

Clearing the Air

A youth-led research project about vaping



McCreary
Centre Society



YOUTH RESEARCH ACADEMY

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A youth-led research project about vaping

YOUTH HEALTH • YOUTH RESEARCH • YOUTH ENGAGEMENT

3552 East Hastings Street | Vancouver BC | V5K 2A7

mccreary@mcs.bc.ca | www.mcs.bc.ca

tel 604-291-1996 | fax 604-291-7308

twitter @mccrearycentre

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Youth researchers

Alyana Lalani
Amanda Percival
Breeya Troy
Chantal Percival
Collin Skaper
Iris Law
Jacob Suldayan
Jessie Hackbarth
Kevin Le
Kieran Adams
Sepehr Nademi
Shae-Lyn Noskye
Shalini Ahuja
Shelby Grant
Stephan Moncayo
Viviana Cuyegkeng

Peer mentors

Martha Dzhenganin
Quincy Applewhite

McCreary staff mentors

Annie Smith, Executive Director
Maya Peled, Director of Evaluation
Katie Horton, Community Research coordinator
Karen Forsyth, BC AHS Coordinator
Garrett Jones, Research and Evaluation Analyst
Stephanie Martin, Community and Communications Manager
Katie Meredith, Research Assistant
Barbara-Jean Johnson, Indigenous Peer Navigator

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**BRITISH COLUMBIA
LUNG ASSOCIATION**

Quotes and reflections from youth who participated in the Research Slam are included throughout this report.

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Introduction

McCreary Centre Society (“McCreary”) is a BC-based, non-profit agency committed to promoting the health of BC youth through community-based research, evaluation, and youth participation projects. McCreary has operated a Youth Action and Advisory Council for over 30 years and a Youth Research Academy for the past four years.

The Youth Action and Advisory Council (YAC) is a group of youth leaders aged 15 to 24 who develop projects to improve youth health, including organizing ‘by youth for youth’ workshops and events. The YAC also operates a granting program called the Youth Action Grants, which offers \$500 grants to young people in BC to deliver projects which improve youth health in their school or community.

The Youth Research Academy (YRA) is a group of youth aged 16 to 24 with experience of the government care system. Members of the YRA are trained to conduct research projects of interest to youth in and from government care and the agencies that serve them.

Funded by the BC Lung Association, members of the YAC and YRA (supported by McCreary staff) created a project in response to increasing concerns about electronic-cigarette use (vaping) in BC schools. The project aimed to include adolescents in a dialogue about vaping, with the intention of ensuring they are able to make informed choices about using vaping products.

This report documents the process and results of that project.



YOUTH RESEARCH ACADEMY



Methodology

Members of the YAC conducted an initial literature review about vaping, and a call was put out for other youth with an interest in taking part in a weekend-long research project about vaping. The project was completed over two weeks in June 2019.

Research Slam

The weekend event was called a Research Slam and was based on a model McCreary has used previously, which involves youth coming together to research a youth health topic of interest to them over a short period of time.

The Vaping Research Slam was a fast-paced weekend project that involved YRA mentors and McCreary staff carrying out peer-to-peer training with other young people. In total, 19 young people aged 16 to 24 took part in the Vaping Research Slam.

Over two days, youth participants discussed their views on vaping; generated ideas to support youth who vape and to share the potential risks of vaping with their peers; developed an analysis plan to analyze vaping data from the BC Adolescent Health Survey; learned to run statistics using SPSS Complex Samples; conducted and wrote up statistical analyses; and presented their findings and key messages to stakeholders.

BC Adolescent Health Survey

With the support of the BC Government, Public Health Nurses and school districts, McCreary conducts the BC Adolescent Health Survey (BC AHS) in public schools across BC every five years. The survey was first conducted in 1992, and the most recent survey was completed by over 38,000 students in 58 of 60 BC school districts between February and June of 2018.

The survey provides comprehensive information on health and well-being, as well as determinants of health, including risk and protective factors for healthy development, among youth in Grades 7 to 12. The survey is voluntary and anonymous and contains approximately 140 questions, including two questions specific to vaping (with and without nicotine) in the past month.

Vaping Research Slam agenda

Day 1

Introduction to the Research Slam

Acknowledgement of Traditional Territories
Ice breaker
Introduction to McCreary/housekeeping
Agenda overview
Group agreement
Pre-evaluation survey

Context—exploring the topic

Findings from the literature review
Purpose of the project
Brief overview of BC Adolescent Health Survey
How and why we conduct data analysis

Create analysis plan

Brainstorm data analysis to be completed
Assign roles

Analysis of BC AHS data

Lunch

Continue analysis of BC AHS data

Share findings

Wrap up

Reflections
Plan for Day 2

Day 2

Introduction to Day 2

Acknowledgement of traditional territories
Ice breaker
Review of information learned on Saturday

Reflection sheets

Continue analysis

Prepare presentation

Information for infographic poster

Lunch

Practice presentation

Presentation to key stakeholders and discussion

Next steps

Opportunities to stay involved

Closing

Review what we learned
Final reflections
Post-evaluation survey

Key findings

Youth researchers selected the following key findings from the Research Slam:

- ★ Youth aged 14 or younger were more likely to vape without nicotine than to vape with nicotine, while youth aged 15 or older were generally more likely to vape with nicotine than without nicotine.
- ★ Youth who slept fewer hours the night before taking the survey were more likely to have vaped (with and without nicotine).
- ★ Youth who missed out on accessing needed mental health services in the past year were more likely than those who did not miss out on accessing these services to have vaped (with and without nicotine) in the past month.
- ★ Youth who had used substances—including cigarettes, cigars, or cigarillos; marijuana; and alcohol—were more likely to have vaped with nicotine in the past month compared to those who had not used these substances.
- ★ Youth who took part in weekly sports with a coach, sports without a coach, and extreme sports were more likely to have vaped in the past month than youth who took part in these activities less frequently.
- ★ Youth who had friends who would be upset with them if they used substances (marijuana and alcohol) were less likely than those whose friends would not be upset with them for these reasons to have vaped with nicotine and without nicotine in the past month.
- ★ Youth who asked other adults for help and found the support helpful were less likely to vape than those who found the support unhelpful. For example, those who found a teacher helpful were half as likely to vape with nicotine than those who found a teacher unhelpful (among those who had asked a teacher for help).
- ★ Youth who felt connected to their community were less likely to vape than those who did not feel connected to their community.
- ★ Youth who found spirituality important in their lives were less than those who found it not at all or only a little important to vape with and without nicotine in the past month.

Literature review

This literature review was conducted by McCreary YAC members Alyana Lalani, Amanda Percival, Chantal Percival, Munsa Kang, Nelson McGillivray, Sehaj Hundal, and Vlada Kozachok.

McCreary's YAC conducted a search of published data relating to vaping. Research studies were also obtained by looking through the reference lists of relevant articles and using the "similar articles" feature available in some databases. The search was limited to English language articles. A search of the grey literature was also conducted using Google.

Search terms included combinations of terms such as: Vaping, vaping methods, e-cigarette, e-juice, vape pen/stick, effects/affects, vaping studies, substance use, addiction, teens, adolescents, youth, health risks, benefits and harms.

Among the articles which were located, there was limited data about the impacts of vaping. Although vaping is put forward as a healthier alternative to cigarette smoking there was evidence that it has health risks and may be linked to future cigarette smoking.

What is vaping?

Vaping is the act of inhaling and exhaling an aerosol produced by a vaping product, such as an electronic cigarette. Vaping does not require burning like cigarette smoking. The device heats a liquid into a vapour, which then turns into aerosol. This vapour is often flavoured and can contain nicotine (Government of Canada, n.d.).

Vaping devices are usually battery-powered. They may come with removable parts. Vaping products have many names, including mods, vapes, sub-ohms, vape pens, e-hookahs, tank systems, electronic cigarettes/e-cigarettes, and electronic nicotine delivery systems (ENDS). They may also be known by various brand names (Government of Canada, n.d.).

Vapes mainly contain vegetable glycerine, propylene glycol (which is considered safe for consumers but the long-term effects of inhalation are unknown), and flavourings (as used in food manufacturing). When the liquids are heated they can create new chemicals like formaldehyde and contain contaminants such as nickel, tin, aluminum (Government of Canada, n.d.).

Who is vaping?

Data from a recent Health Canada survey showed that 23% of students in grades 7–12 have tried an electronic cigarette (Health Canada, 2018). Similarly, about one in four Canadian youth aged 15 to 19, and 29% of young adults aged 20 to 24 reported having tried an electronic cigarette (Interior Health, n.d).

Between 2014 and 2017, use of e-cigarettes increased among Canadian students in grades 7–12. Males were more likely to have used e-cigarettes than females (12% vs. 8%), and students in grades 10–12 were more likely to have used these products than those in grades 7–9 (15% vs. 5%). An Ontario survey also found that vaping starts in earlier grades than cigarette smoking (O'Connor, Pelliter, Bayomay, & Schwartz, 2019).

How are youth vaping?

Almost half of youth who ever tried e-cigarettes (49% or 2.2 million) reported that they borrowed, shared, or bought them from a friend or relative. Twenty-three percent bought them from a vape shop or vapour lounge and 12% (546,000 youth) from a convenience store or gas station (Health Canada n.d.).

Among Canadians who had used an e-cigarette in the past 30 days, most youth aged 15 to 19 (69%) and young adults aged 20 to 24 (62%) reported using a fruit flavour, while among adults aged 25 years and older, 33% reported using a fruit flavour and 29% reported using tobacco flavour (Health Canada n.d.).

Among Canadians who had tried an e-cigarette, 64% reported that the last e-cigarette they used contained nicotine, 24% reported using an e-cigarette that did not contain nicotine, and 12% were uncertain (Health Canada n.d.).

Why are youth vaping?

A US study found that the top reasons for trying vaping were curiosity (54%), appealing flavours (44%), and peer influences (32%; Kong, Morean, Cavallo, Camenga, & Krishnan-Sarin, 2015).

Among youth who completed the 2017 Canadian Tobacco, Alcohol and Drugs Survey who had vaped in the past month, the most commonly reported reasons were feeling that e-cigarettes helped people to quit smoking cigarettes (69%), that e-cigarettes might be less harmful than smoking cigarettes (58%), and that e-cigarettes may be less harmful than cigarettes to people around them (56%; respondents could provide more than one answer; Health Canada n.d.).

Vaping is more attractive to youth than tobacco smoking because youth perceive fewer health risks associated with vaping, and because they prefer the taste, price and ability to use inconspicuously (Schneider & Diehl, 2016).

A US study of middle and high school students found that 39% vaped because a family member or friend did so. Around 3 in 10 (31%) vaped due to the availability of flavours such as mint, candy, fruit, or chocolate, and 17% vaped because they believed it was less harmful than other forms of tobacco such as cigarettes (Wang et al., 2018).

Top reasons for discontinuing were responses relating to losing interest in vaping (24%), perceiving e-cigarettes as “uncool” (16%), and health concerns (12%; Kong et al., 2015).

What are the health benefits?

According to the 2017 Canadian Tobacco, Alcohol and Drug Survey (CTADS), 32% of current or former smokers reported using e-cigarettes as a cessation aid in the past two years. For smokers who switch to vaping, the benefits of being smoke free can mean better oral hygiene, skin health, circulation, lung capacity, and improved sense of smell and taste, as well as the benefits of not inhaling tar and ash, and of having greater control over the amount of nicotine they take into their body (Kriegel, 2018).

What are the health risks?

One study found 22 toxic substances apart from nicotine in liquid e-cigarette cartridges and their emissions. However, many compounds had lower concentrations in e-cigarettes compared to tobacco smoke (Rehan, Maini, & Hungin, 2018).

The Government of Canada notes that nicotine is a highly addictive substance which can affect memory and concentration and is known to alter teen brain development. Vaping with nicotine could lead to dependence and cause nicotine addiction among users who would not have started using nicotine otherwise (e.g., smoking). The liquid in vaping can also be toxic if ingested or absorbed through skin.

The Canadian Government also states that exposure to nicotine during adolescence may cause reduced impulse control, as well as cognitive and behavioural problems. However, the government also notes that second-hand vapour is less damaging than smoke.

In a study of US adolescents in Grade 10, vaping was associated with a higher risk of more frequent and heavy cigarette smoking six months later (Leventhal, Stone, Andrabi et al., 2016). Although some youth reported using e-cigarettes for cessation purposes, vaping was not associated with smoking reductions among cigarette smokers (Leventhal et al., 2016; Miech et al., 2016). Meich and colleagues (2016) also reported that vaping increased the risk of youth becoming desensitized to cigarette smoking, and therefore more likely to move from vaping to smoking cigarettes.

The 'catalyst model' states that an increasing familiarity with nicotine can lead young people to re-evaluate their use of e-cigarettes and cigarettes and subsequently transition to tobacco smoking (Schneider & Diehl, 2016).

What is the legislation around youth vaping?

The Tobacco and Vaping Products Act (TVPA) became law on May 23, 2018. Key elements of the TVPA relating to vaping include:

- Banning the use of certain ingredients
- Not allowing vaping products to be sold or given to anyone under 18 years of age
- Not allowing the sale of vaping products that appeal to youth in how they look or work
- Setting rules about promoting vaping products, including:
 - Not promoting flavours that appeal to youth
 - Not misleading consumers about the health effects of these products (Health Canada, n.d.)

Use of vapour products is banned in all public spaces where the B.C. government has also banned tobacco smoking. Additionally, e-cigarette use is not allowed on any school property in BC (Fraser Health, n.d.).

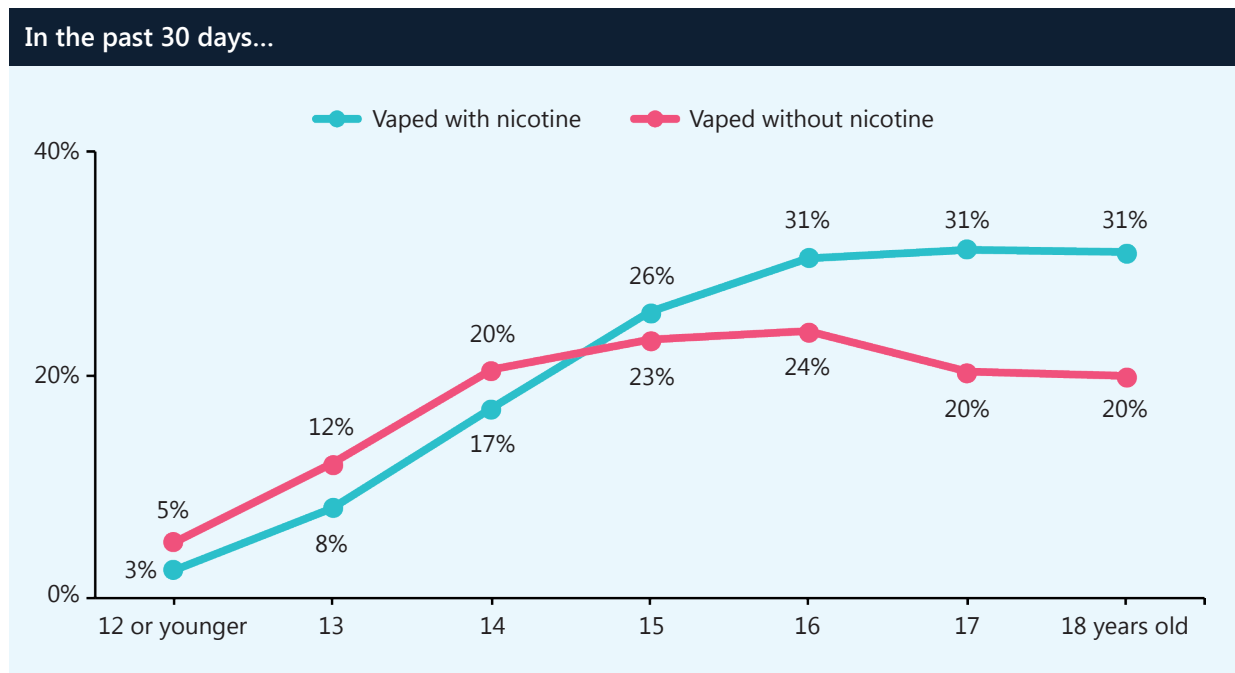
BC youth who vape

A total of 21% of BC youth had vaped with nicotine in the past month, which was higher than the 19% who had vaped without nicotine. Males were slightly more likely than females to have vaped with nicotine (22% vs. 21%), but there were no gender differences for vaping without nicotine. Most youth (59%) who vaped with nicotine also vaped without nicotine.

Age

Youth between the ages of 16 and 18 were more likely than younger youth to vape with nicotine (e.g., 31% of those aged 16–18 vs. 8% of 13-year-olds). For vaping without nicotine, there was a different pattern, with youth aged 15 and 16 more likely than older and younger youth to vape (e.g., 24% of 16-year-olds vs. 20% of 18-year-olds).

Youth aged 14 or younger were more likely to vape without nicotine than to vape with nicotine, while older youth were generally more likely to vape with nicotine compared to without nicotine.



Note: For 15-year-olds, the percentages who vaped without nicotine and with nicotine were not significantly different.



Reflections

There are always new vape mods coming out, and older youth hand down their previous versions to younger youth. So younger youth have easy access to vapes, and they might have even less awareness than older youth that vaping is unhealthy.

There is a lack of research around the health risks associated with vaping, so 'ignorance is bliss' for some youth.

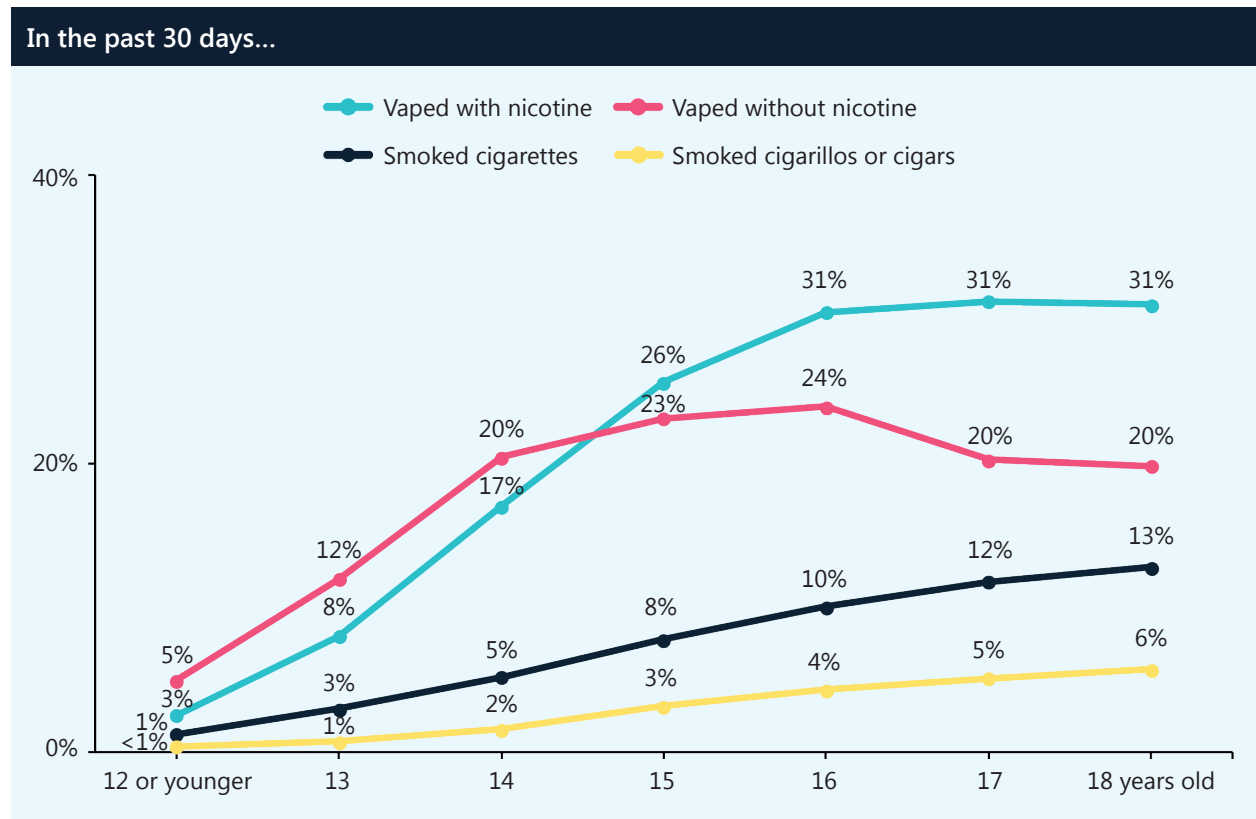
"There is a scene around vaping and a sense that because there is no information about it, you can't worry about what you don't know."

Vaping goes up with age, but after a certain age many youth want to stop. They don't want to be vaping as adults because they start seeing it as embarrassing.

"You quit because you don't want to be 30 and vaping."



Across all ages, youth were more likely to have vaped in the past month than to have smoked cigarettes, cigars, or cigarillos.



Reflections

The findings of older youth vaping with nicotine and younger ones vaping without nicotine was not surprising, nor was the finding that youth are more likely to vape than smoke cigarettes. Although it is sometimes easier to get cigarettes than vapes—because youth can ask someone for a cigarette whereas nobody asks for a hit from a stranger’s vape stick—it is easy to get vapes online.

“It is easier to access vapes than it is to get cigarettes—You don’t get ID’d.”

Youth prefer vaping in part because it is easier than cigarettes to hide and there is no smell of smoke. Also, many youth see vaping as a cleaner habit than smoking cigarettes.

Location

Youth in rural areas were more likely to vape than those in urban areas.

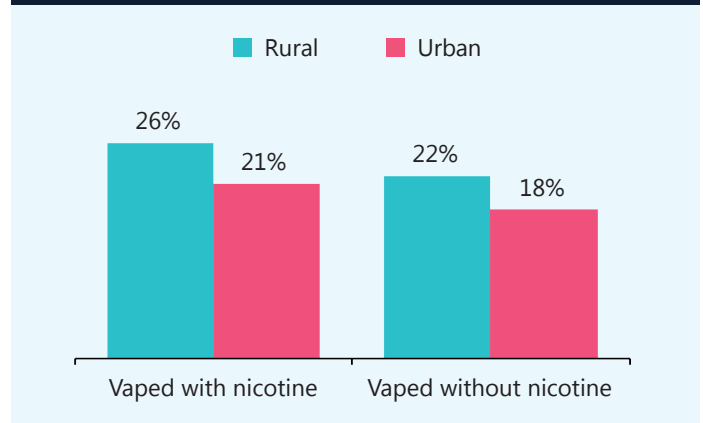
Living experiences

Youth who moved in the past year were as likely to have vaped with nicotine in the past month as those who had not moved. However, youth who had run away from home or who had been kicked out were more likely to have vaped than those who had not had these experiences. For example, 45% of youth who had run away from home had vaped with nicotine in the past month, compared to 19% who had not run away.

Youth with government care experience were more likely to vape with nicotine in the past month than those without care experience. For example, 32% of youth who had been in foster care had vaped in the past month, compared to 22% who had not been in foster care. However, youth with recent care experience (i.e., currently in government care or those who had been in care in the past year) were equally likely to have vaped in the past month as those without recent care experience.

Rates of vaping were similar for youth who lived with no adults compared to those who lived with at least one adult, and for those who lived alone compared to those who lived with others.

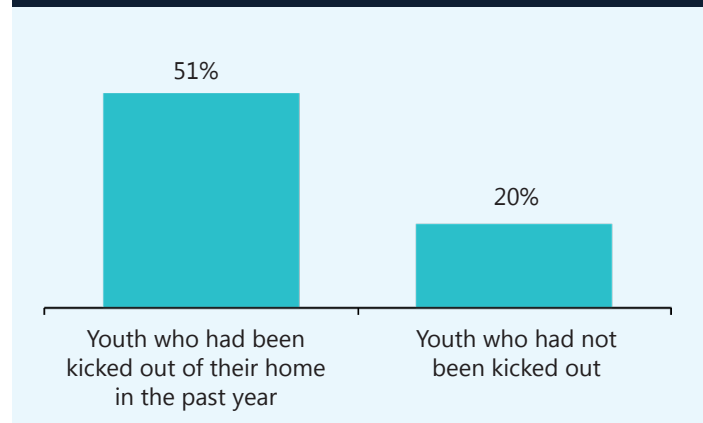
Youth in urban and rural areas who vaped in the past month



Reflections

This result was surprising because youth in urban areas have access to a greater number of vape shops and urban living is stressful. However, youth in rural areas often experience more boredom and therefore might be more likely to vape to occupy their time.

Youth who vaped with nicotine in the past month in relation to being kicked out of their home

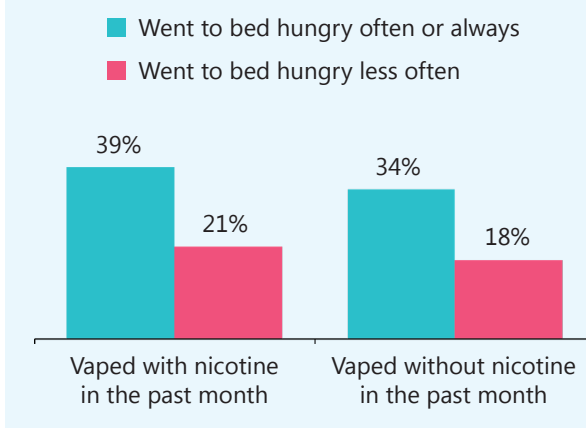


Poverty and deprivation

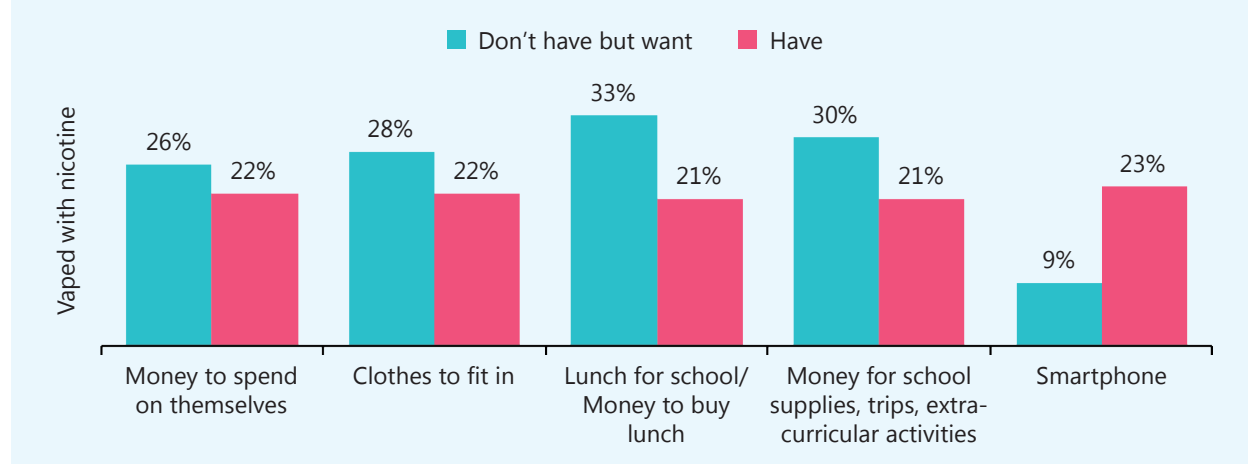
Youth who went to bed hungry often or always because there was not enough money for food at home were more likely to have vaped than those who went to bed hungry less often or not at all.

Youth who reported not having but wanting certain items were more likely to have vaped than those who reported having these items. For example, those who reported being deprived of money to spend on themselves; clothes to fit in; lunch for school or money to buy lunch; and money for school supplies, school trips or to do extracurricular activities were more likely to have vaped with nicotine in the past month than those who reported having these items. An exception was that youth who reported having a smartphone were more likely to have vaped than those who indicated not having but wanting a phone.

Youth who went to bed hungry because there was not enough money for food



Youth who vaped with nicotine in the past month in relation to deprivation





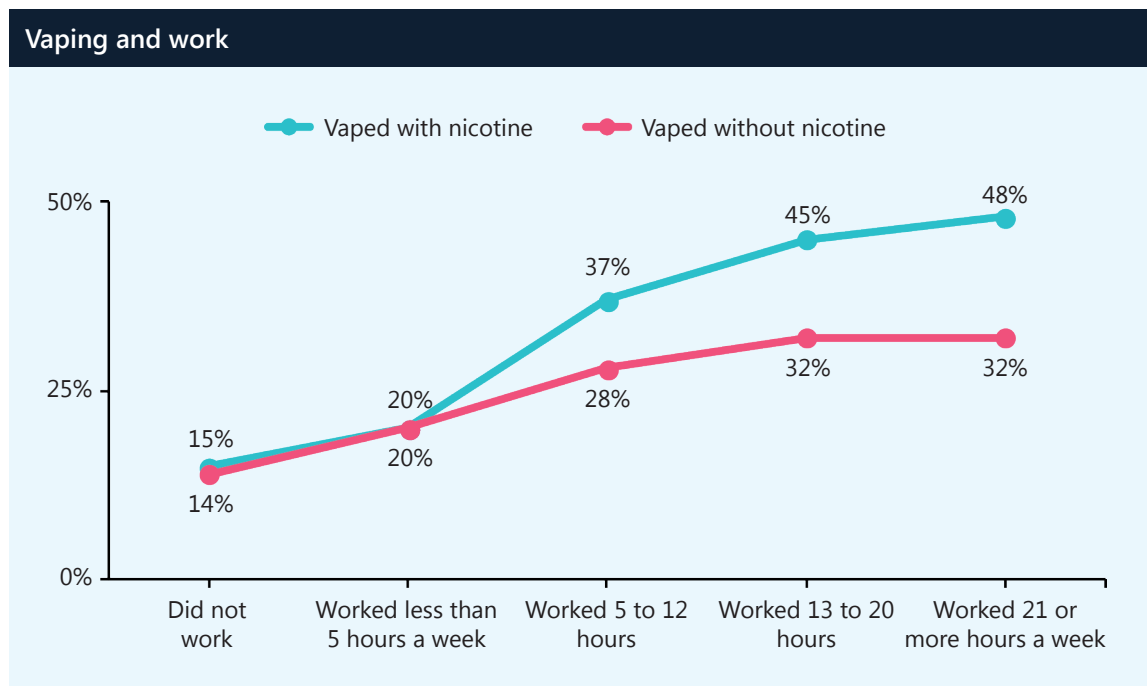
Reflections

Youth who went to bed hungry were more likely to vape. It may be that youth spent all their money on vaping supplies, and didn't have enough money left for food.

It makes sense that youth who vape have less money to spend on themselves because it can get expensive. However, some of the inconsistent results we saw when we looked at deprivation show that a wide demographic of youth are vaping and it is hard to pinpoint who will vape.

Work

Youth who worked at a paid job were more likely than those who did not work to have vaped (with and without nicotine) in the past month. Also, the more hours youth worked, the more likely they were to vape.



Note: For vaping with and without nicotine, the differences for working 13 to 20 hours and for working 21 or more hours were not statistically significant.

Physical health

Youth who described their health as poor or fair were more likely than those who described it as good or excellent to have vaped with nicotine (29% vs. 20%) and without nicotine (24% vs. 17%) in the past month. Also, those who had missed school due to illness in the past month were more likely to have vaped with nicotine (26% vs. 19%) and without nicotine (23% vs. 16%) in the same time period.

Youth with a long-term or chronic medical condition (e.g., diabetes, asthma) were more likely than their peers without such a condition to have vaped with nicotine (25% vs. 21%) and without nicotine (22% vs. 18%) in the past month. However, those with a physical or sensory disability were as likely as youth without these disabilities to have vaped.



Reflections

Youth with a long-term medical condition, like asthma, might be more likely to vape than other youth because they're looking for a healthier alternative to smoking cigarettes, and they see vaping as healthier.

Mental health

Youth who reported poorer mental health were more likely to have vaped in the past month. Also, those who reported having a mental health condition (e.g., depression, anxiety) were more likely than those without such a condition to have vaped with nicotine (33% vs. 19%) and without nicotine (28% vs. 17%) in the past month.

Also, youth who missed out on accessing needed mental health services in the past year were more likely than those who did not miss out on accessing these services to have vaped with nicotine (32% vs. 19%) and without nicotine (27% vs. 16%) in the past month.



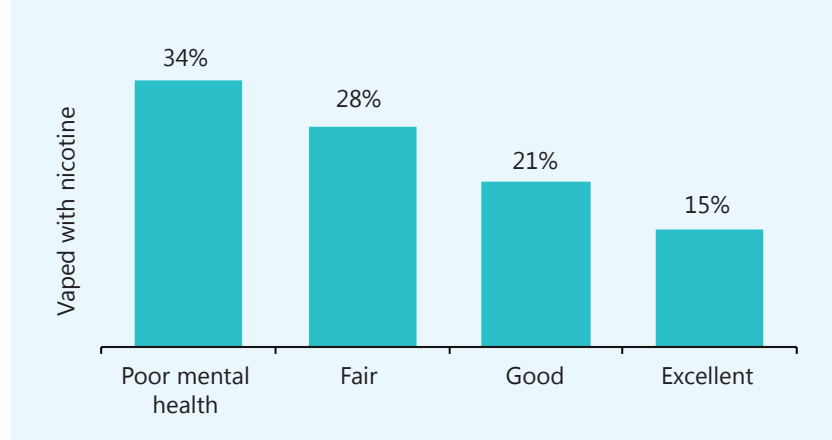
Reflections

It might be that poor mental health is contributing to youth's vaping. Vaping can help to alleviate stress and divert attention away from focusing on problems. Also, vaping can give you a happy feeling, so some youth might vape to manage their mental health challenges.

Although not surprising that youth with mental health challenges vaped more, it was surprising how big the difference was.

The higher usage of vapes among youth who missed out on needed mental health services shows that youth are using to self-medicate.

Youth who vaped with nicotine in the past month and their mental health ratings



Sleep

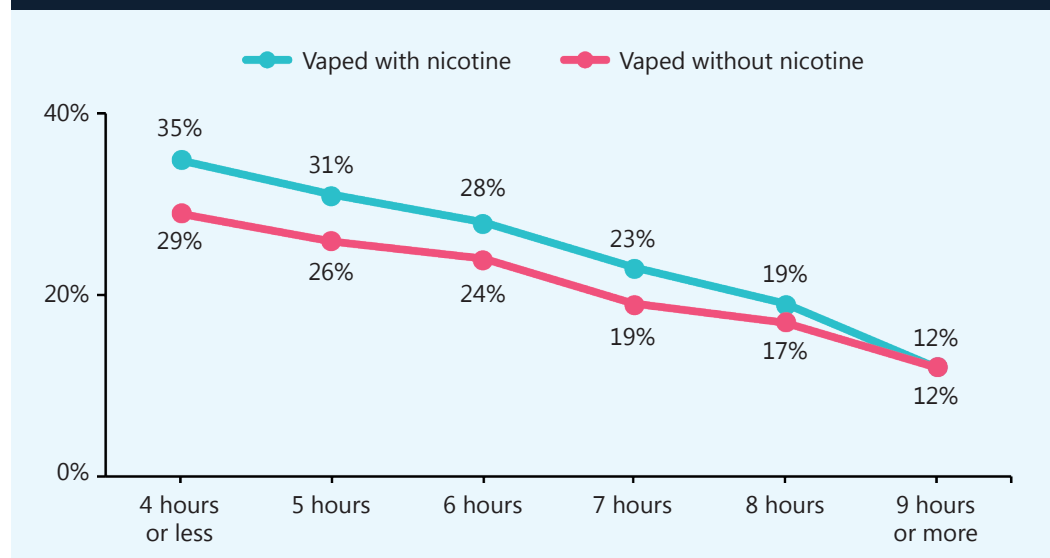
Youth who slept fewer hours the night before taking the survey were more likely to have vaped (with and without nicotine) than youth who slept more hours. For example, 29% of those who slept fewer than five hours had vaped without nicotine in the past month, compared to 12% who slept nine or more hours.



Reflections

If youth are vaping because they are stressed, they will vape when they should be going to sleep.

Hours youth slept the night before taking the survey



Substance use

Youth who had used substances—including cigarettes, cigars, or cigarillos; marijuana; and alcohol—were more likely to have vaped with nicotine in the past month compared to those who had not used these substances.

Also, youth who had used other substances, such as cocaine, mushrooms, ecstasy/MDMA, inhalants, crystal meth, heroin, prescription pills without a doctor’s consent, and more of their own medication than prescribed were more likely to have vaped with nicotine in the past month than those who had never used these substances. For example, 47% of youth who had used prescription pills without a doctor’s consent had vaped with nicotine in the past month, compared to 19% of those who had not misused prescription pills in this way.

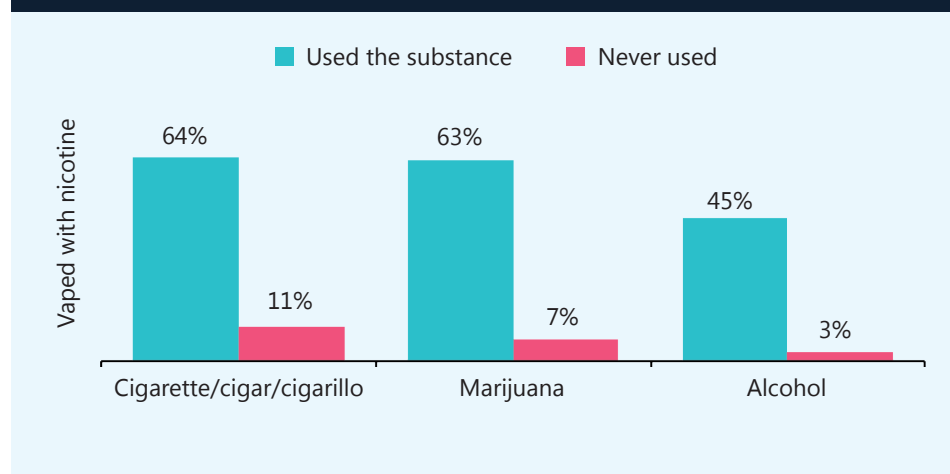
Youth who had used a product to help them stop smoking in the past month were more likely than those who had not used such a product to have vaped with nicotine (85% vs. 20%) and without nicotine (62% vs. 18%) in the same time period.

Reflections

Youth who are willing to try substances will try vaping.

It is important to look beyond vaping and the use of substances like alcohol and marijuana to think about why youth might be turning to these things.

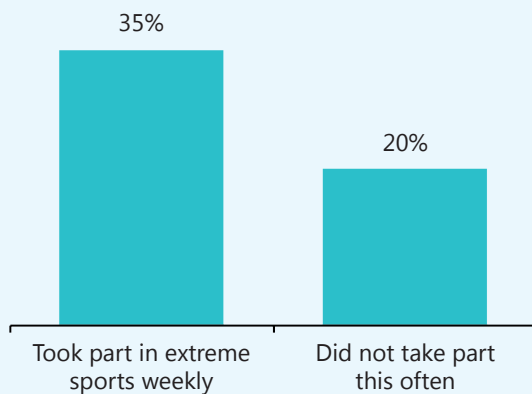
Youth who vaped with nicotine in the past month and their lifetime use of other substances



Physical activity

Youth who took part in weekly sports with a coach, sports without a coach, and extreme sports were more likely to have vaped in the past month than youth who took part in these activities less frequently. For example, 22% of youth who participated in weekly sports with a coach reported vaping with nicotine, which was slightly higher than the 21% who did not participate on a weekly basis.

Youth who vaped with nicotine and involvement in extreme sports



Reflections

Athletes in high performance sports programs with coaches might feel more stress and pressure to succeed and might vape as a result. Also, parents sometimes pressure youth into sports which can increase their stress and then they might self-medicate with vaping.

The link between vaping and extreme sports makes sense as both can create a high or rush.

Friends

Youth with two or more friends were more likely than those with one friend or no friends to have vaped (with and without nicotine) in the past month. Also, those with 10 or more friends were the most likely to have vaped (e.g., 25% vaped with nicotine vs. 19% of those with two friends).

Protective factors linked to reduced likelihood of vaping

Involvement in weekly activities

Youth who took part in weekly activities other than sports were less likely to vape than those who did not take part in these activities on a weekly basis. These included cultural activities (15% vs. 22%), the arts (14% vs. 24%), clubs/groups (11% vs. 23%), and volunteer activities (18% vs. 22%).

Meaningful activities

Youth who found their activities meaningful were less likely to vape than those who did not find their activities meaningful.

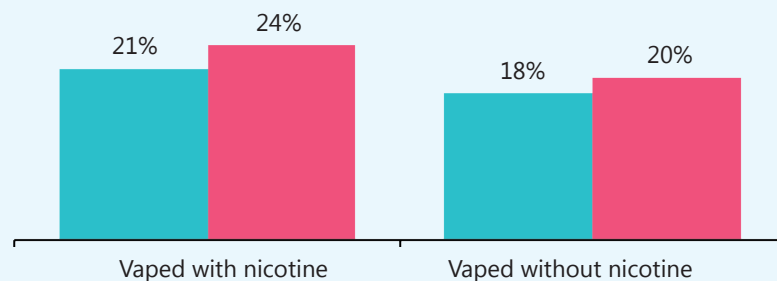


Reflections

Youth who find their activities meaningful are less likely to vape because they want to be fit and healthy to ensure they can fully participate in the activity.

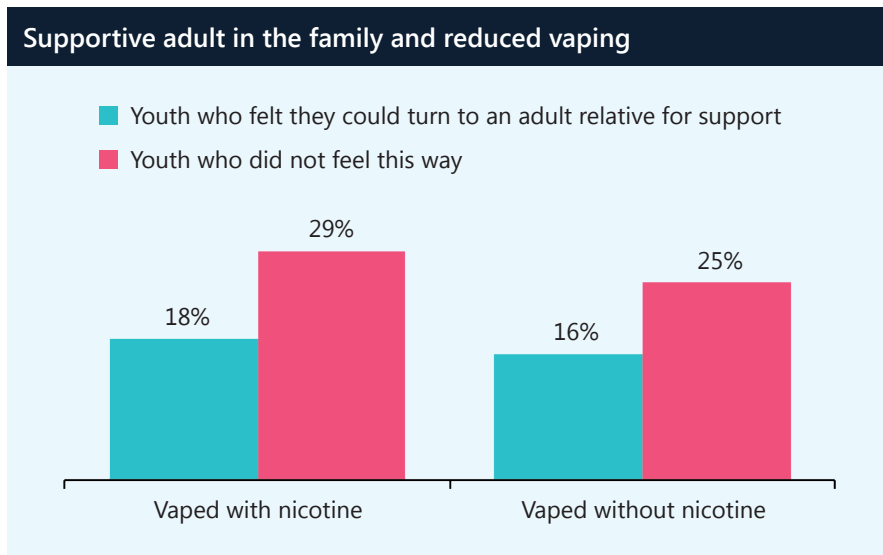
Meaningfulness of activities and vaping in the past month

- Youth who found their activities quite a bit or very meaningful
- Youth who found their activities less meaningful



Supportive adults


Youth who felt there was an adult in their family they could talk to if they had a serious problem were less likely to vape than those who did not feel they could turn to an adult relative for support.



Also, those who asked a family member for help in the past year and found the support helpful were less likely to vape than youth who found the support unhelpful (19% who found a family member helpful reported vaping with nicotine vs. 31% who found the support unhelpful; among those who had asked a family member for support).

Youth who had asked other adults for help and found the support helpful were also less likely to vape than those who found the support unhelpful. For example, those who found a teacher helpful were half as likely to vape with nicotine than those who found a teacher unhelpful (among those who had asked a teacher for help).

Youth who vaped with nicotine in the past month in relation to finding adults' support helpful (among those who had asked adults for support in the past year)		
	Found the support helpful	Found the support unhelpful
Teacher	17%	34%
Spiritual leader	17%	33%
Elder	20%	34%
Doctor	22%	35%
Coach	23%	30%
Counsellor	23%	31%
Social worker	24%	38%
Nurse	24%	39%
Youth worker	28%	37%


Reflections

Having non-judgemental relatable adults is key to youth making healthy choices about vaping.

"I have supportive parents and a teacher that really cares about me. These are the things that are really going to help me."

Parental monitoring

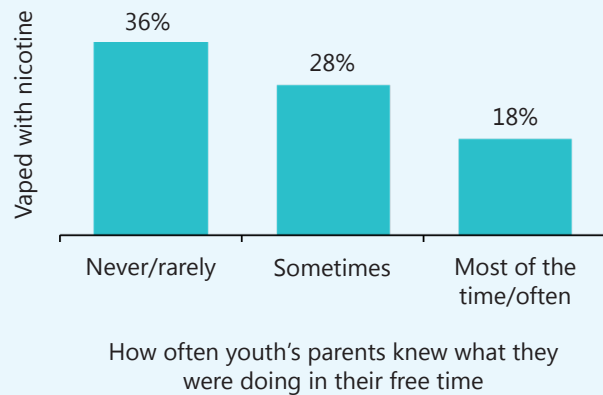
Youth who reported that their parents or other caregivers knew what the youth did in their free time were less likely to vape (with and without nicotine) compared to youth whose parents did not know what they were doing.

Friends with healthy attitudes about substance use

Youth who had friends who would be upset with them if they used marijuana were less likely than those whose friends would not be upset with them for this reason to have vaped with nicotine (7% vs. 40%) and without nicotine (9% vs. 31%) in the past month.

Similarly, if youth had friends who would be upset with them for getting drunk, they were less likely to vape than youth whose friends would not be upset with them for this reason (e.g., 5% vs. 35% vaped with nicotine).

Parental monitoring and vaping with nicotine in the past month



Reflections

It makes sense that if someone has friends who disapprove of using substances they are less likely to vape. Also, if youth have friends who are judgemental of their vaping, they might change their friend group to find others who vape.

Connected to the community

Youth who felt quite a bit or very connected to their community were less likely to vape than those who did not feel connected to their community (19% vs. 24%).



Reflections

Connection to community is a protective factor so there should be a lot more free opportunities (like a youth drop-in centre) for youth to be able to connect with others.

Spirituality

Youth who found spirituality somewhat or very important in their lives were less likely than those who found it not at all or only a little important to vape with nicotine (19% vs. 25%) and without nicotine (18% vs. 20%) in the past month.

Having enough time to do what they want

Youth who felt they had the right amount of time to do the things they wanted were less likely to vape than those who felt they did not have enough time. This included spending time with family, friends, in nature, and on their own. For example, 20% of youth who felt they had the right amount of time on their own reported vaping with nicotine, compared to 27% who felt they did not have enough time on their own.

What youth want to learn more about

The BC Adolescent Health Survey contains an open-ended question which asks youth if there are any health topics they would like to learn more about. Participants in the Research Slam analyzed this qualitative data. They noted that 13-year-olds were the most likely to have questions about vaping which they would like to see addressed in school curriculum, and overall most survey participants who had questions about vaping were aged 13–15.

Examples included:

"[I would like to] learn more things about vaping because it is a very big topic now a days."

—14-year-old

"Vaping experimentation information."

—12-year-old

"Vaping topic because it is very common right now."

—13-year-old

"How bad is vaping? I think that vaping should have its own section on the survey."

—13-year-old

"I think if teachers taught their students more about drugs and alcohol, especially how much it affects students in high school when kids are at the point where people around them start vaping or drinking, they are able to say no! Anyways that's what happened to me."

—13-year-old

Recommendations

Based on their findings and their own experiences, participants in the Research Slam generated a list of recommendations which could help to inform youth about the potential health risks of vaping and which address how to support youth who vape and those who might be thinking about vaping.

- ✓ The link between vaping and poorer mental health shows the need to teach youth healthy coping skills, and specifically stress management skills.
- ✓ The link between poorer sleep and vaping highlights the need for youth and parents to have more knowledge about how to ensure young people get into a healthy sleep pattern.
- ✓ Adults should not vape in front of youth as it normalizes vaping.
- ✓ Analysis of comments written by youth on the BC Adolescent Health Survey shows that younger youth have many questions about vaping and need more information. Additionally, targeting youth aged 11–12 before they start vaping will allow them to make an informed choice about whether they want to vape.
- ✓ There are many useful resources available about vaping but youth often do not access them. It is therefore important to find a way to reach youth, such as through snapchat or in-class discussions.
- ✓ The finding that youth who play sports on a regular basis are more likely to vape shows the need to educate coaches about vaping, including increasing their awareness that youth are more likely to vape if they are stressed so that they do not put too much pressure on youth.
- ✓ The results showing the important role that supportive adults can play in reducing youth's likelihood of vaping should be used to educate adults to be open and non-judgemental.
- ✓ School staff can also play an important role and should be educated about vaping and how to answer youth's questions about vaping. They should help youth who vape rather than taking a punitive approach.
- ✓ Ensure all schools have youth workers attached to them who have experienced vaping or have overcome problems with other substances so that they are relatable and understand what youth are going through.
- ✓ Provide balanced information about vaping.

"Don't just tell us it's bad. Give us the facts and let us decide."

Suggested resources

At the end of the Research Slam, participants shared what they had learned with representatives from Vancouver Coastal Health and the BC Lung Association. They also shared their ideas about what resources and supports would be helpful. Suggestions included:

- Have a number that youth can text for information because for some youth this can be easier than talking to someone.
- Websites have a lot of information about short-term effects of vaping but should also include information about longer term effects.
- Have clear messaging that vaping might be a healthier option than tobacco for those who smoke tobacco, but that it is not a healthy choice for those who have never smoked.
- Have adults accessible for youth to talk to who have been through quitting vaping or have moderated their use and who young people can relate to.
- Share the BC Adolescent Health Survey results and similar information widely so that young people can come to their own conclusions about vaping.
- Encourage teachers to talk about vaping in class.
- Have messaging that is balanced but that highlights how the risks might outweigh the benefits.
- Make vaping products look less cool.
- Have counsellors accessible who specialize in helping youth quit vaping.
- Avoid messaging that says 'Don't vape!' as it is ineffective.
- Learn lessons from tobacco messaging because youth know, for example, that tobacco use can negatively affect sports performance but do not know that vaping might do the same.

Experiences of the Research Slam

At the beginning of the Research Slam, participants took part in an exercise called Give-Get-Got. They wrote on sticky notes what they were bringing into the Slam, and what they hoped to get out of it. At the end of Day 2 they added sticky notes about what they got out of it.

In the 'Give' section, youth reported bringing attributes such as 'humour', 'enthusiasm', 'hard work', 'a good attitude' and their own experiences of vaping. What they hoped to get out of it and what they actually did get out of it is detailed in the table below.

What they hoped to GET (Beginning of Day 1)	What they felt they GOT (End of Day 2)
Information about vaping; Learn more about vaping; More insight into youth experiences with vaping; Learn more about what is associated with vaping; Learning more about the harms and potential benefits of vaping	More knowledge about vaping; More information on risks and protective factors of vaping; A lot more information about how vaping affects youth; Interesting and surprising facts about youth who vape; Knowledge of how little information there really is on vaping
Insight into information on youth vaping & health!	Knowledge on what kids do besides vape
Learn about the perspectives of other youth on vaping	Learned more about attitudes on vaping; Learned about what youth think about vaping
More knowledge on community resources about vaping	I've realized it's important to teach youth coping mechanisms instead of vaping
How to best support youth who vape	Learned more about vaping from people with real life experience
A new perspective on youth health & vaping that will impress the VCH representatives	What adults can do to help youth
Experience in a workplace environment	Experience in a work environment
Research experience; Learn analysis skills	Learned to do some data analysis with SPSS; SPSS skills; Presentation skills; Data analysis experience; More education with computers
Peer support experience; Support	Practiced instruction and support skills; How to work together with a very tight timeline
Perspective	I got new perspectives
Information to share with peers	Learned about the perspectives of other youth on vaping and what they think is needed to educate others; I got valuable insights that I can share
New relationships/friendships	Friends; Met new people
A good time	Good conversation and had fun A way to spend my time productively
Sarcasm	Humour
Learn more about the BC AHS	More questions to answer
	Other: I got to contribute to my community; Cheque; Thai food

Evaluation of project methodology

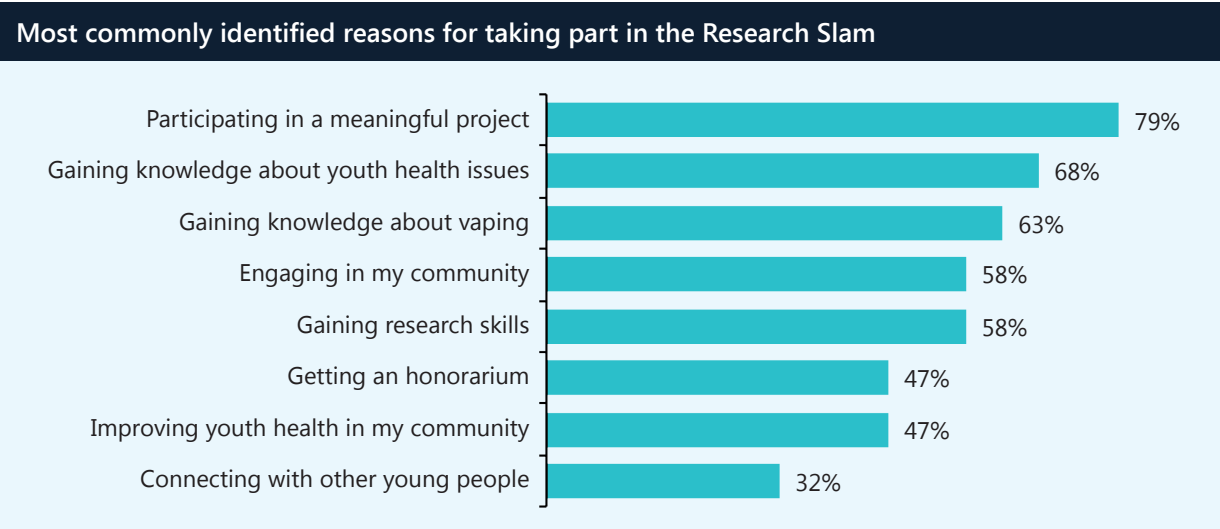
The evaluation included a feedback form which youth completed at the start of their involvement in the Research Slam (i.e., the start of Day 1), and a second feedback form that participants completed at the end of their involvement (i.e., the end of Day 2). The first form included questions about youth's background, vaping experience, and what they hoped to gain from their involvement in the Research Slam. The second form canvassed their feedback about their experience in the Slam and what they felt they gained from taking part.

A total of 19 youth took part in the Vaping Research Slam and completed evaluation surveys. Participants ranged in age from 16 to 24 years, with an average age of 20, including 37% who were between the ages of 16 and 19 years old. The majority of the participants (61%) identified as female (61%). Just over half of participants (53%) indicated they had vaped before.

Participants self-identified a range of backgrounds, and most commonly European (47%). Other backgrounds included Indigenous/Aboriginal, East Asian, South Asian, Southeast Asian, West Asian, and Latin/South/Central American (youth could mark all that applied).

At the start of the Vaping Research Slam, participants were asked about their feelings about the event. They most commonly identified feeling curious (74%), interested (63%), or excited (58%; youth could mark all that applied).

Participants were also asked about what interested them in taking part in the Vaping Research Slam. They most commonly identified participating in a meaningful project, gaining knowledge about youth health issues, and gaining knowledge about vaping.



Note: Youth could mark all that applied.

Comments from participants about what they hoped to learn from participating in the Research Slam (First survey)...

"Valuable research skills and seeing different opinions of youth in my community. I'm hoping to grow and apply these skills in the future!"

"How McCreary involves youth in projects and puts together reports from the AHS. Different perspectives on vaping. Protective and risk factors."

"More info about vaping."

"What protective factors are youth experiencing that correlate with low vaping self reports."

"Data analysis, research skills, how people answered the questions."

"Reasons why people vape."

"Learn about youth vaping, learn facilitation and mentorship skills, learn about youth opinions and responses to substance use/vaping."

"How to best support kids who vape and some research and analysis skills."

"How youth are affected by vaping."

"Other people's opinions."

"Anything."

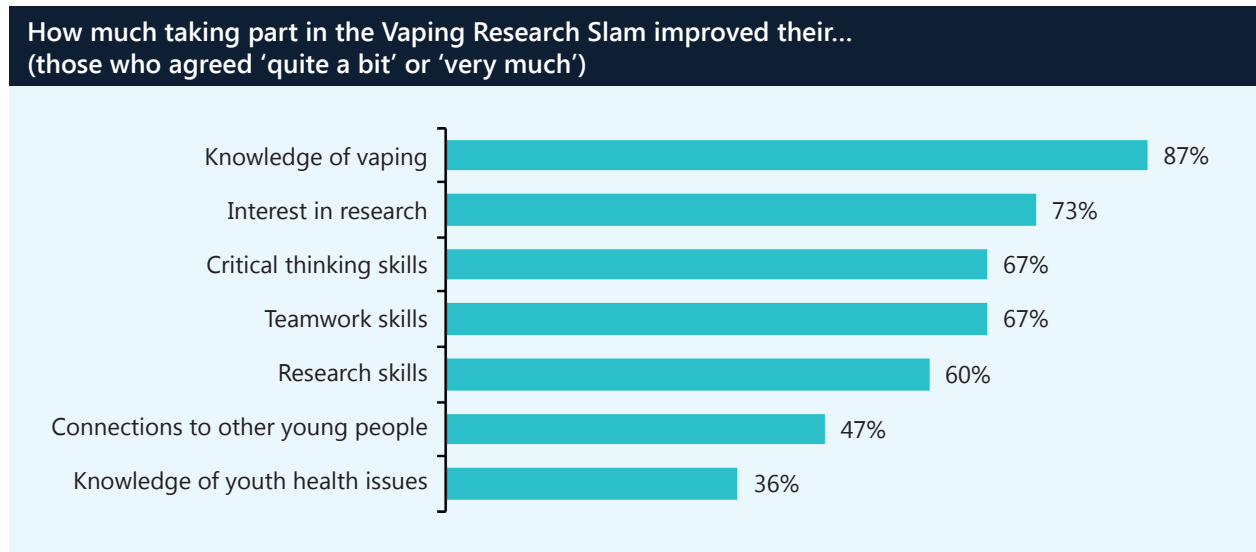
"I am hoping to learn more about the Youth Adolescent Health Survey as well as about vaping and its impacts. I am interested in vaping due to my area of study."

"I am hoping to learn about the associations between vaping and various other health topics such as mental health, accessibility of services in communities and support networks."

"What [this] organization is doing to make [an] impact."

"More info on vaping. It is becoming a really big trend, I just want to learn more about it."

At the completion of the Research Slam, participants were asked how much taking part in the Slam helped to improve their knowledge of vaping, as well as knowledge and skills in other areas. Most participants reported at least a little improvement in their knowledge of vaping; knowledge of other youth health issues; interest in research; skills in various areas including research, presenting findings, teamwork, and critical thinking; and connections to other young people. The majority of youth also reported quite a bit or very much improvement in most of these areas.



Participants were asked an open-ended question about what they had learned through their involvement in the Research Slam. Common responses included learning about different attitudes and perspectives toward vaping, what factors and experiences are associated with youth in British Columbia who vape, and research and data analysis skills (including using SPSS statistics).

What participants learned through their involvement in the Vaping Research Slam

"That people see vaping in so many different ways."

"I learned more about vaping from youth with real life experience as well as from the survey. I also learned more about data analysis from using SPSS."

"Attitudes around vaping, demographics, and also protective factors that go in to understanding youth who vape."

"How to use SPSS. [The] profile of youth who vape. What can be done and what is being done to support youth."

"I learned SPSS analysis skills, more about AHS and how McCreary puts out reports, and about perspectives of other youth on vaping and similar topics/experiences."

"Researching involves a lot of people and that you should always take other people's opinions into consideration."

"I learned that vaping is a very controversial topic. More has to be done not only research but connecting those to services and actual humans."

"That there is little research in the long-term effects on vaping."

"I learned some new SPSS analysis skills and learned about the various associations between vaping and other aspects of youth health. I learned about opinions that other youth have on vaping."

"Big misconceptions about vaping."

"[Which] youth ... start vaping and some of the reasons possibly why."

"SPSS skills. People skills."

"How different things that can happen in your life can affect if you vape or not."

Participants were asked about their overall experience in the Vaping Research Slam. The vast majority reported that they took part in a meaningful project, that the staff were supportive, and that they would recommend participating in a Research Slam to others.

Participants who 'agreed' or 'strongly agreed' with statements about their experience in the Vaping Research Slam	
Took part in a meaningful project	100%
Staff were supportive	93%
Would recommend participating in a Research Slam to others	93%
Environment was safe	80%
Had fun	80%
Learned skills through the Vaping Research Slam that will help them in the future	80%
Felt comfortable sharing thoughts and ideas	67%

Most youth (93%) reported that they were 'quite a bit' or 'very' satisfied with their overall experience in the Vaping Research Slam. When asked to explain, some expressed appreciation for being able to contribute to a meaningful project and to their community. Others valued the opportunity to share their thoughts around vaping, and several identified gaining knowledge and skills in a fun and safe environment.

Participants' comments on their satisfaction with the Vaping Research Slam

"It was nice to contribute to the community in such a meaningful way!"

"I am grateful that I could participate with McCreary in a topic that is lacking information and facts on."

"I felt that I was able to participate in a meaningful activity and that I was listened to. The research slam exceeded my expectations."

"There was a very welcoming and open-minded environment which helped everyone to feel comfortable sharing their thoughts/opinions. The staff was also very supportive and helpful throughout the process."

"Well organized. Clear goal. Youth-led as much as possible. Interesting and fun."

"I am very satisfied. I learned a lot!"

"I got my chance to express my views towards vaping."

"I enjoyed working with the 2018 AHS data."

"A bit too much sitting—wanted to do more outside work."

"It was interesting for a first time at a research slam."

"I learned a lot and had a very fun time."

"I love doing this kind of work so it is very fun for me! :)"

"I didn't expect being a part of this group, [it was] fun and educational. But it was really fun listening to what others had to say and the percentages and graphs were educational."

Conclusion

Participants were asked for any suggestions on how to improve the Vaping Research Slam. Many indicated having no suggestions because they were satisfied with how the Slam was carried out. A few reported wanting the Slam to be longer so they had more time to work on different aspects of the project (e.g., analysis, creating a presentation). Some suggested longer days or holding the project over more days.

"It is really hard to find such hands-on experience for kids my age, so McCreary is always interesting for me!"

This project was an effective way of engaging youth in a discussion about vaping and increasing their knowledge on the topic. The project was also able to generate participants' ideas about what information they would like to learn about vaping and vaping cessation, and what vaping-related services and curriculum they would like to see in place in BC.

One of the protective factors that Slam participants identified which reduced the likelihood of vaping was engaging in activities which were personally meaningful. Evaluation findings suggest that this project was effective at engaging youth in a meaningful project. They also gained skills and knowledge which will contribute to supporting their healthy development.

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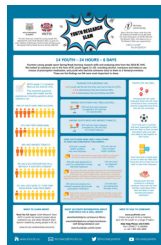
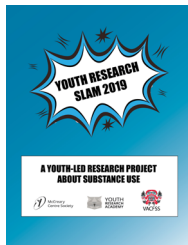
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Research Slam resources



As part of the youth-led research project about vaping, participants selected key findings, recommendations and resources to share in a one-page infographic poster.

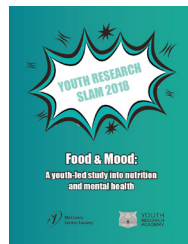
The poster is available to download at www.mcs.bc.ca/pdf/yrs_clearing_the_air_poster.



Youth Research Slam 2019: A youth-led research project about substance use shares findings from the third annual Research Slam. Youth researchers investigated substance use and its effect on youth health, as well as how to support youth to make healthier choices when it comes to substance use. This report was created as part of a project to better understand youth substance use and substance-related harms in the context of the current opioid crisis.

Report download: www.mcs.bc.ca/pdf/yrs_substance_use_report.pdf

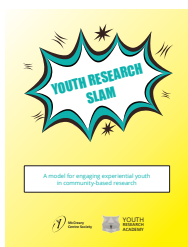
Infographic download: www.mcs.bc.ca/pdf/yrs_substance_use_poster.pdf



Food and Mood: A youth-led study into nutrition and mental health shares findings from the 2018 Research Slam which explored nutrition and mental health.

Research Slam participants analyzed data from the 2013 BC Adolescent Health Survey (BC AHS) relating to nutrition and mental health, and created their own survey to answer questions not addressed in the BC AHS. The report shares the results of that survey as well as recommendations to improve nutrition and mental health among young people.

The report is available to download at www.mcs.bc.ca/pdf/yrs_food_and_mood.pdf.



Youth Research Slam: A model for engaging experiential youth in community-based research shares findings from the first annual Research Slam, which explored how young people manage the stress in their lives.

As part of the project, Research Slam participants created an online survey about how youth manage stress, which was distributed to 586 young people world wide over one weekend. The report highlights the results of that survey and details the Research Slam process.

The report is available to download at www.mcs.bc.ca/pdf/youth_research_slam_1.pdf.



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