Country of Birth and Language Spoken at Home in Relation to Illicit Substance Use

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ABSTRACT

Background: This study examines the association between country of birth, language spoken at home, and lifetime illicit substance use in a Canadian national sample.

Method: Secondary analysis of data was conducted using a sample of 8,656 persons who were between 15 and 54 years of age in 1994 and who participated in Canada's Alcohol and Other Drugs Survey.

Results: Rates of substance use differed among the four groups (42.6% for Canadian-born who spoke official languages, 33.8% for Canadian-born who spoke non-official languages, 35.2% for foreign-born who spoke official languages, and 11.1% for foreign-born who spoke non-official languages). The rate differences persisted after adjustment for socio-demographic factors, religiousness, friends' use of substances, and participation in social activities.

Interpretation: More in-depth studies that include culture-specific information are required to explain the rate differences. In addition, alternative preventive strategies may be required to reduce substance use among foreign-born persons.

In countries where the mainstream culture has fairly accepting attitudes toward recreational substance use, immigrants usually show lower rates of use than native-born people.¹⁻¹⁰ For example, Cheung¹ found that foreign-born high school students exhibited lower levels of alcohol use than their Canadian-born counterparts, regardless of cultural origin. Chen et al.² found that students from non-English-speaking cultures had lower rates of tobacco, alcohol, and illicit substance use than students from native English-speaking cultures in Australia. Various studies in the United States have observed lower substance use rates among immigrant populations compared to native-born Americans.^{7,9,10} Being foreign-born^{1,4,7} and speaking non-official languages at home^{3,5} each has been linked to substance use,^{1-3,5,7} however, few studies have examined the interactive effect of these two factors in relation to substance use. This study examines the association between country of birth, language spoken at home, and lifetime illicit substance use in a Canadian national sample.

METHODS

Data for this study came from Canada's Alcohol and Other Drugs Survey (CADS),¹¹ which was conducted in 1994 by the Special Surveys Division at Statistics Canada. An introduction to CADS can be referenced from Statistics Canada's website.¹²

Subjects

The target population for CADS was all persons 15 years of age and older in Canada, excluding residents of the Yukon and Northwest Territories, full-time residents of institutions, and households without telephones. A person 15 years of age or older in each household was randomly selected. Responses were obtained from 12,155 of the selected households, yielding a 75.6% response rate. We excluded persons beyond 55 years of age in this analysis. The resultant sample comprised 8,656 persons between 15 to 54 years of age.

Measurement

CADS collected data through telephone interview, using a Random Digit Dialing (RDD) telephone sampling method.^{11,13} Substance use was defined as any use of

La traduction du résumé se trouve à la fin de l'article.

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glue/solvents, marijuana, cocaine, LSD, amphetamine, or heroin during the individual's lifetime. Non-official language spoken at home was defined as speaking a language other than English or French (official languages in Canada) at home. Respondents were asked how many of their friends used marijuana, cocaine, LSD, speed, heroin, glue or steroids. Though steroids were included in the list used to ask about friends' substance use, we excluded it because the pattern and purpose for use is quite different from other substances. Nonetheless, inclusion of steroids in the list of illicit substances did not change our results. Respondents were asked how religious they considered themselves to be. Level of social activity was measured by seven questions with reference to frequency during the past 12 months: time spent at others' homes; friends' or relatives' visits to own home; going to social clubs or meetings; participation in leisure activities such as at a cottage, camping or boating; participation in sports activities; attendance at parties or other social gatherings; and going to a concert, sports event or festival. Responses were given on a five-category likert scale from never to more than once a week. These five categories were combined into two categories as "ever" and "never" in the analysis because cross-table results showed that the differences were mainly in the "never" group.

Data analysis

Logistic regression was used to examine the association between country of birth, language spoken at home, and substance use when other variables were adjusted in the model.

RESULTS

The rate of lifetime substance use among study subjects was 39.8% (39.4% for marijuana, 7.1% for LSD, 5.5% for cocaine, 3.0% for amphetamines, 1.1% for glue/solvents, and 0.8% for heroin). Rate of substance use during the past 12 months was 10.5% (9.8% for marijuana, 0.9% for LSD, 0.9% for cocaine, 0.2% for amphetamines, 0.1% for heroin). A minority was born outside Canada (12.2%), while only 403 (4.6%) spoke non-official languages at home.

TABLE I

Characteristics of the Study Subjects by Country of Birth and Language Spoken at Home (%)

	CBOL (N=7535)	CBNL (N=77)	FBOL (N=718)	FBNL (N=326)	p
Lifetime substance use	42.6	33.8	35.2	11.1	<0.001
Sex					0.07
Male	47.3	45.5	45.0	53.7	
Female	52.7	54.5	55.0	46.3	
Age					<0.001
15-19	9.4	19.5	3.1	5.2	
20-34	42.5	48.1	39.1	41.7	
35-44	29.1	20.8	31.6	33.4	
45-54	19.1	11.7	26.2	19.6	
Married/Living with a partner	47.3	53.2	41.6	37.4	<0.001
Educational level					<0.001
No schooling	0.1	0	0.1	0.3	
Elementary	2.3	6.6	1.1	4.0	
Secondary	47.6	48.7	32.4	34.8	
College/University	33.4	23.7	36.3	35.4	
Post-graduate	16.6	21.1	30.0	25.5	
Religion					<0.001
None	19.7	10.8	24.4	17.9	
Catholic	42.3	52.7	30.2	39.5	
United Church	11.4	1.4	3.7	0.6	
Anglican	8.1	4.1	9.3	0	
Other Protestant	13.4	12.2	17.0	8.5	
Other	5.1	18.9	15.4	33.5	

CBOL: Canadian-born and speaking an official language at home; CBNL: Canadian-born and speaking a non-official language at home; FBOL: foreign-born and speaking an official language at home; FBNL: foreign-born and speaking a non-official language at home.
P-value from χ^2 statistics

TABLE II

Participation in Social Activities, Religiosity, and Friends' Use of Substances by Country of Birth and Language Spoken at Home (%)

	CBOL (N=7535)	CBNL (N=77)	FBOL (N=718)	FBNL (N=326)	p
Number of substance-using friends					<0.001
None	60.6	56.9	70.9	85.1	
A few	29.9	33.3	21.2	9.5	
About half	4.3	5.6	2.9	0.3	
Most	4.6	4.2	4.5	4.4	
All	0.6	0	0.6	0.6	
Religiosity					<0.001
Very	8.0	6.8	13.2	20.7	
Moderate	38.8	56.2	33.6	35.4	
Not very	25.2	20.5	20.1	19.4	
Not at all	28.0	16.4	33.0	24.5	
Spend time at someone else's home					<0.001
Never	4.4	11.7	8.3	10.0	
Ever	95.6	88.3	91.7	90.0	
Friends or relatives visit					<0.001
Never	3.9	2.6	7.4	8.1	
Ever	96.1	97.4	92.6	91.9	
Go to a social club or a meeting					0.008
Never	56.9	64.9	60.2	64.7	
Ever	43.1	35.1	39.8	35.3	
Participate in leisure activities					<0.001
Never	26.5	33.8	39.2	53.6	
Ever	73.5	66.2	60.8	46.4	
Participate in sports activities					<0.001
Never	37.3	41.6	42.1	49.8	
Ever	62.7	58.4	57.9	50.2	
Attend a party, social gathering or wedding					<0.001
Never	16.4	17.1	20.4	24.1	
Ever	83.6	82.9	79.6	75.9	
Go to a concert, sports event or festival					<0.001
Never	36.5	33.8	36.4	48.3	
Ever	63.5	66.2	63.6	51.7	

CBOL: Canadian-born and speaking an official language at home; CBNL: Canadian-born and speaking a non-official language at home; FBOL: foreign-born and speaking an official language at home; FBNL: foreign-born and speaking a non-official language at home.
P-value from χ^2 statistics

Both country of birth and language spoken at home were significantly associated with substance use in bivariate analysis. Cross-table results showed a statistically

TABLE III

Logistic regression model for substance use

	Odds Ratio	95% CI
Country of birth and language spoken at home		
Canadian-born and speaking an official language at home	1	
Canadian-born and speaking a non-official language at home	0.72	0.42-1.25
Foreign-born and speaking an official language at home	0.80	0.67-0.96
Foreign-born and speaking a non-official language at home	0.20	0.13-0.29
Age		
15-19	1	
20-34	2.94	2.42-3.57
35-44	3.02	2.45-3.72
45-54	1.36	1.08-1.70
Sex		
Female	1	
Male	1.50	1.36-1.66
Married/Living with a partner		
No	1	
Yes	1.27	1.14-1.41
Educational level		
No schooling or elementary	1	
Secondary	0.88	0.80-0.98
College/University	0.54	0.37-0.79
Post-graduate	0.15	0.02-1.33
Number of substance-using friends		
None	1	
A few	2.41	2.16-2.69
About half	4.70	3.62-6.11
Most	3.36	2.66-4.25
All	23.63	8.29-67.35
Religiousness		
Very	1	
Moderate	1.31	1.08-1.60
Not Very	1.76	1.44-2.16
Not at all	2.70	2.21-3.29
Participate in leisure activities		
Never	1	
Ever	1.28	1.14-1.43
Go to a concert, sports event or festival		
Never	1	
Ever	1.11	1.00-1.23

Figure 1. Immigration years and rate of substance use during lifetime

significant interaction between country of birth and language spoken at home in predicting substance use. Subjects were divided into four groups: Canadian-born and speaking an official language at home (CBOL), Canadian-born and speaking a non-official language at home (CBNL), foreign-born and speaking an official lan-

guage at home (FBOL), and foreign-born and speaking a non-official language at home (FBNL). The majority (87.0%) of the study subjects was CBOL, 0.9% were CBNL, 8.3% were FBOL, and 3.8% were FBNL. Rate of illicit substance use during lifetime and during the past 12 months differed among the four groups: 42.6%

and 11% for CBOL, 33.8% and 7.8% for CBNL, 35.2% and 8.1% for FBOL, and 11.1% and 3.4% for FBNL. Compared to CBOL, the crude odds ratio (OR) for lifetime illicit substance use was 0.69 (95% CI: 0.43-1.11) for CBNL, 0.73 (95% CI: 0.62-0.86) for FBOL, and 0.17 (95% CI: 0.12-0.24) for FBNL. The OR for substance use during the past 12 months was 68 (95% CI: 0.30-1.57) for CBNL, 0.71 (95% CI: 0.54-0.94) for FBOL, and 0.29 (95% CI: 0.16-0.52) for FBNL. The four groups were different in socio-demographic composition (Table I). Foreign-born persons were more likely to be single and to have higher levels of education. Since only 6 CBNL and 11 FBNL persons reported substance use during the past 12 months, only lifetime illicit substance use was used as outcome measures in multi-variable analyses in order to retain statistical power. After adjustment for the socio-demographic differences (sex, age, marital status, educational level) in a logistic regression model, differences in lifetime illicit substance use among the four groups remained. Compared to CBOL, the adjusted OR for lifetime illicit substance use was 0.72 (95% CI: 0.42-1.25) for CBNL, 0.80 (95% CI: 0.67-0.96) for FBOL, and 0.20 (95% CI: 0.13-0.29) for FBNL.

Friends' use of substances, religiousness, and participation in social activities by country of birth and language spoken at home were presented in Table II. Foreign-born subjects were less likely than Canadian-born subjects to have friends who used substances. Among foreign-born subjects, non-official language speakers were more likely than official language speakers to report that none of their friends used substances. FBNL persons were more likely than the other 3 groups to belong to religions other than Catholic and Protestant, and were more likely to report being very religious. Foreign-born subjects were more likely than their Canadian counterparts to "never" participate in social activities, with more FBNL than FBOL never participating in such activities. In the logistic regression model (Table III), religiousness was negatively associated and friends' use of substances was positively associated with lifetime illicit substance use. Participation in two social activities (attending a concert, sports event

or festival and leisure activities such as being at a cottage, camping or boating) was positively associated with substance use. Other social activities were not significant and were excluded from the model. Inclusion or exclusion of the insignificant variables did not change the OR of country of birth and language spoken at home. After adjusting for religiousness, friends' use of substances and participation in social activities, the OR for substance use was 0.72 (95% CI: 0.42-1.25) for CBNL, 0.80 (95% CI: 0.67-0.96) for FBOL, and 0.20 (95% CI: 0.13-0.29) for FBNL.

We examined the association between lifetime illicit substance use and years of immigration to Canada (Figure 1). Among the foreign-born persons, official language speakers showed higher rates of substance use than non-official language speakers, across years of staying in Canada. The longer the immigrants stayed in Canada, the higher the lifetime substance use rate.

DISCUSSION

On average, from 1995 to 2000, more than 200,000 immigrants landed in Canada each year.¹⁴ The latest census available (1996) indicated that 17% of Canada's 28.5 million population were immigrants¹⁵ and 9%¹⁶ of Canadians spoke a non-official language at home. Using country of birth and language spoken at home as indicators, we found that foreign-born persons had a lower rate of illicit substance use than Canadian-born persons. The rate was even lower if the foreign-born persons spoke a non-official language at home. Among Canadian-born persons, non-official language speakers and official language speakers were similar in their illicit substance use. Persons who were foreign-born were more likely to have received higher education, more likely to be religious, less likely to have substance-using friends, and less likely to participate in social activities. However, the differences in substance use by country of birth and language spoken at home persisted after adjustment for differences in socio-demographics, religiousness, friends' use of substances, and participation in social activities.

The findings that foreign-born persons had a higher education likely represent a selection bias in immigration relative to the

Canadian population. Previous studies showed that in general, this selection bias is positive in that immigrants are healthier than the native population.^{17,18} This selective effect may account for the lower substance use rate of foreign-born persons when compared to Canadian-born persons regardless of language spoken at home. The higher substance use rate among the foreign-born persons who have stayed in Canada longer may demonstrate that substance use is associated with a higher level of acculturation. Besides years of immigration, language spoken at home may also be seen as an indicator of acculturation among the foreign-born persons.^{3,19} Less acculturated immigrants (indicated by speaking a non-official language at home) had a lower rate of substance use. As the immigrants became more acculturated (speaking an official language at home), their substance use became more similar to the host culture (higher substance use rate). Also, language spoken at home may reflect the country of origin of the foreign-born immigrants. Since immigrants from English- and French-speaking countries have a better command of an official language, their acculturation may be easier than immigrants from non-English and non-French-speaking countries. Higher acculturation level of the foreign-born official language speakers may be the reason that their substance use rate was higher than foreign-born non-official language speakers. It is also possible that immigrants who speak an official language at home come from countries (e.g., USA, UK, France) where societal attitudes toward use of illicit substances is similar to that of Canadians. Language spoken at home was not significantly associated with substance use among those born in Canada. It may be that Canadian-born persons have integrated into the mainstream cultures regardless of language spoken at home. Our findings of similar exposure to friends' use of substances by either official or non-official language speakers among Canadian-born persons support this speculation. However, limited sample size of Canadian-born non-official language speakers may contribute to the statistically insignificant results.

Though foreign-born persons were more religious, less likely to have substance-using friends, and less likely to participate in social activities, these factors alone cannot

explain their lower rate of illicit substance use. More in-depth studies that include culture-specific information are needed to explain the rate differences. There may be opportunities for prevention of substance use among Canadian-born and official language speakers through better understanding foreign-born and non-official language speaking cultures. In addition, alternative preventive strategies may be needed to reduce substance use among foreign-born persons.

LIMITATIONS

We did not have information on country of origin for foreign-born people. The study considered use of illicit, but not licit, substances. Information on substance use relied on self-report and the quality of the self-report cannot be verified. Since substance use referred to in this study is illegal, it is possible that foreign-born and Canadian-born people reported differently, depending upon their immigrant status and their pre-immigration experiences. However, since other Canadian studies found that immigrants also reported a lower rate of use of licit substances such as alcohol and tobacco,^{1,2,5} it is unlikely that the observed rate differences in our study were due to under-report of illicit substance use among foreign-born persons. The interview was conducted in an official language over the telephone, excluding some high-risk populations (homeless populations, institutionalized population, persons who cannot speak official language). Our results are not generalizable to these populations. Exclusion of persons who cannot speak an official language may be the reason why our proportion of foreign-born and non-official language speakers was lower than the national census.

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Received: March 5, 2001
Accepted: October 30, 2001

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