

3 – Who and Why

MC: Welcome back to The Med Thread. In this episode, we're continuing to talk about vaping with Dr. Leslie Philips, a pharmacist and professor at the School of Pharmacy at Memorial University. She's an expert in mental health and works with the smoking cessation program here as well, so we are very lucky to have her here once again.

CB: Alright, last time, we talked about what vaping was and some of the regulations surrounding it. Now we're switching gears a little. I know that the Canadian Tobacco Alcohol and Drugs Survey regularly looks at the number of people using these products. In recent years, e-cigarettes were added to the list. So Leslie, what do the numbers show?

LP: Well if you look at the latest CTADS, as we call it, data, which is 2017, about 2/3, 65% of users were current smokers. And most of those were dual users. So what I mean by dual users is that they were smoking both tobacco cigarettes and vaping. So that's a little concerning because you're doing both. Are most of those continuing to be dual users? Are they going on to revert back to smoking tobacco cigarettes? Or did we just catch them at a time when they're trying to quit smoking and they're in the crossover between smoking regular tobacco and vaping? It's not likely to be the latter because it's highly unlikely that all of those dual users would be all trying to make that switch over. So I think dual use is concerning because the intent is harm reduction and that means switching over from tobacco cigarettes to vapes, not using both, because smoking even as few as 1-4 regular tobacco cigarettes a day is harmful.

So about 2/3 of users are current smokers, the other 1/3, about 35% are non-smokers. So those non-smokers, 20% were former smokers, but 15% were never smokers. In other words, they never smoked tobacco cigarettes, but they are smoking vapes. And a substantive portion of them are youth and young adults. So, 6% of youth aged 15-19 and 6% of young adults 20-24, reported using vapes in the past 30 days. And a much higher percentage, you're looking, you know, 25-30% report having ever tried e-cigarettes. And the other interesting thing about it and you think about, this is 2017, this survey, so this is before the act that legalized the sale of nicotine containing e-cigarettes. But in that survey, 48% of respondents said that they regularly use products with nicotine in them. 35% said they did not vape products with nicotine in them and 18% have no idea they were using nicotine or not.

(CTADS, 2017: <https://www.canada.ca/en/health-canada/services/canadian-tobacco-alcohol-drugs-survey/2017-summary.html>)

CB: And Leslie, are these numbers changing over the years, do we have data for consecutive years that show any trends?

LP: Well, that's a great question and there's been a lot of media attention lately about an epidemic of use among youth and young adults. And Cathy of course, you know, we just returned from the Ottawa Model Smoking Cessation Conference in Ottawa. And we were fortunate enough to attend a presentation on vaping by Dr. David Hammond. He's a professor in applied public health at the university of Waterloo and an authority on e-cigarette use in Canada. And Dr. Hammond presented some alarming, I think, results from a 2017 and 2018 iteration of the ITC tobacco and e-cigarette survey. And this is an annual survey, given to youth between the ages of 16 and 19 in three different countries, Canada, the US, and England. And there were some disturbing changes in vaping and smoking between 2017 and the 2018 data in Canadian youth.

So we're talking about a survey now that looked at about 8000 Canadian youth. Just to give you an idea of how much things are changing, in 2017 the number of youth reporting ever vaping was just over 29%. In 2018 that number rose to 37%. In 2017, the number of youth reporting past 30 vaping was 8.4%. In the 2018 data, that nearly doubled to 14.6%. And the number of youth reporting vaping 15 or more day a month in 2017 was 2.1%, now it's up in the 2018 data, to 3.6%. And that might sound like a low number overall, but when you think about it, 3.6% of our youth vaping 15 or more days a month is significant and particularly when you think about nicotine addiction because it's certainly enough to cause nicotine addiction.

And here's the other kicker. Smoking tobacco cigarettes is also increased. So this is the first time in more than a decade, because we've seen this sort of steady decline and a little bit of a levelling off in our smoking prevalence rates, well that's up too, both in the national CTADS survey but also in this youth survey. So again, on ever parameter, ever smoking, past 30 day use, past weekly use, and the number of youth who smoked 15 or more days a month has increased. Just to give you one stat, the number of youth in this survey reporting using tobacco cigarettes 15 or more days a month went from about 4.8% in 2017 up to 7.4% in 2018. Now Dr. Hammond cautions that we shouldn't panic yet because these figures need to be replicated because there's such a contrast, he'd liked to see another survey just to validate them. But nonetheless it's quite disturbing.

CB: It's definitely alarming and we mentioned in the last episode that it's actually illegal to sell e-cigarettes and vape products to those less than 18 years of age. So where are these underage users getting them?

LP: I think they're getting them the same ways they got them before, because it's really hard to regulate this industry, it's so huge. So they're getting them online, they're getting them from convenience and grocery stores and gas stations. They're getting them from vape stores, just like they got tobacco products from all these places even though it was illegal. They're getting them from their friends, they're getting them from the underground economy. I know one local high school had a vape buy/sell and trade website. They're getting them from their parents in some cases because the parents believe that these products are safe.

CB: When we're talking to our tobacco cigarette users, there's often the complaint of how expensive they are and how highly they are taxed. How does the cost of the e-cigarette compare to the cost of the tobacco cigarette?

LP: You can pay a little or you can pay a lot, it kind of depends on what type of device you get. It can be anywhere probably from under \$10 for a disposable product to probably \$300 or more for some of the fancier vaping devices. As far as the e-juice goes, it generally sells for around \$20 for a 30 mL or 1 oz bottle. Sometimes they have things like promotions like \$10 Tuesdays or certainly I know that you can buy it in the underground economy for half of what you would spend in a vape store. So overall, for sure, less expensive than tobacco cigarettes and that may be another part of the appeal.

MC: It's almost like you're buying, you're selecting a cell phone and you could buy a cell phone that's a \$1000, or you could buy something really cheap. But here's a tough question for you and a big one actually, why do people vape?

LP: So it is a tough question, you're right, and it probably depends on who's doing the vaping. So as far as current smokers go, why do current smokers vape. Well, from the data it looks like they do it for a couple reasons. As a smoking cessation tool, that might not be a bad idea, if in fact they manage to make the switch completely from a harm reduction point of view. They also use it to reduce the number of tobacco cigarettes that they smoke a day. And sometimes they use it in situations where they're not allowed to smoke, although those places are now tending to ban vaping as well, so for example, you can't smoke on airplanes and you can't vape on an airplane anymore either.

More interesting I guess is why the non-smokers vape. So it may come from the perception that they're harmless or less harmful. Some of them do it simply because they enjoy it, so it's recreational use. When it comes to youth, I think the big drivers are flavours, so they are really attracted by the flavours. Marketing and brands play a big role for youth and hence the popularity I think of those really nifty USB sort of looking devices like the vape pods. And you know, I think, novelty and risk-taking behaviours play a part in youth uptake, as well as the notion of them being harmless. So, there are lots of different reasons why people pick up vaping, for sure.

MC: So, in the past there was this culture of tobacco smoking. Do you see that this is something that's going to occur or has occurred vaping?

LP: I would say definitely yes, there is a culture of vaping. In many ways, we're bringing back the normalization of smoking. So even in vape stores now, a lot of them are more like vape lounges so you can come in there and sit around and vape. And they have videos playing about how to use vapes and promoting these cloud-chasing and other ways to make shapes out of your, out of the aerosol, etc. Particularly in our youth, I think, we have created a culture of vaping and the normalization of smoking. And I think you see that as well in mainstream TV, Netflix. I don't know if you've noticed, but I certainly have, there's a lot more actors smoking cigarettes on television and the movies these days. And there are a lot of celebrities, hey Leonardo DiCaprio vapes or Johnny Depp vapes, so it must be cool.

4 – Addiction

CB: Tobacco naturally has nicotine, so there's no getting around that in cigarettes. But as you've mentioned, nicotine has been added to vape solutions. Nicotine is one of the most addictive substances we know of, so why has it been allowed to be added in these solutions? It seems that just going to lead to nicotine addictions.

LP: But isn't that the point Cathy, because then you get a customer for life, if you can get them hooked on nicotine. Let's be clear, even before it became legal in 2018, nicotine was out there, readily available to vapers. I think nicotine like alcohol, is here to stay. And you're right, nicotine is the addictive part of the cigarette, and that's the thing makes you a repeat customer. In youth I think nicotine addiction has particular concerns. As I mentioned before, it really interrupts brain maturation and can lead to problems with things like concentration and memory, problem solving. And it may also increase the likelihood of youth using tobacco products by as much as 2-7x increased risk. In adults who smoke tobacco cigarettes, it's not the nicotine, as much as it is the other chemicals, the hydrocarbons that are of concern from a morbidity and mortality perspective. So in adults, there could potentially be a role for vapes as a harm reduction tool or

as a cessation aid. So there's a bit of a double-edged sword there, maybe good for some groups, definitely not good for others, again depending who's using them and how they're using them.

MC: So in your experience, have you seen some situations where people have switched over to vape products?

LP: I sure have, and I think my first experience with a vape product was a mental health client who's grandmother had called the clinic to say that he was in nicotine withdrawal because he had been vaping so much, and he ran out of money, couldn't buy his e-juice and now was very restless, and agitated, etc., which she said was the result of him not having any nicotine. I remember laughing to myself at the time thinking well that's not possible, because you can't get nicotine in vapes in Canada. And I think that's how naïve I was, so I asked her to bring him in and also to bring in his device and his e-juice and of course he did that. He had a bottle of homemade e-juice. It was a 30 mL bottle and written in pencil on the label was 3 mg. So, I asked him was that nicotine and he said yes, and this person had made it, again it was a home brew and had added the nicotine, and I asked him if it was 3 mg in the entire bottle or was it 3 mg/mL, and of course he had no idea. So, I did get in contact, actually texted the individual who made the product who advised me it was 3 mg/mL. So this was a 30 mL bottle, so that's 90 mg of nicotine and in talking to this young man, he pretty much vaped all day. So he went through a 30 mL bottle a day. So he was consuming 90 mg, well probably taking in 90 mg, we have no idea, how much nicotine actually entered his system, but certainly, he was going through a bottle that had 90 mg of nicotine per day. And so I think it was safe to say, that yes indeed, that young man was suffering nicotine withdrawal.

CB: And I think it is interesting with these e-cigarettes and vape products, people do vape all day long. You don't have to go outside like you have to do with tobacco cigarettes, the smell is not as bad as it is with the tobacco cigarettes. I have seen patients that certainly have a stronger nicotine addiction with the vape products than they did with the tobacco cigarettes, and the fact that they've been using a lot more nicotine throughout the day. Socially, you can sit around with a group of people inside and watch a hockey game and just vape away. You don't have to go outside to smoke your cigarette. So it is, it's interesting, that appeal.

MC: So Cathy, you said people can sit in a room, watch a game and be vaping all day. We talk about second hand smoke with tobacco cigarettes, how it gets into the furniture, fabric, clothes, the car. Is there something like that with the vape products?

LP: That's a great question and I don't think we know the answer because we don't really know what the long-term consequences are of people who are vaping, much less those consequence might be to the inhalation of vapour by individuals that are near them. But I think, we might anticipate that they would be similar, particularly if you were in a situation where you were among people who were vaping a lot, but time will tell I guess, we really don't know.

MC: So let's get into this a little bit more. There's the idea that's reflected in the advertisements, that vaping is safer than tobacco and people should switch. Does it help people quit smoking though?

LP: So I guess the first thing I'll say is, if you really want to be safe, then you shouldn't tobacco cigarettes nor should you vape. That's the only way to be completely safe. I think it's fair to say

that the ultimate goal is to stop both. However, vaping may help some smokers quit. And again, that's if certain vapes are used in certain kinds of ways. And what do I mean by that? Well, if you're a smoker, obviously you have a nicotine addiction. So you would have to use a vape in a way that controls that nicotine addiction and that means daily use of a product with nicotine and it would have to be sufficient nicotine so as to control your withdrawal symptoms and it will be really hard to dose that because we don't really know how much nicotine vapers are getting from their devices. And you would have to use it with purpose, or with intention to quit I think. Or if you were an individual who smokes regularly and you for some reason couldn't quit or decided that you couldn't quit, switching to a vape could be viewed as a form of harm reduction, it's less harmful. But I think the biggest concern about this are the non-smokers who are vaping, and in particular, youth. So we really want to prevent uptake in non-smokers. So it's not a 100% clear, I don't think, whether or not, e-cigarettes are effective cessation aids and right now I don't recommend them because they are not considered a cessation aid and the evidence, I don't think is there yet to say that. We have a lack of high-quality evidence. That may change in time.

But I will say this. Smoking rates have not changed since their arrival. So, if they were the silver bullet for smoking cessation, that we thought they were, that's not translating into, when you look at the surveys, the prevalence of smoking in Canada. So, I guess vapes, as smoking cessation aids, will only be effective to the extent that they get smokers to stop and right now I don't think the prevalence rates support that. And I will add to that, the other concerning stat, which is the concept of dual users. So again, don't forget that it looks like most current smokers who vape are just that, so they're dual users, so they're using both tobacco cigarettes and vaping.

MC: We have a number of nicotine replacement products, available in the pharmacy, how does this compare?

LP: Thinking about them in terms of efficacy, right now, nicotine replacement therapies are approved treatments, e-cigarettes have not demonstrated that yet. And when I think about it from a safety perspective, I really think of the nicotine replacement or NRT therapies from a safety perspective as being safer because that's all that's in them. So it's what could be thought of as clean nicotine. So it's just nicotine, without all these other things that we worry about in tobacco cigarettes but also in vaping devices. So right now, if I had to recommend one of those two products for somebody who wanted to make a change in their smoking habits, I would definitely be recommending NRT and not vaping, because I do have concerns, both about the efficacy of these agents as smoking cessation aids, but also about the long-term safety. And not to mention that the fact that you're still smoking. When you're vaping, you're still inhaling substances into your lungs and lungs are not meant for that. So I wonder or I worry about the degree for which that's still a trigger for people. And it would not be nice to see them get away with smoking or vaping or putting anything in their lungs that shouldn't be in there.

CB: And Leslie, I like the idea of the clean nicotine that's provided through the nicotine replacement products, like the patch and gum and the lozenge, as opposed to the "dirty" nicotine that we may be getting from the vape products. So when people do come to see me, as I know, for patients who also come to see you for smoking cessation, we both certainly agree, we don't typically recommend the e-cigarettes as a way to quit smoking, because the ultimate goal is to stop.

So let's switch gears a little bit and talk about those that come to us seeking treatment for nicotine addiction. What do we do for the people that are addicted to vaping? Do we offer the same sort of suggestions as we do for cigarettes?

LP: I think that's a great question Cathy and I guess it's something that's going to require further exploration. But certainly, it makes sense as it does with any addiction, a lot of the behavioural types of counselling would still apply and if they're vaping and using nicotine, I guess it would make sense to think about replacing that nicotine with a product such as NRT.

CB: I think I'm of the same mindset, it's still nicotine addiction and if we can provide the clean nicotine through your patch, your gum, or your lozenge, then I certainly agree that that's a safer alternative.

Conclusion

CB: Thank you so much for joining us today! We've learned so much about vaping and all the potential harms and potential benefits. We'll see what effect these regulations and public programs will have to curb vaping and reach people before they start, especially teenagers and young adults.

MC: Yes, thank you so much! If you had to boil it down to a few key messages for our listeners, what would they be?

LP: I there's a couple of things. First of all and most importantly, vaping is less harmful than smoking but it's not harmless. So we don't really know what the long-term health effects but we know certainly, there are some. The second important message is that non-smokers should not vape, especially youth and especially products with nicotine. We talked about concerns over a life-long addiction and the impact that nicotine has on brain development in those under the age of 25. I guess my third big message is that, e-cigarettes may actually help some smokers quit, when used in certain ways. However, they may also facilitate smoking in some people and I think this is born out of the predominant pattern of dual use that we see. And finally, they may also cause people who are non-smokers, to take up smoking, so there are studies suggesting an increased risk of using tobacco cigarettes if you vape.

MC: Thank you so much, and as pharmacists, we're always talking to people about smoking cessation and it's good to have this information about vaping as well.

LP: Well thank you, Mike and Cathy, it's been a pleasure to be here. I love talking about all things smoking cessation and vapes. If I can, I want to take a moment, because we're all pharmacists, to talk about a useful resource that you have in your community that you might not be using and that's your community pharmacist. So pharmacists are very accessible healthcare providers, they're find in pretty much every community. You can go see them without an appointment. They're trained to deliver smoking cessation and in fact they're authorized to prescribe all of the smoking cessation medications and we know that you're much more likely to be successful quitting if you use a quit medication along with counselling versus just trying to quit cold turkey. The School of Pharmacy Medication Therapy Services Clinic also has a specialized tobacco cessation clinic, that maybe something else that some individuals may want to avail of and you can check us out at our website at www.mtsclinic.ca. As well, don't forget about the smoker's

helpline, that's another useful resource for some people, so what matters most is that you never quit quitting.

CB: And that sounds perfect Leslie, we should never quit quitting and we're both very passionate about helping people quit smoking and really helping Canada reach its goal of a smoking prevalence rate of less than 5% by 2035. So we have a long way to go from our current prevalence rate of an average, nationally of 15%, with Newfoundland of course, being the highest among the provinces, sitting at around 20%. So we have a lot of room to go for sure and we'd be happy to help. Thanks for listening and as always, check out our website at www.mtsclinic.ca and send us a message at medthread@mun.ca or find us on Facebook via the School of Pharmacy as well.