Supplementary Material 1. List of variables used to predict current vaping status and inspection of missing values

Variable	Description	Measurement	Missing
Abo	Aboriginal status	1 = yes, 0 = no	1.4%
Age	Age	continuous	-
Sex	Sex	0 = male, 1 = female	-
Prov	Province	0 = Ontario, 1 = Quebec, 2 = Manitoba, 3 = Alberta, 4 = British Columbia, 5 = Nova Scotia, 6 = Saskatchewan, 7 = New Brunswick, 8 = Prince Edward Island, 9 = Newfoundland/Labrador	-
Urban	Type of residency	1 = urban, 0 = rural	-
Marital	Marital status	0 = single/never married, 1 = married or previously married	0.3%
Edu	Highest education	0 = less than high school, 1 = high school, 2 = below bachelor, 3 = bachelor or above	1.5%
Work	Working status	0 = not working, 1 = working	1.5%
Child	Having a child aged < 15	0 = no, 1 = yes	-
Hs_allow	Smoke allowed at home	0 = no, 1 = yes	0.03%
Hv_allow	Vaping allowed at home	0 = no, 1 = yes	1.7%
Ph	Physical health	0 = excellent, 1 = very good/good, 3 = fair/poor	0.1%
Mh	Mental health	0 = excellent, 1 = very good/good, 3 = fair/poor	0.2%
Cig_whole	Ever finished a whole cigarette	1 = yes, 0 = no	-
Cig_100	100 cigarettes in lifetime	1 = yes, 0 = no	-
Cig_pat	Smoking status	0 = never smoked, 1 = former smoker, 2 = current smoker	-
Cig_yr	Smoking years	Continuous	-
Ecig_nic	Use nicotine during the last	1 = yes, 0 = no, 2 = uncertain	-

	vaping		
R_aff	Reasons of vaping: affordable	1 = yes, 0 = no	0.9%
R_allow	Reasons of vaping: smoking is not allowed	1 = yes, 0 = no	0.9%
R_hs	Reasons of vaping: less harmful to oneself	1 = yes, 0 = no	0.9%
R_ho	Reasons of vaping: less harmful to others	1 = yes, 0 = no	0.9%
R_flav	Reasons of vaping: attraction to flavors	1 = yes, 0 = no	0.9%
R_quit	Reasons of vaping: help quit smoking	1 = yes, 0 = no	0.9%
R_smell	Reasons of vaping: doesn't smell	1 = yes, 0 = no	0.9%
R_same	Reasons of vaping: similar to smoking	1 = yes, 0 = no	0.9%
R_acc	Reasons of vaping: more acceptable to non-users	1 = yes, 0 = no	0.9%
R_curious	Reasons of vaping: curious	1 = yes, 0 = no	0.9%
R_other	Reasons of vaping: other (including pregnant)	1 = yes, 0 = no	0.9%
Ecig_get	Usual place to get e-cigarettes	0 = buy or borrow from friends or family members, 1 = purchase	1.3%
H_s1	Perceived harm: smoking occasionally	0 = no/slight risk, 1 = moderate/great risk	1.1%
H_s2	Perceived harm: smoking regularly	0 = no/slight risk, 1 = moderate/great risk	0.8%
H_v1	Perceived harm: vaping occasionally	0 = no/slight risk, 1 = moderate/great risk	4.2%
H_v2	Perceived harm: vaping	0 = no/slight risk, 1 = moderate/great	5.0%

	regularly	risk	
H_sp	Perceived harm: smoking while pregnant	0 = no/slight risk, 1 = moderate/great risk	1.0%
H_vp	Perceived harm: vaping while pregnant	0 = no/slight risk, 1 = moderate/great risk	6.6%
Can	Cannabis use	0 = never used, 1 = current user, 2 = former user	1.1%
Alc	Alcohol use	0 = lifetime abstainer, 1 = former drinker, 2 = current light drinker, 3 = current heavy drinker	5.5%
Cigar	Ever tried a cigar/little cigar	1 = yes, 0 = no	0.03%
Pipe	Ever tried a tobacco pipe	1 = yes, 0 = no	0.03%
Chew	Ever tried a chewing tobacco	1 = yes, 0 = no	-
Wpipe	Ever tried a water pipe	1 = yes, 0 = no	-
Pain	Used pain relivers to get high-12 months	1 = yes, 0 = no	1.5%
Sed	Used sedatives to get high-12 months	1 = yes, 0 = no	1.1%
Sti	Used stimulants to get high-12 months	1 = yes, 0 = no	1.0%
Drug	Ever used one of the seven drugs in lifetime	1 = yes, 0 = no	-

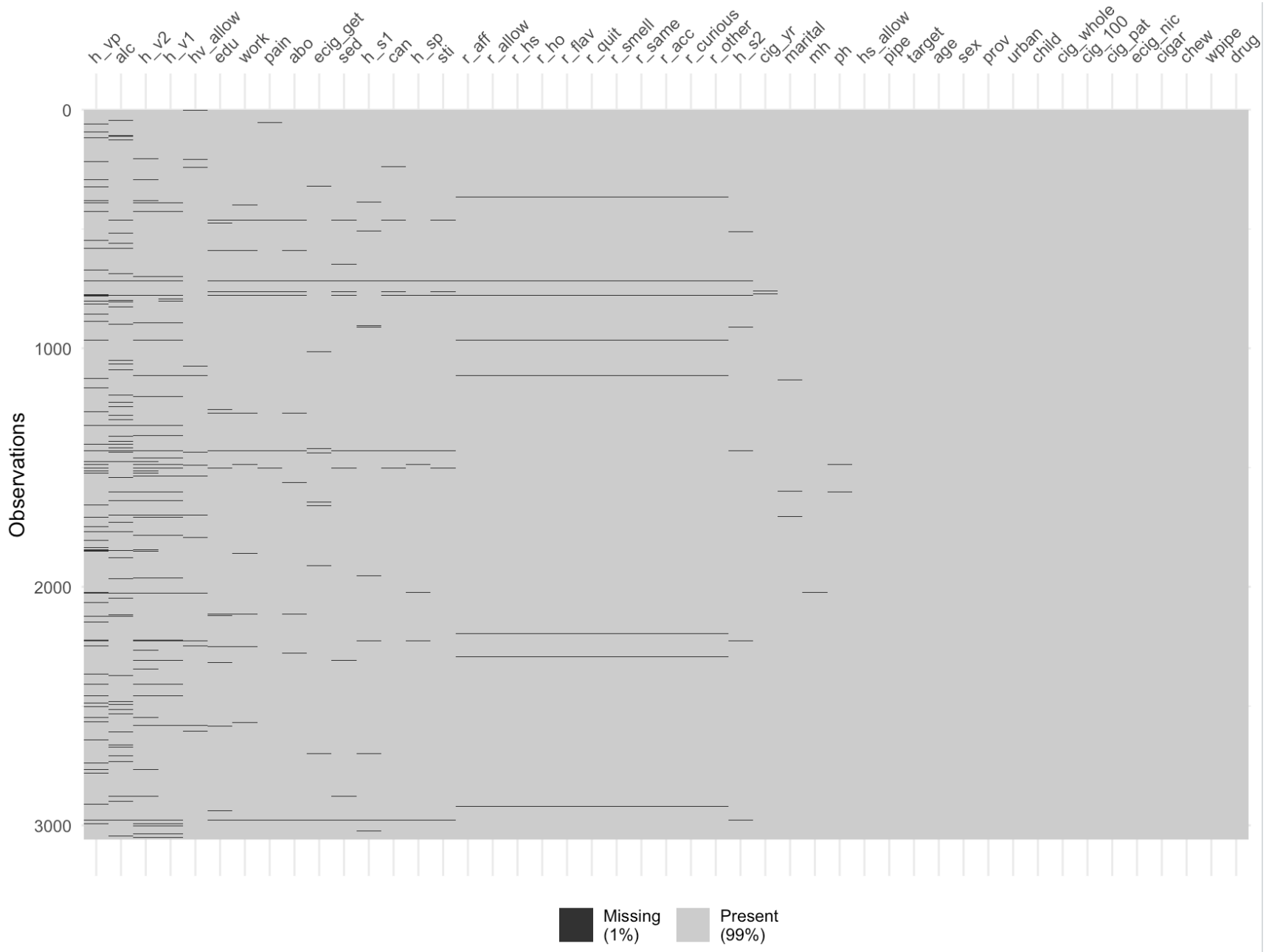
-: no data

Inspect and impute missing values found in the dataset

Overall, about 1% of data were missing and three variables-perceived risk of vaping during pregnancy (6.6%), alcohol use (5.5%) and perceived risk of vaping regularly (5.0%) had missingness that reached 5% or above. In total, 18.1% of respondents had some level of missing responses.

In order to use the MICE (multiple imputation by chained equation) method, we first inspected the distribution of missing data among survey respondents to verify the assumption of missing at random (see the figure on the next page). Upon inspection we believe that there is a lack of visual evidence that clearly shows a distinctive data missing pattern among this sample of survey respondents.

The variables with missing values are all categorical. A few of them are > 2 levels while the majority are binary variables. To impute a value for these variables we used a polytomous regression imputation for unordered categorical data ("polyreg" in the R package "mice"). For each targeted variable (that awaits imputation), we used two sets of independent explanatory variables in the regression model: (1) all sociodemographic variables (age, sex, province, aboriginal status, urban location, education level, marital status and working status) and (2) health indicators (mental and physical health). For each missing data, five imputation values were generated independently, resulting in five imputed data copies ready for complete-case analysis.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cig_100
cig_pat
ecig_nic
cigar
chew
wpipe
drug
0
1000
2000
3000
Observations
Missing
(1%)
Present
(99%)

Supplementary Material 2. Results of potentially important correlated identified by the logistic mixed-effects regression analysis

Variables	**Reference level**	**Fixed effects OR**	**95% CI of the OR**	***P*-value**
Age	Per 1-year increase	0.98	0.97-0.99	< 0.001
History of cigarette smoking	Per 1-year increase	0.99	0.98-1.00	0.30
Sex	Female *vs.* male	0.78	0.65-0.95	< 0.001
Aboriginal	Yes *vs.* no	0.96	0.69-1.34	0.81
Urban residency	Yes *vs.* no	1.07	0.86-1.32	0.56
Marital status	Currently/previously married *vs.* never married/single	0.67	0.52-0.87	0.003
Education				
High school	*vs.* less than high school	0.44	0.36-0.55	< 0.001
Non-bachelor certificate or degree		0.34	0.26-0.44	< 0.001
Bachelor's degree or above		0.23	0.15-0.36	< 0.001
Currently working	Yes *vs.* no	0.72	0.60-0.87	0.001
Living with children	Yes *vs.* no	1.27	1.03-1.56	0.02
Smoking allowed at home	Yes *vs.* no	1.03	0.72-1.46	0.89
Vaping allowed at home	Yes *vs.* no	1.70	1.37-2.10	< 0.001
Physical health				
Very good/good	*vs.* excellent	1.20	0.95-1.50	0.12
Fair/poor		1.24	0.83-1.86	0.29
Mental health				
Very good/good	*vs.* excellent	0.97	0.79-1.21	0.81
Fair/poor		1.27	0.93-1.74	0.13
Having finished a whole cigarette	Yes *vs.* no	0.84	0.67-1.05	0.13
Having smoked 100 times	Yes *vs.* no	0.89	0.74-1.09	0.26
Current smoking pattern				
Former smoker	*vs.* never smoked	1.47	1.20-1.78	< 0.001
Current smoker		0.78	0.55-1.10	0.15
Using nicotine in the last vape				
Yes	*vs.* no	1.52	1.24-1.85	< 0.001
Unsure		0.40	0.27-0.60	< 0.001
Reasons of vaping				
Affordable		2.52	1.96-3.25	< 0.001
Allowed at home		2.48	1.97-3.11	< 0.001
Less harmful than smoking to		2.74	2.25-3.32	< 0.001
oneself	Yes *vs.* no	2.61	2.15-3.17	< 0.001
Less harmful than smoking to others		3.26	2.68-3.97	< 0.001
Attraction to flavors		2.25	1.84-2.74	< 0.001
Help to quit smoking		2.34	1.87-2.92	< 0.001
Don't smell		1.66	1.26-2.20	< 0.001
Similar to smoking		2.35	1.93-2.86	< 0.001
More acceptable to non-smokers		0.47	0.38-0.57	< 0.001
Curious		1.50	1.15-1.96	0.003
Others (including pregnancy)				

Variables	**Reference level**	**Fixed effects OR**	**95% CI of the OR**	***P*-value**
Usual place to get e-cigarettes	Purchase by oneself *vs.* buy/borrow from family/friends	2.40	1.98-2.90	< 0.001
Cannabis use				
Current user	*vs.* never tried cannabis	1.20	0.96-1.50	0.11
Former user		0.59	0.44-0.78	0.001
Alcohol use				
Current light drinker	*vs.* lifetime abstainer and former drinker	0.85	0.65-1.12	0.25
Current heavy drinker		1.36	1.02-1.80	0.04
Ever used other tobacco products				
Cigar/little cigar	Yes *vs.* no	1.14	0.94-1.38	0.18
Pipe		1.24	0.96-1.62	0.10
Chewing tobacco		1.45	1.17-1.80	< 0.001
Water pipe		1.12	0.92-1.36	0.26
Recreational use of medications				
Pain medications	Yes *vs.* no	1.54	1.04-2.28	0.03
Sedatives		1.14	0.87-1.48	0.35
Stimulants		2.79	1.61-4.84	< 0.001
Ever used one of the seven drugs	Yes *vs.* no	1.04	0.86-1.26	0.69
Perceived risks of vaping/smoking behaviours				
Smoking occasionally	Moderate/great risk *vs.* no/slight risk	0.93	0.77-1.12	0.45
Smoking regularly		1.68	0.89-3.18	0.11
Vaping occasionally		0.57	0.46-0.70	< 0.001
Vaping regularly		0.52	0.43-0.62	< 0.001
Smoking during pregnancy		0.80	0.48-1.35	0.40
Vaping during pregnancy		0.65	0.51-0.81	< 0.001