

Let's talk e-cigarettes, April 2024

Transcript

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Podcast 31, April 2024, Jaqueline Avila

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Speaker 3: Jamie Hartmann-Boyce, JHB

Speaker 4: Jaqueline Avila

Musical intro

If asking your mate down the pub about vaping is what they probably say, no one agrees if it's safer or not, so you might as well smoke anyway. Now what your mate needs is a Cochrane review. All the facts have been checked at least twice. They find there's a lot that the experts agree on and might give you different advice.

Speaker 2

Hi, my name is Nicola and I'm a researcher based at the University of Oxford in the UK.

Speaker 3

And I'm Jamie and I'm a researcher based at the University of Massachusetts Amherst in the United States.

Speaker 2

We are both members of the Cochrane Tobacco Addiction Group. Welcome to this edition of Let's talk E cigarettes. This podcast is a companion to a research project being carried out at the University of Oxford, where every month we research the e-cigarette research literature to find new studies. We then use these studies to update our Cochrane Systematic review of E cigarettes for smoking cessation. This is called a living systematic review. In each episode, we start by going through the studies we've found that month and then go into more detail about a particular study or topic related to E cigarettes.

Speaker 3

This month we ran our searches on the 1st of April 2024, we found four references linked to studies we've already included in our Review, 2 new studies, one of which we covered in last month's podcast. In our interview with Dr Ian Pope, and one of which we'll cover in our interview today. And two new ongoing studies, Nicola will tell you about the first of those in a nutshell.

Speaker 2

So, the first one is called a comprehensive evaluation of tobacco flavoured versus non tobacco flavored e-cigarettes on smoking behaviour. So, this study is being led by Dr Theodore Wagner at Ohio State University Comprehensive Cancer Centre. They aim to enroll 1500 participants and randomise them to three study arms. So, the first study arm will receive e-cigarettes of their preferred flavour. The second will receive tobacco flavour e-cigarettes and the third will receive nicotine replacement therapy in the form of nicotine patches and lozenges. And this study is going to look at what happens in the long term. So, it will follow up at six months and look at quit

rates and it is due to complete in 2027 and from what we can tell so far, the study appears to be funded by the National Institute on Drug Abuse.

Speaker 3

Thanks, Nicola. The second new ongoing study this month is out of the University of Pennsylvania and it's investigating the role of flavor in substitutability of e-cigarettes for combustible cigarettes in people who they classify as persistent smokers. Again, it's a 3 armed trial. So they're aiming to randomize 210 participants to fruit, tobacco, or menthol flavored e-cigarettes. And that one is funded by the National Cancer Institute. So in terms of our new study, this month I had the pleasure of speaking to Assistant Professor Jaqueline Avila from the University of Massachusetts, Boston. About their new study, published in nicotine and tobacco research entitled using POD based e-cigarettes and nicotine pouches to reduce harm for adults with low socioeconomic status who smoke. This is a pilot randomized controlled trial and we're so grateful to have Professor Avila on to talk to us about it today. So you'll hear more in this month's deep dive.

So, if you could start by just introducing yourself and telling us a little bit about your background and how you got into e-cigarette research.

Speaker 4

Of course, my name is Jaqueline Avila. I'm an assistant professor in the Department of Gerontology at the University of Massachusetts, Boston, and I was trained as a population health researcher and epidemiologist, working mainly with survey data, and that's how what I set out to do when I joined my postdoc, and I was going to work with data from the Population Assessment of Tobacco and Health, where I mainly studied socioeconomic and age-related disparities in smoking cessations in this data set. However, I trained at the Center for Addiction and Disease Risk Exacerbation at the Brown School of Public Health, where their strength is on really on clinical trials related to substance use and my mentor, Dr Jas Ahluwalia, he had this internal pilot award to conduct an e-cigarette and nicotine pouch study among individuals with low SES. So I thought, OK, I want to work with this you know, secondary data analysis as I'm trained as an epidemiologist. But I also have this opportunity to learn how to do primary data collection and clinical trials research. So I he gave me the opportunity to work on this project, which is the pilot that we are going to talk about today and I said yes, I would love to. So, the project evolved in a way that I ended up being a co PI with him and was given the opportunity to co-lead this project. I learned so much and the more I learned about the barriers.

Speaker 3

Awesome.

Speaker 4

Of individuals who are unwilling or unable to quit smoking with traditional methods, the more I was interested in understanding how electronic cigarettes can be used as a harm reduction tool for this population. So, it started from a place that you wouldn't think, but you know it was really interesting to be able to get to this field of work.

Speaker 3

Yeah, what a good opportunity. We're glad you're in this field. So, tell us a little bit about your new study. What did you set out to look at?

Speaker 4

So, as I mentioned a little bit in my background, our study assessed the harm reduction potential of electronic cigarettes and oral nicotine pouches among individuals who have low socioeconomic status and smoke, but they're not willing to quit smoking through traditional FDA approved methods or they were unable to quit smoking. And we conducted this pilot trial to really look at the effect of eight weeks of receiving electronic cigarette or nicotine pouch and we were interested on changes in cigarettes used per day, cigarette dependence, and we also wanted to see complete cigarette substitution and we did it in a three-armed pilot trial with a 2 to 2 to 1 randomization. However, due to the pilot nature of our study, we were only able to measure within-group differences. Between baseline and week 8 in each of those arms, we did do a randomized trial because we wanted to see if we were able to retain and recruit individuals into these three arms. But in the end, we only compared individuals within groups.

Speaker 3

OK. And can you tell us a little bit more about why you chose these interventions to compare? I'm particularly interested in nicotine pouches, which some of our audience might not be super familiar with.

Speaker 4

Yes, of course. And I think that's one of the reasons why we want to study nicotine pouches. Of course, we started off thinking, OK, we know some evidence are ready from electronic cigarettes, but let's make sure that we do include an e-cigarette arm with the 4th generation pod based e-cigarette as one of our arms. We definitely wanted to include that one as most popular alternative nicotine delivery. But then we thought, OK, our nicotine pouches are a relatively new product. There's not much that we know out there about this product. In fact, we could not find any non-industry independent studies in nicotine pouch looking at the harm reduction potential of nicotine pouches. So, we thought this could be interesting to include as well. First, of course it's under studies. Second, it does have a similar nicotine delivery to cigarettes with less abuse liability potential. I would say. What else? Well, we also know from what we know so far, the nicotine pouches do have a similar profile to nicotine replacement therapy even though we don't know as much about this product yet. So, we thought, OK, this is smokeless product that is coming up in the market. These are just in case for the audience to know what these are. These are small disposable pouches that contain various amounts of pharmaceutical grade nicotine. We use the 4 milligram one and they're placed between the lip and the gum, and there are smokeless products that do not contain tobacco leaf. So, we thought it would be interesting to compare e-cigarette device where you have that hand to mouth and you have a more similar sensory experience to cigarettes, to a smokeless tobacco product to see if both could be used as alternative nicotine delivery systems as harm reduction approaches or if one would do better than the other.

Speaker 3

We were so excited to see that your study existed because we've done some reviews in this space as well, and there's a real lack of studies on nicotine pouches, particularly that aren't funded by the industry. So really pleased to see that. Did you

encounter any challenges like getting the study funded or getting it off the ground or was it pretty much smooth sailing?

Speaker 4

Well when I joined the project, the project was already funded. But this pilot award, I think the greatest challenge that we had was recruiting a population with low socioeconomic status, which we defined as household income less than 250% of the federal poverty level. We had to be creative with the recruitment site, but we also learn important lessons and the major challenge was on retaining this population. For example, we would call participants. That was our main point of contact and to schedule their visits to come in person. But between one month and the other because we followed individuals for 8 weeks, a lot of our participants had a prepaid plan, a phone plan so they wouldn't renew their phone plan. We would lose contact with them even if we sent correspondence.

Speaker

Oh.

Speaker 4

A lot of people in our study were in transitional housing or like a group home which we couldn't reach them through either correspondence or phone. So we did have a higher than expected loss to follow up. And the major reason was that people's phones just stopped working and we couldn't reach them. So, if we could do this again for sure, we would have included a phone or at least paid for people's plans during the period the study period. So I think that was the main challenge of our study.

Speaker 3

Yes. That's really interesting. So what did you find? What were your main findings? Did anything surprise you?

Speaker 4

Well, I think on the nice side is that we did see that both the electronic cigarette and the nicotine pouches have a harm reduction potential for individuals with low SES who are not willing or unable to quit smoking. And there was a significant reduction in both cigarettes per day and cigarette dependence between baseline and Week 8 in both arms. Both the electronic cigarette arm and the nicotine pouch arm. When we look at the magnitude of this difference, of course the e-cigarette arm is a little bit greater. So for example, at baseline, the mean CPD in the E CIG arm was 14.7 and decreased to 2.9. By Week 8 while. While in the OR nicotine pouch arm it changed from 15 to 8.3, so it wasn't such a greater decrease in cigarettes per day. But it was a significant decrease within group change from baseline to week 8 in terms of CO, the only change that we saw was in the E-cigarette arm, a significant decrease in CO in the E-cigarette arm. And in terms of surprising finding, although we could not assess any statistical significance or could not measure any statistical difference between these two groups like e-cigarette versus nicotine pouches because as I told you, because the nature of our study, we could only do within group comparison. Just looking at the observational differences, even the magnitude of change, we can see that for CPD for CO, even for full substitution e-cigarettes seem to be a better tool for harm reduction than for nicotine pouches, for example

only one individual completely switched from smoking cigarettes to full or nicotine pouch. OK, well, for the e-cigarette four people completely switch within eight weeks, and even on the oral nicotine pouch, three people completely stopped using the pouch and went back to exclusive cigarette used. They didn't like the pouch. They didn't like how the pouch felt in their mouth and. One thing was the behavior issue. First of all, everybody wanted the e-cigarette when they were randomized to pouches they were a little discouraged. First, they wanted to try the e-cigarette. Second, they didn't know what the nicotine pouch was. They were very reluctant to use an oral smokeless product and they also had some issues with getting used to the strength of the nicotine content in the first days, so those who decided that they didn't want to use the pouches anymore were those who quit, stopped using it in the first few days. Well, those who said OK, I'm going to get used to the nicotine amount of the pouch they did use and they did see benefit, but it was a more reluctant arm, I would say in terms of the participants in getting excited that they were in the arm nicotine pouch and even knowing what it was.

Speaker 3
Interesting.

Speaker 4
Because everybody thought it was a nicotine patch. So we had to explain to them. No, it's not nicotine patch. It's nicotine pouch and what it was in the beginning of the study. But I would say that was the most surprising finding is how for those who did use the pouch, they did see an improvement. But it was hard for everybody to adhere to use in the pouch as they easily adhere to the e-cigarette.

Speaker 3
Interesting and thinking about like the reasons that that might be, you said part of it might have been like adapting to the nicotine strength from the pouch and also concerns about using an oral product. Did you do any qualitative work or is this just things that participants told you?

Speaker 4
We did. We did a qualitative piece of the study. It's going to come out and we're still working on that paper. So from the qualitative studies, almost like a preview, one thing that people said in the oral nicotine pouch arm is that they were hesitant to use the product because they had perceived risks about smokeless nicotine products or like really they had perceptions about smokeless tobacco products. It was hard for them to understand that this is not a traditional smokeless tobacco product and the fact that there was something in their mouth, you know, bothered some of them. And then as I said, the strength of the nicotine in the first few days to just to adapt just because the use is very different, right, than smoking a cigarette and how the nicotine is released as well. So those two things were the main reasons why the oral nicotine pouch arm participants, most of the things they said were related to those two things.

Speaker 3
That's so interesting. I would think that there would be more safety concerns about e-cigarettes than oral nicotine pouches, but maybe because they're a newer product, it's. Different. That's fascinating.

Speaker 4

Yeah, I don't know if it's the name. People think, patch, but then it's an oral product and then maybe they were confused about what the product was itself. We did provide instructions on what the product was, of course, even before randomization, just to provide informed consent. We showed them what the product was. We explained what it was.

Speaker 3

Yeah. Yeah.

Speaker 4

But it seems like on the time to actually use and try you know that we did get those reactions from people.

Speaker 3

That's really interesting. What would you like to see next done following this study? Is there any research that you have planned? Do you think there's any gaping holes that need filling?

Speaker 4

Well, I think a natural follow up to this study is a fully powered RCT to actually test, right comparing e-cigarettes to raw nicotine pouches and something that I would love to see also is compared to nicotine replacement therapy as maybe another arm. Besides that besides the fully powered receipt that we ours was just a pilot. I do think that piece about the education about tobacco harm reduction. Especially with the oral nicotine pouch and what it is and what it isn't is also important, but not just for one nicotine pouch overall for all tobacco products, we did see a lot of misperceptions about what the products are and when nicotine, you know the harms of nicotine as well. And third thing that I would love to have also researchers think about moving forward, if truly electronic cigarettes or oral nicotine pouches can be a harm reduction tool, we need to consider also accessibility affordability because for these individuals with lower SES some things that they mentioned also in the qualitative study when we asked them if they would continue to use is like 'I don't know if I can afford you know keep using this product' even though nowadays it's not as prohibitive. The cost has come down, but there is also still a perception that these products cost a lot of money compared to cigarettes. So I would say those three things you know in the future studies, I think you would be nice to explore when we're working with the population of individuals with low socioeconomic status. I myself. I'm transitioning to a little bit of a different population.

Speaker 3

Interesting.

Speaker 4

I am very passionate about individuals with low socioeconomic status, but even before that I worked a lot with older adults at high risk for lung cancer and I work now in the Department of Gerontology. I work a lot with population aging and I'm working now on another pilot looking at how electronic cigarettes can be a harm reduction tool for older adults, a high risk for lung cancer who come in for lung cancer

screening. They first received FDA approved pharmacotherapy and counseling, and those who don't quit then we're going to try to see if they would be willing to switch to electronic cigarettes. So a different population.

Speaker 3
How interesting.

Speaker 4
But I think a lot of the lessons learned in this pilot will be true for this next one.

Speaker 3
Absolutely.

Speaker 4
And we'll, we'll definitely we'll definitely take those lessons that we learn.

Speaker 3
And my sense of it from US smoking data is that we're seeing smoking rates go down in younger populations but essentially plateau in older populations. So, it sounds like your target population, it's a very, very relevant one, yeah.

Speaker 4
Yes, the past decade, we haven't seen changes in the prevalence of smoking for older adults who smoke, so we definitely need to talk about this population. I love that a lot of people work with the youth population with the the adolescent population, but there's a few of us now working with the older adult population who smokes because we we do need to also, focus on this population, which really gets the that other end of the stick of like actually having the morbidity and the mortality really shows in the in that age group and they really started smoking when there was no evidence that smoking was harmful. And we almost basically left them, you know, behind so definitely working with this population is a passion of mine.

Speaker 2
Absolutely.

Speaker 3
Yeah. Yeah, yeah.

Speaker 4
And and let's see how what we learned from that study.

Speaker 3
Fantastic. Thank you so much. Is there anything else you'd like to add?

Speaker 4
No, just thank you for the opportunity and just thank you for reaching out about our study. I'm very excited to see it out there.

Speaker 3
Yes, we were very excited to see it. Too, thank you.

Speaker 4

You're welcome. Thank you.

Speaker 2

Well, it's really good to hear about that study, Jamie, especially with this quite novel product. As Doctor Avila said, we haven't seen many studies looking at nicotine pouches. So that's really interesting to us. I suppose it's worth mentioning for our purposes, this was quite a short term study. So it was an 8 week study. So for us, the outcome that we're gonna be interested in for our review is the carbon monoxide levels that were measured and I had a bit of a closer look at the paper and could see that. In the E-cigarette group, there was quite significant reduction in carbon monoxide over the eight weeks, so almost almost reduced by half in the nicotine pouches group stayed roughly the same, maybe reduced a little bit, but interestingly in the people who continued using combustible tobacco, there was actually a bit of an increase in the carbon monoxide level. So I just thought it was worth just chatting through what will actually go into our review from from that study. The other thing I thought was really interesting is the talk around the usability and familiarity of the product and how that might have impacted people's quit rates. And I think it can be quite easy to forget that. Obviously if people don't find the product usable and they're just not that keen on using it, then they're just not gonna use it and therefore they're not gonna quit, however effective the product might be if it were used effectively.

Speaker 3

Absolutely. And I just was happy to see a trial come out that wasn't funded by the tobacco or nicotine product industries and was looking at nicotine pouches cause we've seen them in the news here in the States a lot recently. A congresswoman has called for a Zin surrection as she calls it. Zin is the name of the most commonly used nicotine pouch here in the States at the minute and it's become a little bit of a topic of culture wars, so it's good to see some objective evidence come out here.

Speaker 2

Hmm. Yeah, really interesting, and hopefully we'll see some long-term studies emerging in the future.

Speaker 3

Yeah, yeah, that would be great, alright. Well, that's it from us this month. Thank you everyone for listening. Thank you to Professor Avila for coming on for the interview and checking with us again next month. For more talking about e-cigarettes. Thanks a lot.

Please subscribe on iTunes or Spotify and stay tuned for. Our next episode.

Musical outro

Vaping is safer than smoking may help you quit in the end. But remember to mention the findings we have can't tell us what will happen long term, even though we know vaping is safer than smoking, we may still find cause for concern, if you're thinking about switching to vaping do it. That's what the experts agree. Smoking so bad for you they all concur that vaping beats burning there's much to learn of effect long term yet to be seen.

Speaker 3

Thank you to Jonathan Livingstone-Banks for running searches to Ailsa Butler for producing this podcast and to all of you for tuning. In music is written with Jonny Berliner and I and performed by Johnny. Our living systematic review is supported by funding from Cancer Research UK. The views expressed in this podcast are those of Nicola and I and do not represent those of the funders.