Prevalence and characteristics of substance use among Chinese and South Asians in Canada

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Abstract

This study examines Canadian Alcohol and Drug Use Monitoring Survey data to assess substance use prevalence among Chinese (n=254), South Asians (n=245), and Caucasians (n=14943). South Asians and Chinese reported less current drinking than Caucasians and South Asians reported less current drinking than Chinese. South Asians and Chinese reported less cannabis use and any illicit drug use than Caucasians. Compared to Caucasians, Chinese reported less cigarette smoking and South Asians reported less use of any pain relievers. Additional research focusing on immigration and acculturation is warranted to further explore substance use patterns of South Asian and Chinese populations in Canada.

Introduction

Chinese and South Asians are the two largest visible minority populations in Canada with Chinese numbering over 1 million and South Asians with 941,100 in 2001 (Statistics Canada, 2008). By 2017, both populations are expected to be greater than 1.8 million each (Statistics Canada, 2008). As these groups continue to grow, it will become increasingly important to study health issues as they pertain to these segments of the Canadian population. Despite their substantial numbers, there is little known about the prevalence and incidence of substance use among Chinese and South Asian Canadians.

There have only been a few studies on substance use among Chinese and South Asians in Canada. In a comparison study of Caucasians (n=33,339), Chinese (n=733), and “other Asians” (n=1113), Tiwari and Wang (2006) examined Canadian Community Health Survey data and found that 12-month prevalence of substance dependence was significantly higher in the White group than in the Chinese group. A study of high school students in Toronto found that Chinese students were much less likely to be regular drinkers in the past 12 months at 16%, compared to their non-Chinese

peers at 75%. Country of birth and acculturation have been indicated as related to alcohol use in Chinese and South Asian Canadian samples (Lai, 2004; Weber, 1996). A study of Chinese adults aged 55 and older (n=2272), approximately 17% reported drinking alcohol with being born in Canada as a significant predictor of drinking (Lai, 2004). In a study of Punjabi immigrants in Brampton, Ontario (n=404), those with higher levels of acculturation had more lifetime use of alcohol and higher CAGE scores indicating that they had more problems with alcohol (Weber, 1996).

The present study assesses substance use prevalence among Chinese, South Asians, and Caucasians in Canada by examining national Canadian Alcohol and Drug Use Monitoring Survey (CADUMS) data.

Methods

The Canadian Alcohol and Drug Use Monitoring Survey (CADUMS) is an on-going cross-sectional monthly random-digit dialling two-stage probability telephone survey representative of the general Canadian population, age 15 years and older, stratified by the ten provinces. (For a detailed description of CADUMS, see Fischer, Nakamura, Ialomiteanu, Boak, & Rehm, in press). The overall sample consisted of 16,672 respondents, surveyed April and December 2008, with a response rate of 43.5%¹⁵. This study focused on a subsample of participants who were Caucasian (n=14943), Chinese (n=254), and South Asian (n=245) derived from the 2008 cycle of CADUMS.

Participants were asked the following question to determine their race or ethnicity: “People living in Canada come from many different cultural and racial backgrounds. Are you.....?” They were then provided with the following list of options: Caucasian, Chinese, South Asian, Black, Filipino, Latin American, Southeast Asian, Arab, West Asian, Japanese, Korean, Aboriginal, Other, and “Don’t Know”. Participants could choose up to three categories. Participants that indicated they

were both Chinese and Caucasian (n=10) were classified as Chinese for the purposes of this analysis. Participants that indicated they were both South Asian and Caucasian (n=6) or both South Asian and some other category (n=3), were classified as South Asian.

Additional demographic variables included in this analysis were gender (female=0, male=1), age (grouped into categories: 15-24, 25-54, 55+, and as a continuous variable), and education (<high school, completed high school, some post-secondary, university degree, and continuous as number of years of education).

Substance use variables included: (1) alcohol use past 12 months (current drinking, coded yes=1, no=0); (2) the average number of drinks consumed per week (continuous, estimated using the usual quantity by usual frequency approach); (3) five or more drinks at the same sitting or occasion once a month or more often (coded never=0, at least once=1); (4) cigarette smoking past 12 months (coded yes=1, no=0), (5) any use of prescription pain relievers past 12 months (coded yes=1, no=0), any cannabis use past 12 months (yes=1, no=0); and (6) any use of illicit drugs past 12 months (including any use of cocaine, speed, ecstasy, hallucinogens, glue, methamphetamine or heroin, coded no=0, at least one drug =1).

Analyses were conducted with Stata 10 software with the original CADUMS dataset provided by Health Canada. Missing data (i.e. “don’t know” responses and refusals) were excluded from analyses. All statistical tests were corrected for the sampling design. The percentages reported were based on the weighted sample and can be considered representative of the Canadian population age 15 years and older.

Results

Descriptive data indicated that there were more South Asian and Chinese male participants than female participants in the sample, while there were more Caucasian female participants than

male participants. Caucasian participants were older with a mean age of 46, compared to South Asians with a mean age of 38 and Chinese with a mean age of 37. More than half of the South Asian and Chinese participants had a university degree, whereas only 27% of the Caucasian sample had a university degree (see Table 1).

Table 2 presents data on substance use in the past 12 months by ethnic group. Caucasians scored higher than South Asians and Chinese in all categories. Table 3 presents logistic regression results controlling for demographic characteristics with Caucasians as the reference group. South Asians and Chinese were significantly less likely to report current drinking (OR=.094; 95% CI: .041-.148 and OR=.217; 95% CI: .092-.343) compared to Caucasians. South Asians and Chinese were also significantly less likely to report having five or more drinks (OR=.257; 95% CI: .037-.552 and OR=.155; 95% CI: .016 - .326) compared to Caucasians. Chinese were significantly less likely than Caucasians to report cigarette smoking with an adjusted odds ratio of .384 indicating that they were almost four times less likely to smoke compared to Caucasians. On the other hand, South Asians were significantly less likely to report any use of pain relievers, which included medical use, with an adjusted odds ratio of .323 indicating that they were three times less likely to smoke compared to Caucasians. South Asians and Chinese were significantly less likely to report cannabis use (OR=.335; 95% CI: .094-.684 and OR=.178; 95% CI: .069-.425) compared to Caucasians. Both South Asians and Chinese were significantly less likely to report any illicit drug use (OR=.315; 95% CI: .100-.631 and OR=.189; 95% CI: .045-.423) and any illicit drug use excluding cannabis (OR=.133; 95% CI: .017-.284 and OR=.087; 95% CI: .017-.191) compared to Caucasians.

In order to compare Chinese and South Asian substance use, a logistic regression controlling for demographic characteristics was run with Chinese as the reference group (data not shown). South Asians were significantly less likely to report current drinking (OR=.464; 95% CI: .293-.636) compared to Chinese.

Discussion

This study provides important information about substance use among a large and growing segment of the Canadian population that has been understudied. While there has been an earlier epidemiological study on substance use by Chinese in Canada (Tiwari & Wang, 2006), this is the first study to comparatively examine substance use among South Asians in Canada. Our findings indicate that South Asians and Chinese were less likely to engage in alcohol and illicit drug use as compared to Caucasians, which is consistent with findings in the literature about Chinese and “other Asians” in Canada (Tiwari & Wang, 2006). In addition, Chinese were less likely to smoke cigarettes and South Asians were less likely to use pain relievers than were Caucasian participants. These findings are consistent with studies conducted in the U.S. which demonstrate that Asians use substances at lower rates than other groups (Price, Risk, Wong, & Klinge, 2002; Smith et al., 2006). Furthermore, South Asians were less likely to report current drinking as compared to Chinese participants. These differences between Chinese and South Asian participants reflect the importance of examining substance use by ethnic group rather than lumping ethnic groups together into a racialized category in order to get a clearer picture of particular substance use problems (Le, Goebert, & Wallen, 2009). Such data are also needed for ethnic specific prevention programs which have been shown necessary in other health fields as well (Chiu, Austin, Manueal, & Vu, 2010).

Additional demographic information would enhance our understanding of substance use in Asian North American populations. It is critical that population-health research collect data on immigration status and ethnicity (Creatore et al. 2010). Previous studies suggest that immigrants tend to be healthier on many measures, including substance use and overall mortality, when compared to their North American born counterparts (Gfoerer & Tan 2003; Singh & Siahpush, 2001). This has been attributed to either protective factors related to cultural practices or selection of

healthy individuals as per immigration policy (Singh & Siahpush, 2001). However, research indicates that these health advantages decrease over time (Dunn & Dyck, 2000; Newbold & Danforth, 2003). CADUMS data does not inform us about whether participants are Canadian born or foreign born or how many years immigrants have been living in Canada. Age at immigration has been identified as an important predictor of acculturation (Cheung, 1990). Previous studies have found that Asians who have immigrated to the U.S. at an older age were less likely to use alcohol and illicit drugs than their U.S. born counterparts (Wong et al., 2007). The inclusion of questions about place of birth and years in Canada may have provided important information about which segments of the population are at greater risk for substance use. There is also no indication of the acculturation level of the respondents in the present study. These would be important control variables in future studies that could help to parse out what protective factors are at play that may be preventing South Asians and Chinese from engaging in substance use. Knowledge about protective factors could help inform researcher on how to reinforce prevention efforts. It is likely that less acculturated participants may not be participating in this survey as it is only available in English and French. In order to get a more representative picture of substance use among South Asians and Chinese in Canada, surveys should be conducted that specifically target these populations in additional languages.

Culturally and linguistically appropriate research studies with non-population based methodological approaches, such as target sampling, may yield more accurate information about substance use among ethnic minority groups (Wong et al., 2007). For example, focus groups have indicated that many Southeast Asians do not consider beet and rice wine to be alcohol, which could lead to an underestimation of alcohol use unless culturally relevant questions are included (Wong et al., 2007). In a study of Southeast Asians in the U.S. using snowball sampling and culturally and linguistically tailored survey instruments, 9.6% of foreign-born Vietnamese participants reported

illicit drug use, which was substantially higher than the 1.2% reported from the Substance Use and Mental Health Services Administration's NSDUH report (Brown et al., 2005; Wong et al., 2007). In addition, U.S. studies of Asian university students demonstrate that they may be heavier substance users compared to population study samples (Liu & Iwamoto, 2007; So & Wong, 2006). For example, in a study of Asian American university students who were predominately U.S.-born, 79% reported alcohol consumption in the past 30 days, which was higher than the prevalence rate among other university students (So & Wong, 2006). Illicit substance use among this sample (9.5% in the past 30 days) was also higher than that reported among Asians aged 12 or older in a national sample (So & Wong, 2006). This suggests that second generation Asian youth in North America may be at an elevated risk for substance use that does not get reflected in national surveys such as CADUMS. This demonstrates that target sampled studies that take language and culture into account might give us a clearer picture of substance use among various Asian ethnic groups.

There are several limitations to this study. CADUMS data reflects crude descriptive indicators of substance use. Any use of cannabis in the past twelve months, for example, can reflect both one-time use and daily usage. Data that reflects more detailed usage would help to present a more useful picture of substance use among these populations. Another limitation is that ethnic and racial groups were compared. The CADUMS questionnaire asked participants to select from a number of ethnic and racial groups to identify their "cultural and racial backgrounds". However, participants who selected "Caucasian" were not asked to further identify their ethnicity, which is similar to other studies that include participants of European origin (Sakai, et al., 2005; Smith, et al., 2006; Tiwari & Wang, 2006). Grouping a heterogeneous group together may misrepresent or obscure important within group differences. Information on immigration status and acculturation could have provided useful information about substance use among different ethnic groups in Canada. Additional research is warranted to further explore the substance use patterns of South

Asian and Chinese populations in Canada with particular attention to immigration status and acculturation factors. Future research should be culturally and linguistically tailored in order to get a more accurate picture of substance use in these populations.

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Table 1. Demographic characteristics among Caucasian , South-Asian and Chinese Canadians (aged 15 and older) , CADUMS, 2008

	Caucasians		South Asians		Chinese	
	Total N	%	Total N	%	Total N	%
Total Sample	14943	94.8	245	3.1	254	2.1
Gender				***		
Male	5814	46.9	136	65.2	132	72.8
Female	9129	53.1	109	34.8	122	27.2
Age groups				***		
15-24	1169	15.3	29	7.9	44	19.0
25-54	7588	51.2	175	82.7	176	73.2
55+	6160	33.5	41	9.4	33	7.7
Mean age (SD)		46.3 (18.5)		38.0 (8.6)		37.1 (11.3)
Education				***		
Less than HS	2273	16.5	22	11.8	20	5.7
Completed HS	3788	25.0	47	17.2	42	9.9
Some College/ Univ	4886	31.8	36	20.4	60	26.1
University degree	3891	26.7	138	50.6	130	58.3
Mean years of education (SD)		13.8 (2.9)		15.1 (2.4)		15.9 (2.6)

Note: N is the number of unweighted cases and % is the percentage of subgroups of each demographic variable based on weighted data; Statistical significance (adjusted Chi-square test) : * p<.05, ** p<.01, *** p<.001.

Table 2. Percent reporting substance use in the past 12 months among Caucasian , South-Asian and Chinese Canadians (aged 15 and older) , CADUMS, 2008

	Caucasians	South Asians	Chinese
Total sample (N)	14943	245	254
	% (95% CI)	% (95% CI)	% (95% CI)
Current Drinking (past 12m)		***	
% Yes	80.7 (79.5, 81.9)	41.0 (29.2, 53.9)	63.5 (50.4, 74.8)
Average no. of drinks/week		***	
Mean	3.8	2.0	1.1
(SD)	(12.1)	(3.9)	(2.3)
Five or more drinks at one time (past 12m)		*	
% Yes, at least once a month	17.9 (16.6, 19.3)	7.5 (2.1, 20.3)	5.7 (2.5, 14.3)
Cigarette Smoking (past 12m)		*	
% Yes	20.1 (18.8, 21.4)	12.6 (5.8, 25.2)	8.0 (3.4, 17.5)
Any use of pain relievers (past 12m)		***	
% Yes	22.5 (21.2, 23.8)	8.1 (4.6, 14.0)	11.7 (6.4, 20.4)
Cannabis use (past 12m)		*	
% Yes	11.8 (10.7, 13.1)	5.2 (2.0, 12.6)	3.6 (1.0, 12.2)
Any illicit drugs past 12m (cannabis included)		*	
% Yes	12.7 (11.6, 14.0)	5.4 (2.2, 12.8)	4.2 (1.4, 12.3)
Any illicit drugs past 12m (cannabis not included)		***	
% Yes	4.3 (3.6, 5.2)	0.7 (0.2, 2.1)	0.6 (0.2, 2.0)

Note: N is the number of unweighted cases; % is the percentage based on weighted data; 95% confidence interval (CI) refers to being 95% confident that the interval contains the population percentage; statistical significance (adjusted Chi-square test) : * p<.05, ** p<.01, *** p<.001.

Table 3 Odds ratio estimates for substance use among Chinese and South Asian Canadians as compared to Caucasian Canadians (aged 15 and older) , CADUMS, 2008

	%	Unadjusted OR	Odds Ratio 95% CI	Adjusted OR	Odds Ratio 95% CI
Current drinking (past 12 m)					
Caucasians (ref. group)	80.7	—		—	
South Asians	41.0	.166**	(.078, .253)	.094**	(.041, .148)
Chinese	63.5	.415**	(.190, .640)	.217**	(.092, .343)
Five or more drinks at one time (past 12m)					
Caucasians (ref. group)	17.9	—		—	
South Asians	7.5	.373	(.054, .800)	.257*	(.037, .552)
Chinese	5.7	.276*	(.007, .559)	.155**	(.016, .326)
Cigarette smoking (past 12 m)					
Caucasians (ref. group)	20.1	—		—	
South Asians	12.6	.573	(.083, 1.062)	.530	(.046, 1.013)
Chinese	8.0	.347*	(.037, .656)	.384*	(.044, .723)
Any use of pain relievers (past 12m)					
Caucasians (ref. group)	22.5	—		—	
South Asians	8.1	.306**	(.118, .494)	.323**	(.118, .527)
Chinese	11.7	.458*	(.154, .762)	.524	(.180, .869)
Cannabis use (past 12m)					
Caucasians (ref. group)	11.8	—		—	
South Asians	5.2	.405	(.088, .802)	.335*	(.094, .684)
Chinese	3.6	.278	(.008, .644)	.178*	(.069, .425)
Any illicit drugs past 12m (cannabis included)					
Caucasians (ref. group)	12.7	—		—	
South Asians	5.4	.394	(.023, .764)	.315*	(.100, .631)
Chinese	4.2	.301*	(.005, .652)	.189**	(.045, .423)
Any illicit drugs past 12m (cannabis not included)					
Caucasians (ref. group)	4.3	—		—	
South Asians	0.7	.160**	(.017, .338)	.133**	(.017, .284)
Chinese	0.6	.144**	(.020, .307)	.087**	(.017, .191)

Note: Statistical significance (Wald test): * p<.05, ** p<.01, *** p<.001; OR adjusted for gender, age, and education; 95% confidence interval (CI) refers to being 95% confident that the interval contains the population OR.