

Smoking on Campus

An Examination of Smoking Behaviours Among Post-secondary Students in Canada

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ABSTRACT

Background: Much of the literature on smoking behaviours has focused on adult populations and, more recently, on children and adolescents. A very small body of work has begun to emerge on smoking behaviours among post-secondary students.

Methods: Using the 1994-95 National Population Health Survey, we examined smoking prevalence, age of smoking initiation, and smoking cessation behaviours of post-secondary students, under 30 years old.

Results: Approximately 26% of post-secondary students smoke either occasionally or regularly. Among current smokers, some 27% began to smoke after the age of 17; among former smokers, 57% quit in their 20s.

Interpretation: Smoking prevalence is relatively high in adolescents, and many smokers begin to smoke at about the age they enter university or college. Further research is required to better understand smoking behaviour among this largely overlooked sub-group in the population.

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

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A recent report called cigarette smoking a public health disaster, noting that the medical treatment of illness and disease caused by cigarette smoking costs the Canadian health care system one billion dollars annually.¹ While most tobacco use begins in adolescence, a small body of literature from the United States suggests that a surprising number of smokers begin to smoke in college. There, a national survey revealed that 29% of post-secondary students smoke at least sometimes and 22% smoke frequently.² One in ten students report smoking their first cigarette after the age of 19,³ and a similar proportion indicate that they intend to start smoking while in college.⁴ Research further suggests that up to one quarter of post-secondary students who smoke, began smoking regularly after the age of 19.^{2,3}

Only one Canadian study of smoking prevalence among post-secondary students is available in the published literature.⁵ This study reports that about 15% of students living in a university residence smoke daily. Given the relative paucity of literature in this important area of inquiry, particularly using Canadian data, we used a large national survey of Canadians to examine questions of tobacco use among post-secondary students. To the authors' knowledge, no study has examined smoking and smoking cessation behaviours among this subgroup of the population using a nationally representative sample.

METHOD

1994-95 National Population Health Survey (NPHS)

In this survey, 19,600 households across all ten provinces in Canada were contacted using a multi-stage, random sampling procedure. One person per household was selected to provide detailed personal information. Persons living in Native reserves, military bases, institutions and some remote parts of Ontario and Quebec were excluded. Of the 18,342 possible respondents aged 12 and over, 17,626 participated, resulting in a response rate of 96%.

Selecting Post-secondary Students

The 1994-95 NPHS asked respondents, "Are you currently attending a school, college or university?" Unfortunately, in this public use data set, we were unable to differentiate between students enrolled in public

school, high school, college or university. Therefore, we included in our sample only those respondents (n=1,385) currently attending school, who reported that they had already attained a high school diploma – the minimum requirement for entry into most post-secondary programs in this country. We also limited the upper age range for the sample to 25 to 29, and excluded respondents aged 12 to 14 to better reflect the age distribution of students enrolled in post-secondary institutions in this country (n=973). While these selection criteria may have excluded some respondents who enter college or university through non-traditional methods (e.g., mature student status), this number would be very small in a sample such as this. In spite of the limitations in the data, we believe this sample captures the majority of students enrolled in post-secondary programs.

Measures

Smoking Behaviours

A variety of questions regarding current and former smoking behaviours were available in this survey. The first question asked students whether or not they (currently) smoked at all, and if so, whether they were “daily smokers” or “occasional smokers.” “Daily smokers” were asked to indicate how many cigarettes they smoked per day, and at what age they began smoking. “Occasional smokers” were asked whether they had ever been daily smokers, and if so, at what age their daily smoking began, how many cigarettes they smoked per day, and at what age they stopped smoking on a daily basis. The students who initially stated that they did not smoke at all, were asked whether they had ever previously smoked. Those who responded “yes” were asked the same set of questions that the occasional smokers were asked.

Demographics

Four demographic variables were included in the analyses. Age was available in this data set in five-year intervals; we included three dummy variables, 15 to 19, 20 to 24 and 25 to 29 years of age. Also included is a variable for gender (males and females). We were able to classify students in terms of their status with the institution (part time versus full time). Finally, we included a series of dummy variables representing marital status: married or common law, single, and other (including divorced, widowed and separated).

TABLE I
Demographics of Sample

Variables	n	%
Age (years)		
15-19	335	34.4
20-24	452	46.5
25-29	185	19.0
Gender		
Female	474	48.8
Male	498	51.2
Student Status		
Full time	798	82.4
Part time	170	17.6
Marital Status		
Single	802	82.5
Married/common law/other*	170	17.5

* “Other” includes individuals who are divorced, separated or widowed. As one would expect, the number of post-secondary students who fall in this category is very small (less than 1% of the total sample). Because Statistics Canada prohibits the reporting of cells with less than 10 cases, it was necessary to combine the “other” category with the “married or common law” category.

TABLE II
Current and Past Smoking Status of Post-Secondary Students

Variables	n	%
Do you currently smoke cigarettes?		
Daily	174	17.9
Occasionally	82	8.4
Not at all	716	73.7
Have you ever smoked at all?*		
Yes	167	23.3
No	549	76.7
Have you ever smoked cigarettes daily?†		
Yes	88	35.3
No	161	64.7

* Includes only respondents who answered “not at all” when asked if they currently smoke (n=716).

† Includes respondents who answered “occasionally” when asked if they currently smoke, or “yes” when asked if they had ever smoked at all (n=249).

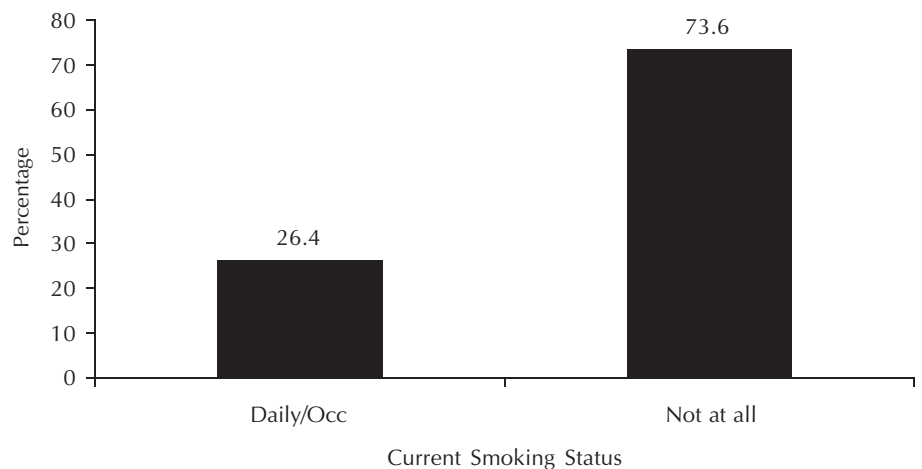


Figure 1. Percentage of Post-Secondary Students Who Smoke Daily/Occasionally versus Not at All

RESULTS

Smoking prevalence and behaviours

Table I shows the demographic distribution of the total sample (n=973). Not surprisingly, the majority (46.5%) of the sample are between the ages of 20 and 24. The

gender distribution is relatively even, with males (51.2%) slightly outnumbering females. Most students were enrolled full-time (82.4%) and were single at the time of the survey (82.5%). In total, 26.4% of the respondents reported smoking either daily or occasionally (see Figure 1).

TABLE III
Age of Smoking Initiation and Cigarette Consumption of Current Daily Smokers

Variables	n	%
Age of initiation of daily smoking		
Less than 12 years old	8	4.8
12-14 years old	31	18.0
15-17 years old	87	50.0
18-19 years old	36	20.5
20-24 years old	11	6.6
25-29 years old	11	6.6
Cigarette consumption	M	SD
Cigarettes smoked per day	13.47	7.28

TABLE IV
Age of Smoking Initiation, Cigarette Consumption, and Age of Smoking Cessation of Former Daily Smokers*

Variables	n	%
Age of initiation of daily smoking		
14 years or younger	26	29.2
15-17 years old	36	40.4
18-19 years old	14	15.7
20-24 years old	13	14.6
Age of smoking cessation		
12-17 years old	23	25.8
18-19 years old	15	16.8
20-29 years old	51	57.3
Cigarette consumption	M	SD
Cigarettes smoked per day	9.37	8.03

* Includes only those respondents who answered "yes" to the question, "have you ever smoked cigarettes daily?"

TABLE V
Logistic Regression of Current Smoking Status on Age, Gender, Student Status, and Marital Status*

Variables	Odds Ratio	95% Confidence Interval
Age (years)		
15-19	0.91	0.56 – 1.45
20-24	0.68	0.44 – 1.03
25-29	1.00	–
Gender		
Female	0.80	0.59 – 1.06
Male	1.00	–
Student status		
Full time	0.79	0.54 – 1.16
Part time	1.00	–
Marital status		
Single	0.99	0.64 – 1.55
Married/ common law/ other	1.00	–

* Odds ratios greater than 1 indicate more likely to be a current smoker.

When asked about their smoking status (see Table II), 17.9% of the students reported smoking daily and 8.5% reported smoking occasionally at the time of the survey. Those students who did not smoke (n=716) were asked if they had ever smoked at all. Almost one quarter (23.3%) reported having smoked at some time in their lives. Finally, when this group of former smokers, along with the students who identified themselves as current occasional smokers (n=249), were asked if they had ever been daily smokers, 35.3% reported having been daily smokers at some point.

Table III shows the results for questions directed at current daily smokers (n=174). Among these smokers, 72.8% reported that they began smoking by the age of 17, while the remaining 27.2% started smoking when they were 18 or older. Their average consumption of cigarettes was 13.5 per day.

Table IV shows the results for questions directed at those students who previously smoked on a daily basis (n=88). Similar to current daily smokers, the majority of former daily smokers began to smoke by the age of 17 (approximately 70%). These students reported a lower average daily con-

sumption of cigarettes when they were daily smokers (M=9.4). Among former daily smokers, 57.3% reported quitting between the ages of 20 and 29 years.

Multivariate modelling

In the final stage of the analysis, we further examined the relationship between current smoking status and the demographic variables using multivariate logistic regression techniques. We regressed a binary outcome variable for current smoking status (daily/occasional versus not at all) on dummy variables for age, gender, marital status and full- versus part-time student status (see Table V). The results of our analysis show that, in terms of predicting current smokers from non-smokers, none of these variables were statistically significant. There were no differences in current smoking behaviours between males and females, or across age, marital status or student status.

DISCUSSION

Consistent with previous research,¹⁻⁵ we found that a significant number of post-secondary students (26.4%) reported daily or occasional use of tobacco. Our results are similar to an American study that found 29% of post-secondary students smoke.² The percentage of students in this sample who smoke was higher than another study conducted in Canada,⁵ however this is likely due to the fact that the other study excluded college students and students not living in residence. Given that many residences have partial or complete bans on smoking,⁶ it might be expected that a lower prevalence of smoking would be found for that sample.

Also consistent with previous research, our results showed that a significant number of smokers began to smoke after the age of 17. In our sample, 20.5% of current smokers and 15.7% of former smokers recalled their age of smoking initiation to be 18 or 19 years old. Additionally, nearly 7% of current smokers and 15% of former smokers said they started smoking after the age of 19. Similarly, among former daily smokers, over 30% reported onset of smoking between the ages of 18 to 24. Although age upon entry to post-secondary institutions was not available in the current study, it seems likely that by the age of 18,

most respondents would be in their first year of post-secondary studies. With 27% to 30% of respondents starting to smoke while in college or university, it is clear that smoking initiation is not limited to early- and mid-adolescence.

Results of this study further suggest that smoking cessation occurs during students' senior years of post-secondary studies or after leaving school. Among the respondents who were former daily smokers, 57% indicated that they quit smoking between the ages of 20 to 29. This finding, along with results showing relatively high rates of smoking among students, bring to light the need for further research into factors that influence university students to begin or stop smoking, strategies to assist smokers to quit smoking, and ways to prevent post-secondary students from beginning to smoke.

Reasons for smoking uptake among college and university students were not included in the current data. However, it has been proposed that smoking initiation among university students may be associated with increased use of alcohol, new social demands experienced by students upon entering university, and perceptions that smoking is a widespread, normative behaviour.^{7,8} Similarly, smokers may minimize the risks associated with smoking,⁹ and perceive smoking as offering benefits such as stress reduction.¹⁰ The extent to which these social conditioning processes contribute to smoking onset and maintenance of smoking in this age group requires further attention.

Issues of smoking cessation assistance on campuses also demand attention. Currently, tobacco control interventions for this segment of the population are extremely limited.¹¹ Post-secondary stu-

dents are typically offered interventions more suitable for adolescents, or older, heavily addicted adult smokers, with little research addressing whether these interventions appeal to, or are effective for this age group. In response to this gap in services, a tobacco control initiative is currently underway at eight post-secondary institutions in Ontario. Funded by the Ministry of Health and Long Term Care, this collaborative initiative, "Leave The Pack Behind," offers post-secondary students a wide range of smoking-related interventions and services, and provides a venue for investigating students' reasons for smoking, needs and preferences related to smoking cessation interventions, and experiences with various interventions. Information generated from this project, and other ongoing research, will broaden our understanding of smoking among this largely overlooked subgroup of the population.

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RÉSUMÉ

Contexte : Une forte proportion des documents sur l'usage du tabac concerne la population adulte et, depuis peu, les enfants et les adolescents. De très rares études commencent à paraître sur l'usage du tabac chez les étudiants de niveau postsecondaire.

Méthode : À l'aide de l'Enquête nationale sur la santé de la population de 1994-1995, nous avons examiné la prévalence du tabagisme, l'âge d'initiation au tabac et le renoncement au tabac chez les étudiants de moins de 30 ans de niveau postsecondaire.

Résultats : Environ 26 % des étudiants de niveau postsecondaire fument à l'occasion ou régulièrement. Parmi les fumeurs actuels, environ 27 % ont commencé après l'âge de 17 ans; parmi les anciens fumeurs, 57 % ont abandonné la cigarette dans la vingtaine.

Interprétation : La prévalence du tabagisme est relativement élevée chez les adolescents, et de nombreux fumeurs ont commencé à fumer vers l'âge de l'entrée à l'université ou au cégep. Il faudrait pousser les recherches pour mieux comprendre le phénomène du tabagisme dans ce sous-groupe très souvent négligé.