Substance use and impaired driving prevalence among Francophone and Anglophone postsecondary students in Western Canada

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ABSTRACT

Introduction: Substance use and impaired driving increase risk of motor vehicle crashes and deaths. Individual, socio-economic and -cultural factors are associated with these at-risk behaviors; however, little is known if differences exist between the Anglophone majority and minority Francophone populations in Canada. This article describes prevalence of substance use, impaired driving and driving practices by postsecondary student and compares Francophones and Anglophones with respect to these behaviors.
Methods: Postsecondary students between 18 and 24 years attending a Francophone university in Western Canada completed a paper-based survey during class-time.
Results: Prevalence of alcohol consumption, binge drinking and marijuana use in the past month were 88.6%, 64.2% and 22.7% respectively. Francophone participants were more likely to consume more alcohol, participate in drinking games, and consume marijuana during the past month than Anglophones. They were also more likely to report impaired-driving, speeding, distracted driving and being passenger in a motor vehicle driven by an impaired driver.
Conclusion: Awareness campaigns on campus highlighting the risks of substance use and unsafe driving practices should be strengthened and target Francophone students in linguistic minority communities.

1. Introduction

Impaired driving is the predominant factor contributing to serious road crashes (Canadian Centre on Substance Use and Addiction, 2018) and among the leading criminal causes of death in Canada (Perreault, 2016). Increased risk of serious injury or fatality in motor vehicle crashes involving a drug-impaired driver is well established (Asbridge, Hayden, & Cartwright, 2012; Canadian Centre on Substance Use and Addiction, 2018; Li et al., 2012). With legalization of cannabis in this country (Health Canada, 2017), concern over drug use and drugged driving is rising (Forrest, 2017). In contrast to a downward trend in alcohol-impaired driving over the past three decades, driving after consuming other psychoactive drugs is increasing (Allen, 2016; Brady & Li, 2013; Canadian Centre on Substance Use and Addiction, 2018). Drivers under the influence of a combination of alcohol and other drugs engage in considerably more risky behavior (Scott-Parker, Watson, King, & Hyde, 2014) and are estimated to have a 23 fold increased risk of fatal crash involvement as compared to non-impaired drivers (Li, Brady, & Chen, 2013). Strict regulation of cannabis use has been adopted (Health Canada, 2017) and amendments to the *Criminal Code* regarding offences and procedures relating to drug-impaired driving (Government of Canada, 2018) are under way to better protect Canadian citizens. These new regulations will most likely be the object of widespread awareness campaigns and development of prevention measures; populations at greater risk of engaging in this type of risk behavior should be targeted (Butters, Mann, Wickens, & Boase, 2012).

Youth and young adults have been identified as an at-risk population for substance use, impaired driving and unsafe driving practices (Canadian Centre on Substance Use and Addiction, 2017, 2018; Perreault, 2016; Robertson, Hing, Pashley, Brown, & Vanlaar, 2017). Trends of drugged driving in Canada reveal that young drivers aged 16–24 years are 6.2 times more likely to report driving within 2 h of using illegal drugs as compared to drivers aged 45–64 years (Robertson et al., 2017). Studies conducted in Canadian universities have also shown that emerging adults are generally more likely to engage in high risk behaviors, particularly relative to alcohol and drug use (Adlaf, Demers, & Gliksman, 2005; Dawson, Schneider, Fletcher, & Bryden, 2007). A recent study in forty-one Canadian universities reported that 68% of participants had consumed alcohol in the last month and 11.2% had driven a vehicle after drinking alcohol in that same time period (American College Health Association, 2016). More than 40% of participants had used marijuana during their lifetime; 17.9% had

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consumed this drug in the last month (American College Health Association, 2016). Binge-drinking and drinking games are also popular among university and college students; reports indicate that nearly 60% of students consume > 5 alcoholic drinks in a single occasion over a period of 15 days (Kwan, Faulkner, Arbour-Nicitopoulos, & Cairney, 2013) and 52% participate in drinking games in a one-month period (Cameron et al., 2010). These behaviors generally lead to further alcohol consumption and negative consequences when driving (Clapp, Reed, & Ruderman, 2014; Ray, Stapleton, Turrisi, & Mun, 2014). Hence, alcohol and drug misuse constitute risk behaviors which should be closely monitored in young adults on Canadian campuses. Awareness campaigns of risks associated to these behaviors should take place in these institutions.

Several predisposing factors have been associated to substance use and impaired driving. The most important individual factors reported are age and gender, with male and young adults exhibiting higher rates of alcohol use (Canadian Centre on Substance Use and Addiction, 2017), impaired driving (Butters et al., 2012; Canadian Centre on Substance Use and Addiction, 2018; Perreault, 2016), and involvement in motor vehicle collisions following cannabis use (Asbridge et al., 2012; Robertson et al., 2017). Socioeconomic determinants such as education, employment, income and housing are also associated to drinking and driving: drinking drivers are more likely to have full-time employment and significantly higher average annual income (Beirness & Davis, 2007), whereas full-time college attenders not living with parents are at greater odds of simultaneous alcohol and marijuana use (Patrick, Terry-McElrath, Lee, & Schulenberg, 2019). Sociocultural factors, which include race and ethnicity, are also predictors of substance use, as cultural norms and practices influence behaviors in social settings (Sudhinaraset, Wigglesworth, & Takeuchi, 2016). While some report that those of white ethnicity are more likely to consume alcohol and marijuana than non-white minority groups (Arbour-Nicitopoulos, Kwan, Taman, & Faulkner, 2010; Khan, Cleland, Scheidell, & Berger, 2014) and that ethnicity may be associated with participation in drinking games (Pedersen & Labrie, 2006; Zamboanga et al., 2015), there are important disparities between studies regarding the effect of ethnicity on drinking and driving (Asbridge, Paynea, Cartwright, & Mann, 2010). Further research would help demystify if and how ethnicity is associated with this high-risk behavior.

As previously mentioned, some studies have focused on ethnic identity in association with substance use and impaired driving, but most of these studies use racial categorizations (White, Hispanic, Black, or Asian) rather than more specific ethnic identities (Asbridge et al., 2010). Members of an ethnic group are defined as "persons who share the same distinct culture or who are descendants of those who have shared a distinct culture and who identify with their ancestors, or their culture or group" (Isajiw, 1999). One such group in Canada are Francophones living outside of Quebec; several studies conducted in postsecondary institutions demonstrate that young adults self-identify as members of this ethnolinguistic minority group (Levesque & de Moissac, 2018; Noël & Beaton, 2010). Few studies have focused on high-risk behavior in this population. An earlier study comparing Francophone and Anglophone adults living in Ontario described few differences in quantity and frequency of alcohol consumption and impaired driving, but highlighted major differences in predictors of use and related problems (Dewit et al., 1995). This study is however dated and does not specifically focus on young adults, who are more likely to engage in substance-related at-risk behaviors. The present article fills this gap; it examines substance use and impaired driving prevalence among students enrolled in a francophone postsecondary institution in Western Canada. The objectives of the study are 1) to describe academic and socioeconomic profiles of Francophone and Anglophone postsecondary students, required for identification of variables (those with statistically significant differences) to consider for subsequent analysis of risk-taking behavior, 2) to describe prevalence of substance use, impaired driving and driving practices in this population, and 3) to compare official language group members (Francophones and Anglophones) with respect to these behaviors. Findings will be used to better inform postsecondary institutions in similar linguistic contexts of factors to consider when developing evidence-based interventions aimed at reducing substance use and impaired driving by students in Canadian universities.

2. Materials and methods

2.1. Design and procedure

A quantitative approach was used to measure academic and socioeconomic profiles as well as high risk behaviors related to substance use and motor-vehicle driving practices. Students attending undergraduate (leading to a bachelor degree) or collegiate (leading to a diploma, generally of technical or professional nature) programs at the largest Francophone university in Western Canada, the Université de Saint-Boniface (USB) in Winnipeg, were invited to participate in a paper-based survey distributed on campus and completed during class-time. The survey was administered by the research assistant, who also obtained informed consent from participants. The study was approved by the USB Research Ethics Board. Participants did not receive compensation for taking part in the study.

2.2. Sample

Convenience sampling was used for data collection; however, the research assistant invited students from pre-selected classes to participate to ensure adequate representation of students from different years of study, programs and ethnic groups. Of approximately 1200 students attending university where the study was conducted, 419 chose to participate. Eligibility criteria included a) being 18 to 24 years of age and b) attending a university or collegiate program. Exclusion criteria was limited to being an international student, as these students generally have a distinct sociodemographic profile as compared to their postsecondary peers (Gueye, Moissac, & Touchette, 2018) and often adhere to religious practices prohibiting substance use (Unlu & Sahin, 2016). Final analysis sample was 302 participants, of which 61.3% self-identified as Francophone and 38.7% as Anglophone. In addition, nine participants in this sample study had at least one missing value for variables of interest. Therefore, the number of observations from one variable to another varies from 293 to 302.

2.3. Measures

The 52-question survey, based on the Canadian Campus Survey (Adlaf et al., 2005), focused on academic and socioeconomic status, linguistic identity (Francophone or Anglophone), substance use, drinking and unsafe driving practices. Academic and socioeconomic data presented in this article include: age, gender, student registration status, self-reported academic average, living situation, hours worked weekly, annual income, financial debt and financial autonomy.

Substance use was assessed, in some cases for the past month (30 days), in others for the last year or lifetime, by questions such as: "How frequently did you consume at least one alcoholic beverage (defined in the survey as the equivalent of one beer, a glass of wine, a shot of liquor such as rum, gin, vodka or whiskey or a cooler)?" and "How frequently did you consume 5 or more alcoholic beverages in a 2–3-hour period of time (binge drinking, as defined in other surveys (Adlaf et al., 2005; American College Health Association, 2016))?". Frequency of drug use in the past month (30 days) and past year were also measured. Drugs of interest other than alcohol included marijuana, cocaine, heroin, methamphetamines, ecstasy, hallucinogens, steroids and over-the-counter or prescription drugs to get a buzz. Multiple choice responses were presented, such as "never", "I had already consumed but not in the last month", "one or two days", "three to five

days", "six to nine days", and "ten days or more" for alcohol, and similarly for other drugs, but as occurrences (how many times) rather than days per month. The first two responses ("never" and "I had already consumed but not in the last month") were combined to form a larger reference group. Eleven drinking practices, such as alternating between alcoholic beverages and non-alcoholic beverages, having a designated driver, or participating in drinking games, were also self-reported for the year prior to the survey. Eight questions pertaining to unsafe driving practices in the past month included frequency of alcohol or drug-impaired driving, speeding, distracted driving (using a mobile device while driving) and being a passenger in a vehicle driven by an impaired driver; being the driver in a motor vehicle accident was measured for the last year.

2.4. Statistical analysis

To meet the two first objectives, descriptive statistics, including proportions for categorical variables, means and standard deviations for continuous variables, were used to describe academic and socioeconomic profiles, prevalence of substance use and driving practices. Chi-square or Fisher's exact tests and *t*-test were used to identify statistically significant differences between Francophones and Anglophones, with respect to categorical and continuous variables. Confounding sociodemographic variables (gender, age and living situation) were identified. To answer the third objective, for each binary or ordinal variable, logistical and ordinal regressions were used to compare the two linguistic groups adjusting for previously identified confounding sociodemographic variables. Prevalence and adjusted odds ratio were also reported. All statistical analyses were performed with IBM SPSS Statistics (version 21; SPSS Inc., Chicago, IL).

3. Results

3.1. Academic and socioeconomic profiles

Academic and socioeconomic profiles for all participants (total) as well as both linguistic groups are presented in Table 1. Significant differences between the two linguistic groups ($p < 0.05$) are in bold. Average age for Francophone participants was 20.1 years and 19.8 years for Anglophones. Differences between the two groups were statistically significant at 5% for gender and living situation only. The majority of participants were female; however, a higher percentage was observed in the Anglophone cohort (84.6%) as compared to Francophones (74.6%). Anglophones were more likely to report living with parents, a spouse or partner, whereas Francophones reported living alone or with friends most often. Most students from both cohorts were registered full-time, had a self-reported academic average of 70% and higher, worked < 20 h per week, had an annual income of less than $5000 and an estimated student debt of less than $5000. Most Francophone (87.9%) and Anglophone (76.5%) participants reported personal responsibility for debt repayment.

3.2. Alcohol use and drinking practices

Alcohol consumption and variables related to drinking practices are presented in Table 2. Most students had consumed at least one alcoholic beverage in their lifetime, the majority (88.6%) had consumed in the month preceding the survey and 64.2% reported binge drinking in that same period. Francophone students, however, reported heavier and more frequent drinking: 19.7% had at least one alcoholic beverage ten days or more in the past month, 68.9% reported binge drinking in that same period and 4.9% reported doing so ten days or more, as compared to 9.5%, 56.9%, and 0.9% respectively for Anglophone students. When controlled for age, gender and living situation, Francophone students consumed alcohol more frequently and were 1.65 times more likely to binge-drink in the past month as compared to Anglophone students.

Table 1
Academic and socioeconomic profiles.

	Total	Franco-Manitobans $n = 185$	Anglophones $n = 117$	*p* value
Average age (standard deviation)		20.1 (0.14)	19.8 (0.18)	0.172
Gender				
Female*	78.5	74.6	84.6	**0.044**
Part-time student	5.3	5.9	4.3	0.607
Self-reported academic average				
70.0% and higher	90.1	90.1	90.2	0.552
60.0% to 69.0%	5.1	6.1	3.6	
< 60.0%	2.4	1.7	3.6	
Unsure	2.4	2.2	2.7	
Employment				
None	17.2	14.6	21.4	0.114
< 20 h per week	65.2	69.7	58.1	
> 20 h per week	17.5	15.7	20.5	
Annual income				
$0	5.4	3.3	8.5	0.135
Less than $5000	84.2	86.7	80.3	
More than $5001	10.4	10.0	11.1	
Estimated student debt				
$0	48.8	47.3	51.3	0.628
Less than $5000	33.2	33.2	33.3	
More than $5001	17.9	19.6	15.4	
Debt repayment				
Student	83,8	87.9	76.5	0.097
Living situation*				
Alone or with friends	13.9	17.3	8.7	**0.007**
With parents, spouse or partner	81.0	75.4	89.6	
With family member	5.1	7.3	1.7	

Notes: Data are reported in percentages, except age.
* Statistical significance at 5.0% with Chi-square or exact tests.

Furthermore, Francophone students were more likely to participate in drinking games than Anglophone students (adjusted odd ratios = 2.14).

Findings related to safe drinking practices were very similar for both groups of participants. Safe drinking practices most often reported were to have a designated driver (83.7%), eating prior to or while drinking (72.2%), staying with the same group of friends the whole time when drinking (71.3%) and keeping track of how many alcoholic beverages were consumed (53.4%). Non-negligible proportions of participants in both groups, however, did not adopt safe drinking practices such as limiting themselves to one alcoholic beverage or less per hour (31.4%) or having a friend let them know when they should refrain from further drinking (33%).

3.3. Drug use

Other than alcohol, the drug most commonly used by the student population was marijuana; 26.8% of Francophone and 16.2% of Anglophone students used this drug in the month prior to the survey. Francophones were 1.91 times more likely to consume marijuana than Anglophones (adjusted odd ratios = 1.91, CI95% = 1.03–3.55). Use of other drugs was infrequent and not statistically significant: ecstasy (2.7%), over-the-counter medication to get a buzz, such as painkillers, Ritalin and Xanax (1.7%), hallucinogens such as LSD, acid, PCP, angel dust, mescaline or magic mushrooms (2%) and cocaine (1.6%) were rarely used by participants.

3.4. Impaired driving-related practices

Table 3 compares self-reported impaired driving-related practices for all participants and those of both linguistic groups. Measures of actual driving practices took into consideration participants with a

Table 2
Alcohol consumption and drinking practices.

	Total *n* =	Franco-Manitoban *n* = 185	Anglophone *n* = 117	AOR (95% IC)	*p* value[a]
Consumed at least one alcoholic beverage (lifetime)	96.3	96.7	95.7	1.34 (0.38; 4.65)	0.649
Consumed at least one alcoholic beverage (last month)	88.6	90.2	86.2	1.44 (0.69; 2.99)	0.333
Frequency of consuming at least one alcoholic beverage in the last month*				1.75 (1.14; 2.69)	
0	11.4	9.8	13.8		**0.010**
1 or 2 days	20.7	17.5	25.9		
3 to 5 days	31.8	30.6	33.6		
6 to 9 days	20.4	22.4	17.2		
10 days or more	15.7	19.7	9.5		
Binge drinking (lifetime)[b]	81.6	84.7	76.7	1.60 (0.51; 2.19)	0.125
Binge drinking (last month)[b],*	64.2	68.9	56.9	1.65 (1.01; 2.70)	**0.049**
Frequency of binge drinking (last month)[b],*					
0	35.8	31.1	43.1	1.81 (1.17; 2.78)	**0.007**
1 or 2 days	34.1	32.8	36.2		
3 to 5 days	19.4	22.4	14.7		
6 to 9 days	7.4	8.7	5.2		
10 days or more	3.3	4.9	0.9		
Participated in drinking games (last month)*					
Never	13.4	9.9	18.8	2,14 (1,35; 3,39)	**0.001**
Rarely or sometimes	35.5	32.0	41.0		
Most of the time or always	51.0	58.0	40.2		

Notes: Data are reported in percentages.
Odds ratio are adjusted for age, sex and living situation.
AOR: Adjusted Odds Ratio.
CI: confidence interval.
  [a] Value *p* for logistic regression adjusted for age, gender and living situation.
  [b] Binge drinking defined as consuming 5 or more alcoholic beverages within a 2 to 3-hour period.
  * Statistically significant at 5.0% with Chi-square or Fisher's exact tests.

driving licence. Among Francophone students, 96.2% had a valid driver's licence as compared to 88% of Anglophone students. Francophone students were 2.86 (confidence interval of 1.09–7.52) more likely to have a licence than Anglophone students, although the wide confidence interval suggests this finding should be considered with precaution.

Over their lifetime, 47.9% of students with a valid driver's licence had engaged in alcohol impaired driving: 55.9% of Francophone students and 34% of Anglophone students. When adjusted for age, gender and living situation, Francophone students were 2.29 times more likely to have done so than Anglophone students. Francophone students were also more likely to report impaired driving in the month preceding the survey as compared to Anglophone students. Alcohol-impaired driving was more frequently reported: 19.1% of Francophone participants had done so once in the past month, and 11.3% twice or more, as compared to 13.6% and 6.8% for Anglophone participants respectively. Drug-impaired driving was less common (10.4%), but slight differences are again noted between Francophone and Anglophone participants: 13% of Francophone students had driven under the influence of illicit drugs in the past month, with as many as 4% doing so 4 times or more in that same period, as compared to 5.8% and 1.9% for Anglophone students respectively.

Participants reported other unsafe driving practices such as being passenger in a car driven by an impaired driver (30.5% for alcohol-impaired, 24.6% for drug-impaired), speeding (78.6%) and distracted driving (while using a mobile device; 75.4%). Statistically significant differences are observed between Francophone and Anglophone students, with higher percentages of Francophone students engaging in these risky behaviors. When adjusted for age, gender and living situation, Francophones were 1.91 times more likely to be a passenger in a motor vehicle driven by an alcohol-impaired driver, 2.27 times more likely to be a passenger in a motor vehicle driven by a drug-impaired driver, 1.72 times more likely to speed and 1.95 times more likely to be a distracted driver than Anglophones. It should be noted that using a handheld mobile device while driving is common practice for participants; 45.2% of Francophones and 32% of Anglophones reported doing

so at least four times in the past month. Despite these differences, participants from both cohorts reported involvement in a similar number of cars with injuries (approximately 15% of participants) over the past year.

4. Discussion

Our research findings are among the first to compare substance use and impaired driving behaviors of Francophone and Anglophone postsecondary students living in a linguistic minority community in Western Canada. Similarly to students in other Canadian universities (Kwan et al., 2013), alcohol was the predominant state-altering substance consumed by this population, followed by marijuana. Binge-drinking and drinking games were also common practices. It should be noted, however, that > 80% of students reported having a designated driver all or most of the time when drinking. Thus, these students seem aware of the risks of drinking and driving and take some precautionary measures. Nevertheless, a significant proportion of students engage in alcohol-impaired driving, and although marijuana use is less common, drug-impaired driving is also reported as a common practice.

Significant differences are observed between Francophone and Anglophone students. Academic and socioeconomic profiles for both student groups were similar, with the exception of gender and living situation. A greater proportion of Francophone participants was male and did not live with their parents; these variables were therefore taken into consideration for subsequent analysis of substance use and unsafe driving. Francophones were more likely to consume alcohol, binge-drink and participate in drinking games. With respect to driving behaviors, they were more likely to drive while alcohol-impaired or be a passenger in a car driven by an impaired driver, speed while driving and use their mobile device while driving as compared to Anglophone participants. Furthermore, a greater proportion of Francophone students engaged in substance use as compared to postsecondary students in other Canadian universities (Kwan et al., 2013). Francophones students in a linguistic minority setting appear to be at greater risk of

Table 3
Impaired driving-related behaviors.

	Total	Franco-Manitoban n = 185	Anglophone n = 117	AOR (95% CI)	p value[b]
Driven a motor vehicle while impaired by alcohol (lifetime)[a,*]	47.9	55.9	34.0	2.29 (1.35; 3.89)	**0.002**
Driven a motor vehicle while alcohol-impaired (last month)[a]					
Never	73.3	69.7	79.6	1.68	0.090
Once	17.1	19.1	13.6	(0.92; 3.29)	
2 to 3 times	6.4	6.2	6.8		
4 times or more	3.2	5.1	0.0		
Driven a motor vehicle while drug-impaired (last month)[a]					
Never	89.60	87.0	94.2	2.53	0.080
Once	4.3	5.1	2.9	(0.89; 7.19)	
2 to 3 times	2.9	4.0	1.0		
4 times or more	3.2	4.0	1.9		
Been passenger in a motor vehicle driven by alcohol-impaired driver (last month)[*]					
Never	69.5	64.3	77.8	1.91	**0.019**
Once	17.2	19.5	13.7	(1.23; 3.27)	
2 to 3 times	9.3	11.9	5.1		
4 times or more	4.0	4.3	3.4		
Been passenger in a motor vehicle driven by drug-impaired driver (last month)[*]					
Never	75.4	70.1	83.8	2.27	**0.008**
Once	10.3	11.4	8.5	(1.24; 4.14)	
2 to 3 times	8.3	10.9	4.3		
4 times or more	6.0	7.6	3.4		
Speed when driving a motor vehicle (last month) (exceed the speed limit by 10 km/h or more)?[a,*]					
Never	21.4	16.9	29.1	1.72	**0.019**
Once	10.3	12.4	6.8	(1.10; 2.71)	
2 to 3 times	32.7	30.3	36.9		
4 times or more	35.6	40.4	27.2		
Driven a motor vehicle while distracted (hand-held mobile (last month))[a,*]					
Never	24.6	17.5	36.9	1.95	**0.004**
Once	12.10	15.3	6.8	(1.24; 3.07)	
2 to 3 times	22.9	22.0	24.3		
4 times or more	40.4	45.2	32.0		
Involved in a car accident where you or a passenger was injured while you were driving (last year)[a]					
Never	85.1	84.3	86.4	1.30	0.476
Once	12.5	12.9	11.7	(0.64; 2.64)	
2 times or more	2.5	2.8	1.9		

Notes: Data are reported in percentages;
AOR: Adjusted Odds ratio.
CI: confidence interval.
[a] Participants with a driving licence.
[b] Value p for logistic regression adjusted for age, gender and living situation.
[*] Statistically significant at 5.0% with Chi-square or exact tests.

alcohol misuse and unsafe driving practices and as such, constitute a target population for prevention measures.

The above findings could in part be explained by postsecondary institution size, as our study was conducted in an institution with < 2000 enrollments per year. As demonstrated by Kwan et al. (2013), institutions with fewer students (i.e., < 20,000) exhibit higher rates of binge drinking and marijuana use as compared to institutions with larger student bodies. However, differences in behaviors between linguistic groups suggests that other factors, such as sociocultural and family influences, may also contribute to these behaviors (Arbour-Nicitopoulos et al., 2010; Osuafor, Maputle, & Ayiga, 2016; Sudhinaraset et al., 2016). Rural upbringing could also be a potential predictor of increased substance use and impaired driving. As reported for adolescents (Minaker et al., 2017; Pickett, Berg, & Marlenga, 2018), students from rural schools in Canada are more apt of consuming alcohol, drinking and driving and being passengers in a car driven by an impaired driver than students from urban schools. Furthermore, other studies suggest that students who consume alcohol and drugs prior to entering college are more likely to later engage in social and recreational activities where alcohol and drugs are available (Patrick et al., 2019; Simons et al., 2005). Within the student population in the postsecondary institution where the study was conducted, 53% of Francophone students were from rural communities, as compared to 5% of

Anglophone students (Mahé-Serle, 2017). Hence, differences in alcohol and drug misuse between Francophone and Anglophone students may be explained in part by this sociodemographic variable.

4.1. Practical implications

Preventative measures such as national and provincial awareness campaigns, assistance programs and legislation related to road safety and responsible drinking have been introduced to help decrease rates of impaired driving (Taylor, 2016). Since 2001, a national strategy for road safety has been established and updated regularly (Canadian Council of Motor Transport Administrators, 2016). Although improvements have been observed, with 10% reduction in fatalities and 16% decline in serious injuries on Canadian roads (Canadian Council of Motor Transportation Administrators, 2016), postsecondary students are still engaging in high risk behaviors. Our findings demonstrate that although students seem aware of safe drinking and driving practices and adhere to some of these practices, many will drive under the influence of alcohol or other drugs, and more so for Francophone students. To positively influence alcohol consumption behaviors in young adults, awareness campaigns should target not only family members, spouses, and close friends (Brown, Hing, Vanlaar, & Robertson, 2016), but also postsecondary settings where high-risk behavior is more

common. Peer-group support groups and health educators, as found in larger universities (University of Manitoba, 2017), are also needed in smaller institutions to better inform and support students. Interventions designed to address high-risk drinking and driving behaviors should focus on minority groups, perhaps particularly linguistic minority groups, and provide support in both official languages.

4.2. Limitations

This study is subject to some limitations. The methodology relied on self-reporting of behaviors over the last month and year rather than objective measures. Self-reported data is limiting as it cannot be independently verified and is subject to recall or conscious biases and estimation errors by either exaggeration or omission, thus skewing accuracy of findings (Stone et al., 1999). Considering the effects of alcohol and drugs on memory and brain function, recall errors may occur. However, self-reporting is commonly used in schools and postsecondary institutions (American College Health Association, 2016; Minaker et al., 2017), allowing for comparisons between studies. A second limitation is that age categories varied between studies and did not always coincide with those used in this study (18 to 24 years). Furthermore, linguistic and ethnic origins of participants in other studies were rarely mentioned, making comparisons difficult. Finally, as our survey focused on an array of other high risk behaviors, the number of questions used to identify participants' sociodemographic profiles was limited. It would have been useful to inquire about rural or urban origin, for example.

4.3. Future research

As this study was quantitative in nature, a qualitative approach would be helpful to expose predisposing factors and motivators of high risk behavior related to substance use and impaired driving by Francophone students. Whereas some authors suggest that substance use is more strongly associated with enhancement (ex: drinking to have fun) rather than coping (ex: drinking to forget your worries) (Kuntsche & Cooper, 2010; Van Damme et al., 2013), others suggest it as a way to meet new people, make friends, and have fun (Colby, Colby, & Raymond, 2009). Many predisposing factors have been suggested: rural upbringing (Gfroerer, Larson, & Colliver, 2007; McInnis & Young, 2015), mental health issues such as depression (Boden & Fergusson, 2011; Mikkonen & Raphael, 2010), difficulties in negotiating the transition to young adulthood (Nelson & Padilla-Walker, 2013), perception of peer substance use (Arbour-Nicitopoulos et al., 2010; Helmer et al., 2014) and social norms (Buckner, 2013) are a few examples. Other predisposing factors that could be further explored are ethnicity and minority group membership.

5. Conclusions

This article provides insight into postsecondary students' high risk behaviors related to substance use and impaired-driving. Binge drinking, drinking games and alcohol-impaired driving are common practices in this population. Prevention strategies focusing on road safety and at-risk behaviors are needed to decrease the number of impaired-driving events. Implementation of awareness campaigns targeting young adults in postsecondary institutions and provision of support to those most at risk are needed. Greater support should be provided to official language minority groups as they appear to be at greater risk of impaired driving and unsafe driving practices.

Acknowledgements

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