DOES SUBSTANCE USE PROSPECTIVELY PREDICT EXCLUSIVE E-CIGARETTE USE, EXCLUSIVE CIGARETTE USE AND DUAL USE AMONG CANADIAN YOUTH?

Sarah Aleyan, Sara Hitchman, Mark Ferro, Scott T Leatherdale

DISCLOSURE STATEMENT

I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

BACKGROUND

○ The prevalence of e-cigarette use has [increased](#) among Canadian youth [1-2]

○ Large proportion of current e-cigarette users are also cigarette users [1-2]

Percentage of past 30-day e-cigarette users who were current smokers, 2017
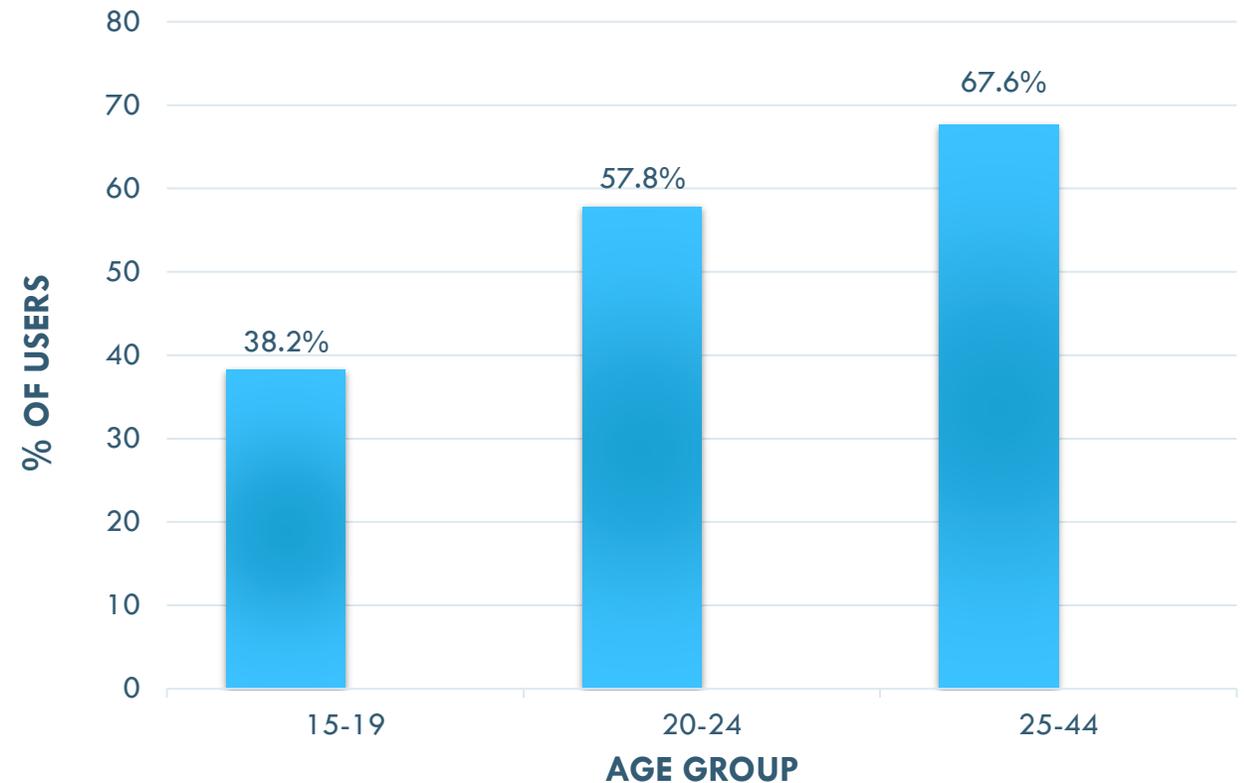
BACKGROUND

o Most studies examining e-cigarette use do not distinguish dual users from exclusive e-cigarette users [3-6]

o Recent cross-sectional work suggests that exclusive e-cigarette users have distinct risk profiles from dual users [7-9]

o Additional longitudinal work needed to differentiate predictors of dual use and exclusive e-cigarette use

RESEARCH QUESTIONS

o Examine whether and how frequency of binge drinking, cannabis and e-cigarette use behaviours measured at baseline predicted

1. dual use of e-cigarettes and cigarettes at follow-up (vs. non-use)

2. exclusive cigarette use at follow-up (vs. non-use)

3. exclusive e-cigarette use at follow-up (vs. non-use)
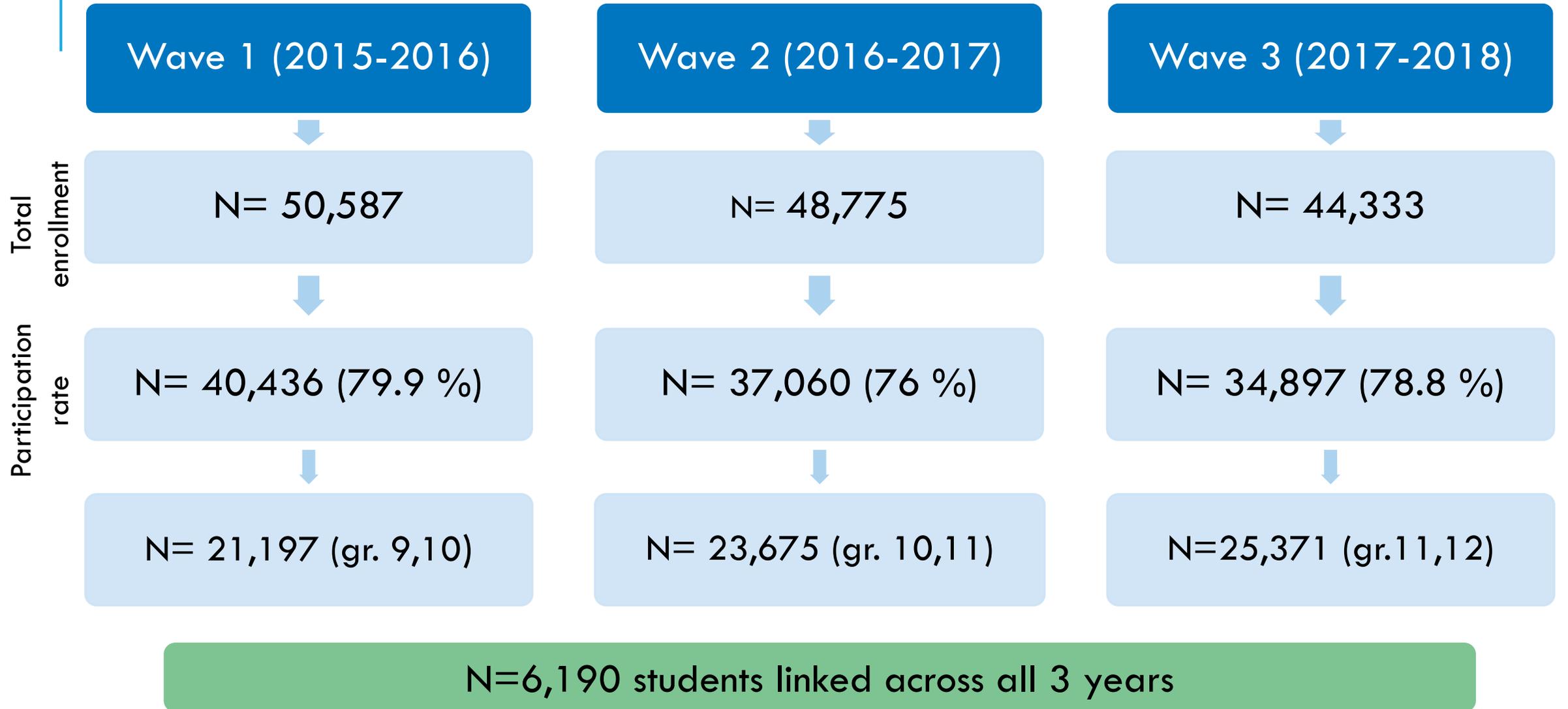
METHODS

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Wave 1 (2015-2016) = Baseline
Wave 2 (2016-2017) = Follow-up time point 1
Wave 3 (2017-2018) = Follow-up time point 2

METHODS

	Wave 1 (2015-2016)	Wave 2 (2016-2017)	Wave 3 (2017-2018)
Total enrollment	N= 50,587	N= 48,775	N= 44,333
Participation rate	N= 40,436 (79.9 %)	N= 37,060 (76 %)	N= 34,897 (78.8 %)
	N= 21,197 (gr. 9,10)	N= 23,675 (gr. 10,11)	N=25,371 (gr.11,12)

N=6,190 students linked across all 3 years

OUTCOME MEASURES

o **Non-users:** did <u>not</u> use e-cigarettes or cigarettes within the past 30 days

o **Exclusive e-cigarette users** : used <u>only e-cigarettes</u> within the past 30 days

o **Exclusive cigarette users:** used <u>only cigarettes</u> within the past 30 days

o **Dual users:** used <u>both</u> cigarettes and e-cigarettes within the past 30 days
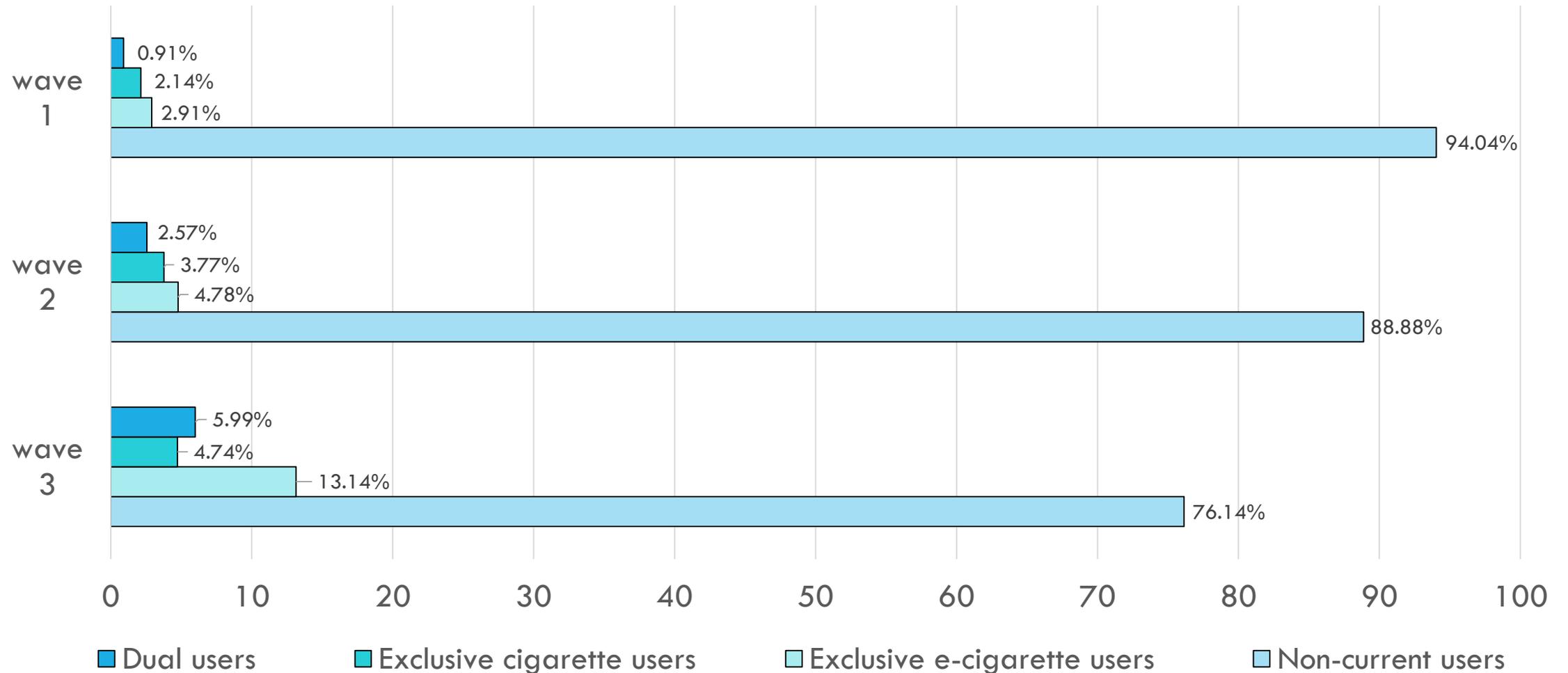
PREDICTORS

o Frequency of e-cigarette use (low frequency: 1-3 days in past month, high frequency: 4+days in past month)

o Frequency of cannabis use (monthly, weekly)

o Frequency of binge drinking (monthly, weekly)

ANALYSIS

o Descriptive statistics were used to examine the changes in exclusive e-cigarette use, exclusive cigarette use and dual use

o Multivariate logistic regression was used to examine predictors of tobacco and vaping product use:

1. **MODEL 1**: examined whether substance use characteristics measured at **wave 1** predicted tobacco and vaping product use at **wave 2**

2. **MODEL 2**: examined whether substance use characteristics measured at **wave 2** predicted tobacco and vaping product use at **wave 3**

RESULTS

wave 1		0.91%
		2.14%
		2.91%
		94.04%
wave 2		2.57%
		3.77%
		4.78%
		88.88%
wave 3		5.99%
		4.74%
		13.14%
		76.14%

■ Dual users   ■ Exclusive cigarette users   ■ Exclusive e-cigarette users   ■ Non-current users

	Tobacco use categories at wave 2		
	Exclusive e-cigarette use Versus Non-use	Exclusive cigarette use Versus Non-use	Dual use Versus Non-use
Substance use characteristics at wave 1	AOR (95%CI)	AOR (95%CI)	AOR (95%CI)
Frequency of e-cigarette use			
Non-users (Ref group)	---	---	---
Low frequency (1-3 days/month)	**2.96 (1.47-5.94)**	2.05 (0.98-4.27)	**3.24 (1.50-7.02)**
High frequency (4+ days/month)	2.44 (0.90-6.60)	1.78 (0.64-5.0)	**5.90 (2.28-15.27)**
Frequency of cannabis use			
Non-users (Ref group)	---	---	---
Monthly	1.72 (0.87-3.39)	**2.72 (1.54-4.80)**	**2.96 (1.53-5.74)**
Weekly	1.82 (0.92-3.59)	**2.10 (1.12-3.94)**	**2.11 (1.07-4.19)**
Frequency of binge drinking			
Non-users (Ref group)	---	---	---
Monthly	**2.26 (1.50-3.40)**	**3.91 (2.61-5.85)**	**3.48 (2.17-5.58)**
Weekly	0.71 (0.19-2.63)	**2.37 (1.01-5.60)**	0.87 (0.30-2.53)

Note: Odds ratios are adjusted for gender, ethnicity, grade, province and baseline tobacco use.

	Tobacco use categories at wave 3		
	Exclusive e-cigarette use Versus Non-use	Exclusive cigarette use Versus Non-use	Dual use Versus Non-use
Substance use characteristics at wave 2	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Frequency of e-cigarette use			
Non-users	---	---	---
Low frequency (1-3 days/month)	**4.53 (2.90-7.08)**	1.90 (0.95-3.77)	**3.48 (1.93-6.12)**
High frequency (4+ days/month)	**3.37 (1.81-6.27)**	1.77 (0.76-4.13)	**3.96 (1.97-7.95)**
Frequency of cannabis use			
Non-users	---	---	---
Monthly	**1.90 (1.37-2.64)**	**3.53 (2.28-5.47)**	**2.01 (1.31-3.11)**
Weekly	1.48 (0.98-2.24)	**4.96 (3.11-7.91)**	**2.94 (1.90-4.56)**
Frequency of binge drinking			
Non-users	---	---	---
Monthly	**3.16 (2.52-3.95)**	**2.86 (2.03-4.03)**	**4.02 (2.96-5.54)**
Weekly	**2.02 (1.23-3.29)**	1.51 (0.77-2.97)	**4.08 (2.41-6.89)**

Note: Odds ratios are adjusted for gender, ethnicity, grade, province and baseline tobacco use.

CONCLUSION

o Findings indicate a rise in dual use behaviours, as youth progress to higher grades

o High frequency use of e-cigarettes was a significant predictor of dual use within earlier waves (i.e., lower grades)

o Monthly cannabis use and binge drinking consistently linked to dual use

POLICY & RESEARCH IMPLICATIONS

- A need to align tobacco use prevention efforts with substance use programming

- Future work should seek to examine potential mediators of relationships observed

THANK YOU ☺