The CIET Aboriginal Youth Resilience Studies: 14 Years of Capacity Building and Methods Development in Canada

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Abstract

CIET started supporting Canadian Aboriginal community-based researchers of resilience in 1995. An evolving approach to Aboriginal resilience used a combination of standard instruments and questionnaires of local design. Over the years, CIET measured personal assets like sense of coherence, spirituality, knowledge, pride in one's heritage, mastery or self-efficacy, self-esteem, low levels of distress, involvement in traditional ways and activities, church attendance. Other indicators reflected the social dimension of resilience: feeling supported; parental care and support; parental monitoring, attitudes, and example; peer support; and support from the wider community.

Pride in one's heritage, self-esteem, low distress, and mastery were measurable personal assets of resilient Aboriginal youth in a variety of cul-

tures and circumstances. Early efforts to link resilience with specific features of culture or spirituality did not meet with success — largely reflecting failure to ask the right questions. Parental care and support, parental monitoring, parental attitudes, and parental example clearly supported the resilient Aboriginal youth in most settings. But peers are an even stronger influence, critical in relation to different types of behaviour from smoking to drinking to substance abuse to violence, unsafe sex, and suicidal tendencies. More generally, having *someone* to confide in, to count on in times of crisis, someone to give advice and someone who makes one feel cared for are important factors in youth resilience and something that communities can help to provide even where the family is not the support it should be and where peers are more of a hindrance than a help.

CIET currently supports three resilience research projects involving Aboriginal youth in Canada: suicide prevention, reduction of HIV risk, and reduction of domestic violence. The latest resilience measurement tools include enculturation and revised approaches to Aboriginal spirituality.

INTRODUCTION

From 1995–2008, CIET trained and supported Aboriginal community-based researchers (CBRs) to conduct twelve studies of resilience among youth; a further three studies are currently under way. Basic facts about the scope and constituencies of the studies can be found in Table 1.

Presented here as a focus on methods and results, the CIET studies rest on a strong and evolving conceptual framework of resilience. This framework is explained in the editorial ("Affirmative Challenges in Indigenous Resilience Research," pp. 3–6) and the three literature reviews (pp. 7–64).

From its earliest engagement with Aboriginal communities in Canada, CIET's approach was to focus on Aboriginal resilience rather than on pathologies. Although it refers to a deeper, more pervasive strength, resilience is easiest to measure in the context of specific risks, opportunities, and social pressure. For youth, these might include using addictive substances, behaving violently or unlawfully, engaging in risky behaviour that exposed them to sexually transmitted diseases (STIs) and blood-borne viruses (BBVs), or harbouring suicidal thoughts. In the CIET studies, resilient Aboriginal youth who did *not* behave destructively provided evidence for their communities to plan effective and affirmative responses in support of their youth.

Aboriginal concerns drove the research, Aboriginal communities were users of the evidence, and researchers were Aboriginal. As CIET researchers and trainers learned more about Aboriginal resilience and its conditioners with each successive project, the tools and analysis improved. With the recent funding interest in knowledge translation, our strategies for returning the evidence to the communities for discussion and action became more effective.

METHODS

PARTNERSHIPS

Community consultation is central to CIET methods in Aboriginal resilience research. Partnering communities participated in design and implementation, although consultations differed according to the scope of the study and the types of Aboriginal organization involved. Table 1 lists the different studies and the partnerships for each.

The James Bay Cree Board of Health and Social Services (JBCBHSS), whose research unit knew what they wanted studied, funded their work and were closely involved from start to finish. In other cases, the research topic was initially the particular interest of the funding source or of an Aboriginal partner organization.

In the Wunska study, all but 4 in a random sample of 100 First Nations Bands agreed to participate and named 2 community-based researchers (CBRs) in each of 96 communities for training by CIET-trained Aboriginal social workers. In that case, the terms of Health Canada funding set the focus on tobacco. A similar approach included CBRs from 87 of 90 randomly selected First Nations Bands in the Assembly of First Nations (AFN) Canada Prenatal Nutrition Program (CPNP) evaluation designed with a steering group convened by the AFN.

Working institutional partnerships with Aboriginal organizations such as the Assembly of First Nations, Nechi, Wunska, and the Canadian Aboriginal AIDS Network (CAAN) developed in parallel with active participation of the communities. The relationship with Native Counselling Services of Alberta (NCSA), which implements an urban component of the Aboriginal Community Resilience regarding AIDS (ACRA) in Edmonton, provides an example of a new wave of CIET institutional mentoring partnerships. Another positive development in CIET-community partnerships

Table 1: The CIET Aboriginal youth resilience studies (1995–2008)

	Behaviours	Sample	Geographical area	Partners
Nechi 1 (1995)	Youth tobacco abuse	622, aged 12–24 years	Winnipeg city	Nechi Institute[a]
Nechi 2 (1996)	Smoking, alcohol abuse, criminal involvement	239 youth in school	Victoria, BC	Nechi Institute[a], Health Canada
Wunska (1996)	Tobacco use and abuse	4,090, aged 10–14 years	96 Bands across Canada (excluding NWT)	Wunska[b], Health Canada
James Bay Cree (1998)	Use of mood altering substances	625, aged 10–21 years	6 James Bay communities	James Bay Cree Board of Health and Social Services
AFN-HIV pilot (1998)	Access to HIV risk information	400 youth	2 James Bay Cree rural communities, Montreal and Winnipeg	Assembly of First Nations
LoPHID (1999)	Parenting and youth resilience	Innu youth and parents	Sheshatshui, Labrador	Health Canada
AFN-CPNP (2000)	Prenatal nutrition, views of school-going youth	2523 women and 2166 youth	87 First Nations Bands across Canada	Assembly of First Nations
LIHC (2002)	Use of mood altering substances, risky sexual and violent behaviour	251 youth 182 parents	5 North Coast communities, Labrador	Labrador Inuit Health Commission
ACYRN (2004–09)	Suicide prevention in Atlantic Canada	382, aged 12–19 years	12 New Brunswick, Nova Scotia communities	The communities, University of Ottawa
	Suicide prevention with Alberta Métis	311, aged 11–25 years	7 Alberta Métis settlements	The Métis Settlements
	Suicide prevention with Alexis Sioux	Baseline in progress	Alexis, Alberta	Alexis Health and Social Programs
ACRA (2005–2010)	STI and BBV reduction with the Treat 8 Cree	415, aged 12–30 years from 10 communities	Treaty 8 Cree, Alberta	Public Health Agency of Canada, Canadian Aboriginal Aids Network
	STI and BBV reduction with the Tłįchǫ	1354, aged 14+ and 241, aged 9–13 yrs	4 NWT communities and 1 school	Tłįchǫ Welfare Service Agency.
	STI and BBV reduction with urban Aboriginal youth	Baseline in progress	Edmonton and Ottawa	Native Counselling Services Alberta; Wabano Centre Ottawa
ACR-DV (2007–2012)	Community led prevention of domestic violence; youth in and out of school	Baseline in preparation	12 Aboriginal women's shelters across Canada	Native Women's Association of Canada

a.   Nechi Training, Research and Health Promotions Institute is based in St. Albert, on the outskirts of Edmonton, Alberta. Nechi recruited CIET from Mexico to train Aboriginal street youth as researchers.

b.   Wunska is an Indigenous social educators' network, now called Thunderbird Nesting Circle. In this study CIET trained 32 Aboriginal social workers who in turn trained 180 CBRs across Canada.

c.   ACYRN stands for Aboriginal Community Youth Resilience Network. Funded by CIHR as an emerging network grant, this project started with 12 Aboriginal communities in Nova Scotia and New Brunswick. From there it expanded to 7 Alberta Métis settlements and to the Alexis Sioux.

DACRA stands for Aboriginal Community Resilience to AIDS, the project whose longer title is "Building on the resilience of Indigenous people in risk reduction initiatives targeting sexually transmitted infections and blood-borne viruses." It is a partnership with researchers in New Zealand and Australia who are also working on Aboriginal resilience.

LoPHID stands for Local Public Health Information Development, a Health Canada funded initiative in the Atlantic Provinces. This included Aboriginal youth in Nova Scotia (Mi'kmaw) and Innu and Inuit in Labrador.

The Assembly of First Nations Canada Prenatal Nutrition Program evaluation (AFN-CPNP) examined the impact of the CPNP on First Nations women and youth.

is evidenced by the Tłįchǫ Community Services Agency (TCSA) and Alexis Health and Social Program. These local authorities paid their own costs and some of the CIET costs for training their community members.

SAMPLES AND SAMPLING

The sampling process differed from study to study. The larger national studies, Wunska and the AFN-CPNP evaluation, employed a formal probability sample (proportional two-stage stratified random cluster) derived from a master frame from two contemporary statistical sources. Several studies relied on purposive samples.

The Nechi-1 study (see Table 1) used a purposive sample of clusters drawn from known areas of Winnipeg where Aboriginal youth concentrated, stratified the clusters by school-going and non-school-going. Nechi-2 did the same with in-school youth in Victoria, BC. The AFN-HIV resilience study chose a remote and less remote rural community in the James Bay area, for comparison with periurban (Montreal) and downtown (Winnipeg) Aboriginal youth. In the Friendship Centres where the AFN-HIV study happened, CBRs interviewed all youth dropping in during the survey week.

In other studies — like the James Bay Cree solvents, the Labrador Inuit, ACRA-Tłįchǫ and ACYRN — there was no sampling. Participants were all youth present and consenting at the study opportunity. This opportunity base and the self-selection of the youth imply several potentially important biases.

In the ACR-DV study, 12 self-selected Aboriginal women's shelters requested research to support their reduction of domestic violence. They are not representative of Aboriginal communities in any formal sense (though they come from all provinces and territories). They were randomly allocated into two waves of intervention, allowing relatively unbiased measurement of the impact of intervention in the first wave to be compared with a baseline in the second wave.

INTERVIEWERS

Interviewers in all of these studies were CBRs nominated by their communities, usually the chief and council. In urban Friendship Centres, recruitment of interviewers was more *ad hoc.*

The 14 years have seen an evolution of the CIET approach to CBRs. Initially, CBRs were named by the participating communities wherever this was possible. As several of the research tools enquired about criminal activ-

ity (solvent abuse, delinquency, and sexual abuse) or highly confidential information like suicide, we switched CBRs to another similar community where they were unknown. Although important for increasing disclosure and anonymity of respondents, this defeated much of the original concept of a community base for researchers. In practice, it also led to poor performance of CBRs as they found themselves outside the scrutiny of their own communities. Turnover of CBRs between projects also meant loss of skills that were not renewed or extended with subsequent training.

A very different result emerged with the Aboriginal research coordinators. The coordinators arose from the CBR recruitment, with some people self-selecting for further training. Many wanted to pursue a career in research. Current and future CIET-supported resilience research will emphasize research coordinators, training fewer of them to a higher level, and investing in their mentorship, institutional linkages, and qualification as researchers.

Instruments

There are many scales used to measure resilience but almost all of them contain questions related to self-esteem, mastery, or self-efficacy (Olsson, 2003; Ahern, 2006; Luthar, 2006). A common problem with questionnaires using scales is the large number of sometimes overlapping questions related to a single factor or outcome. Although the scales identified in the literature were (a bit) better than nothing, they were not ideal Aboriginal resilience research tools. CIET currently draws on methods like exploratory factor analysis and structural equation modelling to refine its instruments. CIET Aboriginal researchers and their community counterparts are also redeveloping the conceptual underpinnings of Aboriginal resilience research.

In 2002, CIET adapted an approach developed for HIV risk in southern Africa to the study of Aboriginal resilience. Drawing heavily on contemporary behaviour change theories, this hypothesizes a partial order or hierarchy of intermediate outcomes implicit in resilience. Thus, even if resilience was not measurable in itself, one should be able to measure a *cascade* or partial order of associations that would ultimately reflect increased resilience.

The original 2002 partial order (acronym *cascada*) included **c**onscious knowledge, **a**ttitudes, **s**ubjective norms and the positive deviation from negative subjective norms, intention to **c**hange, sense of **a**gency (ability to implement change), **d**iscussion or socialization of the issue, and **a**ction, the

practical involvement in resilience-oriented activities. There is an expected partial order of these intermediate outcomes: conscious knowledge would usually change before attitudes do, attitudes would have to change before intentions do, and so forth.

We found this framework inadequate for measuring Aboriginal resilience and added several factors that can precede conscious knowledge. Perception or sense of coherence, spirituality, experience, and enculturation all condition the sense of the *cascada*. Since 2005, CIET has implemented *precascada* as the partial order of factors/assets underlying Aboriginal resilience.

Piloting

In each of the studies, several rounds of piloting combined standard and largely psychometrically validated instruments drawn from other studies with development of new questions of local relevance and interest. In one case, the four-community AFN-HIV access to information study (1998), a principal objective was to demonstrate that communities could be fully engaged in study even when the instruments were standard-based. The dialogue in each community focused on the objectives of each item in the questionnaire and the integrity of the original tool. With the exception of one question about sexuality in the two more remote communities, this approach resulted in all four stakeholder groups accepting the standard instrument in its entirety.

In the Tłı̨chǫ case, the questionnaire was in English. CBRs needed ways to explain what the project was about in Tłı̨chǫ (formerly Dog Rib), but many words about sexual behaviour did not exist or they had negative connotations in translation. The CBRs sat for several days with the sexual terms to find new ways of expressing the terms and their implications in Tłı̨chǫ. This effectively built new content in their language around the contemporary issues of HIV/AIDS.

As with other democratized research processes, the CIET resilience studies have occasionally suffered from last minute stakeholder inspiration, resulting in changes that render a particular item meaningless. These episodes have been few, however, with depth of dialogue almost always retaining the meaning in a standard instrument while ensuring full stakeholder buy in.

Implementation

All youth questionnaires were administered in English or French, after considerable pilot testing in Aboriginal languages (particularly Cree in the case

of James Bay). In some cases these were administered by the CBRs face-to-face (Nechi 1 and 2, Wunska) while most were self-administered (James Bay Cree, AFN-HIV, AFN-CPNP, ACRA, and ACYRN).

Self-administered questionnaires assume a considerable degree of respondent literacy. CIET tried to offset some unevenness in this by facilitating the questionnaires: a CBR read each question in turn and explained placement of possible responses. In national surveys like Wunska and AFN-CPNP, Aboriginal social workers and CBRs discussed results with participants in their communities either in focus groups or in talking circles.

Talking circles are a traditional dialogue format in some First Nations. They are functionally similar to nominal groups, where 7–20 participants take turns to give their answers to a particular question, or to comment on a result presented by a facilitator. Initially, Elders guided these talking circles to fit with traditional protocols. Where it became clear that this limited discussion of, for example, sexual abuse or illegal drug use, trained facilitators and reporters from outside the communities played the key roles.

In the Nechi, Wunska, and AFN-CPNP studies, we also interviewed healers and traditional leaders separately in each community. These provided information on community and community level factors that might influence youth resilience.

Within the ACYRN studies, very different approaches were necessary in the Atlantic and Alberta communities. The Atlantic ACYRN approach was slow, starting in two reserves and extending the baseline to another ten reserves. In each community, the buy-in process included presentations to the Band Council, several rounds of meetings and discussions before a CBR was chosen by the Band for training. In the Alberta Métis Settlements, after a briefing in each community, a large meeting was convened of decision makers, health workers, and potential CBRs from all seven communities.

ANALYSIS

The central concern of analysis was to look at the relevance of interventions and resilience-related outcomes. Greater attention was paid in more recent years to intermediate factors linking resilience to the principal outcome. Quantitative analysis followed standard epidemiological procedures for cluster surveys. As the field itself evolved, the analysis procedures became more streamlined but the basic steps were the same from the beginning.

The analysis weighted frequency counts, where appropriate, in the nationwide Wunska and AFN-CPNP studies. Reporting of results relied on

standard epidemiological parameters to express the resilience of an average individual (odds ratio) and the community implication of the resilience (risk difference). This relied on the Mantel-Haenszel procedure (Mantel and Haenszel, 1959), which Aboriginal research coordinators could grasp with a few days training. More advanced analyses included logistic regression models, adjustments for clustering, and modelling of the influence of community level factors. These technologies have not been transferred to CBRs.

All associations reported in this overview (Table 2) are based on each of the full analyses, adjusted for the influence of other factors, unless otherwise indicated.

SOFTWARE

Development of the *CIETmap* freeware since 2000 has made it possible to use additive models based on risk difference, in addition to the conventional multiplicative logistic regression model, improving interpretability for community level resource allocation. In the AFN-CPNP evaluation, we used population-weighted raster maps (Andersson and Mitchell, 2006) to eliminate the community identity while portraying a national picture of on-reserve risk and resilience. Most of our other studies, however, were too local for these geomatics methods to be helpful.

EVIDENCE TO ACTION

In ACRA-Tłı̨chǫ, the CBRs took the findings and, under their own steam, developed a multistep action plan for dissemination of information and potential interventions (short term and longer term). Similarly, in ACYRN-Alberta, the seven settlements came together to discuss the findings and proposed regional guidelines for solutions. Each community then took the ideas emerging from the analysis back to their own communities and implemented community-specific actions to promote resilience. One settlement made a video about youth resilience and suicide. Other youth-led community activities included talent shows and hockey tournaments. Yet to be evaluated formally, these efforts sought to build community resilience and involve youth in their own planning. In the ACRA studies, community-based evidence informs education agencies at federal and provincial levels about the resilience dynamics to build upon to reduce youth risk of STIs and BBVs. This will be evaluated formally in the 2009 follow-up study.

Table 2. Strength of Association between Resilience Factors and Outcomes in the CIET Aboriginal Youth Resilience Studies

1	2	3
Self-efficacy/ Sense of mastery	Self efficacy smoking OR 2.9 [1.3–6.7]) (Nechi 2, 1996)	Sense of mastery (via low distress OR 3.0 [1.7–5.6] and high self esteem OR 0.09 [0.05–0.16]) (ACYRN Alberta, 2006)
Self-esteem	High self-esteem (re: vandalism OR 3.9, violence OR 1.8) (LIHC, 2002)	High self esteem (via low distress OR 0.3 [0.16–0.5) (ACYRN Alberta, 2006)
Other personal assets	Not feeling left out when others smoked (OR 2.4) (Nechi 1, 1995)	Emotional competence smoking OR 2.6 [1.04–6.7] ; drinking OR 4.2 [1.2–16.3]; criminal involvement OR 2.7 [1.3–5.4] Consider cultural teachings (OR 2.8 [1.5–5.4]) and participation in cultural activities (OR 2.9 [1.4–6.1]) (Nechi 2, 1996)
Parental monitoring	Parents set rules: smoking OR 2.6, drinking OR 2.4 Parents know whom their children are with: drinking OR 1.8, violence OR 1.6 Adult supervision when staying out overnight (smoking OR 2.2) (LIHC, 2002)	Feeling parents knew about their habits (via feeling supported OR 0.3 [0.1–0.6]) (ACYRN Alberta, 2006)
Feeling parents care	Positive attention received as a child (criminal involvement OR 2.9 [1.5–5.8], self-efficacy OR 1.9 [1.08–3.4], emotional competence OR 2.0 [1.08–3.7]) (Nechi 2, 1996)	Parents spend more time with them (smoking OR 1.9, drinking OR 2.1, unsafe sex OR 2.3, violence OR 2.2) (LIHC, 2002)
Feeling supported	Feel supported (re: vandalism OR 4.2) (LIHC, 2002)	Feeling supported (via high self esteem OR 0.4 [0.2–0.7] and sense of mastery OR 0.5 [0.25–0.97] (ACYRN Alberta, 2006)
Other family resources	Parents don't approve of smoking (OR 5.0) (Nechi 1, 1995)	Parents don't approve of smoking/say it harms OR 2.3 [2.0–2.6]) (Wunska, 1996)
Community resources	Few friends smoke (OR 3.3) (Nechi 1, 1995)	Few friends smoke (OR 2.1 [2.7–1.6]) Not feeling left out OR 1.5 [1.4–1.7] (Wunska, 1996)

Table 2. cont.

4	5	6
High sense of mastery (via: self esteem OR 8.3 [4.6–15.2] and feeling parents care OR 3.4 [1.5–7.9]) (ACYRN East)		
High self esteem (direct OR 0.3 [0.01–0.06] and via feeling parents care OR 3.8 [1.5–9.6]) (ACYRN Atlantic)		
Not having sex while using alcohol or drugs (ACRA Tłįchǫ, 2007)	Low distress OR 0.2 [0.1–0.4] Pride in one's heritage (via feeling supported OR 0.2 [0.07–0.7]) (ACYRN Alberta, 2006)	Low distress (via trouble with law OR 2.0 [1.1–3.8], self esteem OR 2.8 [1.5–5.3], feeling safe OR 1.7[1.0–3.0]) (ACYRN East)
Parental monitoring (via no trouble with the law OR 0.05 [0.03–0.09]) (ACYRN East)		
Feeling parents care (via high self esteem OR 0.2 [0.1–0.5] and feeling supported OR 0.2 [0.1–0.5]) (ACYRN Alberta, 2006)	Feeling parents care (direct OR 0.03 [0.01–0.07] and via self esteem OR 4.5 [1.8–10.8] and feeling safe OR 7.1 [2.8-18.3]) (ACYRN East)	
Someone to turn to (v: self esteem OR 2.5 [1.3–4.9]) (ACYRN East)		
Family members do not smoke (smoking hash or marijuana OR 2.7) or drink drinking OR 2.3) (James Bay Cree, 1998)	Parental praise (via feeling parents care OR 7.4 [3.4–16.1] Parents easy to talk to (via feeling parents care OR 2.7 [1.1–6.4]) (ACYRN East)	
-Friends do not ask you to sniff (re: sniffing - OR 8.9), smoke (re: smoking hash or marijuana OR 12.0), or drinking OR 14.0) (James Bay Cree 1998)	Fewer than half of friends engage in risk behaviour (re: unsafe sex OR 9.7), violence OR 2.3) - (LIHC 2002)	-Friends think it's not ok to drink (OR 2.4 [1.2-4.8]) (ACYRN East)

Ethical Review

All CIET studies are reviewed by an ethical review panel prior to implementation. The early studies saw the establishment of an all-Aboriginal ethics review panel made up by the five national Aboriginal organizations, linked to *Anisnabe Kekendazone,* the Ottawa ACADRE. The Assembly of First Nations convened a panel to review the AFN-CPNP evaluation. In addition to its review by the *Anisnabe Kekendazone* panel, we submitted the ACRA projects to the Health Canada ethics review board, because the project included two senior scientists from the Public Health Agency of Canada as co-investigators.

Results

Although in the actual studies these were handled in an integrated way, for purposes of clarity we present separately the internal and external assets or factors investigated over these first 14 years.

Internal Resilience Factors

Spirituality

There are recognized differences between Indigenous and other Canadian communities' view of spirituality. A first attempt to include this dimension in the CIET Aboriginal youth resilience studies was the self-image of participating youth. Knowing the limitations of formal questioning to obtain some measure of spirituality, CBRs in the 1996 Wunska study asked Aboriginal youth, "Do you consider yourself a spiritual person"; 59% said "yes" (range across regions: 53–66%). A large number of respondents said they did not understand the word "spiritual." In retrospect, we should have noted this and interpreted it as an informative response.

We originally trained CBRs *not* to prompt or to define terms for youth when conducting the individual youth questionnaire. Confronted with this response, some CBRs used the relatively neutral phrase "it is whatever spiritual means to you." Other CBRs provided respondents with their own definition of spirituality, making it a different question for each CBR and rendering this potentially interesting item uninterpretable. In the analysis, affirmative answers have no relation to whether they smoked or not.

In the 2007 Tłįchǫ study about HIV and related diseases, CBRs asked youth if their parents taught them about spirituality. Again, we found no clear association between an affirmative answer and a positive outcome.

We covered several other aspects of spirituality as "Practical involvement in traditional activities" (see below).

Sense of coherence
Sense of coherence (SOC) was defined by Antonovsky as

> a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement. (Antonovsky, 1993, p 725)

Antonovsky's original SOC scale contained 29 questions. Subsequent versions of the scale relied on a reduced number of questions. In the 1996 Nechi 2 study, CIET used a 9 question SOC scale but was unable to detect any association between SOC and resilience to smoking, alcohol use, or criminal involvement. Several subsequent CIET questionnaires have used individual questions out of the context of a formal scale.

Experience
Especially for issues like sexual abuse, previous experience seems to change entirely the interpretability of responses about knowledge, attitudes, agency, and even practices. Rather than as a factor in its own right, we found a more useful analytic approach was to treat history of sexual violence as a potential effect modifier — CIET separately analyzed those with a history of sexual violence. Many aspects of experience coincide with "external" resilience factors, dealt with in this review in a separate section.

Conscious knowledge
CBRs asked youth across Canada in the Wunska study of 1996 if they knew about the health effects of smoking. In 1998, they asked James Bay Cree youth if they knew about the adverse effects of substance abuse and they asked Inuit youth in northern Labrador, in 2002, if they knew about the health effects of smoking and drinking. Many young people knew about these adverse consequences in all three studies but, like many, if not most other studies of conscious knowledge and behaviour change, we did not find convincing evidence that people with more knowledge about the health effects behaved differently from those who reported knowing less.

Attitude, pride in one's heritage

The CBRs in the ACYRN studies asked young respondents if they were First Nations, Métis, or other. (There were no Inuit in these study areas). This item was followed by the simple question: "Are you proud of your heritage?" In the Métis communities of the ACYRN Alberta study those who answered "yes" to this question were five times more likely to score high for feeling supported (see Table 2). Feeling supported appeared, in turn, to be protective against suicide by way of self-esteem and self-efficacy. But these same associations were not apparent in the ACYRN-Atlantic study.

In our 1996 Nechi 2 study, CBRs asked young people in Winnipeg and Alberta "how important is it for you to understand your cultural teachings?" and "how important is it for you to participate in traditional cultural activities?" Those who answered that it was very important in both cases scored higher for "emotional competence" which, in turn, was protective against smoking, drinking, and criminal involvement (Table 2). These express feelings about one's heritage. As for actual involvement in traditional activities, the relationship with the risks studied was less than clear.

Attitudes, self-esteem

Self-esteem has to do with personal judgment of one's own worth (Zimmerman, 1995). CIET initially measured emotional competence on a 16 item scale that the team did not use again after 1996. Since 2000, CIET has used the 10 item Rosenberg self-esteem scale (Rosenberg, 1989). Youth judged to have high self-esteem agreed with statements such as: "I feel that I have a number of good qualities," and disagreed with statements like "All in all, I feel I'm a failure." Self-esteem was associated with less vandalism and violence in the 2002 LIHC study. An Inuit youth with high self-esteem was nearly four times as likely *not* to engage in vandalism compared with one who had low self-esteem (Table 2).

High self-esteem also turned out to be protective against suicide in both ACYRN studies, directly in Atlantic Canada and indirectly in Alberta, as a factor in lowering distress.

Subjective norms

Subjective norms (for example, "Most of my friends think it's okay to bully someone" or "Most of my friends think it's okay for adults to get drunk") are most interpretable in the context of an individual attitude ("I think it's okay to bully someone" or "I think it's okay for adults to get drunk." In CIET

resilience studies, we look for the positive deviation of an attitude from a negative subjective norm ("I *do not* think it's okay to bully someone" in the context of "Most of my friends think it's okay to bully someone").

In the baseline, not surprisingly, we did not find any reportable positive deviations of attitudes from negative subjective norms. In the follow-up impact assessment studies for ACRA and ACYRN, however, we expect these positive changes as early signs of impact of the community-led interventions.

Agency, mastery or self-efficacy
Mastery or self-efficacy is the expectation or belief that one has the ability to perform actions necessary to produce a given effect (MeSH, 2007). Since 2000, CIET has used the seven-item Pearlin and Schooler Personal Mastery Scale (Pearlin and Schooler, 1978). Youth judged to have mastery respond positively to statements like "I am able to deal with most problems that come up in my life," or "I can do just about anything I really set my mind on."

Mastery helped to explain why some Aboriginal youth in Winnipeg and Alberta resisted tobacco addiction in the 1996 Nechi 2 study. Youth who scored high for mastery were nearly three times as likely as the others to be nonsmokers. See Table 2 for technical data on the strength of this and other associations.

In relation to suicide, we found indirect associations between mastery and low suicide risk in both ACYRN Atlantic and ACYRN Alberta. Youth who showed mastery were much less likely to have symptoms of distress and much more likely to have higher self-esteem, and these qualities in turn influenced their level of risk for suicide. In the 2002 LIHC study among the Inuit of northern Labrador, on the other hand, we were unable to find clear evidence of an association between mastery and resilience in relation to problem behaviours such as smoking, drinking, vandalism, violence, or substance abuse.

Low levels of distress
CIET has used the word "distress" since 2000 to identify a set of feelings including sadness, nervousness, restlessness, hopelessness, worthlessness, and the feeling that everything is an effort. The six-item scale was a subset of questions asked in the WHO Composite International Diagnostic Interview (WHO, 2004). Statistics Canada used the same subset in its special supple-

mentary questionnaire to the 1994–95 National Population Health survey (Galambos and Tilton-Weaver, 1998).

In the seven Métis settlements of the ACYRN Alberta study, a low level of distress was the only factor that was directly protective against suicidal tendencies; a youth with a low distress level was one-fifth as likely to be at risk for suicide compared with a youth who showed greater distress. Distress, in turn, was influenced by self-efficacy and self-esteem (Table 2).

In ACYRN Atlantic, we found low distress was protective against suicide indirectly via three other factors, self-esteem, feeling safe, and absence of trouble with the law. The 2000 LIHC study among Inuit communities of northern Labrador did not find any association of distress with any of the six types of risky behaviour it examined.

Practical involvement in traditional ways

In the 1996 nationwide Wunska study on tobacco use, the CBRs asked young people about speaking a native language, involvement in traditional ceremonies, and knowledge of traditional use of tobacco. CBRs asked James Bay Cree youth in 1998 if they "practice the Cree Way," if they have a strong relationship with Elders, and if they visit Elders frequently.

The AFN-CPNP evaluation found that 43% of pregnant women had consulted an Elder. Older women, those who spoke Aboriginal languages, and those who were more educated were more likely to do so. Traditional support by an Elder, in turn, was associated with greater attendance at prenatal classes and First Nations women were more satisfied with prenatal classes that included Elders. Consultation with Elders was also associated with reduced risk of tobacco and alcohol use in pregnancy, and increased initiation of breastfeeding — independent of prenatal class attendance.

In the 2007 ACRA Tłı̨chǫ survey, CBRs asked youth if they respected Elders' teachings, if they participated in cultural activities, if they took part in traditional activities and/or ceremonies, if they had been to a traditional Elder, or a traditional healer, or had used traditional medicines in the previous 12 months. In the ACYRN studies, CBRs asked youth how many times they took part in any traditional or cultural activities in the previous 12 months. After taking account of all other potential influences, it was not possible to demonstrate a clear association between resilience and any of these different forms of involvement in traditional ways.

Church attendance

Among the Inuit of northern Labrador in 2002, youth who attended church regularly were less likely than others to report themselves as smokers. CBRs also asked about church attendance in the 1996 Nechi 2 study, in the ACYRN studies and in the 2007 Tłįchǫ study on HIV/AIDS and related diseases, but no clear association with resilience emerged in any of these.

EXTERNAL RESILIENCE FACTORS

Feeling supported

Since 2000, CIET has used a four-point scale to ask youth if there was someone they can confide in, can count on in a crisis, or when making important personal decisions, and if there was someone who makes them feel loved and cared for. This scale was used by Statistics Canada in their special supplementary questionnaire to the 1994–95 National Population Health survey (Galambos and Tilton-Weaver, 1998).

In the three surveys using this four-point scale, we found an association between feeling supported and resilience. In the 2002 study in Inuit communities of northern Labrador, a youth who felt supported was four times as likely as other youth *not* to engage in vandalism. In the ACYRN studies, feeling supported was an important factor behind self-esteem and mastery which, as we have seen, were part of the "cascade" of factors associated with lower risk for suicide.

Parental care and support

Over the years, various questions have elicited feelings among youth that parents care for them and support them. In the 1996 Nechi 2 study in Alberta and Winnipeg, CBRs asked youth if, as young children, they received enough positive attention from parents and other family members. Those who answered yes to this question were nearly three times as likely as others *not* to have been involved in criminal activity.

In the 2002 study among the Inuit communities of northern Labrador, they asked young people about how much time parents spent with them. Those whose parents spent more time with them were roughly twice as likely not to smoke, drink, or engage in unsafe sex or violent activity. In the ACYRN studies a positive answer to a single question, "How much do you feel your parents care about you?" was associated both directly and indirectly with low risk for suicide.

Parental monitoring

The studies prior to 2002 asked simple questions about whether there were clear rules of conduct within the household. Starting in that year with the Labrador Inuit study, the questions about parental monitoring became more detailed, including whether the rules were explained, whether there were consequences for not following them, and whether parents knew where the young person was after school, at night.

In the Inuit communities of northern Labrador in 2002, youth whose parents set rules and knew where they were when they stayed out at night were twice as likely not to smoke or to drink regularly. Young people whose parents knew who their companions were when the youth were away from home or school were 50% more likely not to engage in violent behaviour.

In the ACYRN studies, parental monitoring was also found to be a factor in suicide prevention, by way of feeling supported in Alberta and of avoiding trouble with the law in Atlantic Canada. Among the James Bay Cree in 1998, on the other hand, parental rules and punishment did not appear to deter young people from risky behaviour, whereas parental example was a more effective support to resilience.

Parental attitudes and parental example

Young people in the 1995 Nechi-1 study whose parents disapproved of smoking were five times as likely as others to resist smoking themselves (Table 2). In the 1996 nationwide Wunska study, youth whose parents did not approve of smoking and/or told their children about its adverse effects were twice as likely not to smoke.

Among the James Bay Cree in 1998, youth from nonsmoking households were nearly three times as likely not to engage in smoking marijuana or hashish, and those from nondrinking households were twice as likely not to drink. In the Inuit communities of northern Labrador in 2002, youth were less likely to smoke if their parents did not smoke and nearly three times less likely to drink excessively if their parents did not do so.

In the ACYRN studies, on the other hand, no clear association was found between suicidal tendencies and whether or not parents drink or use drugs frequently.

The role of peers

The strongest potential support to resilience in these studies came from friends who did not induce the study participants, by either example or

persuasion, to risky behaviour. Youth who had few friends who smoke were twice as likely in the 1996 Wunska study and three times as likely in the 1995 Nechi-1 study themselves not to smoke.

In the 1998 James Bay Cree study, those whose friends did not ask them to sniff substances were nine times less likely to be sniffers themselves, those whose friends did not ask them to smoke marijuana or hashish were less than one tenth as likely to do so themselves, and those whose friends did not pressure them to drink excessively were only one-fourteenth as likely to be heavy drinkers.

In the Inuit communities of Labrador in 2002, the typical youth whose friends did not engage in risky behaviour was only one-half as likely to be involved in violence and one-tenth as likely to engage in unsafe sex. The influence on drinking exerted by friends' attitudes toward drinking also showed up as a factor in the suicide risk cascade of the ACYRN study in Atlantic Canada. Another important resilience factor was the absence of bullying and other forms of violence in the young person's life, especially in relation to suicide risk.

The wider community
Various questions over the years probed a possible role of the wider community in youth resilience. While there were indications of community influence in the preliminary sequential phases of data analysis, these disappeared at the multivariate analysis stage. The nationwide Wunska study on smoking produced evidence of an enabling community environment associated with lower smoking rates among male youth. In communities where it was common practice to discourage youth to smoke in public, the male smoking rate was 40% lower than in other communities. Male youth were also 45% more likely to resist smoking in communities where teachers did not smoke.

In the 1998 James Bay Cree study, CBRs asked young people about access to health services and to healing circles. Such access apparently made no difference as regards risk behaviour, even among those who actually attended workshops on substance abuse.

DISCUSSION

Measuring resilience in the context of specific risks does have the contextual advantage of pointing to specific actionable factors in relation to the

specific risks (Rutter, 1979; Fergus and Zimmerman, 2005). Besides personal assets such as self-efficacy, self-esteem, absence of distress, and pride in one's heritage there are a series of social "resources" that contribute to resilience (Olsson et al., 2003). Some of these are in the family and others are in the wider community. But family and community can play different and interchanging roles according to individual circumstances, so it is useful to ask a set of more general questions about feeling supported no matter from where such support might come.

Our inability to detect an association does not mean that no association exists. There are a number of reasons for failure to observe a true relationship. One may be the lack of a sufficiently large sample in several of our studies. Another reason might be that the final instruments did not ask the right questions. A third might be that the cultural context is really very community-specific, and different factors work in quite different ways in different communities. This concern lies behind our current Aboriginal resilience research focussing on several nearby and related communities.

CIET researchers *did* find associations between resilience and personal assets, as they did with social resources. Among personal assets, mastery, self-esteem, low distress, and pride in one's heritage appear to be features of resilient Aboriginal youth in a variety of places, cultures, and circumstances in Canada. But no evidence emerged that knowledge of adverse consequences has much to do with resilience. There was an association between church attendance and not smoking among Inuit youth of northern Labrador, but church attendance did not appear protective in relation to other risks or in other places.

Beyond the general attitude of pride in one's heritage, the tools used in CIET studies to date were unable to detect clear associations between culture or spirituality and resilience. This may have a lot to do with the questions or the way they were asked. There is need for further work on this dimension that has been found in other studies to be an important resilience factor. The initial CIET way of getting at spirituality was by asking about specific traditional practices but our evidence was not able to link any specific practices with resilience. The 1998 James Bay Cree study took a more general approach, asking whether young people "practice the Cree way." It could be argued that, under the circumstances, everyone interviewed practiced the Cree way to some extent so that there was little contrast from which to derive an association. It may be that studies involving both Aboriginal and non-Aboriginal youth are necessary to explore this topic more fully.

Table 3. Examples of Potential Resilience Factors Asked about Frequently That Did *Not* Survive Multivariate Analysis

	Nechi 2 (1996)	Smoking prevention (Wanska 1996)	Substance use (James Bay Cree 1998)	Smoking, drinking, vandalism, violence, drug/solvent abuse (LIHC 2002)	HIV/AIDS/BBV Prevention (Tlicho) 2007	(ACYRN East)
Personal assets	Sense of coherence (9 question scale)	• Knowledge of health effects of smoking • Self-image re: health • Personal problems • Pastimes/hobbies • School • Church attendance, Involvement in sport • Speak Native language • Involvement in ceremonies*** • Know traditional uses of tobacco	• Practice the Cree Way** • Involved in sports • Strong relationship with Elders • Visits Elders • Knowledge of consequences	• High sense of mastery • Knowledge of health effects of smoking • Attend church regularly	• Respects elder's teachings • Attends religious services regularly • Participates in cultural activities (hunt, fish, etc.) • Takes part in traditional Aboriginal practices/ceremonies • Been to traditional elder in past 12m • Been to traditional healer in past 12m • Used traditional medicine in past 12m	• Attends religious services regularly • Attends traditional/cultural activities regularly • Proud of one's heritage
Family resources		• Parents who inform about the dangers • -Family prohibits smoking in home	• Strict rules/punishment at home • Parents care if you smoke or drink		• Parents/guardians teach about spirituality	
Community resources		• Access to healing circle • Access to information on risks		• Friends don't drink	• Most friends proud of their culture • Most friends respect elders	• Friends proud of their heritage

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The current round of CIET studies on suicide prevention, reduction of STI and BVV risk, and reduction of domestic violence all implement more specific items on spirituality and enculturation. We will also be attempting to introduce issues of ethnogenesis, initially through qualitative methods.

Social resources for resilience are of greater interest than personal assets because communities can usually do more about changing them. Parental and peer influences emerge as important social supports for youth resilience. Parental care and support, parental monitoring, parental attitudes, and example are all clearly related to youth resilience in most settings. But young people's friends, their peers, appear from these studies as an even stronger influence. No other resilience factors showed the same strength of association. And the influence of peers appeared critical in relation to different types of behaviour from smoking to drinking to substance abuse to violence, unsafe sex, and suicidal tendencies.

There is, of course, a negative side to these findings. The lack of parental caring, monitoring, and example, and peer pressure to behave destructively — all forms of negative social capital where they exist — certainly make it more difficult for youth to be resilient in the face of the many risks they encounter. In this respect, one finding stands out: feeling supported. Having someone to confide in, to count on in times of crisis, someone to give advice, and someone who makes one feel cared for — no matter whether this is a parent or a peer — is an important Aboriginal youth resilience factor and something that communities can help to provide even where the family is not the support it should be and where peers are more of a hindrance than a help.

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