

University of Lethbridge Research Repository

OPUS

<http://opus.uleth.ca>

Faculty Research and Publications

Currie, Cheryl

2011-12

Enculturation and alcohol use problems among Aboriginal university students

Currie, Cheryl L.

Canadian Journal of Psychiatry

<http://hdl.handle.net/10133/3131>

Downloaded from University of Lethbridge Research Repository, OPUS

Enculturation and Alcohol Use Problems Among Aboriginal University Students

Cheryl L Currie, MSc (PhD Candidate)¹; T Cameron Wild, PhD²; Donald P Schopflocher, PhD³; Lory Laing, PhD⁴; Paul J Veugelers, PhD⁵; Brenda Parlee, PhD⁶; Daniel W McKennitt, MD⁷

Objective: To examine associations between Aboriginal enculturation, Canadian acculturation, and alcohol problems among Aboriginal university students living in an urban area in Canada.

Methods: Data for this mixed methods study were collected through in-person surveys with a convenience sample of Aboriginal university students ($n = 60$) in 2008/2009.

Results: Students evidenced high levels of Aboriginal enculturation and Canadian acculturation. Aboriginal enculturation was significantly associated with reduced alcohol problems for Aboriginal university students. There was no association between Canadian acculturation and alcohol problems. Qualitative findings suggest Aboriginal cultural practices helped students cope with problems in their daily lives and provided them with both personal and social rewards.

Conclusions: This study found Aboriginal enculturation was significantly associated with reduced alcohol problems among Aboriginal university students. Results support the growth of programs and services that encourage Aboriginal students to maintain their cultural identity within the university setting.

Can J Psychiatry. 2011;56(12):735–742.

Clinical Implications

- Aboriginal university students evidenced high levels of Aboriginal enculturation and Canadian acculturation.
- Aboriginal enculturation was protective for alcohol problems among Aboriginal university students.
- Aboriginal cultural practices helped students cope with problems in their daily lives and provided them with personal and social rewards.

Limitations

- This study design was cross-sectional.
- A small convenience sample was used.
- The sample size precluded analysis by Aboriginal group (for example, First Nation or Métis).

Key Words: *Aboriginal, university students, alcohol problems, culture, Vancouver Index*

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

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

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

A study has documented that Aboriginal university students who were highly enculturated used alcohol less frequently than other students.¹⁵ The degree to which enculturation is also associated with reduced alcohol problems remains unknown and is of interest given the documented relation between problematic alcohol use and university attrition in other populations.⁵ Thus the primary objective of this study was to examine whether enculturation was protective for alcohol problems among Aboriginal university students living in an urban centre.

Research in other ethnic groups suggests mainstream acculturation may also enhance well-being. To date, this research has focused on immigrant groups who, for the most part, do not have long-standing historical grievances with Canadian settler society.^{16,17} The idea that acculturation may be similarly protective for colonized Indigenous populations is complicated by the current and historical mistreatment of Aboriginal people by the settler societies who migrated to their homeland. In Canada, forced assimilative policies and practices, the loss of land, racial discrimination, and an ongoing media emphasis on negative Aboriginal stereotypes and anecdotes have resulted in a valid distrust of the settler society that can be difficult to

surmount. A second objective of this study was to explore whether mainstream acculturation would protect Aboriginal students from alcohol problems given this social context.

Method

Sample and Procedure

An in-person survey was administered to a volunteer sample of students at the University of Alberta who lived in Edmonton and self-identified as First Nation, Métis, Inuit, or Aboriginal. An Aboriginal Advisory Committee made up of key members of the Aboriginal community in Edmonton was organized 1-year prior to data collection. Together we determined how constructs would be defined in this study, measures that would be used, how data would be collected, and how participants would be compensated for their time. Among other useful suggestions, the Committee recommended that participants be given the option to self-identify as Inuit, Métis, First Nation, or Aboriginal, as some individuals living in urban centres who are First Nation but are not affiliated with a specific First Nations community or do not have Registered Indian Status may prefer to self-identify as Aboriginal rather than First Nations. Data were collected over a 6-month period during the 2008/2009 school year. Participants were recruited using posters and ads in student e-newsletters. Written consent was obtained from all participants. The study was reviewed and approved by the Human Research Ethics Board at the University of Alberta. All students completed the Vancouver Index, the Alcohol Use Disorders Identification Test (AUDIT), and demographic questions by hand (mean completion time was 20 minutes). It was determined, a priori, that the first half of the sample would be asked additional open-ended questions about enculturation and acculturation in an interview format after the written survey was completed. These questions were asked in the same order for all participants. Two-thirds of the sample chose to write down their answers during the interview, while one-third opted to have the interviewer write them down (mean completion time was 20 minutes). Each participant ($n = 60$) was given an honorarium of \$50 for his or her time.

Exposure Variable

Culture (Quantitative Measure). While numerous studies have attempted to measure Aboriginal enculturation, key limitations have included the use of scales that measure enculturation and acculturation along a single continuum and those that ignore the dynamic and heterogeneous nature of culture.¹⁸ The 20-item Vancouver Index has been used to circumvent these problems in various ethnic groups and has been used extensively across disparate locales.^{17,19} The scale measures enculturation and acculturation on separate continuums and permits cultural heterogeneity by asking people to rate the degree to which they adhere to heritage and mainstream traditions without defining what those traditions should be. In this study, the heritage and

mainstream subscales were used as measures of Aboriginal enculturation and mainstream Canadian acculturation, respectively. The Aboriginal Advisory Committee assembled for this project reviewed the measure and deemed the wording of these items culturally appropriate. Enculturation and acculturation subscales were mean-centred, with a potential range of 1 to 9. Using reliability generalization, a recent meta-analysis reported the average internal consistency for the Vancouver Index across 14 studies as a Cronbach's alpha of 0.83 (range 0.66 to 0.92).¹⁷ In this sample, internal consistency was similarly robust (heritage subscale $\alpha = 0.87$, mainstream subscale $\alpha = 0.81$).

Culture (Open-Ended Measure). A limitation of the Vancouver Index is that it does not provide insight into the personal definitions respondents use to conceptualize culture. For this reason, this study included additional open-ended questions to shed light on the definitions Aboriginal students used to assess their own levels of enculturation and acculturation. The first half of the sample were asked the following open-ended questions in a face-to-face interview format:

1. Thinking about the Aboriginal, First Nation, Métis, or Inuit cultural group that you most identify with, can you name 3 cultural behaviours or traditions that a traditional Aboriginal person would typically engage in?
2. Thinking about the Aboriginal, First Nation, Métis, or Inuit cultural group that you most identify with, can you name 3 cultural values that a traditional Aboriginal person would consider important?
3. Can you name 3 cultural behaviours or traditions that a typical Canadian person would engage in? and
4. Can you name 3 cultural values that a typical Canadian person would consider important?

Students were then asked to comment on the personal significance of each behaviour or value they named by responding to the following question:

5. Why is [behaviour or value] important or not important to you?

Outcome Variable

Alcohol Problem Score. Alcohol problems were assessed using the AUDIT, a 10-item self-report measure developed by the World Health Organization for detecting alcohol use problems.²⁰ The AUDIT has been used across various countries and cultures and correlates positively with biochemical measures of alcohol misuse.^{21,22} Scores range from 1 to 40. A cut-off score of 8 or more has a sensitivity of 0.82 and a specificity of 0.78 to detect alcohol use problems among post-secondary students.²³ Appropriate cut-off scores for Aboriginal populations have not yet been established and may be different. The internal consistency of full-scale AUDIT scores in this study was excellent ($\alpha = 0.88$).

Demographics

Gender and exact age were measured, as well as Aboriginal group across 4 categories, income across 5 categories, marital status across 2 categories, and education across 2 categories (Table 1). Given the urban focus of this study, students were also asked how long they had lived in an urban setting and how frequently they visited First Nations communities in the past year.

Analyses

A linear regression model was used to examine whether enculturation and acculturation scores were associated with alcohol problem scores. First, enculturation was added to the model to provide an unadjusted estimate of the association between this key hypothesized independent variable and alcohol score. Second, acculturation was added, followed by potential confounders (age, sex, and frequency of visits to First Nations communities). There were no significant interactions between these variables. The model was not adjusted for education, given similarities across students, or income, given 1 in 4 students did not report it. Owing to the small sample size stratification by Aboriginal group (for example, First Nations or Métis) was not possible. The significance level was set at $P < 0.05$. All statistical analyses were performed using SPSS 18.0 (SPSS Inc, Chicago, IL).

A content analysis was used to categorize responses to the 4 main open-ended questions.²⁴ To account for the data in a meaningful yet manageable way, the number of categories was restricted to the 4 most frequently cited cultural behaviours and 3 most frequently cited cultural values for both Aboriginal and Canadian questions.²⁴ Additional open-ended comments about the personal significance of named behaviours and values did not add to the categories identified, but did provide additional depth, given that responses to the first 4 open-ended questions were typically short (1 to 4 words). To ensure statements could not be linked back to the data, participants (P) were assigned identifiers based on the order in which they were cited in the text.

Results

Sample Description

Most students were undergraduates who self-identified as First Nation (Table 1). Most had lived in urban settings for 10 or more years and visited Aboriginal communities infrequently. More than one-third lived in poverty with household incomes under \$20 000 per year. About 17% reported alcohol abstinence in the past year. However, many who consumed alcohol did so at harmful levels. The mean AUDIT score for the full sample was 7.85 (SD 6.75, range 0 to 28). To provide context on alcohol-related findings, the sample was divided into quartiles based on AUDIT score (Table 1). Students whose AUDIT scores fell within the first 2 quartiles (that is, 6 or less) consumed alcohol monthly or less, consumed about 1 to 4 drinks when drinking, and had not experienced alcohol blackouts, problems trying to stop

Table 1 Characteristics of the study sample

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

drinking once they started, or problems doing what was normally expected of them owing to drinking during the past year. In contrast, students whose AUDIT scores were above 6 consumed alcohol biweekly or more, consumed 5 to 9 drinks when drinking, and had experienced alcohol blackouts, problems trying to stop drinking once they started, and problems doing what was normally expected of them owing to drinking during the past year.

Quantitative Findings

Overall, students evidenced high levels of enculturation (mean 7.61, SD 1.22, range 3.8 to 9.0) and acculturation (mean 7.02, SD 1.15, range 4.3 to 9.0). These cultural constructs were statistically independent of one another (Pearson's $r = 0.12$, $P = 0.35$). In the full model, low Aboriginal enculturation and male gender were the strongest predictors of alcohol problems (Table 2). For every 1-point increase in enculturation, AUDIT scores decreased almost 2 full points. The mean AUDIT score for males averaged almost 5 points higher than females. The full model explained 25% of the variance in alcohol problem scores among Aboriginal students ($F = 4.52$, $df = 5,48$, $P = 0.002$). Mainstream acculturation was not significantly associated with alcohol use problems.

Descriptions of Culture

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

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

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

When I engage in ceremony I find balance in life, in school. Ceremonies connect you to your culture. You feel comfortable there with your own people all trying to unite and become healthier in the traditional way. (P2)

The 4 areas of my life—spiritual, mental, physical, and emotional—are all balanced. Purification ceremonies provide me with a balanced spiritual connection. I attend sweats regularly and would go more often if I had the choice. They are revitalizing and uplifting. (P3)

Table 2 Linear regression model predicting alcohol use (AUDIT) scores (<i>n</i> = 53)					
Variables	<i>b</i>	SE	β	<i>P</i>	<i>R</i> ² change
Step 1					
Constant	20.80	6.28		0.002	0.07
Enculturation	-1.62	0.81	-0.27	0.05	
Step 2					
Constant	13.59	7.85		0.09	0.04
Enculturation	-1.74	0.80	-0.29	0.03	
Acculturation	1.17	0.78	0.20	0.14	
Step 3					
Constant	22.20	7.64		0.006	0.21
Enculturation	-1.96	0.82	-0.33	0.02	
Acculturation	-0.44	0.81	-0.08	0.59	
Age	-0.18	0.09	-0.24	0.06	
Sex	4.89	2.20	0.32	0.02	
Frequency of visits to FN	1.32	1.21	0.15	0.28	
FN = First Nation communities; SE = standard error					

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

I find it hard to get to sweats with no car, which is a traditional practice, but I smudge sage or sweet grass just about every day. (P4)

There is a smudging room on campus, so I smudge 3 times a week when I need to relax and get in touch with myself—when things get too hectic. (P1)

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

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

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

Language connects us to the culture, allowing us to understand the hidden nuances and insights of traditional knowledge. (P3)

I can communicate with my grandma and other elders on my reserve and hear their stories. It gives me the unique sense that I have a language of my own and I don't have to conform to the masses. (P2)

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

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

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

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

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

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

I was brought up believing that as an Aboriginal person we have to balance the 2 worlds to be successful. We can't just favour 1. Education is the 'modern buffalo.' It will feed us and put a roof over our head. We have to be strong in the mainstream world while having a strong self-definition of who we are spiritually, mentally, and physically as Aboriginal peoples. (P10)

When I was growing up in residential school . . . it was really difficult to try and fit in the system due

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

to both discrimination and trying to understand the white culture. When I came to university I constantly had to say positive things to myself. It started up that old internal dialogue that I'm not good enough that I had when I was a kid. But I try to keep my focus about why I'm here at university—to learn about the history of what happened to my people. (P11)

There was less consensus on what it meant to practice Canadian culture. One in 2 students cited watching or playing hockey or other sports. Other activities included going to church, going to bars or pubs, and being overly formal and polite when interacting with others. As explained by one student:

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

Discussion

Alcohol use problems are a considerable public health problem among university students and a well-documented impediment to university retention and success, regardless of ethnic background.^{25–27} Previous research suggests Aboriginal enculturation is associated with reduced alcohol use among Aboriginal university students.¹⁵ The present study builds on these findings by documenting that Aboriginal enculturation is also associated with reduced alcohol problems within this population. Results indicate that for every 1-point increase

in Aboriginal enculturation (to a maximum of 9) AUDIT scores decrease almost 2 full points. This is a significant reduction given alcohol problems are typically defined by AUDIT scores of 8 or more. Canadian acculturation was not significantly associated with alcohol problems among Aboriginal students in this study.

Why Is Aboriginal Enculturation Protective?

Aboriginal enculturation may have both direct and indirect impacts on alcohol problems. Participants in this study described Aboriginal ceremonies as a key component of cultural practice. Participation in these ceremonies may have a direct effect on alcohol problems, given they are often based on spiritual practices that prohibit alcohol use or recommend moderation. Enculturation may also have indirect effects by reducing motivations to drink. The literature has identified several motives for alcohol use, including the need to cope, enhance mood, and to obtain social rewards.^{28–30} The present findings suggest students were able to meet those needs through cultural practice. Students described turning to cultural traditions when they “personally had to deal with something,” “when things get too hectic,” and to “be connected with others.” Others described cultural participation as “revitalizing,” “uplifting,” and “rejuvenating.”

Differences in the peer networks of highly enculturated students may also account for the observed protective effects of Aboriginal culture, as these networks would include more people who avoid alcohol or practice moderate use.

This would result in less active offers of alcohol and less modelling of alcohol misuse. Highly enculturated students may also feel less pressure to conform to university drinking norms because they perceive their salient social referents drink less than other students. Further research is needed to test these potential explanations before more definitive conclusions can be made.

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

Strengths of this study include guidance by an Aboriginal Advisory Committee, use of measures of enculturation and acculturation that recognize the dynamic nature of culture, and the inclusion of open-ended questions that examine how participants defined cultural values and practice. Limitations include use of a cross-sectional design and a small volunteer sample. While the sample was made up of more women than men, this may not be a limitation as Aboriginal women are more likely to pursue university training than their male counterparts in Canada.³⁵

Conclusions

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

Acknowledgements

This study was funded by the Canadian Institutes of Health Research (ACP 82620). Ms Currie was supported by doctoral training awards from Alberta Innovates: Health Solutions and the Alberta Centre for Child, Family and Community during the course of this research. Dr Wild was supported by a Health Scholar award from Alberta Innovates: Health Solutions. All authors report no conflicts of interest.

We gratefully acknowledge the guidance of Dean Brown, Leona Carter, Jacqueline Fiala, Elena Jacobs, Miranda Jimmy, Patti LaBoucane-Benson, Donald Langford, Norman McCallum, and Hazel McKennitt, who served as members of the urban Aboriginal Advisory Committee for this study; and the Aboriginal students who shared their valuable time and information.

References

1. Waldram JB, Herring DA, Young TK. *Aboriginal health in Canada: historical, cultural, and epidemiological perspectives*. 2nd ed. Toronto (ON): University of Toronto Press; 2006.
2. Cooke M, Mitrou F, Lawrence D, et al. Indigenous well-being in four countries: an application of the UNDP'S Human Development Index to Indigenous Peoples in Australia, Canada, New Zealand, and the United States. *BMC Int Health Hum Rights*. 2007;7(1):9.
3. Mayes C. *No higher priority: Aboriginal post-secondary education in Canada*. Report of the Standing Committee on Aboriginal Affairs and Northern Development. Ottawa (ON): House of Commons; 2007.
4. Wilson D, Macdonald D. *The income gap between Aboriginal peoples and the rest of Canada*. Ottawa (ON): Canadian Centre for Policy Alternatives; 2010.
5. Martinez JA, Sher KJ, Wood PK. Is heavy drinking really associated with attrition from college? The alcohol–attrition paradox. *Psychol Addict Behav*. 2008;22(3):450–456.
6. Karam E, Kypri K, Salamoun M. Alcohol use among college students: an international perspective. *Curr Opin Psychiatry*. 2007;20(3):213–221.
7. VanKim N, Laska M, Ehlinger E, et al. Understanding young adult physical activity, alcohol and tobacco use in community colleges and 4-year post-secondary institutions: a cross-sectional analysis of epidemiological surveillance data. *BMC Public Health*. 2010;10(1):208.
8. Sullivan M, Rislis E. Understanding college alcohol abuse and academic performance: selecting appropriate intervention strategies. *Journal of College Counseling*. 2002;5(2):114–124.
9. Zimmerman MA, Ramirez J, Washienko KM, et al. The enculturation hypothesis: exploring direct and protective effects among Native American youth. In: McCubbin HI, Thompson EA, Thompson AI, editors. *Resiliency in Native American and immigrant families*. Madison (WI): University of Wisconsin; 1994.
10. Hallett D, Chandler MJ, Lalonde CE. Aboriginal language knowledge and youth suicide. *Cogn Dev*. 2007;22(3):392–399.
11. Herman-Stahl M, Spencer DL, Duncan JE. The implications of cultural orientation for substance use among American Indians. *Am Indian Alsk Native Ment Health Res*. 2003;11(1):46–66.
12. Stone RA, Whitbeck LB, Chen X, et al. Traditional practices, traditional spirituality, and alcohol cessation among American Indians. *J Stud Alcohol*. 2006;67(2):236–244.
13. Whitbeck LB, Hoyt DR, McMorris B, et al. Perceived discrimination and early substance abuse among American Indian children. *J Health Soc Behav*. 2001;42(4):405–423.
14. Yu M, Stiffman AR. Culture and environment as predictors of alcohol abuse/dependence symptoms in American Indian youths. *Addict Behav*. 2007;32(10):2253–2259.
15. Cheah CS, Nelson LJ. The role of acculturation in the emerging adulthood of aboriginal college students. *Int J Behav Dev*. 2004;28(6):495–507.
16. Asvat Y, Malcarne VL. Acculturation and depressive symptoms in Muslim university students: personal–family acculturation match. *Int J Psychol*. 2008;43(2):114.
17. Huynh Q, Howell RT, Benet-Martinez V. Reliability of bidimensional acculturation scores: a meta-analysis. *J Cross Cult Psychol*. 2009;40(2):256–274.
18. Waldram JB. *Revenge of the windigo: the construction of the mind and mental health of North American Aboriginal peoples*. Toronto (ON): University of Toronto Press, Anthropological Horizons; 2004.
19. Ryder A, Alden L, Paulhus D. Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self identity, and adjustment. *J Pers Soc Psychol*. 2000;79(1):49–65.
20. Babor TF, Higgins-Biddle JC, Saunders JB, et al. *AUDIT: the alcohol use disorders identification test*. Geneva (CH): World Health Organization; 2001.
21. Allen JP, Litten RZ, Fertig JB, et al. A review of research on the alcohol use disorders identification test (AUDIT). *Alcohol Clin Exp Res*. 1997;21:613–619.

22. Dolman JM, Hawkes ND. Combining the AUDIT questionnaire and biochemical markers to assess alcohol use and risk of alcohol withdrawal in medical inpatients. *Alcohol Alcohol*. 2005;40(6):515–519.
23. Kokotailo PK, Egan J, Gangnon R, et al. Validity of the Alcohol Use Disorders Identification Test in college students. *Alcohol Clin Exp Res*. 2004;28(6):914–920.
24. Mayan MJ. *Essentials of qualitative inquiry*. Walnut Creek (CA): Left Coast Press; 2009.
25. Presley CA, Meilman PW, Cashin JR. Alcohol and drugs on American college campuses: use, consequences and perceptions of the campus environment, volume IV: 1992–1994. Carbondale (IL): Core Institute, Southern Illinois University; 1996.
26. Muehlenkamp JJ, Marrone S, Gray JS, et al. A college suicide prevention model for American Indian students. *Prof Psychol Res Pr*. 2009;40(2):134–140.
27. Presley CA, Leichter JS, Meilman PW. Alcohol and drugs on American college campuses: finding from 1995, 1996, and 1997. 1999. Carbondale (IL): Core Institute, Southern Illinois University; 1998.
28. Cooper ML. Motivations for alcohol use among adolescents: development and validation of a Four-Factor Model. *Psychol Assess*. 1994;6(2):117–128.
29. Cox WM, Klinger E. A motivational model of alcohol use. *J Abnorm Psychol*. 1988;97(2):168–180.
30. Perkins HW. Surveying the damage: a review of research on consequences of alcohol misuse in college populations. *J Stud Alcohol*. 2002;(Suppl 14):91–100.
31. Kirmayer LJ, Dandeneau S, Marshall E, et al. Rethinking resilience from indigenous perspectives. *Can J Psychiatry*. 2011;56(2):84–91.
32. Dell CA, Seguin M, Hopkins C, et al. From benzos to berries: treatment offered at an Aboriginal youth solvent abuse treatment centre relays the importance of culture. *Can J Psychiatry*. 2011;56(2):75–83.
33. McIvor O, Napoleon A. Language and culture as protective factors for at-risk communities. *J Aborig Health*. 2009;5(1):6–25.
34. Fleming J, Ledogar RJ. Resilience and Indigenous spirituality: a literature review. *Pimatisiwin*. 2008;6(2):47–64.
35. Statistics Canada. *Education matters: insights on education, learning and training in Canada*. Ottawa (ON): Statistics Canada; 2010. Catalogue no 81–004-XIE.

Manuscript received April 2011, revised, and accepted July 2011.

¹ Student, School of Public Health, University of Alberta, Edmonton, Alberta.

² Professor and Associate Dean (Research), School of Public Health, University of Alberta, Edmonton, Alberta.

³ Associate Professor, School of Public Health, University of Alberta, Edmonton, Alberta.

⁴ Professor and Dean, School of Public Health, University of Alberta, Edmonton, Alberta.

⁵ Professor, School of Public Health, University of Alberta, Edmonton, Alberta.

⁶ Professor, Faculty of Native Studies, University of Alberta, Edmonton, Alberta.

⁷ Medical Resident, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Alberta.

Address for correspondence: Ms C Currie, School of Public Health, 7–30 University Terrace, University of Alberta, Edmonton, AB T6G 2T4; cheryl.currie@ualberta.ca

Résumé : Problèmes d'enculturation et de consommation d'alcool chez des étudiants d'université autochtones

Objectif : Examiner les associations entre l'enculturation autochtone, l'acculturation canadienne, et les problèmes d'alcool chez des étudiants d'université autochtones habitant une région urbaine du Canada.

Méthodes : Les données de cette étude aux méthodes mixtes ont été recueillies par des sondages en personne menés auprès d'un échantillon de commodité d'étudiants d'université autochtones (n = 60) en 2008–2009.

Résultats : Les étudiants ont manifesté des niveaux élevés d'enculturation autochtone et d'acculturation canadienne. L'enculturation autochtone était significativement associée avec des problèmes d'alcool réduits pour les étudiants d'université autochtones. Il n'y avait pas d'association entre l'acculturation canadienne et les problèmes d'alcool. Les résultats qualitatifs suggèrent que les pratiques culturelles autochtones ont aidé les étudiants à traiter les problèmes de la vie quotidienne et leur ont apporté des récompenses tant personnelles que sociales.

Conclusions : Cette étude a constaté que l'enculturation autochtone était significativement associée avec des problèmes d'alcool réduits chez des étudiants d'université autochtones. Les résultats soutiennent la croissance des programmes et services qui encouragent les étudiants autochtones à maintenir leur identité culturelle en milieu universitaire.