

Transcript

Let's talk e-cigarettes

Podcast 37, November 2024, Dr Mahathi Vojjala, New York University

Speaker 1: Musical intro & outro

Speaker 2: Nicola Lindson, NL

Speaker 3: Jamie Hartmann-Boyce, JHB

Speaker 4: Mahathi Vojjala

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 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 November 2024, we found two papers linked to studies already included in our review and one new ongoing study which Nicola is going to tell you about in a nutshell.

Speaker 2

Our one ongoing study is being led by Dr Elias Klemperer at the University of Vermont. It's the four-arm randomised controlled trial funded by the National Institutes for Health in the US. The study will compare different combinations of normal and very low nicotine content, regular cigarettes and low and high nicotine contenting cigarettes. The study will only be 12 weeks long, so we will not use it to look at quit rates. However, the investigators also plan to look at exposure to toxins across the different conditions.

Speaker 3

So in this month's deep dive. I had the pleasure of speaking to Dr Mahathi Vajjala from New York University about a trial of hers which came out in Nicotine and Tobacco Research this summer. We didn't cover it this summer because it came out

well, Nicola and I were on holiday, so we were really happy to be able to speak to Mahathi this month. Her trials title is switching to e-cigarettes as harm reduction among individuals with chronic disease who currently smoke results of a pilot randomized controlled trial and this was funded by New York University. So first, can you tell us a little bit about your background and what got you into e-cigarette research?

Speaker 4

Sure. I first started working in the tobacco research space when I was a Masters student at NYU School of Global Public Health. So, I was working with Dr Cheryl Heaton. She was at that time with the Dean of the school of Public health and the former president and CEO of the Truth Foundation or the Legacy Foundation. And she honestly introduced me to this whole world of tobacco research. We started looking at tobacco and alcohol depictions in film trailers. And then I started working with, yeah, I started working with the National Youth Tobacco Survey and.

Speaker 3

Interesting.

Speaker 4

The truth Initiatives Young Adult Cohort Survey as well for my master's thesis subsequently, after my masters I started working with Dr David Abrams and Dr Ray Niaura, who are also very well known in this research space and they were the ones who introduced me to electronic cigarette research and that world as well and I set up getting being trained under them for my PhD at NYU and worked with them using the population assessment of tobacco and health (PATH) study looking at biomarkers so biomarkers of exposure biomarkers of harm and looking at risk differences between electronic cigarette users versus other tobacco product users. So that's kind of how I got started in the electronic cigarette space. I was personally always interested in looking at biomarkers and risks among various users. I used the PATH study for my secondary data analysis for my dissertation and I'm still interested in looking at biomarkers. I'm still interested in learning more about oxidative stress and inflammatory markers and systemic. Yeah, so systemic inflammation, oxidative stress. And looking at these differences between users, as we have more and more data available of long term users.

Speaker 3

Absolutely. I think that's going to remain like such a critical area of research for many years to come. And it's nice that there's so much new evidence going in.

Speaker 4

There while I was working on my PhD, I met Dr Scott Sherman and that's the he's a PI of this study that we're talking about today. So while I was working on my PhD, I also helped him with recruitment for the study I was working as a research coordinator with him on the study, and I felt like this was a good mix of both looking at secondary data analysis but also helping with primary data collection and helping with an RCT. So that's how I got started with this specific project.

Speaker 3

Also, so can you tell us a bit more about this specific study? What did you guys set out to look. At why did you choose the interventions you did?

Speaker 4

Yeah, this was the pilot randomized control trial that we launched in 2020 and we were interested in exploring the potential benefits of electronic cigarette use as a harm reduction strategy for individuals with chronic diseases. So in our study, we included patients with COPD. We included patients. With asthma, we included

patients with CAD, PAD, coronary artery disease and peripheral artery disease who were current smokers at the time of recruitment and they have not used at that time of recruitment, had not used NRT nicotine replacement therapy or electronic cigarettes in the past 14 days. And then we randomized them to two different arms, so we had the intervention arm where they received electronic cigarettes, plus behavioral counseling. And then we have the control arm where they received nicotine replacement therapy. It included a combination of patch and lozenge and gum and also counseling. Yeah. So our primary objective what we set out to find for this study was to really compare the health outcomes of participants who switched from combustible cigarettes to electronic cigarettes or to NRT compared to those who were continue to smoke traditional cigarettes. So at the end, we ended up enrolling about 121 patients.

Speaker 3

Awesome.

Speaker 4

we had 63 that were randomized into the E-cigarette arm, and the rest were in the NRT arm and over half of our sample. A majority of our patients had COPD. So I think it was about 60% of. Our sample.

Speaker 3

Wow, yeah.

Speaker 4

That had COPD and the rest had a combination of asthma, CAD, PAD, COPD or just asthma or cat pad.

Speaker 3

Awesome. And what was the rationale for focusing on individuals living with chronic disease?

Speaker 4

We found that people with chronic diseases like respiratory conditions like COPD, asthma or cardiovascular conditions, they're usually disproportionately affected by smoking related harms, right? So we know that these individuals are yours in smoking cessation and trying to quit smoking entirely. And we also know that existing standard of care treatment that we have available right now, which is nicotine, replacement therapy and counseling, medication and counseling, we know that smokers with chronic conditions are, they're usually not very eager to accept these standard of care treatments that are available, so we wanted to focus on providing them with a potentially harm reduced alternative to see if it can help improve their health outcomes.

Speaker 3

Awesome. And what did you guys find?

Speaker 4

What did we find? So as a pilot study we wanted to focus primarily on feasibility and acceptability of the intervention. Like I said, we had a very small sample size, a total sample size of 121 participants. So this was a pilot study where we were just trying to see if this intervention was feasible and acceptable.

Speaker

So those are.

Speaker 4

Main outcome that we wanted to study and what we found was that this intervention was feasible and and it was acceptable. We had high rates of recruitment, we had high rates of enrollment and retention as well as treatment satisfaction for the both

arms. The satisfaction scores varied. We had some missing data for both arms. But the electronic cigarette arms showed a higher survey completion rate. We saw greater participation in counseling for those in the electronic cigarette arm compared to those in the NRT arm. And this is particularly interesting because participants in our study were generally older and usually older individuals are more resistant to newer technology. So this is interesting because these participants were generally older and the results demonstrated feasibility and acceptability of this product of the electronic cigarette.

Speaker

Yeah.

Speaker 4

In these older individuals in in these groups of individuals with. Chronic diseases, who are typically resistant to these new technologies.

Speaker 3

Yeah.

Speaker 4

So that we thought was interesting and this was again corroborated by the high counseling sessions that were completed and participation satisfaction scores as well. This was one of the first longitudinal RCT's that examined switching from electronic cigarettes for harm reduction. Among those with these chronic conditions that we had studied. COPD asthma CAD pad. And we also looked at a reduction in cigarettes per day at our follow up time points at three months and six months. And what we saw was we saw a comparable reduction in cigarettes per day for both arms with no significant difference. And this was surprising for us because we weren't really powered to look at the effectiveness of these products. We weren't expecting to find these differences in outcomes. And and This is why we need a larger powered study with, you know, an increased sample size. So we weren't expecting to find differences in outcomes, but we actually did find these differences. In our outcomes, we found a negative difference actually, and we weren't powered to find a difference in cigarettes per day. We weren't powered to find a difference in abstinence, so we were surprised to find this. We were surprised to see this in our rest health we found a greater rate of continuous abstinence among electronic cigarette users compared to NRT in our follow up at six months. And yeah, and we also found that electronic cigarette use and I mentioned this earlier, but with behavioral counseling, it did lead to a reduction in average cigarettes per day.

Speaker 3

Interesting.

Speaker 4

At the follow up. So could that compared to the reductions in the NRT arm. So we weren't expecting to find these differences. So I think that was a little surprising for us and we weren't really powered to look at this as well. We mainly wanted to look at feasibility and acceptability of our intervention and we saw that we saw that people in both arms were satisfied with it.

Speaker 3

Yeah. Awesome. And did you measure or look at or talk to people about like their own symptoms in terms of COPD and things like that and whether using E cigarettes affected those?

Speaker 4

Yes, we had for each of the chronic conditions that we were studying. So for COPD for asthma cat pad, we had various symptoms, severity skills that we were looking at

from baseline and we followed them up overtime. So we were we were looking at COPD assessment tests for example. So we were looking at the score when we first screened them and then at baseline, three months and six months, those scales did ask participants about symptom severity did ask participants about how they were feeling in terms of each of those conditions.

Speaker 3

OK. And did you see any impact I suppose of the E cigarettes on that? I know that you probably weren't powered to look at that, but I'm curious if there was anything that surprised you about those findings.

Speaker 4

Yeah, we weren't again. Yeah, we weren't powered to. Look at those. But we did find that that COPD patients in the e-cigarette arm showed a significant reduction in cat 4 at three months.

Speaker 3

Wow, yeah, which is really meaningful to those patients too, I think. So that's that's really interesting to hear. Well, it sounds like as far as like pilot feasibility studies go, this one was a really promising one. Do you have plans to move forward with it? What would you most like to see done next? Following on this study in terms of research?

Speaker 4

I mean, I think we do need more extensive longitudinal studies, right with higher sample sizes with larger sample sizes. And we need to look at a more diverse sample as well.

Our sample could have been more diverse and so I think we we could benefit from having larger studies with larger sample sizes and more diverse group of participants a few years ago and I think you might remember this a few years ago, I think about 15 former presidents of SRNT co-authored an article to AJPH.

Speaker 2

Obscure science term definition. SRNT stands for the Society for Research on Nicotine and Tobacco. The AJPH stands for the American Journal of Public Health.

Speaker 4

Advocating for a more balanced perspective right for on e-cigarette research, emphasizing how harmful they are for non-smokers and for youth and adolescents, but also emphasizing a need for more research and the potential that these products could aid smoking cessation in adults who are smokers, and I think that's what we need to focus on, we need to focus on creating more studies where we are looking at how these products could improve health outcomes among adult smokers, chronic smokers.

Speaker 3

Yeah, absolutely. Oh, well, thank you so much. That was awesome. Is there anything else you want to add before we close out?

Speaker 4

I think one of the questions you had asked was if we had any challenges getting the study off the ground and?

Speaker 3

Yeah. Yeah. I would be curious to hear about.

Speaker 4

Yeah. So we did. We had some challenges getting the study off the ground. This study was put into the IRB right around COVID time.

Speaker 2

IRB stands for Institutional Review Board, which is where researchers in the US submit their plans for ethical approval.

Speaker 3

You said 2020. It was like Oh yeah.

Speaker 4

Yeah. And as you may remember, right before COVID, all we saw in the media was this hype around electronic cigarettes. We saw deaths from THC and vitamin E acetate. We heard about popcorn lung. We heard about EVALI. It was all the hype in the media before COVID. And the study was put in right after that. And so we had some challenges in terms of patient perception, in terms of even physician and regulatory perception and getting regulatory approval for the study. We had to explain risks and benefits for participants in a very, very honest and transparent way, which we should for any study of course, but we had to particularly discuss all of these media articles and all of the hype in the media. We had to kind of address those situations for approval, for regulatory approval and for when we were recruiting participants into the study. So you know, there was a lot of media speculation on how harmful these products were and therefore a lot of participants had heard about these products, so when we went when we set out to recruiting participants into the study, a majority of the participants didn't want to be randomized into the electronic cigarette arm. We actually had quite a few that said they didn't want to participate after going through the consent because they were afraid that they were going to be in the electronic cigarette arm and they would rather continue smoking cigarettes. Yeah, I think that perception really made it harder for us to get the study off the ground, but we were we were happy to recruit 121 at the end.

Speaker 3

Yeah.

Speaker 4

And enroll 121. And we saw these benefits at the end of the day exactly.

Speaker 3

Ohh, it's like well done. Amazing job getting people into the study, but also like.

Speaker 4

Thank you. Kudos to the team.

Speaker 3

Yeah. What a. It pains me to hear about people living with like COPD and smoking is being unlikely.

Speaker 4

Right. And COPD is something that we know is caused by smoking and smoking cessation is the best way to reduce the most effective way to reduce health outcomes related to COPD.

Speaker 3

Exactly.

Speaker 4

Right. So that is the best way for them to improve their health outcomes and it it does. It pains me as well. It was, it was hard to hear that that they'd rather continue smoking cigarettes.

Speaker 3

Absolutely.

Speaker 4

When we know that they're very harmful for their health.

Speaker 3

Yeah, yeah, that's rough. Well, hopefully research like that that you were doing and that many other people are doing is going to help move us forward or at least like shift the needle a little bit on some of this. Well, thank you so much. That was awesome. I really appreciate you coming on and talking to us about your study.

Speaker 4

Thank you. Yeah.

Speaker 2

Hey. It was really good to hear about that new study, Jamie and the thing that kind of stood out to me about it was the fact that the e-cigarette arm seemed to also be more engaged with just taking part in the trial and their treatment in general, which seemed really interesting because I think potentially, you know, the enhanced quit rates might not just be due to the product, it could be because people are really engaging more with the support and interestingly, were also more likely to fill in their surveys, and I wonder if that's just because this was a potentially a novel treatment for them that they hadn't tried before, whereas potentially I guess with nicotine replacement therapy, they may have tried it many times and and not been successful. So maybe there was kind of enhanced excitement about the fact they were trying something new.

Speaker 3

Really good point, Nicola. And one of the reasons I was excited to profile this study is that it was just really nice to see a study taking place in people living with chronic illnesses, many of which were smoking related and seeing how this intervention affected those symptoms, right? We know that this is a group who can benefit the most from quitting. And and yet are often overlooked and not supported in their quite attempts. So it was awesome to see results from that and and I hope they keep working in this space.

Well, that is it from us this month. Thank you so much to all of you for listening to Mahathi for coming on to be interviewed and we will catch up with you again soon. 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.

