

Cultural Connectedness and Its Relation to Mental Wellness for First Nations Youth

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Abstract We explored the interrelationships among components of cultural connectedness (i.e., identity, traditions, and spirituality) and First Nations youth mental health using a brief version of the original Cultural Connectedness Scale. Participants included 290 First Nations youth ($M_{\text{age}} = 14.4$) who were recruited from both urban and rural school settings in Saskatchewan and Southwestern Ontario. We performed a confirmatory factor analysis of the Cultural Connectedness Scale-Short Version (CCS-S) items to investigate the factor stability of the construct in our sample. We examined the relationships between the CCS-S subscales and self-efficacy, sense of self (present and future), school connectedness, and life satisfaction using hierarchical multiple linear regression analyses to establish the validity of the abbreviated measure. The results revealed that cultural connectedness, as measured by the 10-item CCS-S, had strong associations with the mental health indicators assessed and, in some cases, was associated with First Nations youth mental health above and beyond other social determinants of health. Our results extend findings from previous research on cultural connectedness by elucidating the meaning of its components and demonstrate the importance of culture for positive youth development.

Keywords First Nations · Youth · Cultural connectedness · Mental health · Assessment · Resilience

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Introduction

The mental health of youth is one of the most urgent concerns affecting many First Nations¹ (FN) communities across Canada (First Nations Information Governance Centre, 2012). FN youth overall continue to experience an increased risk of mental health problems compared to their non-FN counterparts including conduct disorder (Frank & Lester, 2002), substance use (Whitbeck, Yu, Johnson, Hoyt, & Walls, 2008), and suicide (Chandler & LaLonde, 1998; Kirmayer, 1994). These disproportionate risks have arisen within the context of an extensive history of harmful treatment of FN peoples borne of political policies aimed at the oppression, marginalization, and destruction of FN cultures (Kirmayer, Gone, & Moses, 2014). However, not all FN youth are drawn into a helpless situation with poor mental health prognoses; in fact, a high proportion of FN youth are reported as mentally healthy (First Nations Information Governance Centre, 2012). Why do some FN youth demonstrate psychological resilience in the context of significant adversity? Our study provides a new face to the centuries-old phenomenon by delineating the role of culture for the mental health of FN youth. We begin by reviewing the historical and social realities of FN youth in our society and their resilience in the face of adversity to contextualize and frame our main research objective: to scientifically examine the relationships between culture and mental health among FN youth using a brief version of the newly developed Cultural Connectedness Scale (CCS; Snowshoe, Crooks, Tremblay, Craig, & Hinson, 2015). We did this by developing an abbreviated version of the original scale (i.e., Cultural Connectedness Scale-Short Version; CCS-S) and demonstrating its usefulness by linking it to indicators of positive mental health among FN youth in Canada. Lastly, we discuss the utility of the CCS-S in terms of potential contributions to the field and strongly encourage researchers to begin to incorporate cultural connectedness into their models of FN peoples' mental health.

First Nations Youth Adversity

Of the myriad forces that influence youth mental health, the most fundamental are the social contexts in which youth are embedded (Rutter, 1993). A substantial body of research has shown that the family and school realms of youths' lives are among the most critical, in that a lack of positive family relationships and sense of belonging at school leads to poor prognosis for normal youth development (Benard, 1992; Karcher, 2011; Resnick, 2000). Many FN youth throughout Canada experience strained family ties as a result of the residential school and "Sixties Scoop"² eras, both of which were part of the same continuum of political policies that specifically sought to sever the connection between FN youth and their families

¹ We use the term First Nations (FN) throughout the manuscript to reflect our Canadian context. We rely on American findings where appropriate due to the absence of previous cultural connectedness studies within a Canadian context.

² The "Sixties Scoop" refers to the Canadian practice, beginning in the 1960s and continuing until the late 1980s, of forcibly removing ("scooping up") First Nations children from their families and placing them in foster homes or for adoption.

for future generations (Stevenson, 2013). FN peoples who are living with the legacies of colonization may perceive the current educational system as an extension of historical policies that serve to further oppress FN ways of life (Battiste & Barman, 2011). While the resulting poor relationships with school (Little Soldier, 1985) that characterize FN youth certainly impact their development in a number of ways (Reading & Wien, 2009), resistance to Western-based education may represent more “function than folly” and reflect a larger movement towards self-determination (Renfrey, 1992, p. 324).

In addition to the systematic removal of family and school protective factors, a significant proportion of FN youth are also confronted with the unique challenge of facing acculturation (i.e., the extent to which individuals are influenced by or assimilated into cultures other than their own) on their homeland on a *daily* basis (Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001). Historical trauma (i.e., the enduring effects of trauma due to the colonization, marginalization, oppression, and destruction of FN peoples and their cultures that persist across multiple generations; Kirmayer et al., 2014; Mohatt, Thompson, Thai, & Tebes, 2014) is a major source of acculturation-related stress (Hawkins, Cummins, & Marlatt, 2004) that has been linked to a number of negative emotional responses including feelings of sadness, anxiety, shame, and anger, which in turn can negatively impact mental health outcomes for FN youth (LaFromboise, Albright, & Harris, 2010; Whitbeck, Chen, Hoyt, & Adams, 2004). Furthermore, discriminatory acts by members of the dominant society may serve to trigger historical trauma for these youth (Mohatt et al., 2014; Whitbeck et al., 2001). Historical trauma and discrimination operate as “major assaults” on the developmental process for FN youth (Luthar, Cicchetti, & Becker, 2000, p. 543). All too often, the inequitable socio-political environments that perpetuate negative developmental trajectories for FN youth are not acknowledged (let alone addressed) by Western treatment models (Goodman & Gorski, 2015; Wexler & Gone, 2012). Instead, the results of “living in trauma” (Linklater, 2014, p. 20) may be transformed into mental health labels (e.g., major depression, generalized anxiety) and externalizing behaviours (e.g., academic failures, legal problems) that can persist into adulthood (Little Soldier, 1985; McQuaid, Bombay, McInnis, Matheson, & Anisman, 2015; Mohatt et al., 2014; Whitbeck et al., 2004; Whitbeck, Hoyt, Stubben, & LaFromboise, 2001; Whitbeck et al., 2008). These highly visible social problems often serve to reinforce stereotypical notions and dominant narratives of FN people that sustain damaging oppressive policies and attitudes directed towards an already disenfranchised group of people (Goodman & Gorski, 2015).

First Nations Youth Resilience

Despite the challenges associated with historical and contemporary forms of colonialism, FN youth who manage to maintain positive family and school connections experience less emotional distress and lower rates of risk-taking and suicidal behaviour (van der Woerd, Dixon, McDiarmid, Chittenden, & Murphy, 2005). In efforts to better understand the resilience-building process for these youth, researchers have also reported that the revitalization of FN culture is critical in

mitigating the negative impact that historical trauma and discrimination have on FN youths' mental health (Bombay, Matheson, & Anisman, 2010; Whitbeck et al., 2004). Cultural connectedness (i.e., the knowledge of, and engagement with, aspects of FN culture) may help explain why some youth manage to not only survive but also *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 the mental health of FN youth (Torres Stone, Whitbeck, Chen, Johnson, & Olson, 2006), the approaches that were taken to support this premise were largely deficit-based (e.g., the lack of connection to culture as a risk factor for depression or substance abuse; Fleming & Ledogar, 2008). As such, the cultural mechanisms at work that not only contribute to, but *enhance*, FN mental health and resilience are still largely unknown. Additionally, research on the role of culture in a FN context has historically lacked a unified conceptual framework for the construct and measurement decisions have often been inappropriately borrowed from previous work without a theoretical basis. Consequently, researchers have reported mixed results when components of cultural connectedness were removed or changed (Fleming & Ledogar, 2008). For example, some researchers have found interaction effects between cultural connectedness and self-esteem on mental health outcomes (Zimmerman, Ramirez-Valles, Washienko, Walter, & Dyer, 1998), while other have not (Whitbeck et al., 2001).

Recognizing this gap, Snowshoe et al. (2015) developed the Cultural Connectedness Scale (CCS) to organize, explain, and promote a better understanding of the resiliency mechanisms underlying cultural connectedness for FN youth. Using an innovative blend of rational expert judgments and empirical data, they established a three-factor model of cultural connectedness for FN youth. The resulting 29-item inventory consisted of three separate but inter-correlated components of FN culture: identity, traditions, and spirituality. While the findings of the Snowshoe et al. (2015) study demonstrated that cultural connectedness was positively related to indicators of mental wellness, the results were correlational and thus the direction of causation could not be determined. Our study extended this previous work by elucidating the association between cultural connectedness and positive mental health for FN youth using a brief version of the original CCS. We hypothesized that cultural connectedness would act as an important social determinant of mental health for FN youth that can be empirically linked to positive mental health outcomes. Specifically, we expected that each of the three components (i.e., identity, traditions, and spirituality) of cultural connectedness would relate to the mental health indicators and, in some cases, be associated with positive outcomes above and beyond well-established social determinants of mental health.

Methods

Participants

Two-hundred-and-ninety FN, Métis, and Inuit youth (140 male, 140 female; 10 unspecified) enrolled in grades seven through 12 from Saskatchewan ($n = 153$) and

Southwestern Ontario ($n = 137$) in Canada participated in our study. Approximately 68 percent of respondents reported living on-reserve. Respondents ranged in age from 11 to 24 years of age ($M = 14.4$; $SD = 2.4$), with approximately 90 percent being age 18 or under. Those individuals with higher chronological ages than what is typically considered for “youth” were retained in the analysis, as age is not necessarily congruent with cultural connectedness trajectories. Low socioeconomic 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 11–15 from the general Canadian population (Adamson, Bradshaw, Hoelscher, & Richardson, 2007).

In Saskatchewan, we asked all youth from our target grades enrolled at schools on the five FN reserve communities under the jurisdiction of the local education council to participate in the study. In Southwestern Ontario, we used a multipronged strategy to identify a complete cohort of FN, Métis, and Inuit youth in a large provincially funded urban school board.³ Students from 35 schools were involved across the two provinces. The Centre for Addiction and Mental Health (CAMH)–Centre for Prevention Science (CPS) Research Ethics Board, the school board research ethics team, and the educational authority in Saskatchewan approved our research protocols. In addition to obtaining legal authorization of the project, we sought appropriate traditional and moral authorization (Crooks, Snowshoe, Chiodo, & Brunette-Debassige, 2013). The Aboriginal Advisory Committee (comprised of community partners and educators from the FN reserves whose youth attend school in the urban board) approved the project for the Ontario school board. Similarly, the FN Band Council approved the project in Saskatchewan.

We provided an introduction to youth participants that described the purpose of the study, their rights as research participants, and how to complete the survey. We worked closely with a contact person at each school to recruit FN youth participants and arrange data collection dates and times. We 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.

A small number of respondents self-identified as being other than status or non-status FN (i.e., 13 Métis, two Inuit). Although our study involved the validation of a FN-specific scale of cultural connectedness for youth, it is not uncommon for these youth to be affiliated with more than one background or for youth to identify with a different community or ancestry other than their own (e.g., FN). Additionally, 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 Ojibwe). As such, self-identified Métis and Inuit youth were retained in the analysis.

³ All youth appearing on the school board’s FN, Métis, and Inuit student self-identification system and youth participating in The Fourth R: Uniting Our Nations programs were asked to participate in the study [see Crooks et al. (2015) for more information on FN programming].

Table 1 Items and standardized factor loadings of the 10-item Cultural Connectedness Scale-Short Version (CCS-S)

Item #	Standardized loadings
<i>Identity (4 items)</i>	
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
<i>Traditions (3 items)</i>	
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
<i>Spirituality (3 items)</i>	
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

FNMI = First Nations, Métis, and/or Inuit

^a No or yes response format

^b Strongly disagree, disagree, do not agree or disagree, agree, strongly agree response format

^c Never, once/twice in the past year, every month, every week, every day response format

Measures

Cultural Connectedness Scale-Short Version (CSS-S)

We chose a subset of the original 29-item CCS to represent each of the three cultural connectedness components (i.e., identity, traditions, and spirituality; Snowshoe et al., 2015), which was heavily informed by community-based knowledge obtained from FN traditional Elder collaborations. A total of 10 items were ultimately selected to comprise the CCS-S, four of which belonged on the identity subscale, three on the traditions subscale, and three on the spirituality subscale (see Table 1). 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 *never* to *every day*, and one had a 5-point Likert response scale ranging from *strongly disagree* to *strongly agree*. The CCS-S demonstrated good scale score reliability (Cronbach's $\alpha = .70$, 95% CI [.641–.752]).⁴

⁴ Since scale score reliabilities are often artificially deflated by a narrow range of items comprising a scale, we recommend that the full scale CCS-S be used for research purposes. Researchers interested in specific components of cultural connectedness may elect to use the original CCS (Snowshoe et al., 2015).

Demographics

Demographic questions used in our study included gender; age; school district; school name; FN (status or non-status), Métis and/or Inuit ancestry; residence (on-reserve or off-reserve); family affluence; and name of the respondent's affiliated FN, Métis, or Inuit community/Nation. In our study, we treated gender and age as social determinants of health variables for the purpose of our analyses.

Stressful Life Events

Stressful life events were also 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, such as loss of a close friend or family member, police interaction, and social services interaction. A total of eight items constituted 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 our 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 events, 43 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 147-item 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 FN youth populations in a number of capacities. The AMHS-IV includes a nine-item self-efficacy scale that assesses a youth's judgment about his or her ability to complete tasks and set goals. For example, an item on the AMHS-IV self-efficacy scale reads, "I often feel confident in dealing with the problems of life." All items on the self-efficacy scale are rated on 5-point Likert scales (*strongly disagree* to *strongly agree*). The self-efficacy scale demonstrated questionable scale score reliability in our sample (Cronbach's $\alpha = .58$, 95% CI .499–.651).

Sense of Self in the Present and in the Future

The Hemingway Measure of Adolescent Connectedness–Short Version (MAC 5-A-Short Version, Grades 6-12; Karcher, 2011) includes a six-item⁵ "sense of self in the present" subscale and a six-item⁶ "sense of self in the future" subscale. The former subscale assesses positive connections to youths' lives including connection

⁵ The reversed item on the scale was removed in the Snowshoe et al. (2015) study due to its negative impact on internal consistency with a FN youth sample. As such, we emulated this approach by administering the more reliable, shortened version of the scale in our study.

⁶ Ibid.

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 self in the present subscale reads, “I can name three things that other kids like about me.” The sense of self in the future subscale taps the positive qualities of youth that are perceived by others and actions of the youth to secure a positive future, such as the item, “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 (Cronbach’s $\alpha = .74$, 95% CI .633–.789), as did the sense of self in the future subscale (Cronbach’s $\alpha = .73$, 95% CI .676–.778).

School Connectedness

The MAC 5-A-Short Version (Karcher, 2011) also includes a six-item⁷ 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 scale focuses on the importance a youth places in school and the degree to which he or she actively seeks to be successful in school. Respondents rated the items on 5-point Likert scale (*not at all true* to *very true*). The school connectedness subscale had acceptable reliability in our sample (Cronbach’s $\alpha = .75$, 95% CI .702–.798).

Life Satisfaction

The Satisfaction with Life Scale for Children (SWLS-C; Gadermann, Schonert-Reichl, & Zumbo, 2010) is a five-item 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 reads, “I am happy with my life.” The SWLS-C had adequate scale score reliability in our sample (Cronbach’s $\alpha = .77$, 95% CI .724–.810).

Procedure

The main objective of our study was to explore the relationships among the three components of cultural connectedness (i.e., identify, traditions, and spirituality; Snowshoe et al., 2015) and the mental health of FN youth. First, we examined the relationships among the subscales on the CCS-S using correlational analysis to provide evidence for construct validity. We also explored group differences based on gender, on- or off-reserve residence, and family affluence. Next, we conducted a confirmatory factor analysis (CFA) using the CCS-S items to test the three-factor stability of the cultural connectedness construct. Finally, we investigated the relationships between the CCS-S subscales and the mental health measures (i.e., self-efficacy, sense of self in the present and future, school connectedness, and life satisfaction), in addition to the three social determinants of health measures, using

⁷ Ibid.

hierarchical multiple linear (HML) regression analyses to establish the validity of the shortened cultural connectedness measure.

Analysis

The Pearson’s *r* correlations among the three CCS-S subscales ranged from .30 to .43, *ps* < .01 (see top split of Table 2), indicating that these subscales are positively associated. We also conducted independent samples *t* tests to determine whether any gender, on-reserve versus off-reserve, and family affluence (i.e., low, moderate, high) groups differences existed in our sample for each of the CCS-S subscales. We interpreted the results at a more conservative *p* level of <.01 given the relatively small sample size for these analyses. No significant group differences were found (see Table 3). Differences between FN, Métis, and Inuit groups could not be determined given the small proportion of the sample that identified as Métis or Inuit (i.e., approximately 5 percent).

Structure Stability of the Cultural Connectedness Construct

We examined the stability of the cultural connectedness factor structure among the CCS-S items using a CFA. We tested Snowshoe et al.’s (2015) three-factor solution 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 our sample of FN youth (*N* = 290). We evaluated the model fit 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 1. 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 overall measurement model of cultural connectedness.

Table 2 Pearson correlations between the Cultural Connectedness Scale-Short Version (CCS-S) and other 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

Table 3 Comparisons between males and females, Southwestern Ontario and Saskatchewan, and on- and off-reserve groups on Cultural Connectedness Scale-Short Version (CCS-S) means

	Males		Females		<i>t</i>	<i>p</i>
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>		
Identity	138	12.23 (2.40)	140	12.64 (2.31)	−1.445	.150
Traditions	138	5.20 (3.00)	140	4.90 (2.65)	.878	.381
Spirituality	139	8.75 (2.34)	140	8.67 (2.31)	.237	.813
	Southwestern Ontario		Saskatchewan		<i>t</i>	<i>p</i>
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>		
Identity	136	12.73 (2.36)	150	12.08 (2.32)	−2.337	.020
Traditions	136	4.38 (2.72)	152	5.59 (2.83)	3.709	.000
Spirituality	137	9.01 (2.19)	149	8.48 (2.42)	−1.956	.051
	On-Reserve		Off-Reserve		<i>t</i>	<i>p</i>
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>		
Identity	197	12.39 (2.28)	80	12.58 (2.55)	.610	.542
Traditions	197	5.57 (2.78)	80	3.78 (2.56)	−4.952	.000
Spirituality	198	8.79 (2.31)	79	8.54 (2.38)	−.814	.416

Next, we investigated the relationships between the CCS-S subscales and the mental health measures. Table 2 (see bottom split) shows Pearson correlation coefficients 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 (ranging from $|r| = .12$, $p < .05$, to $.24$, $p < .01$).

Cultural Connectedness and Positive Mental Health

Lastly, we examined the relationships between the CCS-S subscales and self-efficacy, sense of self (present and future), school connectedness, and life satisfaction using HML regression analyses to establish the validity of the shortened cultural connectedness scale to the mental health of FN youth, over and above three 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. We selected this approach in order to determine whether the CCS-S subscales were associated with these measures above and beyond the social determinants of health variables.

All regression equations produced results that were normally distributed. Age, gender, and stressful life events as a group were not found to predict self-efficacy

($\Delta R^2 = .028$; $F[3, 233] = 2.249$; *ns*). However, when the CCS-S subscales were added to the equation, the variance of self-efficacy explained significantly increased to 12.8% as shown in Table 4. Although the identity subscale alone appeared to significantly improve model fit ($\Delta R^2 = .111$; $F[4, 232] = 9.346$; $p < .001$), 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 measured by all three CCS-S subscales, has an important role in understanding FN 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 alone but, when cultural connectedness was considered, the identity subscale explained 3% of the variance of sense of self in the present ($\Delta R^2 = .028$; $F[4, 241] = 2.902$; $p < .01$), as shown in Table 4. 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 model, 2.6% of the sense of self in the future variance was explained ($\Delta R^2 = .038$; $F[4, 241] = 2.607$; $p < .01$). 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 ($\Delta R^2 = .012$; $F[6, 239] = 2.918$; $p < .05$; see Table 4). Interestingly, the spirituality subscale significantly improved model fit above and beyond identity alone. The overall results suggest that a cohesive identity is important for a cohesive self-concept to develop, and that FN 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 ($\Delta R^2 = .018$; $F[3, 242] = 1.445$; *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 ($\Delta R^2 = .056$; $F[4, 241] = 4.810$; $p < .001$; see Table 5). As such, FN youth involvement in and positive attitude towards school may be significantly improved by helping these youth to access, engage in, and affiliate with their FN culture.

In the last regression equation, age, gender, and stressful life events were found to account for 11% of the variance in life satisfaction ($\Delta R^2 = .121$; $F[3, 240] = 11.051$; $p < .001$; see Table 5). Once the identity subscale was added to the model, the variance explained increased to 13% and model fit significantly improved ($\Delta R^2 = .027$; $F[4, 239] = 10.419$; $p < .001$). Although the traditions and spirituality subscales did not appear to significantly improve model fit over and above the identity subscale, the three CCS-S subscales together were important predictors of life satisfaction. This finding suggests that cultural connectedness is an important contributor to FN youths' happiness with their life, which is a necessary element for overall mental health and wellness (Raibley, 2012).

Table 4 Predictors of self-efficacy, sense of self in the present, and sense of self in the future among First Nations Youth Using HML regression

Dependent	Predictors	Model 1			Model 2		
		b	β	95% CI	b	β	95% CI
Self-efficacy (<i>n</i> = 237)	Age	.311*	.137	(.004, .617)	.390**	.171	(.099, .680)
	Gender	-.795	-.074	(-2.166, .576)	-1.125	-.105	(-2.424, .174)
	Stressful life events	.072	.028	(-.279, .424)	-.020	-.008	(-.354, .313)
	Identity	-	-	-	.778**	.337	(.497, 1.059)
	Traditions	-	-	-	-	-	-
	Spirituality	-	-	-	-	-	-
	Constant	41.007	-	-	31.673	-	-
	Adjusted R^2	-	.016	-	-	.124***	-
	ΔR^2	-	.028	-	-	.111***	-
	Age	-.008	-.035	(-.039, .022)	-.004	-.017	(-.034, .026)
	Gender	-.141*	-.129	(-.278, -.003)	-.161	-.147	(-.297, -.025)
Sense of self in the present (<i>n</i> = 246)	Stressful life events	.005	.019	(-.030, .040)	.000	.001	(-.035, .035)
	Identity	-	-	-	.040**	.171	(.011, .070)
	Traditions	-	-	-	-	-	-
	Spirituality	-	-	-	-	-	-
	Constant	3.469	-	-	2.988	-	-
	Adjusted R^2	-	.005	-	-	.030*	-
	ΔR^2	-	.017	-	-	.028**	-
	Age	.013	.059	(-.016, .042)	.017	.079	(-.011, .046)
	Gender	-.017	-.016	(-.148, .115)	-.039	-.038	(-.169, .091)
	Stressful life events	-.008	-.031	(-.042, .026)	-.013	-.052	(-.046, .020)
	Identity	-	-	-	.044**	.197	(.016, .072)
Traditions	-	-	-	-	-	-	
Spirituality	-	-	-	-	-	-	
Constant	3.120	-	-	2.592	-	-	
Sense of self in the future (<i>n</i> = 246)	Age	.013	.059	(-.016, .042)	.017	.079	(-.011, .046)
	Gender	-.017	-.016	(-.148, .115)	-.039	-.038	(-.169, .091)
	Stressful life events	-.008	-.031	(-.042, .026)	-.013	-.052	(-.046, .020)
	Identity	-	-	-	.044**	.197	(.016, .072)
	Traditions	-	-	-	-	-	-
	Spirituality	-	-	-	-	-	-
	Constant	3.120	-	-	2.592	-	-

Table 4 continued

Dependent	Predictors	Model 1		Model 2			
		b	β	b	β	95% CI	95% CI
	Adjusted R^2		-.009		.026*		
	ΔR^2		.004		.038**		
Table 4 continued							
Dependent	Predictors	Model 3		Model 4			
		b	β	b	β	95% CI	95% CI
Self-efficacy ($n = 237$)	Age	.348**	.169	.411**	.181	(.091, .676)	(.118, .704)
	Gender	-1.111	-.103	-1.076	-.100	(-2.414, .193)	(-2.375, .223)
	Stressful life events	-.033	-.013	-.019	-.007	(-.373, .308)	(-.359, .320)
	Identity	.762***	.330	.654***	.283	(.468, 1.055)	(.337, .971)
	Traditions	.048	.025	-.002	-.001	(-.204, .300)	(-.259, .255)
	Spirituality	-	-	.290	.122	-	(-.039, .620)
	Constant	31.838	-	30.300	-	-	-
	Adjusted R^2		.121***		.128***		
	ΔR^2		.001		.011		
	Sense of self in the present ($n = 246$)	Age	-.005	-.020	-.004	-.017	(-.035, .026)
Gender		-.160	-.146	-.159	-.145	(-.297, -.023)	(-.296, -.022)
Stressful life events		-.001	-.003	.000	-.002	(-.036, .035)	(-.036, .035)
Identity		.039*	.165	.036*	.154	(.008, .070)	(.003, .070)
Traditions		.004	.013	.003	.016	(-.022, .031)	(-.024, .031)
Spirituality		-	-	.007	.028	-	(-.028, .042)
Constant		3.003	-	2.966	-	-	-
Adjusted R^2			.027*		.023		
ΔR^2			.000		.001		

Table 4 continued

Dependent	Predictors	Model 3			Model 4		
		b	β	95% CI	b	β	95% CI
Sense of self in the future ($n = 246$)	Age	.016	.074	(-.013, .45)	.020	.091	(-.009, .049)
	Gender	-.037	-.036	(-.167, .093)	-.031	-.030	(-.160, .098)
	Stressful life events	-.015	-.061	(-.049, .019)	-.013	-.051	(-.046, .021)
	Identity	.041**	.184	(.012, .071)	.026	.115	(-.006, .057)
	Traditions	.009	.049	(-.016, .034)	.001	.004	(-.025, .027)
	Spirituality	-	-	-	.042*	.182	(.009, .075)
	Constant	2.624			2.400		
	Adjusted R^2		.024			.045**	
	ΔR^2		.002			.012*	

CI confidence interval

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

Table 5 Predictors of school connectedness and life satisfaction among First Nations youth using HML regression

Dependent	Predictors	Model 1			Model 2		
		b	β	95% CI	b	β	95% CI
School connectedness (<i>n</i> = 246)	Age	.019	.083	(-.011, .048)	.024	.108	(-.005, .053)
	Gender	.065	.061	(-.069, .198)	.037	.035	(-.094, .168)
	Stressful life events	-.030	-.116	(-.064, .004)	-.036*	-.141	(-.070, -.003)
	Identity	-	-	-	.055***	.241	(.027, .084)
	Traditions	-	-	-	-	-	-
	Spirituality	-	-	-	-	-	-
	Constant	2.933	-	-	2.275	-	-
	Adjusted R^2		.005			.059**	
	ΔR^2		.018			.056***	
	Life satisfaction (<i>n</i> = 244)	Age	-.201**	-.167	(-.352, -.050)	-.179*	-.148
Gender		-.913**	-.165	(-1.575, -.251)	-1.039**	-.188	(-1.698, -.380)
Stressful life events		-.300**	-.221	(-.469, -.130)	-.325***	-.239	(-.493, -.156)
Identity		-	-	-	.207**	.168	(.059, .355)
Traditions		-	-	-	-	-	-
Spirituality		-	-	-	-	-	-
Constant		22.322	-	-	19.882	-	-
Adjusted R^2			.110***			.134***	
ΔR^2			.121***			.027**	

Table 5 continued

Dependent	Predictors	Model 3			Model 4		
		b	β	95% CI	b	β	95% CI
School connectedness ($n = 246$)	Age	.024	.106	(-.005, .053)	.026	.117	(-.003, .055)
	Gender	.038	.035	(-.093, .169)	.041	.039	(-.089, .172)
	Stressful life events	-.037*	-.144	(-.071, -.003)	-.036*	-.138	(-.070, -.001)
	Identity	.054***	.236	(.024, .084)	.044***	.194	(.012, .076)
	Traditions	.003	.018	(-.022, .029)	-.002	-.009	(-.028, .024)
	Spirituality	-	-	-	.026	.111	(-.007, .059)
	Constant	2.287	-	-	2.147	-	-
	Adjusted R^2	-	.055**	-	-	.060**	-
	ΔR^2	-	.000	-	-	.009	-
	Life satisfaction ($n = 244$)	Age	-.175*	-.145	(-.327, -.023)	-.174*	-.144
Gender		-1.043**	-.188	(-1.704, -.383)	-1.042**	-.188	(-1.705, -.379)
Stressful life events		-.320***	-.236	(-.492, -.148)	-.319***	-.235	(-.492, -.146)
Identity		.214**	.173	(.059, .369)	.211*	.171	(.044, .377)
Traditions		-.020	-.020	(-.149, .109)	-.022	-.022	(-.156, .112)
Spirituality		-	-	-	.010	.008	(-.158, .177)
Constant		19.792	-	-	19.735	-	-
Adjusted R^2		-	.131***	-	-	.127***	-
ΔR^2		-	.000	-	-	.000	-

CI confidence interval

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

Discussion

The principal aim of this study was to investigate the associations among cultural connectedness and the mental health of FN youth using the newly developed CCS-S. The factor analytic results, together with the correlations we found, support the invariance of the major structural elements of the cultural connectedness construct as identified by Snowshoe et al. (2015). Our study extends the findings of the previous examination of cultural connectedness by further elucidating the meaningfulness of its components (i.e., identity, traditions, spirituality). While cultural connectedness added only a small amount of variance in each case, it consistently made a contribution. These findings are a testament to the strength of cultural connectedness among FN youth, as age, gender, and life stress are generally accepted as influential, and largely universal, social determinants of health (Mikkonen & Raphael, 2010). Furthermore, our work on the CCS-S has improved the practical utility of the measure due to its brevity.

While most researchers have focused on the lack of cultural connectedness (i.e., acculturation) in relation to mental health problems among FN peoples (Fleming & Ledogar, 2008), a unique contribution of our study was our commitment to a strengths-based approach. All too often, explanations about mental health issues facing FN youth have been framed from a deficit-based perspective, which are largely driven by dominant narratives and research methodologies that tend to misrepresent FN peoples' psychosocial realities (Tuhiwai Smith, 2012). We consider our study to be innovative in that it involved the identification of a culturally specific protective factor using a strengths-based approach within a FN worldview that can be empirically measured and verified (Walter & Andersen, 2013).

Although this work has shed light on the resilience process for the mental health of FN youth, our study has several limitations. In particular, a more culturally appropriate measure of self-efficacy should be developed with reference to diverse FN youth populations (e.g., Multicultural Mastery Scale; Fok, Allen, Henry, Mohatt, & People Awakening Team, 2012). Similarly, measures of school connectedness that capture FN ways of knowing and community-based indicators of success should be considered in future studies, as existing measures tend to reflect Western-based educational outcomes that do not address the history of colonialism and its residual impacts on academic achievement for FN youth (Dehyle, 1992). The variance accounted for by the CCS-S in our study may improve somewhat with the use of more culturally specific outcome measures. Secondly, the data are cross-sectional, a feature that raises some questions about the direction of effects. The relationships we reported can only be elaborated satisfactorily with longitudinal data. Thirdly, while our sample may be viewed as diverse for research purposes, it still does not represent the vast heterogeneity of FN youth in Canadian society. Consequently, the results here may not be generalizable to all FN peoples or communities. We caution the use of the CCS-S in different First Nations contexts and highly recommend that researchers work closely with community members to determine its appropriateness.

Our study has elaborated the complex interplay of psychosocial variables that determine mental health outcomes for FN youth by identifying cultural connectedness as a key factor in that process (Mikkonen & Raphael, 2010; Mohatt, Fok, Burket, Henry, & Allen, 2011). Although many FN communities have incorporated culture into their healing practices for hundreds of years, the empirical support for the cultural connectedness concept and its impact on mental health is relatively new. 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 FN 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.

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Compliance With Ethical Standards

Conflict of interest The authors declare they have no conflict of interest.

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