

# LTPB Report: Use of hookah among Ontario post-secondary students

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## Introduction

The use of a hookah (also known as a waterpipe) for smoking tobacco is an emerging health concern due to its increasing popularity worldwide<sup>1</sup>. Traditionally, using a hookah to smoke tobacco has been rooted in Arabic societies<sup>1</sup> but the increase in popularity has resulted in both youth<sup>2</sup> and young adults<sup>3</sup> in Western societies using this form of tobacco smoking.

Some of the known health risks of hookah smoking are similar to cigarette smoking and include lung cancer, respiratory illness, low-birth weight, periodontal disease, cardiovascular disease, and nicotine dependence.<sup>4,5</sup> Unfortunately, due to the unregulated nature of the product used in a hookah, these health risks may vary and are influenced by the duration and frequency of use, volume of smoke inhaled and the burning temperature.<sup>4</sup>

Currently, the only Canadian study to examine hookah use among young adults has found that 23% of young adults report using waterpipe at least once in the past year.<sup>3</sup> Past year use of waterpipe was also associated with smoking cigarettes, drinking alcohol and using other drugs such as marijuana.<sup>3</sup> The extent to which similar consumption patterns exist among young adults attending University in Canada is unknown. Therefore, the purpose of this brief report is to examine hookah use and quitting intentions among Ontario university students who access a campus health clinic.

## Methods

In the fall of 2007, LTPB surveyed Ontario university students who accessed a campus health clinic. Approximately 3,000 students who were entering a health clinic were given a study package to review while they were waiting. Students who agreed to participate returned their consent form and a brief registration card ( $n = 1,835$ ) and then went online within 72 hours to complete a survey ( $n = 985$ ). The online survey asked questions about use of campus health services, exercise, and use of alcohol, marijuana and shisha.

For the purpose of this analysis, young adults between 17 and 24 years old were selected. The sample of students was predominantly female (79.5%) and on average were 20.6 years of age. Attrition analyses found that those who dropped out of the study were more likely to be male or report other substance use in the past 30 days (tobacco, alcohol, marijuana and shisha). No missing value patterns were detected for participants with missing data on substance use or demographic questions.

## Results

On the online survey, students were asked to report their use of shisha (ever use, past 12 months, and past 30 day), age when they tried hookah, the importance of quitting shisha and their intention to quit. Students were also asked similar questions about their use of tobacco, alcohol and marijuana.

Approximately 27% of students indicated that they had tried hookah at least once. The average age of initiation was 18.3 years ( $SD = 2.6$ ). Overall, 14.6% of students reported that they had used hookah in the past 12 months and 4.1% of students reported hookah use in the past 30 days. Students who reported use of shisha in the past 12 months were also significantly more likely to report use of tobacco, alcohol or marijuana in the past 12 months. Specifically, among students who had reported use of shisha in the past 12 months: 64% had used tobacco, 63% had used marijuana and 57% had consumed alcohol in the past 12 months.

Table 1 illustrates the demographic differences between hookah users and non-users. Hookah users were more likely to live in an on-campus residence than live in a family home or at an off-campus residence. In addition, young adults who had used hookah in the past 12 months were younger ( $M = 20.3$ ,  $SD = 2.5$ ) than those who had not used hookah in the past 12 months ( $M = 21.2$ ,  $SD = 1.7$ ),  $t(247) = 3.62$ ,  $p < .001$ .

Table 1

*Demographic characteristics of participants who reported using shisha in the past 12 months (n = 250)*

Used Shisha, hookah or waterpipe in past 12 months	Yes		No		$\chi^2$
	n	%	n	%	
Gender					
Female	103	55.1	84	44.9	0.03
Male	35	57.4	26	42.6	
Year of study <sup>a</sup>					
1 <sup>st</sup>	31	75.6	10	24.4	8.4
2 <sup>nd</sup>	26	57.8	19	42.2	
3 <sup>rd</sup>	29	50.9	28	49.1	
4 <sup>th</sup>	37	56.9	28	43.1	
5 <sup>th</sup>	9	42.9	12	57.1	
Living arrangement					
On-campus	33	73.3	12	26.7	7.4*
Off-campus	91	50.8	88	49.2	
Family home	13	56.5	10	43.5	
Program of study					
Applied Health Science	32	50.0	32	50.0	4.5
Business	14	63.6	8	36.4	
Education <sup>b</sup>	-	-	-	-	
Humanities	22	52.4	20	47.6	
Math & Science	32	55.2	26	44.8	
Social Science	28	60.9	18	39.1	
Professional & Trades <sup>b</sup>	12	75.0	-	-	

\*\* $p < .001$ ; \* $p < .05$

<sup>a</sup> Based on students who stated they were completing a Bachelor's degree.

<sup>b</sup> Numbers are too low to report.

Tables 2 and 3 present students' intentions to quit using hookah and their rating of the importance for quitting hookah. Sixty-five percent of students have no plans of quitting hookah and sixty nine percent believe that quitting hookah is not important at all.

Table 2

*Young adult students' intentions to quit smoking hookah (n = 141)*

Hookah Quitting Intentions	n	%
I do not plan to stop	89	65.4
More than 6 months from now	23	16.9
Within the next 7 days	20	14.7
Some time within the next 6 months, but not within the next 30 days <sup>a</sup>	-	-
Some time within the next month, but not within the next 7 days <sup>a</sup>	-	-

<sup>a</sup> Numbers are too low to report.

Table 3

*Young adult students' rating of the importance of quitting hookah use (n = 141)*

<b>Hookah Quitting Level of Importance</b>	<i>n</i>	%
Not important at all	96	68.6
Not very important	30	21.4
Very important	8	5.7
Quite important	6	4.3

## Discussion

Hookah use is common among young adults attending university who also access their campus health clinic. Almost one third of students had indicated that they had tried hookah at least once in their life, 15% had used it in the past 12 months and 4% had used it in the past 30-days. This is slightly lower than a 30-day prevalence of hookah use of 9.5% that has been observed in a random sample of American university students.<sup>6</sup>

Students who had used hookah in the past 12 months were younger than non-users and started around the age of 18 years old. This may suggest that users are starting to experiment with hookah around the time they transition from high school to university and adjust to living in a new environment (i.e., in a campus residence). Similar to Dugas and colleagues<sup>3</sup>, students who use hookahs also appear to engage in other substance use as well, namely tobacco, alcohol, or marijuana. The majority of hookah users do not see quitting (the use of hookah) as important, and therefore the majority have very little intention to quit.

Anecdotal evidence suggests that more females use campus health clinics; therefore, it is not surprising that this sample was largely female. As a result, the sample may not be proportionate to the student population but may be representative of students who access campus health clinics. A non-response from males has been similarly demonstrated in previous studies of health risk behaviours.<sup>7</sup>

## Recommendations

The results of this study suggest that:

1. Campus health professionals should be asking students who visit the clinic whether they use hookah. Particularly those students who are also reporting use of tobacco, marijuana or alcohol.
2. Campus health professionals should advise students to quit hookah use.
3. Information about the health consequences of hookah use and resources to assist with quitting should be available to students, particularly those living in campus residences.
4. Health messaging about hookah use should be tailored to younger students who are predominantly in their first year of studies.

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<sup>1</sup> Maziak, W., Ward, K. D., Soweid, R. A., & Eissenberg, T. (2004). Tobacco smoking using a waterpipe: A re-emerging strain in a global epidemic. *Tobacco Control, 13*, 327-33.

<sup>2</sup> Health Canada. Youth Smoking Survey 2006-2007: Public Use Microdata. Ottawa Ontario: Health Canada, 2008.

<sup>3</sup> Dugas, E., Tremblay, M., Low, N. P., Cournoyer, D., & O'Loughlin, J. (2010). Water-pipe smoking among North American youths. *Pediatrics, 125*, 1184-1189.

<sup>4</sup> Akl, E. A., Gaddam, S., Gunukula, S. K., Honeine, R., Jaoude, P. A. & Irani, J. (2010). The effects of waterpipe tobacco smoking on health outcomes: A systematic review. *International Journal of Epidemiology, 39*, 834-857.

<sup>5</sup> Cobb, C., Ward, K. D., Maziak, W., Shihadeh, A. & Eissenberg, T. (2010). Waterpipe tobacco smoking: An emerging health crisis in the United States. *American Journal of Health Behavior, 34*(3), 275-285.

<sup>6</sup> Primack, B. A., Sidani, J., Agarwal, A. A., Shadel, W. G., Donny, E. C., & Eissenberg, T. E. (2008). Prevalence of and associations with waterpipe tobacco smoking among U.S. university students. *Annals of Behavioral Medicine, 36*, 81-86.

<sup>7</sup> Pealer, L. N., Weiler, R. M, Pigg, R. M., Miller, D., & Dorman, S. M. (2001). The feasibility of a web-based surveillance system to collect health risk behavior data from college students. *Health Education & Behavior, 28*5, 547-559.