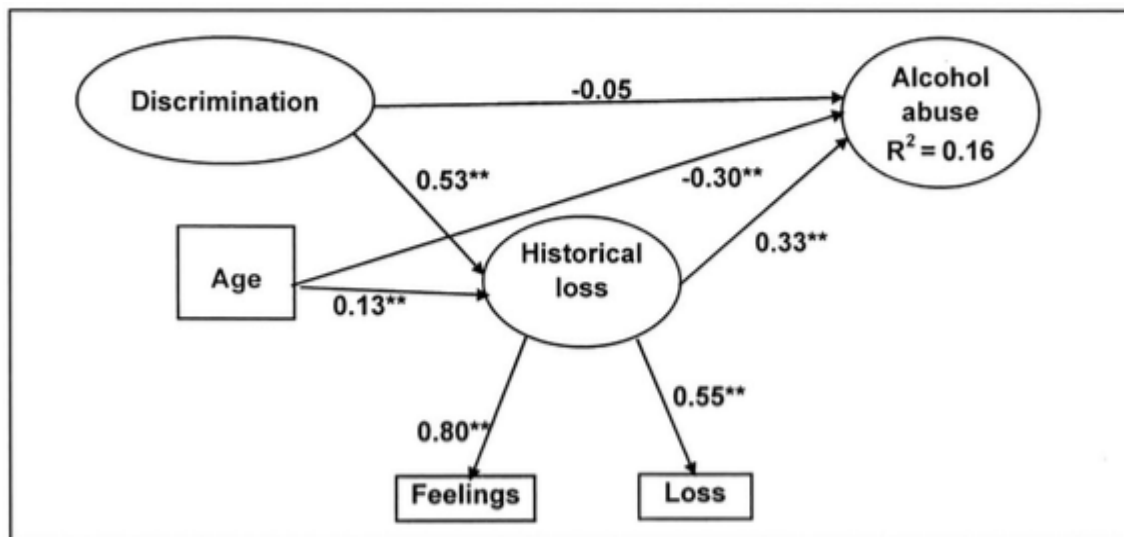
** *p* < .01

expected outcomes have inspired the systematic study of resilience as a distinct domain of empirical and theoretical inquiry in psychology, especially developmental psychopathology (Yates & Masten, 2004). One of the most commonly used definitions of resilience is "positive adaptation despite adversity," with most researchers considering the presence of some demonstrable substantial risk to be essential (Fleming & Ledogar, 2008, pp. 48-49). Many universal protective factors have been identified in light of these risks, such as healthy connections to self, peer, family, school, religion, and community networks (Bernard, 1992; Karcher, 2011). However, there has been little attention to the applicability of existing resilience models to culturally diverse youth (Ungar, 2008), and even less consideration has been given to culturally specific protective factors (Graham, 2001).

There has, however, been emerging conceptual development as to what would comprise resilience in a First Nations context (e.g., LaFromboise et al., 2010). These contributions suggest the importance of community, family, and cultural values as each being a critical element in the resilience and wellness of First Nations youth (LaFromboise, Hoyt, Oliver, & Whitbeck, 2006). Resilience frameworks have particular appeal to First Nations communities because they are often congruent with a holistic view of mental health. Some First Nations authors prefer to see resilience as "a natural, human capacity to navigate life well" (Fleming & Ledogar, 2008, p. 49). From this perspective, a strengths-based approach to First Nations youth mental health and wellness is both welcomed and needed; it shifts the perceived deficits away from the individual and places mental health problems into the appropriate context (e.g., residential schools), allowing one to focus on the strength and resilience that many of these youth have demonstrated in

the face of colonization.

Although factors related to cultural oppression (e.g., cultural loss, perceived discrimination) may result in psychological distress (Whitbeck, McMorris, Hoyt, Stubben, & LaFromboise, 2002), aspects of First Nations culture appear to serve as protective in light of the risks (Whitbeck et al., 2004). In fact, connection to culture has been shown to directly compete with the negative forces of cultural loss and discrimination in determining First Nations peoples' mental health (Bombay, Matheson, & Anisman, 2010; Whitbeck et al., 2004). For example, Whitbeck and colleagues (2004) found that individuals who are immersed in American Indian culture were less likely to meet clinical criteria for alcohol abuse. Although connection to culture did not appear fully eliminate the negative effects of discrimination (see Figure 2), the effects of discrimination on alcohol abuse became nonsignificant when considering cultural loss, and the opposing effects of cultural loss and connection to culture were almost equal (see Figure 3; Whitbeck et al., 2004). Cultural connectedness (i.e., the knowledge of, and engagement with, aspects of traditional First Nations culture) may be key in explaining why some First Nations youth manage to not only survive, but to *thrive* in the face of significant adversity stemming from the social legacies of colonization. While there is a general consensus among researchers regarding the importance of cultural connectedness for First Nations youth mental health (Torres Stone, Whitbeck, Chen, Johnson, & Olson, 2006; Zimmerman et al., 1996; 1998), the approaches that were taken to support these claims were largely deficit-based (e.g., culture as a protective factor against depression and substance abuse). As such, the cultural mechanisms at work that not only contribute to, but *enhance*, First Nations mental health and wellbeing are still largely unknown.

Figure 2. The cultural connectedness (enculturation) model predicting alcohol abuse

among First Nations adults (with coefficients for men in parentheses; Whitbeck et al.,
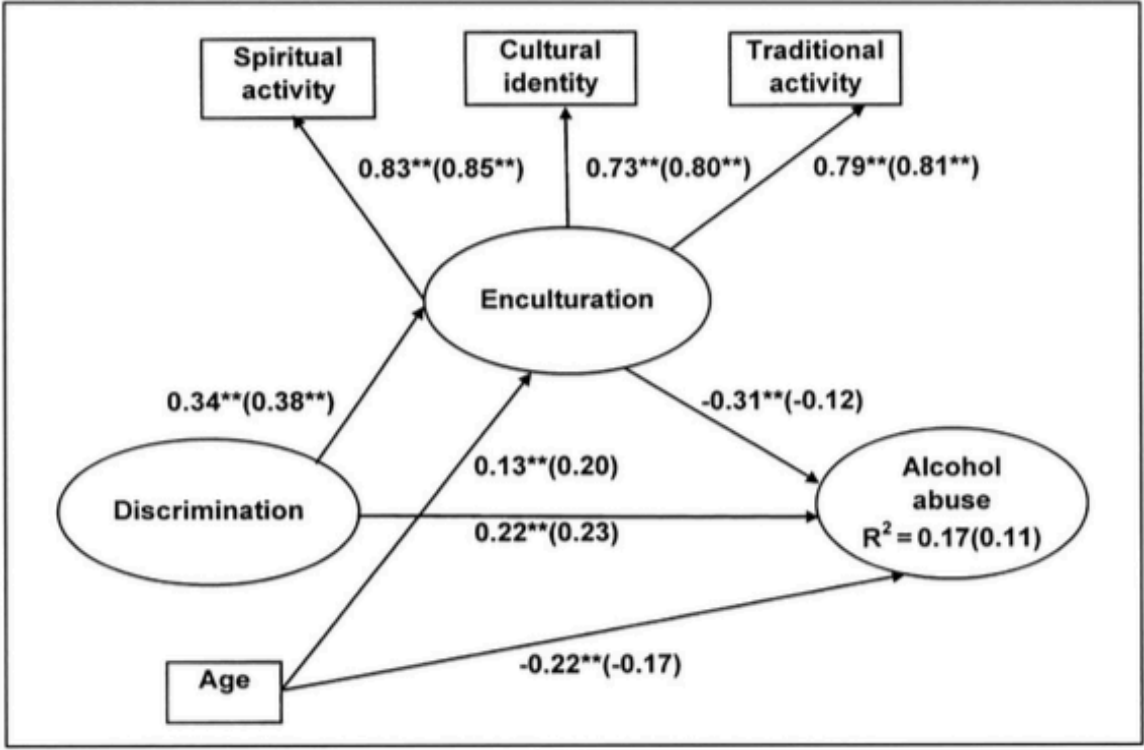
2004).

** *p* < .01

Figure 3. The full model (cultural loss and cultural connectedness) predicting alcohol abuse among First Nations adults (with coefficients for men in parentheses; Whitbeck et al., 2004).
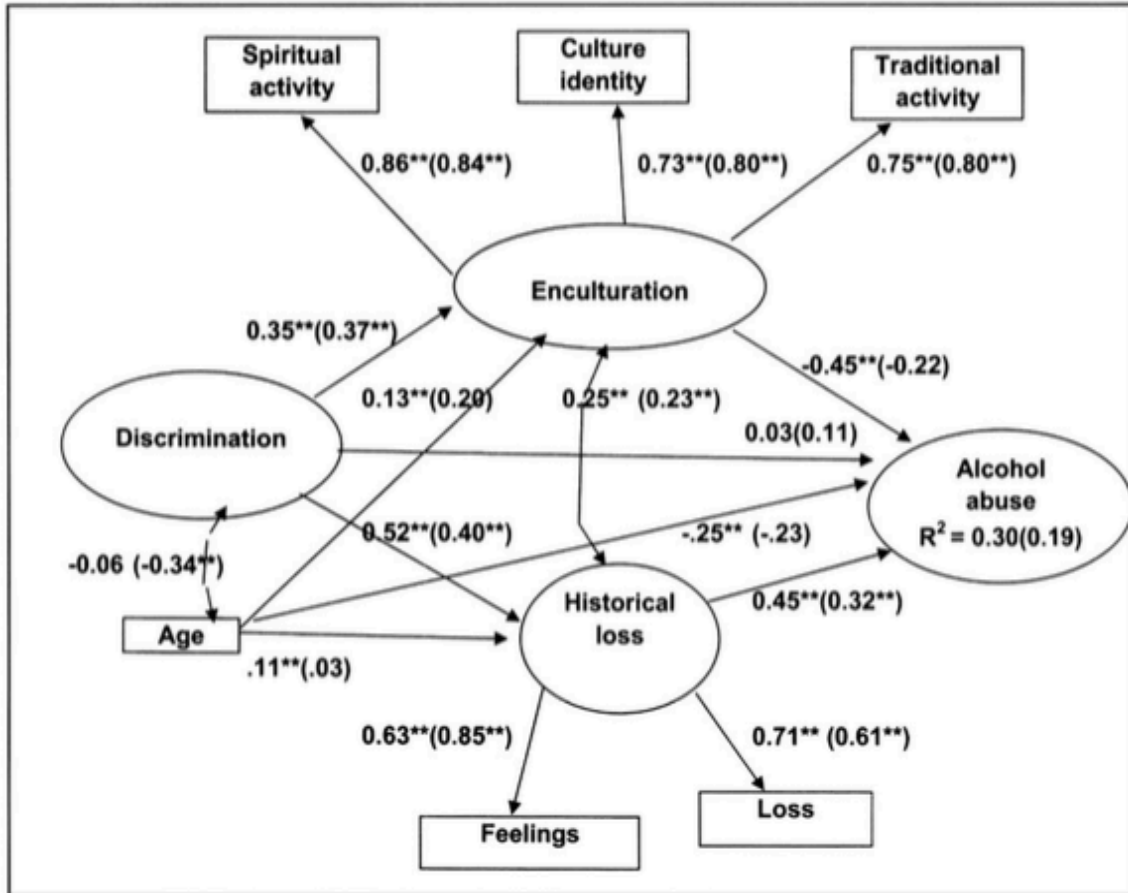
** *p* < .01

The construct of cultural connectedness fits with a transformation in thinking from that of a deficit-based approach to one of resiliency and strength. Strengths- and community-based approaches are particularly important in First Nations contexts because they enable First Nations communities to reclaim and reaffirm First Nations *ways of knowing* and *being* (Tuhiwai Smith, 2012). Within this framework, cultural connectedness has been shown to protect against the mental health symptoms and risks associated with cultural loss and perceived discrimination by directly counteracting its negative impact on American Indian youth (Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001) by increasing the potential for prosocial behaviours (Whitbeck, Hoyt, Stubben, & LaFromboise, 2001) and strengthening connectedness to family, school, and community among First Nations youth (Crooks, Chiodo, Thomas, & Hughes, 2010; Resnick et al., 1997; Sale, Sambrano, Springer, & Turner, 2003). While First Nations youth often possess a number of cross-cultural protective factors, a strong connection to culture may provide an additional means of protection against distinct communal challenges, both as mechanisms of coping (Walters, Simoni, & Evans-Campbell, 2002) and by strengthening universal youth protective factors, such as healthy family, school, and community networks (Bernard, 1992).

Culturally Specific Resilience Models for First Nations Youth

Despite some recent strengths-based efforts to identify and verify culturally specific resilience models for First Nations youth, very little research has included the construct of cultural connectedness in order to elucidate its link with positive mental health outcomes. Mohatt, Fok, Burket, Henry and Allen (2011) describe the development of the Awareness of Connectedness Scale (ACS), a 12-item culturally specific measure of

Alaskan Native youth (*n* = 284) connections to self, family, community, and the natural

environment. Their four-factor awareness of connectedness model yielded positive

associations with experiences of purpose and meaning in life (i.e., reasons for living),

mastery with a communal focus (i.e., problem solving through assistance with family and

peers, as opposed to on one's own), and cultural identification (i.e., one aspect of the

larger cultural connectedness construct). The ACS provides an important foundation for

future strengths-based work in the area of First Nations youth resilience. However, the

need to identify and integrate a cohesive understanding of cultural connectedness, as a

missing piece of existing models, remains.

Efforts to Operationalize First Nations Cultural Connectedness

Given the considerable negative attention in the literature on the link between the

lack of culture and First Nations mental health issues, it would be inappropriate (and

potentially harmful) to provide an exhaustive review of these deficit-based studies (see

Waldram, 2004 for a detailed review). Instead, the author focuses on studies that have

attempted to address the measurement of First Nations youth cultural connectedness[2],

beginning with the early work by Zimmerman, Ramirez-Valles, Washienko, Walter, and

Dyer (1996; 1998). These authors provided the foundation upon which a body of

literature concerning the operationalization of cultural connectedness was built that

focused on strengths rather than deficits. Prior to Zimmerman and colleagues' work,

connection to culture was typically measured by the extent of one's acculturation, the

process by which a Native American person is assimilated into the majority or dominant

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[2] Although researchers have typically used the term *enculturation* to describe this concept, the research team has moved to the term *cultural connectedness* based on feedback from the First Nations partners. Specifically, it was noted that the term *enculturation* was easily confused with *acculturation*, and was not easily accessible to community partners. Conversely, the term *cultural connectedness* is more self-evident and seen to be more culturally appropriate.

Western culture (Waldram, 2004). The different degrees of cultural orientation were hypothesized to range from "native-oriented" to "fully acculturated," until Oetting and Beauvais (1990-1991) found that enculturation was not related to acculturation using their six-item Orthogonal Cultural Identification Scale, which taps elements of identity with Native American culture and the dominant Western culture. As such, Zimmerman et al. (1996) used the term enculturation in a Native American context to distinguish it from acculturation. Zimmerman et al. established and tested a single factor structure of enculturation for Native American youth in the Upper Midwest United States ($n = 120$) using items on cultural affinity (largely adapted from King's [1992] five-item Acculturation Scale), cultural identity (consisting of a single item: "Do you see yourself as American Indian?"), and family involvement in cultural activities (using a nine-item checklist which included activities such as berry picking and hunting). The measurement model of enculturation was consistent with the unidimensional conceptualization of enculturation presented by others (Little Soldier, 1985; Oetting & Beauvais, 1990-1991; Trimble, 1987) and with more general cross-cultural models of ethnic identity (Phinney & Chavira, 1992). Zimmerman et al. (1996; 1998) applied their one-factor model of enculturation to test its relationship with self-esteem for prediction of alcohol and substance use among Native American youth. Although they did not find direct main effects of enculturation, youth with high cultural identity and high self-esteem reported the least alcohol and drug use, while youth with high cultural identity and low self-esteem reported the most alcohol and drug use.

Whitbeck, Hoyt, Stubben, and LaFramboise (2001) extended Zimmerman and colleagues' conceptual model by introducing traditional spirituality (measured by three

items asking youth if they participated in traditional spiritual activities, how often they participated in such activities, and the importance of traditional spiritual values to how they lead their lives) as a component separate from traditional activities (measured by a 12-item checklist) and cultural identification (using the Orthogonal Cultural Identification Scale by Oetting & Beavais [1990-1991]). This major conceptual development was applied to their study that measured enculturation, in addition to other known contributors, to the academic performance of American Indian youth in the Upper Midwest United States. Whitbeck et al. found the three components to load into a single factor in exploratory factor analyses ($n = 196$) that was positively associated with academic performance.

In a more recent group of studies by LaFromboise et al. (2006), Yoder, Whitbeck, Hoyt, and LaFromboise (2006), and Torres Stone, Whitbeck, Chen, Johnson and Olson (2006), enculturation using all three components (i.e., cultural identity, traditional activities, and traditional spirituality) appeared to serve a protective mechanism against mental health problems among Native American peoples. LaFromboise et al., using Whitbeck et al.'s (2001) one-factor model comprising all three components, found that maternal warmth and support, perceived community support, and higher levels of enculturation were all associated with increased likelihood of prosocial outcomes among American Indian youth ($n = 212$). Like LaFromboise et al., Yoder et al. conceptualized and measured enculturation using the same basic overlapping components among American Indian youth ($n = 212$). The results showed that when enculturation was analyzed in a simple relationship with suicidal thoughts, enculturation did not appear to have a predictive value. However, when all the other variables were taken into account,

enculturation proved to be the second strongest predictor (after lower levels of drug use) of low levels of suicidal ideations. A major development was Torres Stone et al.'s (2006) move to conceptualizing enculturation as a latent construct assessed by three separate dimensions rather than overlapping components of a single dimension. While traditional activities and traditional spirituality were found to be convincingly associated with alcohol cessation among Native American adults, cultural identity was not ($n = 980$). The researchers felt their findings "provide some intriguing evidence concerning the specific mechanisms through which enculturation works" (Torres Stone et al., 2006, p. 242) but overall, no conclusive statements could be made about the role of cultural connectedness on mental health for this population.

While the accumulated empirical evidence is largely in favour of resilience from components of a broad construct of cultural connectedness among American Indian and Native American adults and youth, researchers have encountered some mixed results when components were removed or changed (Fleming & Ledogar, 2008). For example, as shown in Figure 4, some researchers have found interaction effects between enculturation and self-esteem on mental health outcomes (e.g., Zimmerman et al., 1996; 1998), while other have not (e.g., Whitbeck et al., 2001). This ambiguity may be largely due to a lack of conceptual framework for the construct of cultural connectedness and the vast heterogeneity within and between First Nations, Native American, American Indian, and Alaskan Native cultures. Further complicating the efforts to understand cultural connectedness, research on the role of culture in a First Nations context has historically lacked a unified conceptual framework; components have often been borrowed from previous work without a theoretical basis and measurement decisions have depended

Figure 4. Cultural connectedness (enculturation) outcomes (Fleming & Ledogar, 2008).

Source	Conceptual components		
	Family/Traditional Activities	Cultural Affinity/identification, Native American Identity	Traditional Spirituality
Zimmerman et al., 1998 [1994] (Sample: 121 adolescents)	Youth with highest levels of self-esteem and cultural identity reported least alcohol and substance use. Youth with low self-esteem and high cultural identity reported most alcohol and substance use.		Concept not included in the study
Whitbeck et al. 2001 (n=196 children, 9-16)	Positive association between enculturation and school success. Self-esteem also independently associated with school success.		
Whitbeck, et al., 2002 (n=287 adults)	For each unit increase, traditional practices lowered depressive symptoms by 29%. Where participation in traditional practices > mean, discrimination had almost no effect on depressive symptoms.	Concept not included in the study.	Concept not included in the study.
Whitbeck et al., 2004 (n=452 caregivers/parents of children ages 10-12 of same culture in upper Midwest USA and Canada	The researchers found at best a limited protective effect of enculturation on alcohol abuse. It appeared that those who are highly enculturated are also those who report higher levels of historical loss. The authors suggest that traditional culture both sensitizes one to loss and serves as a protection from reminders of loss.		
Torres Stone et al., 2006 (n=980 of same culture in upper Midwest USA and Canada)*	Traditional activities convincingly associated with alcohol cessation	No association with alcohol cessation found	Traditional spirituality convincingly associated with alcohol cessation
LaFromboise et al., 2006 (n=212 youth, grades 5–8)	Outcomes measured were alcohol use, substance abuse, and externalizing behavior. For each unit increase in enculturation, the odds of being resilient were 1.8 times greater.		
Yoder et al., 2006 (n-212 Native American adolescents on/near reservations in upper midwestern USA in 1998–99)	Enculturation was second strongest predictor variable (after drug use), found to be protective against suicidal ideation in multivariate analysis.		

*Note: A significant effect was found between alcohol cessation and the composite measure of enculturation but not with the sub-component of cultural affinity analyzed separately.

heavily on the question that researchers have sought to answer. Moreover, culture is a constantly changing construct, and attempts to define cultural connectedness among the current generation of First Nations youth can become inadvertently limited by a societal view of culture that does not allow for change (Kirmayer et al., 2009).

Future research with First Nations youth using pre-existing enculturation measures would be premature until a conceptual framework is identified and empirically tested. As such, the current research initiative addressed this key knowledge gap by examining the underlying structure of cultural connectedness as measured by a new scale of cultural connectedness for First Nations youth within a Canadian context. The author developed the CCS to identify the construct of cultural connectedness as both a central factor in a cultural theory of protection among First Nations youth and as a potential link between theories of cultural connectedness and positive mental health outcomes. Accordingly, the objective of Study 1 was to develop a new scale of cultural connectedness to link to mental health outcomes for First Nations youth by (a) testing the multidimensional nature of the construct as measured by the CCS and its model fit, (b) investigating the psychometric properties of the CCS item pool, and (c) assessing the evidence for associations between the CCS and theoretically linked mental health constructs. Extending the work of the scale development, the objective of Study 2 was to examine the relationships between culture and mental health among First Nations youth. This was done by (a) confirming the invariance of the major structural elements of the construct using a more parsimonious version of the CCS, and (b) demonstrating its usefulness as a predictor of positive mental health above and beyond other social determinants of health.

CHAPTER TWO: THE INDIGENOUS QUANTITATIVE FRAMEWORK

Quantitative Methodologies with First Nations Peoples

Contemporary academic institutions within which health researchers are trained are part of a Western system governed by dominant narratives that is often viewed by many First Nations people to be inextricably linked to imperialism and colonialism. There are myriad ways in which researchers have disrespected, exploited, and/or harmed First Nations peoples (e.g., Schnarch, 2004; Waldram, 2004). The tension between academic and First Nations *ways of knowing* and knowledge acquisition is exemplified by the "parachuting model" that was historically employed by many researchers, whereby the Western-oriented researcher typically came to the reserve, collected data, and left, never to be heard from again (Montour & Macaulay, 1998). In many cases, researchers have either disregarded local knowledge and input or misappropriated it (Scott, 2010), which has led to skewed illustrations of First Nations communities and stereotypical conceptualizations of First Nations peoples (Waldram, 2004). As a result, many First Nations peoples and their communities meet research with distrust and resistance (LaFrance & Nichols, 2010; Tuhiwai Smith, 2012). Issues such as a mistrust of government agencies, the resentment of processes imposed from the outside by expert-driven research, a sense that the researcher does not really understand the community or respect their *ways of knowing* and *being*, and the feeling of being over-researched are all factors that come into play during the research process (LaFrance & Nichols, 2010; Minkler, 2005).

Quantitative methodologies that guide the collection, analysis, and interpretation of data about First Nations people both reflect and uphold the dominant mainstream

framework within which research results operate in ways largely invisible to their producers and users (Walter & Andersen, 2013). Although statistical depictions are often used to summarize the social complexity of First Nations communities, the weight and power of statistical techniques and the numerical summaries they generate "speak a 'truth' about the communities on which they shine their statistical light" (Walter & Anderson, 2013, p. 9). Consequently, the conclusions that flow from quantitative data (intentionally or unintentionally) push out other (less valued) *ways of knowing*, such as First Nations peoples' understandings about their community and the world around them (i.e., the "epistemological gap;" Walter & Andersen, 2013). As such, quantitative research methodologies bring with them an inherent risk due to their colonial groundings when applied with marginalized and oppressed groups of peoples such as First Nations populations, regardless of the research question or objective. It is important for researchers to recognize this context and to become advocates for First Nations communities by respecting the community's values, needs, concerns, and justifying these priorities to academic institutions (Grover, 2010).

Indigenous Quantitative Methodology in Theory

Indigenous quantitative methodologies[3] is a relatively new and growing approach to research that reflects First Nations communities' *ways of knowing* and *being* throughout the research process to increase the chances that the results are respectful, relevant, and representative from the perspective of the community. Walter and Andersen (2013) define Indigenous quantitative methodologies as "methodologies within which the practices and the processes of the research are conceived and framed through an

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[3] The term *Indigenous quantitative methodology* was coined by Walter and Andersen (2013) to represent a methodological framework that is distinct from both quantitative and Indigenous methodologies. The author has adopted this term for the purposes of this chapter.

Indigenous standpoint" (p. 83). In theory, Indigenous quantitative methodologies emerge

within an ethical point of convergence between the seemingly opposing forces of

empiricism and traditional First Nations ways of acquiring knowledge. As outlined in

Figure 5, it is the researchers' standpoint that delineates the shared philosophical base

that not only defines a quantitative methodology as an Indigenous methodology, but also

situates that methodology within broader First Nations epistemologies (Walter &

Andersen, 2013). Because the social position of First Nations peoples differs from

researchers from mainstream backgrounds in a number of ways (e.g., culturally,

politically, and often economically), a First Nations researcher's[4] standpoint will

influence every aspect of the research methodology (e.g., methodological design,

research question, data collection methods, data interpretation, knowledge translation).

According to Walter and Andersen (2013), conducting research within an Indigenous

quantitative methodological framework encapsulates two key purposes: (1) to generate

statistical data from a First Nations lens that (a) privileges First Nations peoples' voices,

(b) does not take the dominant mainstream value system of the academy as the

unacknowledged norm, and (c) does not take a presumption of deficits as its starting

point; and (2) to challenge the hegemony embedded in statistical practice with First

Nations peoples by exposing the standpoint from which it operates.

The author believes that Indigenous quantitative methodologies are not possible

unless community-based research partnerships are at the *core* of the research design.

Indigenous quantitative methodologies require the researcher to take a standpoint that

embodies the views (i.e, social position, axiology, ontology, and epistemology) of the

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[4] The author is not suggesting here that only those researchers that have First Nations ancestry will have differing standpoints, but rather those researchers more generally that have adopted the worldview of a First Nations community(ies) to the extent that it influences their positioning in the research.

Figure 5. Conceptualization of a research methodology (Walter & Andersen, 2013).
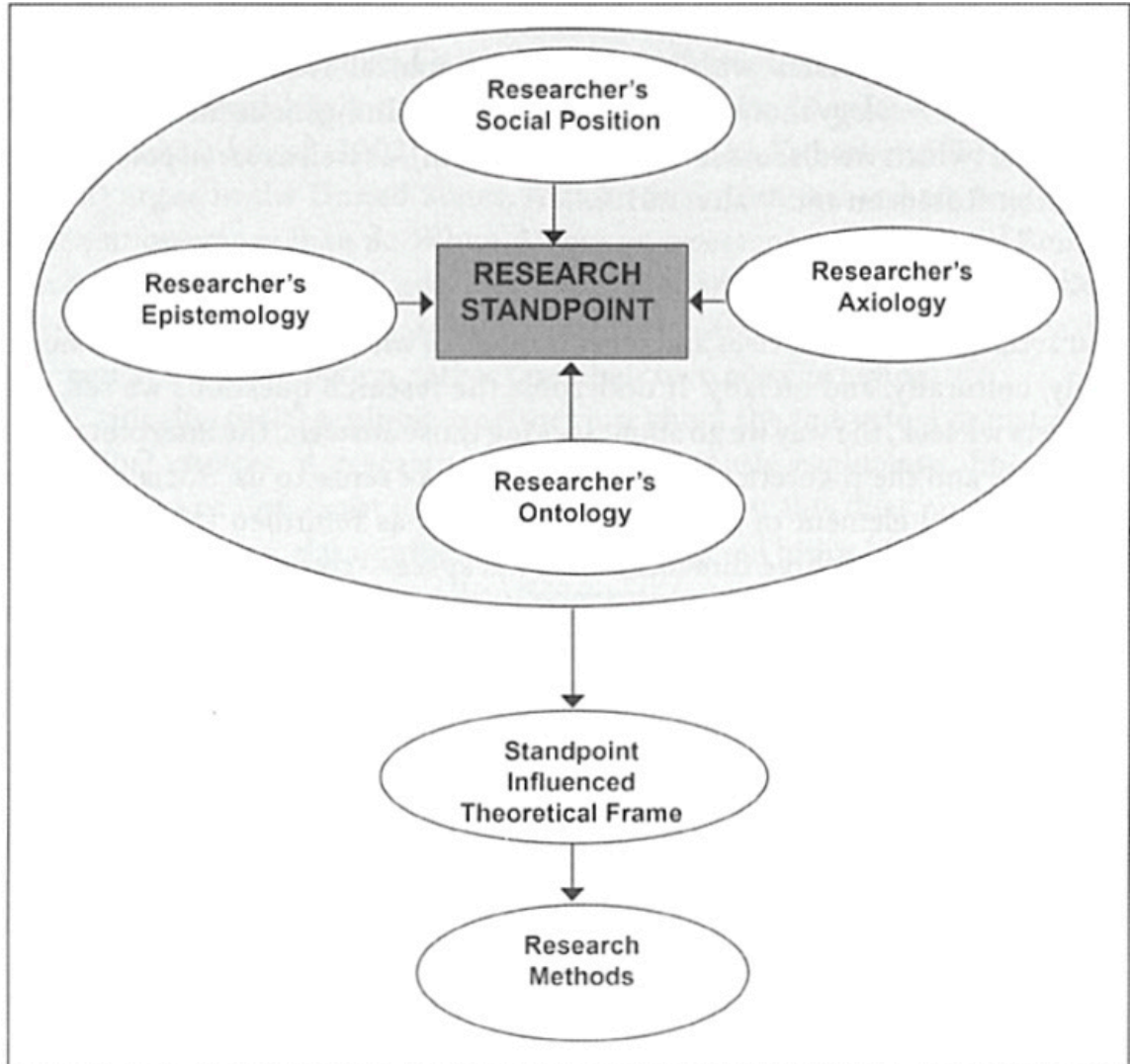
First Nations community(ies) of interest. Without engagement at the community level, the researcher's standpoint will be heavily dependent on the social position of the (dominant) academic institution from which the researcher was trained, which ultimately silences the voices of First Nations peoples (Gone, 2009). As such, community-based research partnerships are necessary in order to mitigate the potential harm of quantitative approaches to research within First Nations contexts.

Community-based research partnerships have recently emerged as a new model for achieving an equitable, respectful approach to research that protects the autonomy of First Nations communities and leads to clear short- and long-term benefits for First Nations people (Tobias, Richmond, & Luginaah, 2013). Some general guidelines have been offered to researchers to assist them in relationship building process with First Nations communities to ensure ethical research conduct, such as the second edition of the Tri-Council Policy Statement (TCPS 2; Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2010) and the principles of ownership, control, access, and possession (OCAP; Schnarch, 2004). An intention of these guidelines for ethical practice is to increase the likelihood that research involving First Nations peoples is premised on respectful relationships. For example, the TCPS 2 chapter on Research Involving the First Nations, Inuit, and Métis Peoples of Canada includes a number of detailed sections that go beyond broad principles to provide specific guidelines and requirements for partnerships. This chapter has served as a blueprint for the current work with First Nations youth and their communities and provided a common language for stakeholders to use as a starting point in outlining roles and responsibilities. It also

highlights the importance of some of the softer work that such partnerships entail (e.g., in-person meetings, site visits). In particular, it legitimizes allotting significant funds to partnership-building activities in grant proposal budgets.

While these general guidelines are an apparent sign of progress within the realm of research in First Nations contexts, many of the guiding principles can be difficult to implement in practice. For example, there is a tension between the principle of community ownership and the knowledge mobilization expectations of the academy or grant agency. Typically, mainstream institutions expect the results of research to be made available in various formats; however, it may be difficult to determine who has the authority to share the research results and with which audiences. At the individual level, adherence to good research practices can help, such as obtaining consent to audiotape interviewees and double-checking whether participants want particular quotations to be shared (and, if so, ensuring their anonymity is protected, especially in small communities). But at a larger level, there are additional considerations about how secondary data are shared, with whom, and for what purposes, and these questions can be difficult to navigate. The stronger the relationships are among research and community partners, the better these challenges can be negotiated.

The most serious consideration for building meaningful and sustainable research partnerships with First Nations communities for the purpose of conducting research is the assurance by the researchers that they will be able to uphold their personal responsibility and accountability for the impacts or outcomes of the research on the community of interest and its members (Weber-Pillwax, 2004). With this in mind, the research initiative should benefit the participating First Nations community, as well as extend the

boundaries of health promotion knowledge (Canadian Institutes of Health Research et al., 2010). To benefit the participating First Nations community, the research initiative "should be (a) relevant to community health needs and priorities with the potential to produce valued outcomes for the community and its members, (b) conducted with respect for community codes of practice and cultural protocols for acquiring knowledge, and (c) culture-enhancing by taking a strengths-based research approach" (Crooks, Snowshoe, Chiodo, & Brunette-Debassige, 2013, p. 20). Researchers must therefore be able to interpret these foundational principles from the perspective of the community via the community engagement process and to navigate between the often conflicting worldviews of the academic setting and First Nations communities.

Indigenous Quantitative Methodology in Practice

In the following sections, the author highlights a number of obstacles that were encountered during the development of a scale of cultural connectedness for First Nations youth and the efforts to navigate between scientific rigour and the requirements of community-based research partnerships (Crooks et al., 2013). Throughout the research process, the author and her research team have had the opportunity to reflect on the factors that have been essential in conducting research that is respectful, relevant, and required from the perspective of the First Nations communities of interest. The author has identified seven major factors that have been crucial to the success of the current research initiative and addresses the implications inherent to these issues (Crooks et al., 2013). The rationale for presenting these experiences of navigating between rigour and community-based research partnerships within an Indigenous quantitative methodology is twofold: (1) to provide a basis for which the approach to the cultural connectedness scale

development can be understood, and (2) to offer practical examples for future researchers attempting to engage in ethical research with First Nations communities.

Engaging complex authority structures. Researchers should not assume that approval of a research initiative by formal authority structures or administration necessarily guarantees the advancement of the project in First Nations communities, despite such approval being a typical and sufficient route for research in non-First Nations communities. In some First Nations communities and within specific domains of knowledge, the authority to permit and monitor research rests with community members designated by traditional custom and codes (e.g., traditional Elders or knowledge keepers) rather than by election or appointment. In First Nations settings, a confederacy council spanning several communities may be recognized as having official jurisdiction over research initiatives involving its members. In other communities, or even within the same community, an informal organization of traditional Elders and knowledge keepers may have overlapping moral authority and expertise with respect to the knowledge being sought (e.g., language, culture camps). The preferred course for researchers is to secure approval for research from both formal council and moral authority members of a community. Researchers should engage in community processes, including the guidance of moral authorities such as traditional Elders, to prevent potential conflicts and ethical dilemmas that may arise during the partnership process. In the current research initiative, despite obtaining official authorization from the Chief Executive Officer of the Northwest Nations Education Council to collect data in Saskatchewan reserve schools, collective (unanimous) approval was required from Chief and Band Council members along with other informal stakeholder groups (e.g., traditional Elders) before the author could

proceed with the research. An existing relationship between a traditional Elder from the

community and the author (which was build over the course of a number of days

consisting of remote First Nations community visits, land-based learning, and ceremony)

was integral for identifying key stakeholders and community members, and for arranging

a formal meeting to obtain unanimous support from this traditional authority structure.

Recognizing the complexity of the traditional Elder engagement process.

Although the importance of engaging traditional Elders in research is largely recognized,

it is a complicated process in that different communities vary in their identification and

expectations of traditional Elders (Hill, 2003). Some First Nations communities have

traditional Elder advisory committees and councils that specifically serve to facilitate

consultative practices with First Nations stakeholders and researchers. Other

communities' traditional Elders focus strictly on preserving traditional culture and sacred

community-based knowledge through ceremony and spiritual healing methods and may

perceive researchers' presence or intentions as inappropriate and a threat to cultural

continuity (Tuhiwai Smith, 2012). The engagement of traditionally knowledgeable

community members throughout the research process is necessary because the process of

identifying (and even selecting or electing) moral authority structures such as traditional

Elders is largely community-driven (Ellerby, 2001; Hill, 2003). Adding to the

complexity, the cultural protocols for approaching traditional Elders for knowledge and

accessing their services vary by community, organization, and individual. Researchers

have an obligation to become informed about, and to respect, these cultural protocols

(Canadian Institutes of Health Research et al., 2010). This requires adherence to

processes that may take considerable time but are valued by the community members,

such as respecting the unique *ways of knowing* among First Nations peoples, being flexible about time commitments, and appreciating culturally established ways of communicating (Johnston, 2010). Effective communication requires researchers to re-evaluate their skills, attitudes, and styles from a First Nations community perspective (Santiago-Rivera, Morse, Hunt, & Lickers, 1998). In the current studies, the author had some knowledge of cultural protocols that was applicable to the First Nations communities of interest as a starting point. Over a considerable period of time, the author built a trusting relationship with a traditional Elder who served as the gatekeeper for one set of communities' organizational structures, traditional knowledge, and cultural processes.

Utilizing culturally competent messengers as mediators of the partnership process. To communicate effectively, researchers must be able to operate from a First Nations worldview when necessary and to interpret collaborative principles from the perspective of the First Nations community and its members. Culturally competent messengers serve as translators by being well-versed and immersed in two cultures: the academic and the First Nations (i.e., "two-eyed seeing;" King, 2012; Scott, 2010). Bridging the categories of academic and traditionalist, culturally competent messengers play a dual role in mediating attempts to satisfy a "culture of rigour" for the academic setting and a "culture of application" for the First Nations community. They articulate the shared sense of collective purpose and use concepts and terms gained from their experiences in navigating through both worldviews (Scott, 2010). Ideally, both sides of the partnership utilize culturally competent messengers who can navigate from both academic and First Nations worldviews. These messengers can come together to foster a

mutual interest and commitment on behalf of their respective organization or structure and begin exploring strategies for satisfying the interests and needs of both cultures. The current research initiative benefited from having culturally competent messengers both on the research team (e.g., the author of this manuscript) and in significant roles at the school board. In addition, community partners have varying degrees of experience with other research endeavours, which serve to further facilitate the community-based research partnership building process.

      Taking a strengths-based approach to research design. Many First Nations and non-First Nations researchers have advocated for a reformulation of mental health research and service delivery strategies to reflect positive adaptation rather than pathology, and cultural continuity rather than decimation (e.g., Gone, 2009). Such an approach was more acceptable to the community partners in the current research initiative, all of whom have identified the over-researching of problem behaviours among First Nations youth as a negative and pervasive experience. The concept of cultural connectedness reflected a transformation in thinking from an individual deficit-based approach to one of community resiliency and strength that fit with the central goal of many community-based youth programs (e.g., culture camps, healthy relationships). An important external shift that has facilitated the author's ability to conduct a strengths-based research project was the emergence of funding initiatives that emphasize positive mental health and wellbeing. Previously, researchers often had to emphasize a specific deficit angle (e.g., substance use, depression, suicide prevention) to meet the mandate of a particular funding call to obtain resources for research. With the significant resources that grant agencies (such as the Public Health Agency of Canada) are putting into

promoting mental health through new innovation strategies, the research team was able to obtain funding to develop and conduct the current research on cultural connectedness from a strengths-based perspective.

Anticipating a longer timeframe for the community engagement process. An important shift for the current research initiative has been changing the timeframe to a longer view of research than is typically used (Fisher & Ball, 2005). Even partnership building is a process that occurs over a span of years, and each joint project success further strengthens the partnership. In outlining the various tasks and stages of partnership building for their project, Santiago-Rivera et al. (1998) identified seven interrelated steps in developing a strong community-based research partnership consisting of academic researchers and community members: adapting styles of communication, gathering information, establishing a research agenda and parameters, exchanging knowledge, negotiating and establishing roles, resolving differences, and gaining acceptance and trust. Each of these stages requires considerable time to develop. In addition, the timeline for building community-based relationships will vary significantly depending on whether research in the community has historically been conducted in an ethical manner, as a number of additional steps may be needed in cases where communities have been disrespected or exploited. In some ways, the shift from a linear process to an iterative cycle of continuous stakeholder input is consistent with the concept of development research (Patton, 1994). Developmental research is particularly useful in situations marked by high complexity or early stages of social justice work (Gamble, 2008). One main challenge for the current project was that it was difficult to plan and implement the research in a linear fashion within a pre-specified timeline set by the

academy. In order to create sufficient momentum, the author dedicated a significant amount of time and resources to community engagement at the front end of the project, recognizing that decisions concerning scale development would need to be leveraged by community-based knowledge to ensure its relevance.

Selecting culturally appropriate data collection methods. In research with disenfranchised and oppressed populations such as First Nations peoples, it is important that cultural protocols for acquiring the right to access community-based knowledge should be incorporated into the research design rather than as an add-on. Often, such protocols are initially unknown to the researcher. For example, in situations where the research question borders on sacred or protected community-based knowledge, common procedures such as note-taking and audio- or video-recording are often not appropriate nor feasible. Furthermore, extracting quotations from interviews and focus groups for dissemination that involved traditional Elders and knowledge keepers would be prohibited in many cases. Assuming that standard qualitative procedures are suitable or superior to cultural protocols is an example of cultural oppression through research. Moreover, to apply Western research practices in First Nations communities when it is not essential to do so is counterproductive to cultural preservation. In the current research initiative, the author used cultural protocols to approach a traditional Elder following a formal meeting with the Northwest Nations Education Council in Saskatchewan, which lead to a spontaneous three-day spiritual journey involving site visits to the surrounding First Nations reserves, land-based learning, traditional storytelling, medicinal teachings, and ceremony. In the process, the author learned *nahtchinaykaiwin*, a Cree term for the laws of access or earning the right to the knowledge being sought, and how to integrate

these principles to the core of the research and personal life. All subsequent steps in the current research process were grounded in the concepts of *nahtchinaykaiwin* and *kaandossiwin* (i.e., the latter being an Ojibway term for "how we come to know"). This oral narrative process engaged all aspects of the self (i.e., physical, mental, emotional, and spiritual) and thus is considered a valid Indigenous method of data collection that is distinguished from those used in qualitative methodologies (Absolon, 2011; Kovach, 2009; Wilson, 2008).

Committing significant time and resources to scale development. A final factor that has helped build the foundation for the current research initiative is the investment of significant resources into developing culturally relevant and strengths focused measures. In particular, the author spent a lot of time and effort developing a scale of cultural connectedness in order to achieve a balance between First Nations worldviews and scientific rigour by using a blend of Western and Indigenous methods which included a literature review, consultations with traditional Elders and knowledge keepers, development of a concept domain grid, a youth focus group, a community stakeholder focus group, and expert raters. Though time-consuming, this process was critical to ensure that the interpretation of statistical data were informed by the standpoint of the author, which was set by the theoretical frame of the community via the community engagement process (Walter & Andersen, 2013). The expert rater portion of the scale development exemplified the ongoing balance that the author strove to achieve; while some experts were comfortable rating the cultural connectedness scale items for appropriateness (to enable the calculation of a content validity index), other experts preferred to give their feedback qualitatively through conversation either by phone or in-

person because they were not comfortable quantifying cultural concepts. At each step, the author worked to find ways for different partners to provide meaningful input into the project through the modality that fits best for them. The cultural connectedness scale was revised on the basis of empirical (i.e., factor analytic) and rational (i.e., stakeholder judgments about the importance of including particular items and themes) approaches in order to respect both Western and First Nations *ways of knowing*. Nonetheless, the process of developing a new scale of cultural connectedness (as opposed to making minor modifications to an existing one) has added approximately one year to the larger research study within which this project was embedded.

In summary, navigating the tensions between scientific rigour and community-based research partnerships in conducting research within an Indigenous quantitative methodological framework was a challenging but critical endeavour. An awareness of the demands of both the academy and the community is an essential starting point in engaging partners and planning a research project. The author has identified numerous success factors from the work on developing a cultural connectedness scale for First Nations youth. In the following sections, the current research approaches and decisions should be viewed with an Indigenous quantitative methodological framework in mind. The author hopes that these experiences highlight the importance of Indigenous quantitative methodologies and aid future researchers in putting theory into practice; however, it is important to recognize that each community-based research partnership will unfold differently based on the unique circumstances of the partners and research objectives.

CHAPTER THREE: STUDY 1[5]

In Study 1, the author used a strengths-based approach to the development of a conceptual and operational model of cultural connectedness for First Nations youth within an Indigenous quantitative methodological framework. The research design strikes a balance between First Nations worldviews and scientific rigour through a combination of Western and Indigenous methods. In the following chapter, the author delineates the steps that were taken in the scale development process and addresses the main objectives: (a) an analysis of the underlying structure of cultural connectedness construct as measured by the new scale, (b) the examination of the item pool characteristics to assess how each item functions, and (c) an assessment of the criterion validity of the scale using measures of positive mental health.

The current study helps build "statistical literacy" among First Nations communities, that is, the practice and production of statistical information *by* First Nations peoples *for* First Nations peoples (Walter & Andersen, 2013, p. 130). While active resistance to quantitative research by First Nations researchers is understandable and justified, refusal to participate in the research arena ensures that dominant methodological frames which are used to inform decisions on the behalf of First Nations communities will remain unchallenged. While First Nations scholars are developing their own equally valid methods, using non-quantitative techniques bypasses the essential point that statistical information will be collected, analyzed, and disseminated by Western-oriented researchers with or without the involvement of First Nations peoples. The author hopes that the current study will be viewed as an exemplar for decolonizing the quantitative research terrain and will be utilized in ways that support First Nations

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[5] A version of this chapter has been published (Snowshoe et al., 2014).

peoples' declaration for research self-determination.

<div align="center">**Method**</div>

Participants

Three hundred and nineteen First Nations, Métis, and Inuit youth (147 male, 162 female; 10 unspecified) enrolled in grade eight through 12 from Saskatchewan ($n = 201$) and Southwestern Ontario ($n = 118$) participated in the current study. Seventy-eight percent of respondents reported living on-reserve. Respondents ranged in age from 11 to 29 ($M = 15.3$; $SD = 2.3$). A small number of respondents self-identified as being other than status or non-status First Nations (i.e., eight Métis, one Inuit). Although the current research initiative involves the development of a First Nations-specific scale of cultural connectedness for youth, there may be as much, if not more, cultural heterogeneity within communities belonging to a particular Nation (e.g., Swampy Cree, Plains Cree, and Woodland Cree) as there is between Nations (e.g., Cree and Ojibway). Furthermore, it is not uncommon for Métis youth to identify with their First Nations ancestry or an Inuit youth to be raised in, and thus identify with, a First Nations community. As such, Métis and Inuit youth were retained in the analysis. A similar rationale was used to retain those individuals in the analyses with higher chronological ages than what is typically considered for "youth," as age is not necessarily congruent with cultural connectedness developmental trajectories.

Measures

Sixty-four cultural connectedness items were initially generated as described in the procedure section of this manuscript. Of the initial pool of cultural connectedness items (i.e., prior to measure refinement), 28 items had a dichotomous response scale of *no*

or *yes*, nine items had a 5-point Likert response scale ranging from *never* to *everyday*, and

27 items had a 5-point Likert response scale ranging from *strongly disagree* to *strongly*

agree. Six of these latter items were adapted from the Multigroup Ethnic Identity

Measure – Revised (MEIM–R; Phinney & Ong, 2007) to be culturally relevant to First

Nations youth.

      Demographics. Demographic questions included gender; age; school district;

school name; First Nations (status or non-status), Métis, and/or Inuit ancestry; residence

(on-reserve or off-reserve); and name of affiliated First Nations, Métis, or Inuit

community or Nation.

      Life satisfaction. The Satisfaction with Life Scale for Children (SWLS-C;

Gadermann et al., 2010) is a five-item instrument that assesses global life satisfaction.

Response categories ranged from 1 (*disagree a lot*) to 5 (*agree a lot*). For example, one

item on the SWLS-C is, "If I could live my life over, I would have it the same way." The

SLWS-C had good scale score reliability (Cronbach's alpha = .82, 95% CI [.782, .847]).

      Sense of self-in-the-present and -future. The Hemingway Measure of

Adolescent Connectedness – Short Version (MAC 5-A – Short Version, grades 6-12;

Karcher, 2011) includes a six-item sense of self-in-the-present subscale and a five-item

sense of self-in-the-future subscale. The former subscale assesses positive connections in

youths' lives including connection to family, school, friends, and self, suggesting that

youth are benefiting emotionally from their close relationships and feel good about

themselves. For example, one item on the sense of self-in-the-present subscale is, "I can

name 3 things that other kids like about me." The sense of self-in-the-future subscale is

based on the positive qualities of youth that are perceived by others and on actions of the

youth to secure a positive future (e.g., "I do things outside of school to prepare for my future"). Both subscales are rated on 5-point Likert scales (*not at all true* to *very true*). The sense of self-in-the-present subscale had acceptable scale score reliability in the current sample (Cronbach's alpha = .62, 95% CI[.543, .681]), as did the sense of self-in-the-future subscale (Cronbach's alpha = .69, 95% CI[.630, .744]).

Spiritual activities. Respondents were asked how many times they attend spiritual, religious, or faith activities in their community during their average or typical week. Response categories ranged from 1 (*not at all*) to 5 (*five or more times*).

The SWLS-C, MAC 5-A–Short Version, and the spiritual activities item were used as positive mental health indicators to assess the criterion validity of the cultural connectedness scale.

Procedure

The aim of the study was to use a strengths-based approach to the development of the CCS in order to test the theoretical framework for the construct of cultural connectedness and link it to positive mental health outcomes among First Nations youth. In considering the existing evidence about the nature of cultural connectedness, the author identified the following desirable features that a measure of cultural connectedness would ideally have:

(1) self-report in structure and short in length, for ease of administration in research settings;

(2) developmentally and culturally appropriate in content and language;

(3) content validity, by combining rational expert judgments and empirical data (Lynn, 1986);

(4) items concerned with behaviours as well as internal states that tap potential components identified in the previous literature;

(5) ability to capture commonalities (i.e., processes, beliefs, and practices) within and between the diverse communities of interest;

(6) past-, present-, and future-oriented items, to account for developmental processes (e.g., exploration and commitment; Phinney & Ong, 2007);

In addition to the aforementioned scale characteristics, the author determined that the process of developing and refining the cultural connectedness measure should be:

(7) sequential and iterative, based on Streinger and Norman's (2008) recommendations;

(8) strengths-based in approach, using positive mental health indicators to establish convergent validity;

(9) balanced, in terms of rigour and community-based collaboration (see Crooks et al., 2013);

(10) guided by the TCPS 2 Ethical Conduct for Research Involving First Nations, Inuit, and Métis Peoples of Canada (Canadian Institutes of Health Research et al., 2010); and,

(11) guided by the principles of reframing (focus on community stimulated research matters), renaming (incorporating First Nations epistemologies and realities), and reclaiming (the research environment) as outlined by Tuhiwai Smith (2012) for decolonizing research methodologies.

Approval for the research protocol was obtained through the CAMH – Centre for Prevention Science Research Ethics Board (see Appendix A), the Thames Valley District

School Board research ethics team in Southwestern Ontario, and the Northwest Nations

Education Council in Saskatchewan. The research initiative was also approved by the

Thames Valley District School Board's Aboriginal Advisory Committee (comprised of

community partners and educators from the First Nations reserves whose youth attend

school in the urban board). Similarly, Chief and Band Council approved the project in

Saskatchewan. In addition to obtaining legal authorization of the project, the research

team sought appropriate traditional/moral community authorization (Crooks et al., 2013).

In Saskatchewan, all youth from the target grades enrolled at schools on the five First

Nations reserve communities under the jurisdiction of the Northwest Nations Education

Council were asked to participate in the study. In Southwestern Ontario, a multipronged

strategy was used to identify a complete cohort of participants; youth appearing on the

Thames Valley District School Board's First Nations, Métis, and Inuit student self-

identification system, as well as youth participating in the Thames Valley District School

Board's Aboriginal Fourth R© programming, were asked to participate in the study.

 The research team worked closely with a contact person at each school to recruit

youth participants and arrange data collection dates and times. The research team made a

significant effort to provide all eligible and willing youth the opportunity to participate in

the study, which required multiple visits to on- and off-reserve schools in urban and

remote areas. Students from 35 schools were involved across the two provinces. In both

provinces, passive parental consent and active youth assent were utilized. Youth

participants were given an introduction that described the purpose of the study, their

rights as research participants, and how to complete the measures. The cultural

connectedness items underwent a process of development and refinement that was guided

by Streinger and Norman's (2008) recommendations, as described in detail below and outlined in Table 1. The author was committed to finding a balance between First Nations worldviews and scientific rigour by using a combination of Western and Indigenous methods prior to the statistical analyses (see Figure 6). In this way, the interpretation of statistical data were informed by the standpoint of the author, which was set by the theoretical frame of the community via the community engagement process (Walter & Andersen, 2013).

Item generation. A three-stage process (i.e., item generation, judgement-quantification, item selection) was used to incorporate rigorous instrument development practices and quantify aspects of content validity (Lynn, 1986). The item generation stage of content validity had three steps: key informant interviews, focus groups, and item pool creation. Three key informants (two male, one female) were selected to be interviewed based on their expertise in the area of cultural connectedness for First Nations youth in Canada. The intention of the interviews was to begin to explore cultural connectedness at a broad, conceptual level. The informants held positions of a National Consultant, Healing Lodge Executive Director, and traditional Elder. The interviews helped to identify cultural connectedness domains for First Nations youth. The interviews were informal in nature and included the sharing of knowledge through a variety of Western and Indigenous methods (e.g., via phone, in-person meetings, land-based learning, dream interpretation, and ceremony). The interviews were not recorded in order to respect the sacredness of the information that was shared during the dialogue, which is a common and culturally appropriate practice in Indigenous "searching" methods (Absolon, 2011; Tuhiwai Smith, 2012).

Table 1

Cultural Connectedness Scale (CCS) Development Phases and Associated Steps

Phase	Stage	Steps
Conceptual Framing	Literature Review	Determine purpose of the measure
		Identify the population(s) of interest
		Identify any relevant theoretical models
Measure Development	Item Generation	Conduct key informant interviews
		Conduct focus groups
		Generate an item pool that has redundant and over-inclusive items
	Judgement-Quantification	Reduce the item pool as dictated by an expert panel
		Revise items as dictated by an expert panel
	Item Selection	Administer the items to the sample
		Derive scales by means of exploratory factor analysis (EFA)
		Confirm model by means of confirmatory factor analysis (CFA)
		Assess the concordance of the scale with the original purpose of the measure
Psychometric Testing	Reliability	Evaluate the scale items by means of item analysis and adapt them accordingly
		Assess the internal consistency and intercorrelations of the subscales
		Determine subscale norms and identify any group differences
	Convergent Validity	Assess subscale correlations with other theoretically-related mental health measures

Figure 6. The flow of information within the current Indigenous quantitative

methodological framework

The length of interviews ranged from 30 minutes to one interview spanning over a three-day visit with a traditional Elder key informant at a number of remote First Nations reserves in Saskatchewan. During that time, the author engaged with Chief and Band Council and traditionally knowledgeable community members in order to understand the research needs from the perspective of the communities themselves and to build meaningful and lasting research partnerships (see Crooks et al., 2013 for a detailed description of the community engagement process). At the same time, traditional customs and community codes of practice were shared with the author. The visit served to foster a mutual interest in and commitment to the research initiative and provided a contextual foundation for the generation of the cultural connectedness items. These in-depth interviews spanned over a period of six months and were discontinued when no new themes emerged (i.e., sampling to redundancy).

The emergent themes from the interviews included youths' direct experience, indirect experience, traditional knowledge, and commitment to First Nations *ways of knowing* and *being*. Subsequently, a first focus group was utilized to help identify and define the content dimensions of cultural connectedness. The focus group included 15 First Nations, Métis, and/or Inuit youth (seven male, eight female) who were in grades nine through 12 and were enrolled in a cultural leadership course to ensure representation of the target population. Based on the emergent themes from the key informant interviews, the Y-Chart curriculum-based strategy was chosen to solicit youths' understandings about what being First Nations means to them (see Appendix B). The author, with the assistance of the cultural leadership course instructor, introduced the activity, answered questions, and divided the class into groups of five. Each group had

approximately 15 minutes to record their ideas on flip chart paper labelled either "Culture Looks Like," "Culture Sounds Like," or "Culture Feels Like." For example, one response to the "Culture Looks Like" question was *pow-wow/regalia*. All three groups then rotated the flip chart paper and were provided another 15-minute period to elaborate on the ideas from the previous group. The protocol was repeated until every group had a chance to address all three questions. Subsequently, all responses were presented to the entire class and a discussion took place whereby the youth clarified or elaborated on their responses. At the end of the activity, the class as a whole was debriefed and thanked by the author. The Y-Chart approach appeared to be very effective in tapping youths' levels of direct and indirect cultural experiences, knowledge of, and commitment to, First Nations *ways of knowing* and *being*.

Key informant interviews and the youth focus group data were synthesized and the underlying domains were organized in a content matrix according to main themes (i.e., identity, traditions, and spirituality) and by modes of acquisition (i.e., direct experience, and indirect experience, traditional knowledge, and commitment). The author subsequently generated 56 items according to these themes and modes of acquisition (see Appendix C). For example, one item that was generated from the youth focus group which identified pow-wow and regalia as a part of what culture means to First Nations youth was, "How often have you attended a pow-wow, ceremonial dance, or round dance?" which fell within the direct experience/traditional practices domain of cultural connectedness. This process was repeated until each domain was adequately represented by the items.

The matrix and the 56 items were provided to members of a second focus group,

and the items were evaluated in terms of their face validity and the extent to which they were relevant, clear, unambiguous, and written in vocabulary and at a reading level that would be understood by potential respondents. The second focus group was comprised of 18 adults (seven male, 11 female) forming Thames Valley District School Board Aboriginal Advisory Committee. The members consisted of the Thames Valley School Board staff, school psychologists, First Nations community Chief and Band Council members and educational service providers, and post-secondary professors. Wording revisions were made to some items according to the feedback obtained from the second focus group. For example, the wording for the item that originally read, "I have participated in a cultural ceremony like a sweatlodge before" was revised to, "I have participated in a cultural ceremony (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast, or Giveaway)" to better reflect the vast heterogeneity of the First Nations groups of interest. The matrix and the revised set of 56 items were then provided to expert judges in the next stage of scale development to obtain content validity ratings (see Appendix D).

Judgment-quantification. The second stage of Lynn's (1986) two-stage process, the judgement-quantification stage, involves two steps that entail the assertion by a specific number of expert judges that individual items as well as the entire measure is content valid. Content validity of the 56 items was evaluated using a content validity index (CVI; Grant & Davis, 1997). Expert judges were selected based on their extensive knowledge in cultural connectedness for First Nations youth. Ten expert judges (six male, four female) served as panel members with positions ranging from professor/scholar to traditional Elder. All expert judges, with one exception, were First Nations peoples.

The CVI for each item was calculated by the proportion of experts who rated it as content valid (i.e., a rating of 3 or 4), and the CVI for the entire scale was calculated by the proportion of total items judged to be content valid (Lynn, 1986). While some experts were comfortable assigning numerical ratings for the cultural connectedness items, other experts preferred to give their feedback qualitatively (through conversation either by phone or in-person). The author worked to find ways for all members of the expert panel to provide meaningful input into the project through culturally appropriate modalities. In some cases, the author was also required to adhere to cultural protocols for accessing experts' expertise. For each of the 56 cultural connectedness items rated, the number of expert ratings ranged from five to seven. In addition, expert judges were given the opportunity to provide qualitative feedback regarding the relevance, representativeness, and clarity of the dimensions and associated items, as well as to add or revise the wording of items (Haynes, Richard, & Kubany, 1995).

Item selection. The item selection stage was based on inspection of rational expert judgments (i.e., CVIs) and the participant responses to the items (i.e., item endorsement frequencies). Prior to being tested, fifteen items of the 56 items for which CVIs were available were discarded due to low CVIs and eight items were added as a result of expert judges' qualitative feedback. Items that received low CVIs directly as a result of wording problems alone, as indicated by expert judges, were retained and re-worded accordingly. The CVI for the total scale once low CVI items were removed increased from a moderate level of 0.66 to a high level of 0.91. Subsequently, 49 items remained to be examined using statistical analyses. Participant item endorsement frequencies for the 49 items were checked to ensure that there was adequate item

variance across participants. Three items were deleted based on participant item endorsement frequencies that fell above 90 percent or below 10 percent, and another item was deleted due to an inappropriate response scale, leaving 45 items to be used in further statistical analyses (see Appendix E for the sequential selection or removal of items based on CVIs, item endorsement frequencies, and item variance). Prior to the statistical analyses phase of the scale development, the 45 items were reviewed and approved[6] for use in Saskatchewan by the Northwest Nations Education Council during a second site visit to the surrounding First Nations reserves. During that time, further informal dialogue took place between the author and the traditional Elder regarding the hypothesized usefulness of the items.

Results

Exploratory Factor Analysis of the Items

The first step of the analyses involved examining the 45 items in an exploratory factor analysis (EFA) in Mplus (Version 5; Muthen & Muthen, 2007). Full information maximum likelihood (FIML) was used to estimate the EFA. Item response scales were specified as discrete ordinal using the Mplus categorical/ordinal options and, as a result, a weighted least squares estimation with mean and variance (WLSMV) estimator was used. A geomin oblique rotation method was used, permitting correlations among latent factors. Although it was hypothesized that the three components of cultural connectedness identified in the previous literature (i.e., identity, traditions, and spirituality) would be reflected in the factor structure, a lack of empirically-driven models in the field for First Nations youth led the author to begin with an exploratory approach.

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[6] Only minor wording changes were requested from the community partners, such as the use of the term *Aboriginal* for use with First Nations youth in Saskatchewan, rather than *First Nations, Métis, Inuit [FNMI]* which was the preferred term in Southwestern Ontario.

Based on inspection of the scree plot and eigenvalues greater than one, the three-, four-, five- and six-factor solutions were most interpretable. Model fit was evaluated based on chi-square (noting that chi-square is heavily influenced by sample size), root mean square error of approximation (RMSEA), Comparative Fit Index (CFI), and Tucker Lewis Index (TLI) and standardized root mean square residual (SRMR), as per Kline (2011). Table 2 shows the change in χ^2 for nested models, CFI, TFI, RMSEA, and SRMR for three-component through six-component solutions. Consideration of these fit indices and the robustness of the factors in terms of pattern of structural and pattern coefficients (i.e., loadings) at or above .35 and conceptually meaningful interpretations of the factors led the author to select a three-factor solution. A liberal .35 cut-off for factor loadings was chosen to ensure that enough items were retained early in the analyses. Although factor solutions with more than three factors had slightly better fit indices, the three-factor solution was more parsimonious, the fit indices were adequate, and the author could not derive meaningful components from the additional factors. The three components together accounted for 45.48 percent of the variance. The criteria for retaining items were (a) items with loadings of .35 or higher were selected (i.e., six items removed) and (b) items meeting the .35 criteria on more than one factor were eliminated due to substantial cross-loadings (three additional items removed), resulting in 36 items. The geomin-rotated loadings (i.e., pattern coefficients) for these 36 items are presented in Table 3. The resulting factors were labelled identity (Factor 1: positive sense of exploration and commitment to one's culture, 14 items), traditions (Factor 2: engagement in and utility of traditional practices, 15 items), and spirituality (Factor 3: connection to the spirit world through an adoption of a First Nations ontology, seven items).

Table 2

Goodness-of-fit Indices for Factor Solutions Three through Six

Goodness-of-Fit Index	3	4	5	6
Chi-Square (χ^2) Value	344.484	307.986	268.075	243.927
Chi-Square (χ^2) *P*-value	.000	.000	.000	.000
Comparative Fix Index (CFI)	.908	.925	.945	.955
Tucker-Lewis Index (TLI)	.964	.971	.978	.982
Root-Mean Square Error of Approximation (RMSEA) Estimate	.062	.056	.048	.044
Standardized Root Mean Square Residual (SRMR)	.072	.067	.057	.054

Table 3

Cultural Connectedness Scale (CCS) Items and Rotated Loadings for 36-items

Item	Factor			M	SD
	1	2	3		
25. I plan on trying to find out more about my [Aboriginal/FNMI] culture, such as its history, traditions, and customs	**.599**	.037	.161	4.10	1.12
29. I have spent time trying to find out more about being [Aboriginal/FNMI] such as its history, traditions and customs	**.700**	.050	.009	3.57	.98
30. I have a strong sense of belonging to my [Aboriginal/FNMI] community or Nation	**.605**	.115	.172	3.91	1.01
32. I have done things that will help me understand my [Aboriginal/FNMI] background better	**.599**	.242	.043	3.76	.91
33. I have talked to other people in order to learn more about being [Aboriginal/FNMI]	**.630**	.074	.073	3.70	.98
34. When I learn something about my [Aboriginal/FNMI] culture, I will ask someone more about it later	**.580**	.023	.055	3.76	.98
35. I feel a strong attachment towards my [Aboriginal/FNMI] community or Nation	**.576**	.031	.221	3.77	1.01
41. If a traditional person, Elder, or Clan Mother spoke to me about being [Aboriginal/FNMI], I would listen to them carefully	**.596**	.143	.230	4.29	.94
42. I would take a [Aboriginal/FNMI] studies course at school if I had the chance, even if my friends were not in the class	**.753**	.138	.060	4.00	1.10
43. I feel a strong connection to my ancestors	**.440**	.138	.142	4.05	1.07
44. I feel a connection to all things in life	**.390**	.127	.325	3.20	1.02
45. Being [Aboriginal/FNMI] means I sometimes have a different way of looking at the world	**.527**	.155	.244	3.66	1.07
50. It is important to me that I know my [Aboriginal/FNMI] language	**.647**	.021	.130	4.19	.97
61. How often do you hear people from your family or someone you are close with talk about being [Aboriginal/FNMI]	**.355**	.188	.017	3.15	1.38
4. I can understand some of my [Aboriginal/FNMI] language	.333	**.580**	.214	3.96	1.27
5. I can speak some of my [Aboriginal/FNMI] language	.287	**.414**	.152	3.89	1.33
12. I use tobacco for guidance	.004	**.462**	.318	2.38	1.71
13. I have participated in a cultural ceremony (Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway)	.227	**.662**	.182	3.51	1.58
14. I have helped prepare for a cultural ceremony (Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway)	.129	**.601**	.151	2.54	1.74
15. I have offered food or feasted someone/something for a cultural reason	.060	**.491**	.129	3.72	1.46
21. Someone in my family or someone I am close with attends cultural ceremonies (Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway)	.036	**.701**	.188	4.10	1.17
24. I plan on attending a traditional ceremony in the future (Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway)	.073	**.444**	.140	3.73	1.45
26. I have honoured my grandmothers and/or grandfathers in a Memorial Feast or "Feast of the Dead"	.053	**.521**	.040	3.74	1.42
28. I have a traditional person, Elder, or Clan Mother who I talk to	.023	**.530**	.216	3.18	1.70
56. How often do you make tobacco offerings for cultural purposes	.002	**.589**	.107	2.02	1.00
58. How often do you use sage, sweetgrass, or cedar in any way or form	.191	**.674**	.002	3.02	1.23
59. How often does someone in your family or someone you are close with use sage, sweetgrass, or cedar in any way or form	.143	**.708**	.040	3.34	1.30
62. How often have you listened to a traditional person, Elder, Clan Mother, or someone you are close with tell traditional stories	.117	**.444**	.040	2.89	1.08
64. How often do you hear people from your family or someone you are close with speak in their [Aboriginal/FNMI] language	.009	**.521**	.040	3.74	1.42
3. I know my cultural/spirit name	.055	.085	**.383**	2.68	1.75
9. In certain situations, I believe things like animals and rocks have a spirit like [Aboriginal/FNMI] people	.209	.172	**.395**	3.79	1.41
48. The eagle feather has a lot of meaning to me	.238	.128	**.487**	3.78	1.17
51. When I am physically ill, I look to my [Aboriginal/FNMI] culture for help	.033	.141	**.732**	3.07	1.06
52. When I am overwhelmed with my emotions, I look to my [Aboriginal/FNMI] culture for help	.010	.046	**.857**	3.04	1.08
53. When I need to make a decision about something, I look to my [Aboriginal/FNMI] culture for help	.067	.017	**.789**	2.96	1.07
54. When I am feeling spiritually disconnected, I look to my [Aboriginal/FNMI] culture for help	.237	.010	**.696**	3.23	1.17
Eigenvalue	14.672	3.678	2.118	--	--

A More Parsimonious Measurement Model of the Final Set of Items

The author developed and tested a structural equation measurement model based on the final EFA solution using Mplus (Version 5; Muthen & Muthen, 2007). The intent of this analysis is not to confirm (as in a confirmatory factor analysis) an a priori model, but to use a CFA approach to determine whether the fit of the final EFA model from the previous section would still have an adequate fit once the author specified it as a more parsimonious measurement model with all cross-loading values (that would be part of an EFA model) set at zero. Using a sequential item analysis strategy exemplified in the development of the Personality Research Form (Jackson, 1989), a second purpose was to make final refinements by testing whether additional items could be removed without reduction in fit. Replication of this model requires further testing in a new sample. In an attempt to improve these fit indices while maintaining adequate scale length, the loadings for each item were examined. The items with the lowest three loadings (i.e., pattern coefficients) from the cultural identity and traditions subscales were eliminated (i.e., six items in total), one at a time with re-estimation of the model at each stage. No items on the spirituality subscale were removed because the item properties were adequate. Modification indices were also examined during the final selection of items. One item on the traditions subscale had a high modification index associated with a cross loading and was therefore removed. Changes to model fit based on the sequential removal of items are shown in Table 4 and standardized loadings for the remaining 29 items (indicate final number of items in each subscale) are presented in Table 5. Fit indices for the final CCS indicated acceptable model fit, $\chi^2(103) = 247.526$, $p < .001$; CFI = .926; TLI = .973; RMSEA = .066; weighted root-mean-square residual (WRMR) = 1.069 (Hu & Bentler,

Table 4

Goodness-of-fit Indices Changes for the Three-factor Solution based on the Sequential Removal of Items

Goodness-of-fit Index	36 Items[a]	30 Items[b]	29 Items[c]
Chi-Square (χ^2) Value	313.853	261.676	247.526
Chi-Square (χ^2) *P*-Value	.000	.000	.000
Comparative Fit Index (CFI)	.902	.919	.926
Tucker-Lewis Index (TLI)	.961	.971	.973
Root-Mean-Square Error of Approximation (RMSEA)	.071	.068	.066
Weighted Root-Mean-Square Residual (WRMR)	1.161	1.089	1.069

[a] Fourteen identity, 15 traditions, and seven spirituality items
[b] Eleven identity, 12 traditions, and seven spirituality items
[c] Eleven identity, 11 traditions, and seven spirituality items

Table 5

Items and Standardized Factor Loadings of the Final 29-item Cultural Connectedness Scale (CCS)

Item	Standardized Loadings
Identity (11 items)	
25. I plan on trying to find out more about my [Aboriginal/FNMI] culture, such as its history, traditions, and customs[a]	.686
29. I have spent time trying to find out more about being [Aboriginal/FNMI], such as its history, traditions and customs[b]	.674
30. I have a strong sense of belonging to my [Aboriginal/FNMI] community or Nation[b]	.791
32. I have done things that will help me understand my [Aboriginal/FNMI] background better[b]	.753
33. I have talked to other people in order to learn more about being [Aboriginal/FNMI][b]	.713
34. When I learn something about my [Aboriginal/FNMI culture], I will ask someone more about it later[b]	.611
35. I feel a strong attachment towards my [Aboriginal/FNMI] community or Nation[b]	.739
41. If a traditional person, Elder, or Clan Mother spoke to me about being [Aboriginal/FNMI], I would listen to them carefully[b]	.641
43. I feel a strong connection to my ancestors[b]	.614
45. Being [Aboriginal/FNMI] means I sometimes have a different way of looking at the world[b]	.574
50. It is important to me that I know my [Aboriginal/FNMI] language[b]	.667
Traditions (11 items)	
4. I can understand some of my [Aboriginal/FNMI] language[a]	.561
12. I use tobacco for guidance[a]	.704
13. I have participated in a cultural ceremony (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway)[a]	.574
14. I have helped prepare for a cultural ceremony (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway)[a]	.570
15. I have offered food or feasted someone/something for a cultural reason[a]	.620
21.Someone in my family or someone I am close with attends cultural ceremonies (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway)[a]	.793
24. I plan on attending a cultural ceremony in the future (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway)[a]	.681
28. I have a traditional person, Elder or Clan Mother who I talk to[a]	.627
56. How often do you make tobacco offerings for cultural purposes[c]	.606
58. How often do you use sage, sweetgrass, or cedar in any way or form[c]	.793
59. How often does someone in your family or someone you are close with use sage, sweetgrass, or cedar in any way or form[c]	.744
Spirituality (7 items)	
3. I know my cultural/spirit name[a]	.414
9. In certain situations, I believe things like animals and rocks have a spirit like [Aboriginal/FNMI] people[a]	.663
48. The eagle feather has a lot of meaning to me[b]	.744
51. When I am physically ill, I look to my [Aboriginal/FNMI] culture for help[b]	.811
52. When I am overwhelmed with my emotions, I look to my [Aboriginal/FNMI] culture for help[b]	.832
53. When I need to make a decision about something, I look to my [Aboriginal/FNMI] culture for help[b]	.820
54. When I am feeling spiritually disconnected, I look to my [Aboriginal/FNMI] culture for help[b]	.865

[a] No or Yes response format
[b] Strongly Disagree, Disagree, Do Not agree or Disagree, Agree , Strongly Disagree response format
[c] Never, Once/Twice is the Last Year, Every Month, Every Week, Every Day response format

1999; Yu & Muthén, 2001). These results provide initial support for the measurement model of cultural connectedness. The final 29-item cultural connectedness scale is presented in the Appendix F.

   Reliability and group differences. All three subscales demonstrated adequate scale score reliabilities as demonstrated by Cronbach's alpha values of .872 for identity, .791 for traditions, and .808 for spirituality. Overall descriptive statistics are shown in Table 6. The Pearson's *r* correlations among the three subscales ranged from .49 to .69 (see top split of Table 7) indicating that these measures represent an underlying common construct of cultural connectedness as well as unique aspects associated with identity, traditions, and spirituality. Several independent samples *t*-tests were conducted to examine group differences as shown in Table 8. Results were interpreted at a more conservative *p* level of < .01. Females reported significantly higher scores than did males on the identity subscale (females $M = 44.1$, $SD = 6.12$; males $M = 41.6$, $SD = 8.10$; $t(261) = -2.97$, $p < .01$), while no significant differences were found on the traditions and spirituality subscales. The gender difference for the identity subscale may be reflective of a higher proportion of males lacking a coherent identity or possessing a negative sense of cultural identity, such as gang affiliation based on cultural kinship. Respondents living on-reserve and from Saskatchewan reported significantly higher scores on the traditions subscale than those living off-reserve (on-reserve $M = 36.9$, $SD = 8.03$; off-reserve $M = 29.4$, $SD = 10.10$; $t(63) = 4.95$, $p < .001$) and from Southwestern Ontario (Saskatchewan $M = 36.9$, $SD = 8.03$; Southwestern Ontario $M = 29.4$, $SD = 10.10$; $t(63) = 4.95$, $p < .001$), respectively. Because the majority of respondents from Saskatchewan were living on-reserve and a number of respondents from Southwestern Ontario were living off-

Table 6

Cronbach's Alphas and Confidence Intervals, Means, Standard Deviations, Skew, and Kurtosis of Responses for the Cultural Connectedness Scale (CCS)

Subscale	*n*	*α*	CI (.95)	*M*	*SD*	Skew	Kurtosis
Identity	309	.872	.848-.893	42.87	7.19	-1.103	1.767
Traditions	306	.791	.752-.826	35.54	8.90	.656	.035
Spirituality	308	.808	.772-.840	22.52	6.01	-.379	-.229

Table 7

Pearson's r Correlations between the Cultural Connectedness Scale (CCS) and the Mental Health Measures

	Identity	Traditions	Spirituality
Identity	--		
Traditions	.485***	--	
Spirituality	.692***	.535***	--
Life Satisfaction	.176**	.006	.099*
Sense of Self-in-the-Present	.166**	.131**	.136**
Sense of Self-in-the-Future	.276***	.097*	.192***
Spiritual Activities	.273***	.506***	.358***

*p<.05
**p< .01
***p< .001

Table 8

Comparisons between Males and Females, Southwestern Ontario and Saskatchewan, and On- and Off-reserve Groups on Cultural Connectedness Scale (CCS) Means

	Males		Females				
	N	*M (SD)*	*N*	*M (SD)*	*t*	*p*	Cohen's *d*
Identity	142	41.59 (8.10)	157	44.07 (6.12)	-2.966	.003	-.346
Traditions	140	36.38 (9.03)	158	34.69 (8.88)	1.631	.104	.189
Spirituality	139	22.29 (6.52)	159	22.63 (5.63)	-.471	.638	-.056
	Southwestern Ontario		Saskatchewan				
	N	*M (SD)*	*N*	*M (SD)*	*t*	*p*	Cohen's *d*
Identity	117	43.78 (7.29)	192	42.32 (7.08)	1.728	.083	.203
Traditions	113	32.57 (9.17)	193	37.28 (8.27)	-4.489	.000	-.539
Spirituality	116	22.25 (6.18)	192	22.68 (5.92)	-.605	.541	-.071
	On-reserve		Off-reserve				
	N	*M (SD)*	*N*	*M (SD)*	*t*	*p*	Cohen's *d*
Identity	240	43.01 (7.25)	52	42.45 (7.12)	.517	.610	.078
Traditions	239	36.91 (8.03)	50	29.38 (10.10)	4.954	.000	.825
Spirituality	239	23.05 (5.72)	51	20.44 (6.44)	2.673	.004	.429

reserve in an urban community, the author expected to find similar trends between these two sets of groups. Interestingly, respondents living on-reserve also showed significantly higher scores on the spirituality subscale than those living off- reserve (on-reserve $M =$ 23.1, $SD = 5.72$; off-reserve $M = 20.4$, $SD = 6.44$; $t(288) = 2.89$, $p < .01$). These findings suggest that living in an on-reserve community is related to one's participation in traditional activities and the degree to which one is embedded in a spiritually-informed First Nations worldview, which may be related to limited access to cultural and spiritual opportunities off-reserve. No other significant group differences were found.

     Criterion validity. Table 7 (bottom split) shows Pearson's r correlation coefficients between the CCS subscales with life satisfaction, sense of self-in-the-present, sense of self-in-the-future, and spiritual activities. It was expected that the identity subscale would positively correlate with the life satisfaction and sense of self measures, as a cohesive self-concept has been found to be related to positive affect and happiness among youth (Burrow & Hill, 2011) and important (if not critical) for the ability to view oneself as a cultural group member (Phinney & Ong, 2007). Similarly, the author believed that the traditions subscale would positively correlate with spiritual activities, given the strong overlap between these components. The author also hypothesized that the spirituality subscale would be positively related to sense of self-in-the-future specifically because a First Nations spiritual worldview is presumed to be highly related to investigations about one's meaning or purpose in life (Rheault, 1999).

     All correlations between the CCS subscales and their theoretically linked measures were significant and in the expected direction, providing evidence for criterion validity. Significant correlations between the CCS subscales and the sense of self

measures ranged from ($|r| = .10$ to $.28$) all in the expected direction. These findings

suggest that those youth who identify closely with their First Nations culture, who

participate in traditional activities, or who hold a spiritual worldview also tend to feel a

connection to the present while being oriented towards the future. A significantly stronger

association between sense of self-in-the-future and identity ($r = .28$) than traditions ($r =$

$.10, z = 2.29, p < .05$) was found, suggesting that a cohesive self is particularly important

for future orientation. All three CCS subscales were highly associated with spiritual

activities ($|r| = .27$ to $.51$), with a significantly stronger correlation with traditions ($r =$

$.51$) than spirituality ($r = .36, z = 2.24, p < .05$) and identity ($r = .27, z = 3.39, p < .001$).

This finding reflects the behavioural nature of the spiritual activities item (i.e., "I attend

spiritual/religious/faith activities"), as the traditions subscale is more concerned with

traditional activities (usually conducted within the spiritual community) while the

spirituality subscale is comprised of items that are reflective of a spiritual view of the

world (i.e., "In certain situations, I believe things like animals and rocks have a spirit like

[Aboriginal/FNMI] people"). Identity and spirituality were modestly correlated with life

satisfaction ($r = .18$ and $r = .099$, respectively) with a significantly stronger association

between life satisfaction and identity than traditions ($z = .006, p < .05$), suggesting that

youth who see themselves as First Nations and adopt a First Nations worldview tend to

report being happier with their lives than those who merely attend cultural events.

Summary

A sequential approach with a strong emphasis on content validity was used to

develop and refine the CCS for use with First Nations youth in Canada by combining

rational expert judgments and empirical data. This process included focus groups and

interviews with members of the target population to define and expand the item pool, independent evaluations of the items by content experts, and selection of the best items based on factor analyses. This iterative process of item selection resulted in an adequate fit for the final model consisting of three CCS subscales (i.e., identity, traditions, and spirituality) based on 29 items. Although part of the scale construction process also focused on promoting discriminant validity of the subscales, correlations among the CCS subscales remained quite large, suggesting that the constructs are inter-related. Some degree of overlap was expected given that knowledge and practice of spiritual ways and values reflect both cultural practice and cultural identity (Whitbeck, Hoyt, Stubben, & LaFromboise, 2001). Although the three subscales share a common source of variance, they have unique components, which reflect the theoretical dimensions that were hypothesized. The analyses indicated good scale score reliability of the subscales, especially given the small number of items per subscale (ranging from seven to 11). Criterion validity was demonstrated with significant correlations in the expected direction between the CCS subscales and the mental health measures, which is consistent with existing theories and findings from other studies (e.g., Chandler & Lalonde, 1998; Phinney & Ong, 2007).

While the current study supports the general consensus among researchers regarding the importance of cultural connectedness for First Nations peoples' mental health (Zimmerman et al., 1996; Whitbeck, Hoyt, Stubben, & LaFromboise, 2001), the current results advance the findings from previous studies with respect to the structure of the cultural connectedness construct for First Nations youth, specifically. Although the results are mostly consistent with previous models that treat cultural connectedness as a

latent construct comprised of three overlapping components (Torres Stone et al., 2006), the current study extends the boundaries of this knowledge by providing evidence for a three-factor model, where cultural connectedness is conceptualized as being comprised by the three separate but inter-related components that contribute uniquely to the construct.

Further work using the CCS should test emerging theories which suggest that the developmental process of cultural connectedness for First Nations youth may follow an identity-traditions-spirituality trajectory (see Figure 7, Farrell, 2008); some researchers posit that cultural identity formation for First Nations people first begins at birth (or earlier) and requires resisting dominant narratives or rejecting negative stereotypes regarding First Nations *ways of being* (Anderson, 2000). At the core of cultural identity is "a sense of self as a group member that develops over time through an active process of investigation, learning, and commitment" (Phinney & Ong, 2007, pg. 279) through the reclaiming of First Nations traditions and the translation of tradition into the contemporary context (Anderson, 2000). McCormick (1997) expands on this notion by explaining that once First Nations youth are exposed to spiritual experiences through ceremonies in their community, they begin to explore their relationships with, and connect themselves to, the land and "other-than-human" beings such as the Creator and other spirit helpers (i.e., physical and metaphysical relations; see Hallowell, 1960; Farrell, 2008; Rheault, 1999 for a detailed explanation). Delineating the identity-traditions-spirituality pathway will be crucial for prevention work with First Nations youth in order to target aspects of cultural connectedness that are most effective in changing mental health trajectories depending on a youth's developmental stage.

Figure 7. Relationships of the self (Farrell, 2008).

This study provides an orienting framework that guides future measurement of cultural connectedness among First Nations youth that will serve to untangle the collection of mixed results that researchers have encountered when components are removed or changed (Fleming & Ledogar, 2008). Research with the three distinct cultural connectedness components should yield clearer results. However, the CCS cannot be deemed factorially invariant until the factor structure is replicated, ideally with other types of criterion and predictor variables to enhance the understanding of the cultural connectedness construct. Given the diversity of the sample, item statistics would likely be replicated in samples with similar characteristics; however, it may be necessary to modify the scale content for use with different First Nations youth populations if it is determined that significant within- and/or between-group heterogeneity exist. Future researchers should use the CCS as a basis or start point but adapt the items to their population or community accordingly and are strongly encouraged to engage in collaborative efforts with the First Nations communities of interest to identify culturally relevant content. In addition, although it is accepted that cultural connectedness is important to the mental health and wellness of First Nations youth, its contribution to the resilience process likely changes throughout the lifespan, particularly during adolescence and early adulthood, through a process of exploration and commitment (Phinney & Ong, 2007). Prior studies in this area have not tested for age changes in cultural connectedness levels. Trajectory and growth mixture modeling should also be performed to test identity-tradition-spirituality pathway theories. Such relationships can only be elaborated satisfactorily with longitudinal data.

CHAPTER FOUR: STUDY 2[7]

Health policy researchers have reached a tentative consensus about an extensive list of social determinants that influence the health of First Nations peoples (Reading & Wien, 2009). These social determinants of health can be categorized as distal (e.g. historic, political, social, and economic contexts), intermediate (e.g. community infrastructure, resources, systems, and capacities), and proximal (e.g. health behaviours, physical and social environment). What remains less well articulated are the mechanisms and contexts through which social determinants influence the lives of First Nations peoples. While it is clear that physical, mental, emotional, and spiritual dimensions of health among First Nations youth are influenced by a broad range of social determinants, there has been little progress in mapping out the complex interconnections between culture and mental health for First Nations youth and even less success demonstrating those linkages empirically. In an attempt to address this gap, the author extended the work of the cultural connectedness scale development from Study 1 by elucidating the interrelationships between culture and mental health among First Nations youth. This was done by (a) confirming the invariance of the major structural elements of the construct using a more parsimonious version of the CCS, and (b) demonstrating its usefulness as predictor of positive mental health above and beyond other social determinants of health.

The main purpose of the current study was to provide empirical support for cultural connectedness as a pathway for positive mental health among First Nations youth. It was hypothesized that cultural connectedness would act as an important social determinant of health for First Nations youth that can be linked to positive mental health

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[7] A version of this chapter has been submitted for publication (Snowshoe, Crooks, Tremblay, & Hinson, 2015).

outcomes. It was also expected that the three components of cultural connectedness would relate differently to the mental health indicators and would, in some cases, predict positive mental health despite the impact of social barriers. The author hopes that the current results will support efforts to reduce the health inequalities between First Nations and non-First Nations youth by providing empirical evidence for the inclusion of culture in youth programming.

Method

Participants

Two hundred and ninety First Nations, Métis, and Inuit youth (140 male, 140 female; 10 unspecified) enrolled in grades seven through 12 from Saskatchewan ($n = 153$) and Southwestern Ontario ($n = 137$) participated in the current study. A small number of respondents self-identified as being other than status or non-status First Nations (i.e., 13 Métis, two Inuit) and were retained in the analyses due to possible affiliations with First Nations communities. Approximately 68 percent of respondents reported living on-reserve. Respondents ranged in age from 11 to 24 ($M = 14.4$; $SD = 2.4$), with approximately 90 percent being age 18 or under. Low socio-economic status was reported by over a quarter of the youth respondents (26.1% low, 46.4% moderate, and 27.5% high) as measured by the Health Behaviour in School-Aged Children (HBSC) Family Affluence Scale (Currie et al., 2008), which is approximately double that reported by youth ages 11 to 15 from the general Canadian population using the same measure (Adamson, Bradshaw, Hoelscher & Richardson, 2007).

Approval for the research protocol was obtained through the CAMH – Centre for Prevention Science Research Ethics Board, the Thames Valley District School Board in

Southwestern Ontario, and the Northwest Nations Education Council in Saskatchewan. The research protocols were analogous in Study 1 and Study 2. Parental permission was required for youth to participate in Study 2. Youth participants were given an introduction that described the purpose of the study, their rights as research participants, and how to complete the measures. The measures were administered to youth participants at a total of 11 schools across Southwestern Ontario and Saskatchewan. The data collection period for Study 2 commenced 12 months following the data collection period for Study 1.

Measures

      Cultural Connectedness. A subset of the original 29-item CCS was chosen to represent each of the three cultural connectedness components (i.e., identity, traditions, and spirituality), which was heavily informed by community-based knowledge obtained from traditional Elder collaborations and the youth focus group in Study 1[8]. Although inter-item correlation coefficients and factor loadings would be typically used in Western practice as a basis of brief scale item selection, the author sought to achieve an ethical point of convergence between Western and Indigenous methods from which a common solution can be found (i.e., epistemological triangulation). Furthermore, the selection of items based on community-based knowledge ensured that First Nations *ways of knowing* were adequately represented and equally valued in the research space, rather than marginalized by the weight of statistical data (Absolon, 2011; Walter & Andersen, 2013). For example, the importance of a First Nations youth receiving a cultural or spirit name

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[8] Ideally, additional community stakeholder input would be solicited at this stage to inform the brief scale item selection. However, such feedback would require a number of in-person meetings with individuals across Canada to capture the vast the heterogeneity of First Nations groups for which the original scale was designed. This was not possible due to time and budgetary limitations. As such, the community-based knowledge obtained by the author in Study 1 was used to inform the item selection decisions in Study 2.

was emphasized a number of times during dialogue between the author and the traditional

Elder during Study 1. As such, the item that read, "I know my cultural/spirit name" was

included in the brief version of the spirituality subscale. This approach of referring back

to oral narratives with community members to make decisions regarding item retention or

removal for the brief scale version was used for all CCS items. Ten items were ultimately

selected to comprise the CCS-S, four of which belonged on the identity subscale, three on

the traditions subscale, and three of the spirituality subscale (see Table 9). Of the CCS-S

items, five had a dichotomous response scale of *no* or *yes*, four had a 5-point Likert

response scale ranging from *strongly disagree* to *strongly agree*, and one had a 5-point

Likert response scale ranging from *never* to *every day*. Since scale score reliabilties are

often artificially deflated by a narrow range of items comprising a scale, an overall

CCS-S score was calculated while recognizing that distinct components comprise the

cultural connectedness construct. The CCS-S demonstrated good scale score reliability

(Cronbach's α = .70, 95% CI [.641, .752]). The final 10-item CCS-S is presented in the

Appendix G.

Demographics. Demographic questions used in the current study included

gender; age; school district; school name; First Nations (status or non-status), Métis

and/or Inuit ancestry; residence (on-reserve or off-reserve); family affluence; and name of

affiliated First Nations, Métis, or Inuit community or Nation. The author treated gender

and age as social determinants of health measures for the purpose of the analyses.

Stressful life events. Stressful life events were included as a social determinant of

health in order to explore resilience in the face of adversity. The stressful life events

measure included a list of hardships common in youths' lives that were encountered over

Table 9

Items and Standardized Factor Loadings of the 10-item Cultural Connectedness Scale – Short (CCS-S)

Item	Standardized Loadings
Identity (4 items)	
4. I plan on trying to find out more about my [Aboriginal/FNMI] culture, such as its history, traditions, and customs[a]	.735
6. I have spent time trying to find out more about being [Aboriginal/FNMI], such as its history, traditions and customs[b]	.744
7. I have a strong sense of belonging to my [Aboriginal/FNMI] community or Nation[b]	.762
8. I feel a strong attachment towards my [Aboriginal/FNMI] community or Nation[b]	.741
Traditions (3 items)	
3. I use tobacco for guidance[a]	.666
5. I have a traditional person, Elder or Clan Mother who I talk to[a]	.603
10. How often does someone in your family or someone you are close with use sage, sweetgrass, or cedar in any way or form[c]	.535
Spirituality (3 items)	
1. I know my cultural/spirit name[a]	.418
2. In certain situations, I believe things like animals and rocks have a spirit like [Aboriginal/FNMI] people[a]	.695
9. The eagle feather has a lot of meaning to me[b]	.681

[a] No or Yes response format
[b] Strongly Disagree, Disagree, Do Not agree or Disagree, Agree , Strongly Disagree response format
[c] Never, Once/Twice is the Last Year, Every Month, Every Week, Every Day response format

the past 12 months, such as loss of a close friend or family member, police interaction, and social services interaction. A total of eight items comprised the stressful life events measure and participants responded on a dichotomous response scale of *no* or *yes.* The cumulative stress-related experiences of youth were of interest in the current study (i.e., total stressful life events). Of the youth respondents, approximately 14 percent reported experiencing no stressful events during the past year, 33 percent reported one or two stressful event(s), 43 percent reported three to five, and 10 percent reported six or more stressful events.

Self-efficacy. The BC Adolescent Mental Health Survey – Fourth Edition (AMHS-IV) is a self-report survey designed to provide a comprehensive picture of the physical and emotional health of youth, including risk and protective factors (Smith et al., 2009). The measure has been used with First Nations youth populations in a number of capacities. The AMHS-IV includes a nine-item self-efficacy subscale that assesses a youth's judgment about his or her ability to complete tasks and set goals. For example, an item on the self-efficacy subscale reads, "I often feel confident in dealing with the problems of life." All items on the self-efficacy subscale are rated on 5-point Likert scales (*strongly disagree* to *strongly agree*). The subscale demonstrated adequate scale score reliability in the current study (Cronbach's α = .58, 95% CI [.499, .651]).

Sense of self-in-the-present and -future. The Hemingway Measure of Adolescent Connectedness – Short Version (MAC 5-A – Short Version, Grades 6-12; Karcher, 2011) includes a six-item[9] sense of self-in-the-present subscale and a six-item[10]

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[9] The reversed item on the scale was removed in the Study 1 due to its negative impact on internal consistency with a First Nations youth sample. As such, the author emulated this approach by administering the more reliable, shortened version of the scale in the current study.
[10] Ibid.

sense of self-in-the-future subscale. The former subscale assesses positive connections to youths' lives including connection to family, school, friends, and self, suggesting that youth are benefiting emotionally from their close relationships and feel good about themselves. For example, one item on the sense of self-in-the-present subscale reads, "I really like who I am." Similarly, the sense of self-in-the-future subscale taps the positive qualities of youth that are perceived by others and the actions of the youth to secure a positive future. For example, one item on the sense of self-in-the-future subscale reads, "I think about my future often." Both sense of self subscales are rated on 5-point Likert scales (*not at all true* to *very true*). The sense of self-in-the-present subscale had acceptable scale score reliability in the current sample (Cronbach's α = .74, 95% CI [.633, .789]), as did the sense of self-in-the-future subscale (Cronbach's α = .73, 95% CI [.676, .778]).

School connectedness. The MAC 5-A – Short Version (Karcher, 2011) also includes a six-item[11] school connectedness subscale reflecting how invested youth are at school, how much they enjoy school, and how successful they feel at school (e.g., "I work hard at school"). The subscale focuses on the importance a youth places in school and the degree to which he/she is actively involved in being successful in school. Respondents rated the items on a 5-point Likert scale (*not at all true* to *very true*). The school connectedness subscale proved to have acceptable reliability in the current sample (Cronbach's α = .75, 95% CI [.702, .798]).

Life satisfaction. The Satisfaction with Life Scale for Children (SWLS-C; Gadermann, Schonert-Reichl, & Zumbo, 2010) is a five-item scale that assesses global life satisfaction. Response categories ranged from 1 (*disagree a lot*) to 5 (*agree a lot*). For

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[11] Ibid.

example, one item on the SWLS-C is, "I am happy with my life." The SLWS-C had good

scale score reliability in the current study (Cronbach's α = .77, 95% CI [.724, .810]).

Procedure

  The main objective of the current study was to explore the interrelationships

among the previously established three components of cultural connectedness from Study

1 (i.e., identify, traditions, and spirituality) and First Nations youth mental health. Youth

participants were given an introduction that described the purpose of the study, their

rights as research participants, and how to complete the survey. The research team

worked closely with a contact person at each school to recruit First Nations youth

participants and arrange data collection dates and times. The research team also made

significant efforts to give all eligible and willing youth the chance to participate in the

study, which required multiple visits to on- and off-reserve schools in urban and rural

areas.

  The relationships between the subscales on the CCS-S were examined using

correlational analysis to provide evidence for construct validity. Group differences were

also explored to look at differences based on gender, on- or off-reserve residence, and

family affluence. A confirmatory factor analysis (CFA) using the CCS-S items was then

conducted to test the three-factor stability of the cultural connectedness construct. Finally,

the relationships between the CCS-S subscales and the mental health measures (i.e., sense

of self-in-the-present and -future, life satisfaction, self-efficacy, and school

connectedness), in addition to the three social determinants of health measures, were

investigated using several hierarchical multiple linear (HML) regression analyses to

establish the predictive validity of the cultural connectedness construct.

Results

Confirmatory Factor Analysis of the Items

The Pearson's *r* correlations among three CCS-S subscales ranged from .30 to .43, *p*s < .01 (see top split of Table 10), indicating that these subscales represent an underlying common construct of cultural connectedness as well as unique aspects associated with identity, traditions, and spirituality. The stability of the cultural connectedness factor structure among the CCS-S items was examined using a confirmatory factor analysis (CFA). The three-factor solution from Study 1 was tested using Mplus (Version 5; Muthén & Muthén, 2007). The intent of this analysis was to confirm the a priori model using the shortened subscales of the CCS-S in the sample of First Nations youth (*n* = 290). Model fit was evaluated based on chi-square (noting that chi-square is heavily influenced by sample size), root mean square error of approximation (RMSEA), Comparative Fit Index (CFI), and Tucker Lewis Index (TLI) and weighted root-mean-square residual (WRMR) as per Kline (2011). Standardized loadings for the CCS-S items are presented in Table 9. Modification indices did not identify any items with a high cross loading and thus no items required removal. Fit indices for the CCS-S indicated good model fit, $\chi^2(21) = 746.939$, $p < .001$; CFI = .967; TLI = .970; RMSEA = .060; WRMR = .784 (Hu & Bentler, 1999; Yu & Muthén, 2001). These results not only provide justification for the use of the shortened version of the scale, but also further support the three-factor measurement model of cultural connectedness.

Cultural Connectedness as a Predictor of First Nations Youth Mental Health

Reliability and group differences. Independent samples *t*-tests were conducted to determine whether any group differences existed between gender (i.e., male versus

Table 10

Pearson's r Correlations between the Cultural Connectedness Scale – Short (CCS-S) and the Mental Health Measures

	Identity	Traditions	Spirituality
Identity	--		
Traditions	.298**	--	
Spirituality	.432**	.361**	--
Self-efficacy	.321**	.160**	.196**
Sense of Self-in-the-Present	.161**	.114	.093
Sense of Self-in-the-Future	.177**	.113	.185**
School Connectedness	.240**	.067	.136*
Life Satisfaction	.195**	-.022	.103

*p<.05
**p< .01
***p< .001

female), region (Southwestern Ontario versus Saskatchewan), and residence (on-reserve versus off-reserve) for each of the CCS-S subscales (see Table 11). Family affluence (i.e., low, moderate, high) was also examined through one-way analysis of variance (see Table 12). Results were interpreted at a more conservative p level of < .01 given the relatively small sample size for these analyses. Unlike Study 1, there were no differences found on the identity subscale for males and females (females $M = 12.63$, $SD = 2.31$; males $M = 12.23$, $SD = 2.40$; $t(276) = -1.45$, $p < ns$). However, respondents living on-reserve and from Saskatchewan reported significantly higher scores on the traditions subscale than respondents living off-reserve (on-reserve $M = 5.57$, $SD = 2.78$; off-reserve $M = 3.78$, $SD = 2.56$; $t(275) = -4.95$, $p < .001$) and from Southwestern Ontario (Saskatchewan $M = 5.59$, $SD = 2.83$; Southwestern Ontario $M = 4.38$, $SD = 2.72$; $t(286) = 3.71$, $p < .001$), respectively. These findings are consistent with the results from Study 1 that suggest that living on-reserve is related to a higher degree of participation in traditional activities among First Nations youth. The author hypothesizes that cultural activities or events may be easier to access if a youth is living in on-reserve, particularly if the First Nations community has a high degree of cultural continuity (Chander & Lalonde, 1998). While youth living on-reserve also reported higher scores on the spirituality subscale in Study 1, this finding was not replicated in Study 2 (on-reserve $M = 8.79$, $SD = 2.31$; off-reserve $M = 8.54$, $SD = 2.38$; $t(275) = -.814$, $p < ns$). No other significant group differences were found.

Cultural connectedness and its relation to mental health. Next, the relationships between the CCS-S subscales and the mental health measures were examined. Table 10 (see bottom split) shows the Pearson's r correlation coefficients

Table 11

Comparisons between Males and Females, Southwestern Ontario and Saskatchewan, and On- and Off-reserve Groups on Cultural Connectedness Scale – Short (CCS-S) Means

| | Males | | Females | | | | |
	N	*M (SD)*	*N*	*M (SD)*	*t*	*p*	Cohen's *d*
Identity	138	12.23 (2.40)	140	12.64 (2.31)	-1.445	.150	-.173
Traditions	138	5.20 (3.00)	140	4.90 (2.65)	.878	.381	.105
Spirituality	139	8.75 (2.34)	140	8.67 (2.31)	.237	.813	.097
	Southwestern Ontario		Saskatchewan				
	N	*M (SD)*	*N*	*M (SD)*	*t*	*p*	Cohen's *d*
Identity	136	12.73 (2.36)	150	12.08 (2.32)	-2.337	.020	-.277
Traditions	136	4.38 (2.72)	152	5.59 (2.83)	3.709	.000	.438
Spirituality	137	9.01 (2.19)	149	8.48 (2.42)	-1.956	.051	-.232
	On-reserve		Off-reserve				
	N	*M (SD)*	*N*	*M (SD)*	*t*	*p*	Cohen's *d*
Identity	197	12.39 (2.28)	80	12.58 (2.55)	.610	.542	.081
Traditions	197	5.57 (2.78)	80	3.78 (2.56)	-4.952	.000	-.657
Spirituality	198	8.79 (2.31)	79	8.54 (2.38)	-.814	.416	-.108

Table 12

One-way Analysis of Variance of Cultural Connectedness Scale – Short (CCS-S) Means by Family Affluence (Low, Medium, and High)

	Source	df	SS	MS	F	p
Identity	Between Groups	14.857	2	7.478	1.450	.237
	Within Groups	1067.912	207	5.159		
	Total	1082.868	209			
	Source	df	SS	MS	F	p
Traditions	Between Groups	10.792	2	5.396	.651	.523
	Within Groups	1715.639	207	8.288		
	Total	1726.431	209			
	Source	df	SS	MS	F	p
Spirituality	Between Groups	.604	2	.302	0.52	.949
	Within Groups	1193.991	207	5.768		
	Total	1194.595	209			

between the CCS-S with self-efficacy, sense of self-in-the-present and -future, school connectedness, and life satisfaction. All significant correlations between the CCS-S subscales and the mental health measures were in the expected direction. Significant correlations between all three of the CCS-S subscales and self-efficacy ranged from rs = .16 to .32, ps < .01. These findings suggest that those First Nations youth who identify closely with their First Nations culture, who participate in traditional activities, or who hold a spiritual worldview also tend to hold stronger beliefs in their ability to complete tasks and reach goals. A significant association between identity and sense of self-in-the-present was also found (r = .16, p < .01), suggesting that youth who view themselves as First Nations tend to have cohesive beliefs about who they are in the present tense. Furthermore, both identity and spirituality were positively correlated with sense of self-in-the-future (r = .18, p < .01 and r = .19, p < .01, respectively). Similarly, those youth with a higher sense of identity and spirituality also reported feelings a stronger connection to school (r = .24, p < .01 and r = .14, p < .05). In terms of overall level of happiness, youth with a strong sense of identity also tended to be more satisfied with their lives (r = .20, p < .01).

Lastly, the relationships between the CCS-S subscales and self-efficacy, sense of self (present and future), school connectedness, and life satisfaction were examined using HML regression analyses to delineate the role of culture for First Nations youth mental health over and above three well-established social determinants of health: age, gender, and stressful life events. For each of the five regression analyses, the three social determinants of health variables were first added to the equation as a group, followed by identity in the second step, traditions in the third step, and spirituality in the final step.

The rational for the HML regression approach is two-fold: (1) it is consistent with an identity-traditions-spirituality pathway theory (Anderson, 2000; McCormick, 1997; Phinney & Ong, 2007), and (2) it is appropriate when variance on a criterion variable is being explained by predictor variables that are highly correlated with each other. As such, the author was able to analyze the effect of each of the CCS-S subscale predictor variables after controlling for other variables.

All regression equations produced results that were normally distributed. Age, gender, and stressful life events as a group were not found to significantly predict self-efficacy (ΔR^2 = .028; F = [3, 236]; $p < ns$). Once all three CCS-S subscales were added to the equation, however, the variance of self-efficacy explained significantly increased to 12.8%, as shown in Tables 13 and 14. Although the identity subscale alone appeared to significantly improve model fit (ΔR^2 = .111; F = [1, 235]; $p < .001$), this was due to the large overlap between the three CCS-S predictors (i.e., identity, traditions, and spirituality) and should not be taken as a reflection of the importance of the individual subscales in predicting self-efficacy. The regression findings suggest that cultural connectedness as a whole as measured by the three CCS-S subscales, all have an important role in understanding First Nations youths' belief in their ability to complete tasks and reach goals.

Age, gender, and stressful life events together were not found to predict sense of self-in-the-present but, when cultural connectedness was considered, the identity subscale explained 3% of the sense of self-in-the-present variance (ΔR^2 = .028; F = [1, 241]; $p < .01$), as shown in Table 15. Age, gender and stressful life events were also not found to predict sense of self-in-the-future. However, when the identity subscale was added to the

Table 13

Predictors of Self-efficacy among First Nations Youth using HML Regression (n = 237)

Predictor Variables	Model 1 b	β	95% CI	Model 2 b	β	95% CI	Model 3 b	β	95% CI
Age	.311*	.137	(.004, .617)	.390**	.171	(.099, .680)	.384**	.169	(.091, .676)
Gender	-.795	-.074	(-2.166, .576)	-1.125	-.105	(-2.424, .174)	-1.111	-.103	(-2.414, .193)
Stressful Life Events	.072	.028	(-.279, .424)	-.020	-.008	(-.354, .313)	-.033	-.013	(-.373, .308)
Identity	--	--	--	.778***	.337	(.497, 1.059)	.762***	.330	(.468, 1.055)
Traditions	--	--	--	--	--	--	.048	.025	(-.204, .300)
Spirituality	--	--	--	--	--	--	--	--	--
Constant	41.007	--	--	31.673	--	--	31.838	--	--
Adjusted R2		.016			.124***			.121***	
Δ R2		.028			.111***			.001	

C.I = confidence interval
*p <.05
**p <.01
***p <.001

Table 14

Predictors of Self-efficacy among First Nations Youth using HML Regression (n = 237) Continued

Predictor Variables	Model 4 b	β	95% CI
Age	.411**	.181	(.118, .704)
Gender	-1.076	-.100	(-2.375, .223)
Stressful Life Events	-.019	-.007	(-.359, .320)
Identity	.654***	.283	(.337, .971)
Traditions	-.002	-.001	(-.259, .255)
Spirituality	.290	.122	(-.039, .620)
Constant	30.300		
Adjusted *R*2		.128***	
Δ *R*2		.011	

C.I = confidence interval
*p <.05
**p <.01
***p <.001

Table 15

Predictors of Sense of Self-in-the-present among First Nations Youth using HML Regression (n = 246)

Predictor Variables	Model 1			Model 2			Model 3			Model 4		
	b	β	95% CI	b	β	95% CI	b	β	95% CI	b	β	95% CI
Age	-.008	-.035	(-.039, .022)	-.004	-.017	(-.034, .026)	-.005	-.020	(-.035, .026)	-.004	-.017	(-.035, .027)
Gender	-.141*	-.129	(-.278, -.003)	-.161	-.147	(-.297, -.025)	-.160	-.146	(-.297, -.023)	-.159	-.145	(-.296, -.022)
Stressful Life Events	.005	.019	(-.030, .040)	.000	.001	(-.035, .035)	-.001	-.003	(-.036, .035)	-.002	-.002	(-.036, .035)
Identity	--	--	--	.040**	.171	(.011, .070)	.039*	.165	(.008, .070)	.036*	.154	(.003, .070)
Traditions	--	--	--	--	--	--	.004	.013	(-.022, .031)	.003	.016	(-.024, .031)
Spirituality	--	--	--	--	--	--	--	--	--	.007	.028	(-.028, .042)
Constant	3.469			2.988			3.003			2.966		
Adjusted R2		.005			.030*			.027*			.023	
Δ R2		.017			.028**			.000			.001	

C.I = confidence interval
*p <.05
**p <.01
***p <.001

model, 2.6% of the sense of self-in-the-future variance was explained ($\Delta R^2 = .038$; $F = [1, 241]$; $p < .01$). Furthermore, when all three CCS-S subscales were entered into the equation, 4.5% of the sense of self-in-the-future variance was explained by the identity and spirituality subscales, and model fit improved significantly ($\Delta R^2 = .012$; $F = [1, 239]$; $p < .05$; see Table 16). Interestingly, the spirituality subscale model significantly improved model fit above and beyond identity alone. The overall results suggest that a strong cultural identity is important for a cohesive self-concept to develop, and that First Nations spirituality may enable one to extend that conceptualization into the future (e.g., life purpose).

In terms of school connectedness, the group of predictors including age, gender and stressful life events did not show any statistical predictive value on their own ($\Delta R^2 = .018$; $F = [3, 242]$; $p = ns$). After cultural connectedness was added to the model, however, 6.0% of the variance in school connectedness was accounted for by the three CCS-S subscales ($\Delta R^2 = .056$; $F = [1, 241]$; $p < .001$; see Table 17). As such, First Nations youth involvement in, and positive attitudes towards, school may be significantly improved by helping these youth to access, engage in, and affiliate with all aspects of their First Nations culture.

In the last regression equation, age, gender, and stressful life events were found to account for 11% of the variance in life satisfaction ($\Delta R^2 = .121$; $F = [3, 240]$; $p < .001$; see Tables 18 and 19). Once the identity subscale was added to the model, the variance explained increased to 13% and model fit significantly improved ($\Delta R^2 = .027$; $F = [1, 239]$; $p < .001$). Although the traditions and spiritualty subscales did not appear to significantly improve model fit over and above the identity subscale, the three CCS-S

Table 16

Predictors of Sense of Self-in-the-future among First Nations Youth using HML Regression (n = 246)

Predictor Variables	Model 1 b	β	95% CI	Model 2 b	β	95% CI	Model 3 b	β	95% CI	Model 4 b	β	95% CI
Age	.013	.059	(-.016, .042)	.017	.079	(-.011, .046)	.016	.074	(-.013, 0.45)	.020	.091	(-.009, .049)
Gender	-.017	-.016	(-.148, .115)	-.039	-.038	(-.169, .091)	-.037	-.036	(-.167, .093)	-.031	-.030	(-.160, .098)
Stressful Life Events	-.008	-.031	(-.042, .026)	-.013	-.052	(-.046, .020)	-.015	-.061	(-.049, .019)	-.013	-.051	(-.046, .021)
Identity	--	--	--	.044**	.197	(.016, .072)	.041**	.184	(.012, .071)	.026	.115	(-.006, .057)
Traditions	--	--	--	--	--	--	.009	.049	(-.016, .034)	.001	.004	(-.025, .027)
Spirituality	--	--	--	--	--	--	--	--	--	.042*	.182	(.009, .075)
Constant	3.120			2.592			2.624			2.400		
Adjusted R2	-.009			.026*			.024			.045**		
Δ R2	.004			.038**			.002			.012*		

C.I = confidence interval
*p <.05
**p <.01
***p <.001

Table 17

Predictors of School Connectedness among First Nations Youth using HML Regression (n = 246)

Predictor Variables	Model 1			Model 2			Model 3			Model 4		
	b	β	95% CI	b	β	95% CI	b	β	95% CI	b	β	95% CI
Age	.019	.083	(-.011, .048)	.024	.108	(-.005, .053)	.024	.106	(-.005, .053)	.026	.117	(-.003, .055)
Gender	.065	.061	(-.069, .198)	.037	.035	(-.094, .168)	.038	.035	(-.093, .169)	.041	.039	(-.089, .172)
Stressful Life Events	-.030	-.116	(-.064, .004)	-.036*	-.141	(-.070, -.003)	-.037*	-.144	(-.071, -.003)	-.036*	-.138	(-.070, -.001)
Identity	--	--	--	.055***	.241	(.027, .084)	.054***	.236	(.024, .084)	.044**	.194	(.012, .076)
Traditions	--	--	--	--	--	--	.003	.018	(-.022, .029)	-.002	-.009	(-.028, .024)
Spirituality	--	--	--	--	--	--	--	--	--	.026	.111	(-.007, .059)
Constant	2.933		--	2.275		--	2.287		--	2.147		
Adjusted $R2$	.005			.059**			.055**			.060**		
Δ $R2$	.018			.056***			.000			.009		

CI = confidence interval

*$p < .05$

**$p < .01$

***$p < .001$

Table 18

Predictors of Life Satisfaction among First Nations Youth using HML Regression (n = 244)

Predictor Variables	Model 1 b	β	95% CI	Model 2 b	β	95% CI	Model 3 b	β	95% CI
Age	-.201**	-.167	(-.352, -.050)	-.179*	-.148	(-.329, -.029)	-.175*	-.145	(-.327, -.023)
Gender	-.913**	-.165	(-1.575, -.251)	-1.039**	-.188	(-1.698, -.380)	-1.043**	-.188	(-1.704, -.383)
Stressful Life Events	-.300**	-.221	(-.469, -.130)	-.325***	-.239	(-.493, -.156)	-.320***	-.236	(-.492, -.148)
Identity	--	--	--	.207**	.168	(.059, .355)	.214**	.173	(.059, .369)
Traditions	--	--	--	--	--	--	-.020	-.020	(-.149, .109)
Spirituality	--	--	--	--	--	--	--	--	--
Constant	22.322	--	--	19.882	--	--	19.792	--	--
Adjusted R2			.110***			.134***			.131***
Δ R2			.121***			.027**			.000

C.I = confidence interval
*p < .05
**p < .01
***p < .001

Table 19

Predictors of Life Satisfaction among First Nations Youth using HML Regression (n = 244) Continued

Predictor Variables	Model 4 b	β	95% CI
Age	-.174*	-.144	(-.328, -.020)
Gender	-1.042**	-.188	(-1.705, -.379)
Stressful Life Events	-.319***	-.235	(-.492, -.146)
Identity	.211*	.171	(.044, .377)
Traditions	-.022	-.022	(-.156, .112)
Spirituality	.010	.008	(-.158, .177)
Constant	19.735		
Adjusted R2		.127***	
Δ R2		.000	

C.I = confidence interval
*p <.05
**p <.01
***p <.001

subscales together were important predictors of life satisfaction. This finding suggests that cultural connectedness is an important contributor to First Nations youths' happiness with their life, which is a necessary element for overall mental health and wellness (Raibley, 2012).

Summary

The principal aim of Study 2 was to investigate the interrelations among cultural connectedness and First Nations youth mental health using a shortened version of the CCS. The factor analytic results, together with the correlations, support the invariance of the major structural elements of the cultural connectedness construct as identified in Study 1. The current study extends the findings of the previous examination of cultural connectedness by further elucidating the meaningfulness of its components (i.e., identity, traditions, spirituality). Furthermore, the current work on the CCS-S has improved the practical utility of the measure due to its brevity.

Similar to the CCS, the author anticipated significant overlap between the CCS-S subscales, given that First Nations *ways of knowing* (i.e., spiritual worldview) often develops from and further facilitates First Nations *ways of being* (i.e., cohesive identity) and *doing* (i.e., traditional practices). Although the three CCS-S subscales were found to share a common source of variance, the results from the correlational analyses suggest that they have unique components that relate differently to the mental health indicators for First Nations youth. In fact, identity correlated significantly with all of the mental health measures in the expected direction (i.e., self-efficacy, sense of self-in-the-present and -future, life satisfaction, and school connectedness), while spirituality was related to self-efficacy, sense of self-in-the-future, and school connectedness. Interestingly, the

traditions subscale was found to be associated with self-efficacy alone. While similar relational trends were captured in Study 1 using the CCS, the current study suggests that a greater association may exist between identity and sense of self-in-the-present and between spirituality to sense of self-in-the-future compared to the other CCS-S subscales. These findings not only make conceptual sense, but are also consistent with emerging theories on the role of a positive self-concept over the course of youth development (i.e., self-continuity) as a deterrent for First Nations youth suicide (e.g., Chandler & Lalonde, 1998; Reading & Wien, 2009).

The current study was successful in beginning to unravel the predictive role of cultural connectedness for First Nations youth mental health. While cultural connectedness added only a small amount of variance in each case, it was consistent in making a contribution. The results of the analyses revealed that those youth who are highly connected to their First Nations culture, as measured by the three CCS-S subscales, are more likely to develop a cohesive sense of self that extends into the future and a stronger connection to school. In this case, the impact of First Nations culture appears to exceed the influence of age, gender, and stressful life events on such development. When the social determinants of health group *did* predict positive mental health, as was in the case with life satisfaction, the CCS-S identity subscale significantly improved prediction above and beyond the social determinants of health group alone. These findings are a testament to the strength of cultural connectedness among many First Nations youth, as age, gender, and life stress are generally accepted as influential, and largely universal, social determinants of health for youth wellbeing (Mikkonen & Raphael, 2010).

Although this work has shed light on the resilience process for First Nations youth mental health, the current study is not without its limitations. Ideally, the scale score reliabilities for all the measures would have fell within more preferable ranges (i.e., good to excellent). The narrow range of items on some subscales may have artificially deflated scores or it may be that certain measures are not as culturally relevant for some cultural sub-groups within the sample (e.g., Haudenosaunee, Saulteaux). In particular, a more culturally appropriate measure of self-efficacy should be explored in future research with diverse First Nations youth populations. The variance accounted for by the CCS-S in the current study may have improved somewhat by use of more culturally specific outcome measures. Secondly, the data are cross-sectional, a feature that raises some questions about the direction of effects. Future research should examine mental health and wellness trajectories among First Nations youth to determine if cultural connectedness directly increases wellbeing or whether some other characteristic such as healthy families increases both variables. Such relationships can only be elaborated satisfactorily with longitudinal data. Thirdly, while the current sample of First Nations youth may be viewed as considerably diverse for research purposes, it still does not represent the vast heterogeneity of First Nations people in Canadian society. Consequently, the results here may not be generalizable to all First Nations peoples or communities. As such, the author cautions the use of the CCS-S in different First Nations contexts and highly recommends that researchers work closely with community members to determine its appropriateness.

The current findings have elaborated on the complex interplay between biopsychosocial variables that determine mental health outcomes for First Nations youth by identifying cultural connectedness as a key factor in that process. Although many First

Nations communities have incorporated culture into their wellness models for hundreds of years, the empirical support for the cultural connectedness construct and its impact on mental health is relatively new. Furthermore, the results of the current study have shown that while different aspects of cultural connectedness were differentially interrelated to mental health indicators, cultural identity emerged as a consistent predictor across outcomes. Longitudinal work will be needed to determine whether the development of cultural connectedness follows an identity-traditions-spirituality pathway, as hypothesized. Future research should continue to examine the construct with the goal of developing models that specifically reflect the vast heterogeneity across the life span and across First Nations cultures in Canada. In this way, more knowledge can be accumulated about the conceptualization and operationalization of cultural connectedness, the role of culture as a mental health determinant, and the human resilience process as a whole.

CHAPTER FIVE: GENERAL DISCUSSION

While most researchers have focused on the lack of cultural connectedness (i.e., acculturation) in relation to mental health problems among First Nations peoples (e.g., substance abuse, suicide, psychopathology; Waldram, 2004), a contribution of the current studies was the commitment to a strengths-based approach to scale development and validation. From this perspective, it allowed the author to begin to uncover the specific elements that contribute to mental health, which ultimately contributes to a better understanding of the resilience process for First Nations youth. All too often, explanations about mental health issues facing First Nations youth have been framed in terms of individual- and deficit-based approaches, which are largely driven by dominant epistemologies and research methodologies that tend to produce misrepresentations of the

psychosocial realities of this already vulnerable population. Historically, research has typically left little benefit to the participating First Nations communities (Tuhiwai Smith, 2012). Furthermore, embracing and disseminating deficit-based approaches (when there is no scientific reason to do so) can be counterproductive to cultural preservation, thereby increasing the potential of harm to the community as a whole (Canadian Institutes of Health Research et al., 2010). This manuscript represents a new direction of quantitative research with First Nations peoples that embraces a strengths-based approach to facilitate a shared collective interest, build community collaboration, establish mutual benefits, and cultivate endogenous helping resources already existent in communities, while taking into account the historical context (e.g., Crooks et al., 2010; Crooks et al., 2013; Mohatt et al., 2011).

First Nations researchers are often deemed the best authorities on the current status of their community(ies) and, therefore, are in the best position to conduct research affecting First Nations peoples and communities (Gillies, Burleigh, Snowshoe, & Werner, 2014; Saini, 2012; Wilson, 2008). When choosing a research design that is compatible with First Nations values, priorities, and needs, Bentz and Shapiro (1998) recommend achieving a consistency between the worldview of the researcher, the context to be studied, and the set of research methods to be used. In the current research initiative, the developer of the CCS is a member of Ojibway and Métis Nations from Ontario, Canada, and has had extensive involvement with Cree Nations from Saskatchewan, Manitoba, and British Columbia. The author, working from both First Nations and Western epistemologies (King, 2012), acted as a culturally competent messenger to engage formal and traditional/moral authorities and research partners in collaboration that

lead to a sense of shared collective interest in the study that met community needs and priorities. The author understood the cultural protocols for acquiring the right to access traditional and community knowledge and was able to incorporate this information into the scale development where feasible and appropriate. This integrative, strengths-based approach increased the chances that the results are representative, relevant, and required from the perspective of First Nations communities and its members (Crooks et al., 2013).

While the present findings provide some insights into the role of cultural connectedness in resiliency frameworks for First Nations youth, some limitations should be noted. Firstly, perceived discrimination, a potential mediator of cultural connectedness among First Nations peoples, was not assessed in the current studies due to the author's adherence to a strengths-based protocol. Perceived discrimination is considered one indicator of culture conflict in that it represents perceived rejection and maltreatment by the dominant mainstream culture. The author feels that Mohatt et al.'s (2011) culturally specific ACS may be a promising tool for future research when assessing the construct of perceived discrimination among First Nations youth from a strengths-based perspective. The self (e.g., negative self-statements or stereotypes), family, community, and the surrounding environment, as measured by the ACS, are often the key sources of discriminatory acts. At the same time, acknowledging the historical injustice against First Nations peoples is equally important for the promotion of mental health and healing. Researchers should strive to strike a balance between a strengths-based approach at the individual and community level, while recognizing the negative impacts at the structural and societal level (Duran & Duran, 1995). In this way, a strengths-based approach would not mean ignoring negative historical and social realities facing First Nations youth, their

families, and their communities, but rather would serve to promote health in the light of these injustices. Future research initiatives should consider using the CCS in combination with the ACS to explore what levels of connectedness are considered protective and to what degree is there a protective function. These measures, taken together, may represent a holistic construct of First Nations youth connectedness (i.e., self, family, community, natural environment, and culture) based on a First Nations epistemology from which complex research questions can be answered.

The conceptualization and operationalization of cultural connectedness has a number of potential applications both for research and prevention. The current findings contribute to a growing body of work that empirically support an understanding that First Nations communities have utilized in a variety of treatment settings for hundreds of years. However, empirical support for cultural connectedness may have important policy and funding implications for prevention work, curriculum-based programming, and other cultural-preservation initiatives (Kreuter, Lukwago, Bucholtz, Clark, & Thompson, 2003; LaFrance & Nichols, 2008). It provides educators, service providers, and program evaluators with a model that focuses on the aspects of First Nations culture that may be supported and strengthened in programs to promote healthy youth functioning. Specifically, culturally relevant curriculum-based programs (e.g., cultural leadership courses, peer mentoring) and pedagogical teaching strategies (e.g., land-based learning, storytelling) should be offered to youth to help facilitate cultural identity development and to represent these identities and First Nations *ways of knowing* within the school environment. For example, the Aboriginal Perspectives Program is one part of the larger Aboriginal Fourth R© that focuses on holistic models of youth development and

relationships within a cultural identity framework. The program situates some of the issues facing First Nations youth in a historical context of colonization and provides opportunities to identify individual and community strengths within a First Nations cultural framework. Educators and school administrators should engage in cultural audits of their school environments and consider implementing culture-enhancing programming like the Aboriginal Fourth R© in their schools. In these ways, the education gap between First Nations and non-First Nations youth can begin to be addressed by allowing First Nations youth and their families to feel included in, and more connected to, the Western-based education system (Crooks et al., 2013)[12].

The value of culture must also be recognized by those in the health care system in order to address the mental health disparities among First Nations youth by ensuring that service providers receive adequate training and utilize alternative *ways of knowing* in the treatment of First Nations clients (in collaboration with knowledge keepers and traditional Elders where required)[13]. A major reason for First Nations peoples' under-utilization of mental health services is due to the common perception held by many First Nations peoples that Western psychological services tend to impose a Western cultural bias onto First Nations problems, resulting in efforts to shape the client's behaviours that conflict cultural *ways of knowing* and *being* (Goodkind, Gorman, Hess, Parker & Hough, 2015; Gone, 2009; LaFromboise, 1988; Trimble, 1990). Given that First Nations peoples are the fastest growing cultural group in Canada and few First Nations psychologists exist, the task of narrowing the need-service gap will continue to fall on non-First Nations therapists (Goodkind et al., 2015). Rather than merely attending to the cultural

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[12] This is a priority that is clearly articulated in the Truth and Reconciliation Commission of Canada: Calls to Action (2015) report.
[13] Ibid.

competence of the therapist involved in treating First Nations clients, conventional psychotherapeutic interventions, as cultural artifacts, must also be critically examined from a decolonizing and social justice lens. For example, youth mental health workers should be trained in First Nations worldviews in order to identify possible sources of cultural connectedness and to treat those sources as assets (e.g., physical and metaphysical support networks) during assessment and intervention planning. To date, there has been little examination of the congruence between the core underlying principles of Western psychotherapies and the needs and perspectives of First Nations peoples. As such, the author is currently developing an orienting framework based on the principles of (a) respecting epistemologies, (b) strengthening resilience, (c) using community-based approaches, and (d) taking a trauma-informed perspective to guide culturally responsive conventional interventions (i.e., culture-based therapy) for those clients who operate primarily from a First Nations epistemology or wish to reconnect to their culture.

The current research initiative also emphasizes the importance of training for researchers in Indigenous quantitative methodologies so that they can begin to work more effectively with First Nations communities to identify possible points of convergence between Western and First Nations approaches that work towards the broader movement of helping First Nations peoples recover their own research self-determination. Reflecting back on the outset of the current research initiative, the author felt faced with two presumably conflicting options for a research methodology: quantitative or Indigenous. Striving to achieve an approach that had equal merit in both academic and First Nations settings, the author saw the advantage of straddling Western and First Nations

worldviews to arrive at an epistemological crossroad in the research design. As a result of this new understanding, the author, a professor in Educational Psychology at the University of Regina in Saskatchewan, is currently in the process of developing a quantitative research course that introduces Indigenous quantitative methodologies to novice researchers and emphasizes the importance of community-based research partnerships as integral to research in First Nations contexts.

The current research initiative is the first of its kind to apply an Indigenous quantitative methodology for the purposes of scale development and validation. All too often, Western-Indigenous dichotomies are used to falsely indicate entirely separable and competing research spaces. The author believes that by intentionally creating ethical spaces for seemingly opposing worldviews to converge, Western and Indigenous paradigms can become co-producers of knowledge. The innovative convergence of Western and Indigenous epistemologies in the current research initiative serves to unify the schism of understandings on the role of culture for First Nations youth mental health. It simultaneously privileges First Nations voices, knowledges, and understandings about the world and validates these perspectives through the process of strengths-based empirical investigation. The author hopes that her ability to navigate between scientific rigour and community-based knowledges will act as a foundation for future research in First Nations contexts to work towards decolonizing and social justice agendas aimed at improving the mental health for First Nations youth, their families, and their communities in Canada and beyond.

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Appendices

Appendix A

Ethics Approval for Study 1 and 2

camh

Centre for Addiction and Mental Health
Centre de toxicomanie et de santé mentale

www.camh.net

PROTOCOL REFERENCE #016/2011

March 23rd, 2011

Dear **Dr. Crooks**:

Re: Approval for research protocol **#016/2011** entitled, **"A Longitudinal Evaluation of the Fourth R Aboriginal Program: Exploring Culture as a Protective Factor in Aboriginal Adolescent Mental Health, Well-Being and Academic Success"** by Crooks C, Wolfe D.

We are writing to advise you that the Centre for Addiction and Mental Health Research Ethics Board (CAMH REB) has granted approval to the above-named research study **for a period of one year from the date of this letter**[1]. IF THE STUDY IS EXPECTED TO CONTINUE BEYOND THE EXPIRY DATE, YOU ARE RESPONSIBLE FOR ENSURING THE STUDY RECEIVES RE-APPROVAL BY SUBMITTING THE CAMH REB "**ANNUAL RENEWAL OF ETHICS APPROVAL**" FORM ON OR BEFORE **February 1st, 2012**. Should the study be completed prior to the annual renewal date, please submit a "**Final Report**". **The level of continuing review for this study is Level 2.**[2]

The revised consent forms: **"Guardian Passive Consent for TVDSB Longitudinal Study"**, **"Guardian Passive Consent for Northwest Nations Longitudinal Study"**, **"Guardian Passive Consent for TVDSB Pilot Study"**, **"Youth Assent Form for TVDSB Longitudinal Study"**, **"Youth Assent for Northwest Nations Longitudinal Study"**, **"Youth Assent for TVDSB Pilot Study"**, (Appendix A to F respectively, all Version 2 ~ March 10, 2011) received **March 10th, 2011**, have been approved and are attached. **Participants should receive a copy of their consent form.**

During the course of the research, any significant deviations from the approved protocol (**that is, any deviation which would lead to an increase in risk or a decrease in benefit to human subjects**) and/or any unanticipated developments within the research should be brought to the attention of the Research Ethics Office.

Best wishes for the successful completion of your project,

Susan Pilon, MHSc
Manager, Research Ethics Office, CAMH

SP/tl
Encl.

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[1] CAMH Investigators are reminded that should they leave CAMH, they are required to inform the Research Ethics Board of the status of any on-going research. If a study is to be closed or transferred to another facility, the REB must be informed and any advertisements must be discontinued.
[2] Level 2: Review of routine annual reports, changes and amendments to the approved protocol, adverse events, filing of a final report and audit of study files/documentation. .**Please retain a printed copy of this letter (and documents if applicable) for your records.**

Appendix B

The Youth Focus Group Y-Chart Activity

YOUTH FOCUS GROUP LESSON PLAN

Activity Title: What Does Being First Nations Mean to You?

Lesson Title: Culture Looks Like… Culture Sounds Like… Culture Feels Like…

Grade Level: 6-12

Length of Lesson: 50 minutes

Activity Expectation:

Gather First Nations youths' understandings about what culture means to them in order to identity the core aspects of cultural connectedness from which items can be generated.

Materials (include activity sheets and/or supporting resources):

Culture: Looks Like, Sounds Like, Feels Like Activity Sheet x 3
Coloured markers

X	Goal 1: Gather information and ideas about cultural connectedness from a First Nations youth perspective
	Goal 2: Synthesize information in conjunction with information from key informant interviews
	Goal 3: Generate items according to construct domains
	Goal 4: Obtain feedback from key stakeholders regarding relevancy, representativeness, and wording

Essential Questions:

What is First Nations culture? What does being First Nations mean to you?

Procedures:

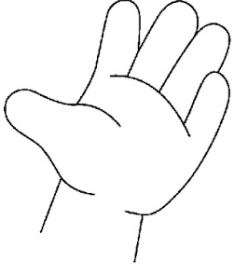| Facilitator Procedures:	Student Activities:
1. The facilitator will introduce herself and provide a brief introduction to the activity at hand.	1. Student will be provided the opportunity to ask any questions they may have.
2. The facilitator will pass out the *Culture: Looks Like, Sounds Like, Feels Like* Activity Sheets and markers,	2. Students will write down what culture

and ask the students write down what culture looks like, sounds like and feels like depending on what Activity Sheet each group is assigned. 3. Student will have approximately 15 to work with their group members to brainstorm and write down that culture looks like, sounds like, or feels like. Group discussion is encouraged. 4. After approximately 15 minutes has elapsed, the Activity Sheets are rotated to the right/left and students repeat Step 3. 5. Step 4 is repeated. 6. Students will be asked to reconvene as a class and each group will be asked to voluntarily share what they have written on their Activity Sheets and discuss as a class, letting students write down or make changes to their sheets. Encourage students to give personal or other examples of what they mean with their answers. 7. Debrief students on the Activity, address any further questions, and thank them for their time and participation.	looks like, sounds like and feels like depending on what Activity Sheet each group is assigned. 3. Students will volunteer to share what is written on their Activity Sheets, discuss one another's answers as a group and make changes to their sheets. Students will give examples of their answers as they feel confortable to do so. 4. Students should be provided with the opportunity to ask questions about the activity or its purpose.

Follow-Up Activities:

Contact the classroom instructor via phone or email and thank her for the opportunity to visit her class. Remind her of the purpose of the activity and how the information will be used. Provide the opportunity for her to discuss what went well and not so well. Inform her that she can have a copy of the *Culture: Looks Like, Sounds Like, Feels Like* Activity Sheets as a reminder to the students of what culture means to them, if she should so chose. Provide her with the facilitator's contact information and encourage her to contact the facilitator if she has any further questions or concerns.

Facilitator reflection notes (completed after the lesson):

Activity Sheet Example:

What Does Culture…

LOOK LIKE	SOUND LIKE	FEEL LIKE

Appendix C

Cultural Connectedness Content Matrix

MAIN THEMES

MODES OF ACQUISITION

		Sense of Aboriginal Identity	Traditional Practices	Traditional Spirituality
	Knowledge	1 I have spent time trying to find out more about my Native culture, such as its history, traditions, and customs.*	18 I know my clan.	36 I know how to make a tobacco tie.
		2 I have often talked to other people in order to learn more about my Native culture.*	19 I know my Native/spirit name.	37 To me, cedar provides me with protection.
		3 I have often done things that will help me understand my Native background better.*	20 I can understand some of my Native language.	38 In certain situations, I believe that things like animals and rocks have a spirit like Native people.
		4 When I learn something about my Native culture, I will often ask someone more about it later.	21 I can speak some of my Native language.	39 If I hunted an animal or picked a plant, I would offer tobacco.
			22 I have heard the Seven Grandfather teachings.	40 I know my Native Creation story.
				41 I use tobacco for guidance.
	Direct Experience	5 How often do you feel proud to be Native?	23 I have heard or listened to traditions sings or drumming.	42 How often do you offer tobacco?
		6 How often do you think about being Native?	24 I have sung traditional songs, danced at traditional dances, or drummed.	43 How often do you smudge or use sage/sweetgrass?
		7 I understand pretty well what being Native means to me.*	25 How often have you attended a pow-wow, ceremonial dance, or round dance?	44 I have offered food or feasted someone/something for a cultural reason.
		8 I have a strong sense of belonging to my own Native nation or tribe.*	26 Have you made any Native crafts like dreamcatchers, drums, shakers, moccasins, bead work, or Native paintings or poetry?	45 I have participated in a cultural ceremony like a sweatlodge.
		9 I feel a strong attachment towards my own Native nation or tribe.*		46 I have helped prepare for a cultural ceremony like a sweatlodge.

MODES OF ACQUISITION

MAIN THEMES

Indirect Experience	10 I have always felt Native from a young age.	27 I have been in a sharing circle.	47 I feel a strong connection to my ancestors.
		28 I have gone on a traditional fast or vision quest.	48 I feel a connection to all things in life.
		29 How often have you listened to an Elder or someone you are close with tell traditional stories?	
	11 One of my role models or someone I look up to is Native.	30 How often do you heard people rom your family or someone you are close with talk about being Native?	49 How often does someone in your family or someone you are close with offer tobacco?
	12 I prefer to be around Native people than non-Native people.	31 Someone in my family or someone I am close with is involved in Native/Band politics.	50 How often does someone in your family or someone you are close with smudge or use sage/sweetgrass?
	13 I know a lot of Native people.		51 Someone in my family or someone I am close with collects, uses, or talks about traditional medicines.
	14 I can relate strongly with certain Native movies that I watched.		52 Someone in my family or someone I am close with attends cultural ceremonies.
Future Intent/Degree of Internalization	15 I plan on spending more time trying to find out more about my Native culture, such as its history, traditions, and customs.	32 It is important to me that I know my Native language.	53 My dreams tell me something about my path in life.
	16 If an Elder spoke to me about being Native, I would listen to them carefully.	33 It is important to me that I know my clan and/or Native name.	54 Being Native means that I sometimes have a different way of looking at the world.
	17 I would take a Native course at school if I had the chance, even if my friends were not in the class.	34 Native teachings help me decide how to live my life.	55 The eagle feather has a lot of meaning to me.
		35 I plan on participating in a cultural activity or event in the future.	56 I plan on attending a traditional ceremony like a sweatlodge in the future.

Appendix D

Content Expert Judges' Information Form and Questionnaire

Exploring culture as a protective factor in Aboriginal adolescent mental health: Development and
longitudinal validation of a brief enculturation measure

With the increased acknowledgement of the importance of enculturation to Aboriginal mental health
and wellbeing, many programs have been developed to facilitate Aboriginal adolescents'
connectedness to and engagement in family, school, and community through the use of culturally-
enriched interventions. However, these enculturation-promoting programs currently have no
practical means of assessing program success in meeting their goals. Without the use of a
psychometrically sound and practical measure of Aboriginal adolescent enculturation, the process
of implementation to outcome for Aboriginal enculturation programs cannot be appropriately
evaluated, modified, or expanded, and instead results remains ambiguous and indefinite. As such,
the need for brief and developmentally appropriate measure of enculturation among Aboriginal
adolescents has a great significance for mental health professionals, theorists, and researchers.

Our research team is undertaking the development of such a measure. I am conducting this work
as part of my Ph.D. program and as part of a larger research project being directed by Dr. Claire
Crooks at the CAMH Centre for Prevention Science.

 You are being asked to serve as a content expert because of your knowledge in this area. Your
participation in the instrument review process is valuable as a preliminary step to future studies that
evaluate programs that aim to enhance enculturation as a protective factor against mental health
issues among Aboriginal adolescents. The instrument consists of items related to the dimensions
of Aboriginal Identity, Traditional Practices, and Traditional Spirituality and Worldview. Within each
dimension are the measurement approaches of Knowledge, Direct Experience, Indirect
Experience, and Future Intent/Degree of Integration (see axes on attached grid).

On the attached form you are asked to judge how representative the 1) dimensions, 2)
measurement approaches, and 3) individual items are of the domain of enculturation. Please note,
these categories are *not* intended to be mutually exclusive and are expected to overlap with one
another. In judging the representativeness of the measurement at these levels, please evaluate
whether the items are appropriate for both Aboriginal adolescents from across Aboriginal
nations/tribal affiliations, all degrees of enculturation or cultural exposure, and other demographic
variables (e.g., gender, socio-economic status, regional location). Conceptual/theoretical definitions
and instructions (where necessary) are available on the left column, while your judgments and
rating responses will be indicated in the right hand column. Your judgments and feedback related
to representativeness of the dimensions, measurement approaches, and items the dimension will
be useful in refining the instrument.

Please return your completed questionnaire by April 11, 2011 in order to ensure that all aspects of your feedback in considered in the revision process. If you would like to provide feedback in another format or if you have any questions/comments regarding this process, please do not hesitate to contact this investigator at any time by responding to:

Angela Snowshoe, B.A, M.Sc.
Research Associate
CAMH Centre for Prevention Science

Enculturation Dimensions	Dimension Representativeness
Cultural Identity – the extent to which an Aboriginal individual identifies with his or her Aboriginal culture, Nation/tribe, group, or community. Traditional Practices – the extent to which an Aboriginal individual participates in his or her traditional Aboriginal culture Traditional Spirituality – the extent to which an Aboriginal individual adopts the spirituality and worldview of his or her traditional Aboriginal culture	1. Are the dimensions representative of and collectively do they fully capture the domain of enculturation? Yes No (explain)
Measurement Approaches	Measurement Approach Representativeness
Knowledge – an understanding about some characteristics, history, traditions, customs, and behaviors of the traditional Aboriginal culture that an individual learns through the process of enculturation Direct Experience – direct observation or participation in Aboriginal cultural events or opportunities as a means of enhancing enculturation Indirect Experience – indirect exposure to Aboriginal cultural events as a means of enhancing enculturation Future Intent/Degree of Integration – the degree to which an individual commits to the pursuance of enculturation-enhancing opportunities; the degree to which an individual synthesizes multiple cultural knowledge models or experiences into ones sense of self, being, and world	2. Do the measurement approaches appear to be an appropriate means of assessing the enculturation dimensions? Yes No (explain)

Enculturation Items	Item Representativeness
On a scale of 1 to 4, please mark with a "X" the number that indicates how representative each item is to the domain of enculturation. Consider clarity, age-appropriate wording, response scales, all degrees of cultural exposure, etc. when making your decision and provide feedback in the "comments" section were applicable to explain your judgment. *Items based on Phinney, J. S. & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology, 54*(3), 271-281.	1= The item is <u>not representative</u> of enculturation 2 = The item is <u>slightly</u> representative of enculturation 3 = The item is <u>somewhat</u> representative of enculturation 4 = The item is <u>representative</u> of enculturation
Items with Strongly Disagree; Disagree; Neither Agree Nor Disagree; Agree; Strongly Agree Response Scales:	
1 I have spent time trying to find out more about my Native culture, such as its history, traditions, and customs.*	1__ 2__ 3__ 4__ Comments:
2 I have often talked to other people in order to learn more about my Native culture.*	1__ 2__ 3__ 4__ Comments:
3 I have often done things that will help me understand my Native background better.*	1__ 2__ 3__ 4__ Comments:
4 When I learn something about my Native culture, I will often ask someone more about it later.	1__ 2__ 3__ 4__ Comments:
5 I understand pretty well what being Native means to me.*	1__ 2__ 3__ 4__ Comments:

Enculturation Items	Item Representativeness 1= not representative 4= very representative
6 I have a strong sense of belonging to my own Native nation or tribe.*	1__ 2__ 3__ 4__ Comments:
7 I feel a strong attachment towards my own Native nation or tribe.*	1__ 2__ 3__ 4__ Comments:
8 I always felt Native from a young age.	1__ 2__ 3__ 4__ Comments:
9 I know a lot of Native people.	1__ 2__ 3__ 4__ Comments:
10 I can relate strongly with certain Native movies that I have watched.	1__ 2__ 3__ 4__ Comments:
11 I prefer to be around Native people rather than non-Native people.	1__ 2__ 3__ 4__ Comments:
12 If a traditional Elder spoke to me about being Native, I would listen to them carefully.	1__ 2__ 3__ 4__ Comments:
13 I would take a Native course at school if I had the chance, even if my friends were not in the class.	1__ 2__ 3__ 4__ Comments:

Enculturation Items	Item Representativeness 1= not representative 4= very representative
14 I feel a strong connection to my ancestors.	1__ 2__ 3__ 4__ Comments:
15 I feel a connection to all things in life.	1__ 2__ 3__ 4__ Comments:
16 Being Native means I sometimes have a different way of looking at the world.	1__ 2__ 3__ 4__ Comments:
17 Native teachings help me decide how to live my life.	1__ 2__ 3__ 4__ Comments:
18 My dreams tell me something about my path in life.	1__ 2__ 3__ 4__ Comments:
19 The eagle feather has a lot of meaning to me.	1__ 2__ 3__ 4__ Comments:
20 It is important to me that I know my clan and/or Native name.	1__ 2__ 3__ 4__ Comments:
21 It is important to me that I know my Native language.	1__ 2__ 3__ 4__ Comments:
Items with Yes or No Response Scale:	
22 One of my role models or someone I look up to is Native.	1__ 2__ 3__ 4__ Comments:

Enculturation Items	Item Representativeness 1= not representative 4= very representative
23 I know my clan.	1__ 2__ 3__ 4__ Comments:
24 I know my Native/spirit name.	1__ 2__ 3__ 4__ Comments:
25 I can understand some of my Native language.	1__ 2__ 3__ 4__ Comments:
26 I can speak some of my Native language.	1__ 2__ 3__ 4__ Comments:
27 I have heard the Seven Grandfather Teachings.	1__ 2__ 3__ 4__ Comments:
28 I know how to make a tobacco tie.	1__ 2__ 3__ 4__ Comments:
29 To me, cedar provides me with protection.	1__ 2__ 3__ 4__ Comments:
30 In certain situations, I believe things like animals and rocks have a spirit like Native people.	1__ 2__ 3__ 4__ Comments:
31 If I hunted an animal or picked a plant, I would offer tobacco.	1__ 2__ 3__ 4__ Comments:

Enculturation Items	Item Representativeness 1= not representative 4= very representative
32 I know my Native Creation story.	1__ 2__ 3__ 4__ Comments:
33 I use tobacco for guidance.	1__ 2__ 3__ 4__ Comments:
34 I have participated in a cultural ceremony like a sweatlodge.	1__ 2__ 3__ 4__ Comments:
35 I have helped prepare for a cultural ceremony like a sweatlodge.	1__ 2__ 3__ 4__ Comments:
36 I have offered food or feasted someone/something for a cultural reason.	1__ 2__ 3__ 4__ Comments:
37 I have been in a sharing circle.	1__ 2__ 3__ 4__ Comments:
38 I have heard or listened to traditional songs or drumming.	1__ 2__ 3__ 4__ Comments:
39 I have sung traditional songs, danced at traditional dances, or drummed.	1__ 2__ 3__ 4__ Comments:
40 I have made Native artwork or crafts like dreamcatchers, drums, shakers, moccasins, beadwork, or Native paintings or poetry.	1__ 2__ 3__ 4__ Comments:

Enculturation Items	Item Representativeness 1= not representative 4= very representative
41 Someone in my family or someone I am close with collects, uses, or talks about traditional medicines.	1__ 2__ 3__ 4__ Comments:
42 Someone in my family or someone I am close with attends cultural ceremonies.	1__ 2__ 3__ 4__ Comments:
43 Someone in my family or someone I am close with is involved in Native/Band politics.	1__ 2__ 3__ 4__ Comments:
44 I have gone on a traditional fast or vision quest.	1__ 2__ 3__ 4__ Comments:
45 I plan on participating in a cultural activity or event like a pow-wow in the future.	1__ 2__ 3__ 4__ Comments:
46 I plan on attending a traditional ceremony like a sweatlodge in the future.	1__ 2__ 3__ 4__ Comments:
47 I plan on trying to find out more about my Native culture, such as its history, traditions, and customs.	1__ 2__ 3__ 4__ Comments:
Items with Never; Once or twice in the past year; Every month; Every week; All the time Response Scales: 48 How often do you offer tobacco?	1__ 2__ 3__ 4__ Comments:

Enculturation Items	Item Representativeness 1= not representative 4= very representative
49 How often does someone in your family or someone you are close with offer tobacco?	1__ 2__ 3__ 4__ Comments:
50 How often do you smudge or use sage/sweetgrass?	1__ 2__ 3__ 4__ Comments:
51 How often does someone in your family or someone you are close with smudge or use sage /sweetgrass?	1__ 2__ 3__ 4__ Comments:
52 How often do you think about being Native?	1__ 2__ 3__ 4__ Comments:
53 How often do you feel proud to be Native?	1__ 2__ 3__ 4__ Comments:
54 How often do you hear people from your family or someone you are close with talk about being Native?	1__ 2__ 3__ 4__ Comments:
55 Have often have you listened to an Elder or someone you are close with tell traditional stories?	1__ 2__ 3__ 4__ Comments:
56 How often have you attended a pow-wow, ceremonial dance, or round dance?	1__ 2__ 3__ 4__ Comments:

Appendix E

Item Selection and Removal Based on Content Validity Indices, Item Endorsement Frequencies, and Item Variances

Variable	Item	Response Scale	Endorsement Frequency	Endorsement Freq. Removal Rule	Item CVI	# of Ratings	CVI Rating Rule	Item Variance	Item Var. Removal Rule
culc1a	One of my role models or someone I look up to is Native.	yes/no	78.5	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.44	SD not < 1.0
culc2a	I know my clan.	yes/no	76	No item falls in the lowest or highest 10%		7	No more than one rater that scores an item less than "3"	1.5	SD not < 1.0
culc3a	I know my Native/spirit name.	yes/no	48.1	No item falls in the lowest or highest 10%	1	7	No more than one rater that scores an item less than "3"	1.75	SD not < 1.0
culc4a	I can understand some of my Native language.	yes/no	84.5	No item falls in the lowest or highest 10%	1	7	No more than one rater that scores an item less than "3"	1.27	SD not < 1.0
culc5a	I can speak some of my Native language.	yes/no	82.5	No item falls in the lowest or highest 10%	1	6	No more than one rater that scores an item less than "3"	1.33	SD not < 1.0
culc6a	I have heard the Seven Grandfather Teachings.	yes/no	70.2	No item falls in the lowest or highest 10%	0.83	6	No more than one rater that scores an item less than "3"	1.6	SD not < 1.0
culc7a	I know how to make a tobacco tie.	yes/no	17.6	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.33	SD not < 1.0
culc8a	To me, cedar provides me with protection.	yes/no	50.2	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.75	SD not < 1.0
culc9a	In certain situations, I believe things like animals and rocks have a spirit like Native people.	yes/no	79.8	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.41	SD not < 1.0
culc10a	If I hunted an animal or picked a plant, I would offer tobacco.	yes/no	65.1	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.67	SD not < 1.0
culc11a	I know my Nation's Native Creation Story.	yes/no	63.3	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.69	SD not < 1.0
culc12a	I use tobacco for guidance.	yes/no	39.3	No item falls in the lowest or highest 10%	0.83	6	No more than one rater that scores an item less than "3"	1.71	SD not < 1.0
culc13a	I have participated in a cultural ceremony like a sweatlodge.	yes/no	71.8	No item falls in the lowest or highest 10%	0.83	6	No more than one rater that scores an item less than "3"	1.58	SD not < 1.0
culc14a	I have helped prepare for a cultural ceremony like a sweatlodge.	yes/no	44.1	No item falls in the lowest or highest 10%	0.8	5	No rater scores an item less than "3"	1.74	SD not < 1.0

Code	Item	Response	%						
culc15a	I have offered food or feasted someone/something for a cultural reason.	yes/no	77.6	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.46	SD not < 1.0
culc16a	I have been in a sharing circle.	yes/no	74.8	No item falls in the lowest or highest 10%			No more than one rater that scores an item less than "3"	1.52	SD not < 1.0
culc17a	I have heard or listened to traditional songs or drumming.	yes/no	97.2	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	0.52	SD not < 1.0
culc18a	I have sung traditional songs, danced at traditional dances, or drummed.	yes/no	76.7	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.48	SD not < 1.0
culc19a	I have made Native artwork or crafts like dreamcatchers, drums, shakers, moccasins, beadwork, or Native paintings or poetry.	yes/no	90.2	No item falls in the lowest or highest 10%	1	6	No more than one rater that scores an item less than "3"	1.04	SD not < 1.0
culc20a	Someone in my family or someone I am close with collects, uses or talks about traditional medicines.	yes/no	72.6	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.56	SD not < 1.0
culc21a	Someone in my family or someone I am close with attends cultural ceremonies.	yes/no	87.3	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.17	SD not < 1.0
culc22a	I have gone on a traditional fast or vision quest.	yes/no	16.2	No item falls in the lowest or highest 10%	0.57	7	No more than one rater that scores an item less than "3"	1.29	SD not < 1.0
culc23a	I plan on participating in a cultural activity or event like a pow-wow in the future.	yes/no	88.5	No item falls in the lowest or highest 10%	1	7	No more than one rater that scores an item less than "3"	1.12	SD not < 1.0
culc24a	I plan on attending a traditional ceremony like a sweatlodge in the future.	yes/no	78.1	No item falls in the lowest or highest 10%	1	6	No more than one rater that scores an item less than "3"	1.45	SD not < 1.0
culc25a	I plan on trying to find out more about my Native culture, such as its history, traditions, and customs.	yes/no	88.4	No item falls in the lowest or highest 10%	1	7	No more than one rater that scores an item less than "3"	1.12	SD not < 1.0
culc26a	I have honoured my grandmothers and/or grandfathers in a Memorial Feast or "Feast of the Dead."	yes/no	72.2	No item falls in the lowest or highest 10%	n/a	n/a	Item added following expert rating elicited	1.57	SD not < 1.0
culc27a	As a part of my healing journey, I have talked to a Native or non-Native counsellor.	yes/no	41.1	No item falls in the lowest or highest 10%	n/a	n/a	Item added following expert rating elicited	1.73	SD not < 1.0

culc28a	I have an Elder, Clan Mother or traditional person who I talk to.	yes/no	62.1	No item falls in the lowest or highest 10%	n/a	n/a	Item added following expert rating elicited	1.7	SD not < 1.0
culc29a	I have spent time trying to find out more about being Native such as its history, traditions and customs.	strongly disagree/ disagree/ agree/ strongly agree	62.3	No item falls in the lowest or highest 10%		7	No more than one rater that scores an item less than "3"	0.98	SD not < 1.0
culc30a	I have a strong sense of belonging to my own Native Nation or tribe.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	73.9	No item falls in the lowest or highest 10%	0.83	6	No more than one rater that scores an item less than "3"	1.01	SD not < 1.0
culc31a	I understand pretty well what being Native means to me.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	80.3	No item falls in the lowest or highest 10%	1	7	No more than one rater that scores an item less than "3"	0.92	SD not < 1.0
culc32a	I have often done things that will help me understand my Native background better.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	69.1	No item falls in the lowest or highest 10%	0.83	6	No more than one rater that scores an item less than "3"	0.91	SD not < 1.0
culc33a	I have often talked to other people in order to learn more about being Native.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	65	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	0.98	SD not < 1.0
culc34a	When I learn something about my Native culture, I will often ask someone more about it later.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	70.2	No item falls in the lowest or highest 10%	0.83	6	No more than one rater that scores an item less than "3"	0.97	SD not < 1.0
culc35a	I feel a strong attachment towards my own Native nation or tribe.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	67.5	No item falls in the lowest or highest 10%	0.8	5	No rater scores an item less than "3"	1.01	SD not < 1.0
culc36a	I always felt Native from a young age.	strongly disagree/disagree/ do not agree or disagree/ agree/ strongly agree	69.2	No item falls in the lowest or highest 10%	0.57	7	No more than one rater that scores an item less than "3"	1.14	SD not < 1.0
culc37a	I know a lot of Native people.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	83.3	No item falls in the lowest or highest 10%	0.29	6	No more than one rater that scores an item less than "3"	0.97	SD not < 1.0
culc38a	I can relate strongly with certain Native movies that I have watched.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	56.8	No item falls in the lowest or highest 10%	0.29	7	No more than one rater that scores an item less than "3"	1.12	SD not < 1.0
culc39a	I have cultural objects or clothing that remind me of being Native.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	63.9	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.2	SD not < 1.0
culc40a	I prefer to be around Native people rather than non-Native people.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	47.3	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.2	SD not < 1.0
culc41a	If an Elder spoke to me about being Native, I would listen to them carefully.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	85.8	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	0.94	SD not < 1.0
culc42a	I would take a Native studies course at school if I had the chance, even if my friends were not in the class.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	75.9	No item falls in the lowest or highest 10%	1	7	No more than one rater that scores an item less than "3"	1.1	SD not < 1.0

culc43a	I feel a strong connection to my ancestors.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	72.8	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.07	SD not < 1.0
culc44a	I feel a connection to all things in life.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	35.8	No item falls in the lowest or highest 10%	1	7	No more than one rater that scores an item less than "3"	1.02	SD not < 1.0
culc45a	Being Native means I sometimes have a different way of looking at the world.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	62.3	No item falls in the lowest or highest 10%	0.83	6	No more than one rater that scores an item less than "3"	1.07	SD not < 1.0
culc46a	Native teachings help me decide how to live my life.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	53.2	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.09	SD not < 1.0
culc47a	My dreams tell me something about my path in life.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	50.7	No item falls in the lowest or highest 10%	0.57	7	No more than one rater that scores an item less than "3"	1.1	SD not < 1.0
culc48a	The eagle feather has a lot of meaning to me.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	61.9	No item falls in the lowest or highest 10%	1	6	No more than one rater that scores an item less than "3"	1.14	SD not < 1.0
culc49a	It is important to me that I know my clan or Native/spirit name.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	69.8	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.16	SD not < 1.0
culc50a	It is important to me that I know my Native language.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	81.9	No item falls in the lowest or highest 10%	1	7	No more than one rater that scores an item less than "3"	0.97	SD not < 1.0
culc51a	When I am physically ill, I look to my Native culture for help.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	34.2	No item falls in the lowest or highest 10%	n/a	n/a	Item added following expert rating elicited	1.06	SD not < 1.0
culc52a	When I am overwhelmed with my emotions, I look to my Native culture for help.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	33.7	No item falls in the lowest or highest 10%	n/a	n/a	Item added following expert rating elicited	1.08	SD not < 1.0
culc53a	When I need to make a decision about something, I look to my Native culture for help.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	31	No item falls in the lowest or highest 10%	n/a	n/a	Item added following expert rating elicited	1.07	SD not < 1.0
culc54a	When I am feeling spiritually disconnected, I look to my Native culture for help.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	42.8	No item falls in the lowest or highest 10%	n/a	n/a	Item added following expert rating elicited	1.17	SD not < 1.0
culc55a	I feel proud to be Native.	strongly disagree/ disagree/ do not agree or disagree/ agree/ strongly agree	91.6	No item falls in the lowest or highest 10%	1	6	No more than one rater that scores an item less than "3"	0.75	SD not < 1.0
culc56a	How often do you offer tobacco?	Never/once or twice in past year/every month every week/everyday	9.1	No item falls in the lowest or highest 10%	0.83	6	No more than one rater that scores an item less than "3"	1	SD not < 1.0
culc57a	How often does someone in your family or someone you are close with offer tobacco	Never/once or twice in past year/every month/ every week/everyday	28.7	No item falls in the lowest or highest 10%	0.67	6	No more than one rater that scores an item less than "3"	1.3	SD not < 1.0

Item	Question	Response	%	Note		Expert rating	SD	SD note
cuic58a	How often do you smudge or use sage/sweetgrass?	Never/once or twice in past year/every month/ every week/everyday	35.7	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.23	SD not < 1.0
cuic59a	How often does someone in your family or someone you are close smudge or use sage/sweetgrass?	Never/once or twice in past year/every month/ every week/everyday	45.9	No item falls in the lowest or highest 10%	0.86	7	No more than one rater that scores an item less than "3"	1.3	SD not < 1.0
cuic60a	How often do you think about being Native?	Never/once or twice in past year/every month/ every week/everyday	63.9	No item falls in the lowest or highest 10%	0.71	7	No more than one rater that scores an item less than "3"	1.39	SD not < 1.0
cuic61a	How often do you hear people from your family or someone you are close with talk about being Native?	Never/once or twice in past year/every month/ every week/everyday	41.3	No item falls in the lowest or highest 10%	0.8	5	No rater scores an item less than "3"	1.38	SD not < 1.0
cuic62a	How often have you listened to an elder or someone you are close with tell traditional stories?	Never/once or twice in past year/every month/ every week/everyday	27.2	No item falls in the lowest or highest 10%	1	6	No more than one rater that scores an item less than "3"	1.08	SD not < 1.0
cuic63a	How often have you attended a pow-wow, ceremonial dance, or round dance?	Never/once or twice in past year/every month/ every week/everyday	12.9	No item falls in the lowest or highest 10%	1	6	No more than one rater that scores an item less than "3"	0.82	SD not < 1.0
cuic64a	How often do you hear people from your family or someone you are close with speak in their Native language?	Never/once or twice in past year/every month/ every week/everyday	61.6	No item falls in the lowest or highest 10%	n/a	n/a	Item added following expert rating elicited	1.42	SD not < 1.0

Appendix F

Cultural Connectedness Scale (CCS)

ABOUT MY CULTURE

The following questions ask about being [Aboriginal/First Nations, Métis or Inuit] and culture:

1.	I know my cultural/spirit name.	O **No**	O **Yes**
2.	I can understand some of my [Aboriginal or First Nations/Métis/Inuit] language.	O **No**	O **Yes**
3.	In certain situations, I believe things like animals and rocks have a spirit like [Aboriginal or First Nations/Métis/Inuit] people.	O **No**	O **Yes**
4.	I use tobacco for guidance.	O **No**	O **Yes**
5.	I have participated in a cultural ceremony (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast, or Giveaway).	O **No**	O **Yes**
6.	I have helped prepare for a cultural ceremony (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway).	O **No**	O **Yes**
7.	I have offered food or feasted someone/something for a cultural reason.	O **No**	O **Yes**
8.	Someone in my family or someone I am close with attends cultural ceremonies (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway).	O **No**	O **Yes**
9.	I plan on attending a cultural ceremony in the future (examples: Sweatlodge, Moon Ceremony, Sundance, Longhouse, Feast or Giveaway).	O **No**	O **Yes**
10.	I plan on trying to find out more about my [Aboriginal or First Nations/Métis/Inuit] culture, such as its history, traditions and customs.	O **No**	O **Yes**
11.	I have a traditional person, Elder or Clan Mother who I talk to.	O **No**	O **Yes**

	Strongly Disagree	**Disagree**	**Do Not Agree or Disagree**	**Agree**	**Strongly Agree**
12. I have spent time trying to find out more about being [Aboriginal or First Nations/Métis/Inuit], such as its history, traditions and customs.	O	O	O	O	O
13. I have a strong sense of belonging to my [Aboriginal or First Nations/Métis/Inuit] community or Nation.	O	O	O	O	O
14. I have done things that will help me understand my [Aboriginal or First Nations/Métis/Inuit] background better.	O	O	O	O	O
15. I have talked to other people in order to learn more about being [Aboriginal or First Nations/Métis/Inuit].	O	O	O	O	O
16. When I learn something about my [Aboriginal or First Nations/Métis/Inuit], I will ask someone more about it later.	O	O	O	O	O

17.	I feel a strong attachment towards my [Aboriginal or First Nations/Métis/Inuit] community or Nation.	O	O	O	O	O
18.	If a traditional person, Elder, or Clan Mother spoke to me about being [Aboriginal or First Nations/Métis/Inuit], I would listen to them carefully.	O	O	O	O	O
19.	I feel a strong connection to my ancestors.	O	O	O	O	O
20.	Being [Aboriginal or First Nations/Métis/Inuit] means I sometimes have a different way of looking at the world.	O	O	O	O	O
21.	The eagle feather has a lot of meaning to me.	O	O	O	O	O
22.	It is important to me that I know my [Aboriginal or First Nations/Métis/Inuit] language.	O	O	O	O	O
23.	When I am physically ill, I look to my [Aboriginal or First Nations/Métis/Inuit] culture for help.	O	O	O	O	O
24.	When I am overwhelmed with my emotions, I look to my [Aboriginal or First Nations/Métis/Inuit] culture for help.	O	O	O	O	O
25.	When I need to make a decision about something, I look to my [Aboriginal or First Nations/Métis/Inuit] culture for help.	O	O	O	O	O
26.	When I am feeling spiritually disconnected, I look to my [Aboriginal or First Nations/Métis/Inuit] culture for help.	O	O	O	O	O

		Never	Once/ Twice in the Past Year	Every Month	Every Week	Every Day
27.	How often do you make tobacco offerings for cultural purposes?	O	O	O	O	O
28.	How often do you use sage, sweetgrass, or cedar in any way or form?	O	O	O	O	O
29.	How often does someone in your family or someone you are close with use sage, sweetgrass, or cedar in any way or form?	O	O	O	O	O

Appendix G

Cultural Connectedness Scale – Short (CCS)

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ABOUT MY CULTURE
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The following questions ask about being [Aboriginal/First Nations, Métis or Inuit] and culture:

1.	I know my cultural/spirit name.	O **No**	O **Yes**
2.	In certain situations, I believe things like animals and rocks have a spirit like [Aboriginal or First Nations/Métis/Inuit] people.	O **No**	O **Yes**
3.	I use tobacco for guidance.	O **No**	O **Yes**
4.	I plan on trying to find out more about my [Aboriginal or First Nations/Métis/Inuit] culture, such as its history, traditions and customs.	O **No**	O **Yes**
5.	I have a traditional person, Elder or Clan Mother who I talk to.	O **No**	O **Yes**

		Strongly Disagree	Disagree	Do Not Agree or Disagree	Agree	Strongly Agree
6.	I have spent time trying to find out more about being [Aboriginal or First Nations/Métis/Inuit], such as its history, traditions and customs.	O	O	O	O	O
7.	I have a strong sense of belonging to my [Aboriginal or First Nations/Métis/Inuit] community or Nation.	O	O	O	O	O
8.	I feel a strong attachment towards my [Aboriginal or First Nations/Métis/Inuit] community or Nation.	O	O	O	O	O
9.	The eagle feather has a lot of meaning to me.	O	O	O	O	O

		Never	Once/ Twice in the Past Year	Every Month	Every Week	Every Day
10.	How often does someone in your family or someone you are close with use sage, sweetgrass, or cedar in any way or form?	O	O	O	O	O

Curriculum Vitae

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