

February 2022 Let's talk e-cigarettes

Musical intro: [00:00:00] If asking your mate down the pub about vaping. Here's 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.

Nicola Lindson: Hi, I'm Nicola Lindson and I'm Jamie Hartmann-Boyce. We're both researchers based at the University of Oxford, where we work with 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 search the e-cigarette research literature to find new studies.

We then use these studies to update our Cochrane [00:01:00] 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 have found that month and then go into more detail about a particular study or topic related to e-cigarettes.

Jamie Hartmann-Boyce:

This month we ran our searches on the 1st of February, we found two new ongoing studies and two papers linked to studies already included in our review. The new ongoing studies were both identified from the U S clinical trials register. And I will tell you a little bit more about them in a nutshell. So the first one is a study funded by the National Institute on drug abuse in the U S sponsored by Virginia Commonwealth university.

And it is looking at the effects of electronic nicotine delivery system, flavor regulations. On tobacco behavior toxicity and abuse liability among African-American menthol smokers. So what it's really aiming to do is inform the U S food and drug administration in making [00:02:00] predictions about the impact of putting in further flavor restrictions, essentially. So what the study authors say they're looking at is the impact of moving from the current regulatory market where menthol and tobacco flavored e-cigarette cartridges are available to one where only tobacco or unflavored cartridges are available. And here the authors are particularly interested in the impact this might have on any consequences, either good or bad among African-American menthol smokers.

The second study looks at the effects of combination zonisamide, which I hope I'm pronouncing correctly and bupropion on people who smoke switching to an electronic cigarette. So for anyone who doesn't know, bupropion is one of the kind of main smoking cessation drugs that can be prescribed to help people quit smoking. It's originally an antidepressant and zonisamide is an anti-seizure drug, which has also kind of in some smaller experimental studies been found to reduce nicotine withdrawal and cravings. But isn't commonly used for smoking cessation. [00:03:00] And in this trial, basically what the authors are setting out to do is give everyone who smokes an e-cigarette.

They are aiming to recruit 180 people and look at whether also receiving zonisamide and or bupropion helps people quit smoking more effectively when using an e-cigarette. This one is run by the Rose Research Center and funded by a Foundation for a Smoke-Free World, which is receiving tobacco industry funding.

Now, because we didn't find any new completed studies this month, we wanted to spotlight a study we found in our December search. Nicola chatted to professor Billie Bonevski about her Quit ENDS trial, which you can, and I hope we'll hear all about in this month's deep dive.

Nicola Lindson: Hi, Billie. It's really lovely to meet you. And I was just wondering if you'd be able to tell us a little bit about yourself and what you brought you to studying e-cigarettes.

Billie Bonevski: Yes. Yes. Thanks Nicola. I'm a health behavior scientist by training and a professor of public health [00:04:00] at Flinders university in South Australia. I'm interested in all aspects of human behavior that promotes health and wellbeing. And I started developing an interest in e-cigarettes a number of years ago as a potential solution or part of a solution for high smoking rates in certain population subgroups. My team lead a substantial body of work, studying ways that we can help people stop smoking. And almost all of that work is with population groups with really high smoking rates and people who genuinely find it difficult to stop smoking.

And we have been trialing a number of evidence-based strategies that seem to work for the general population like behavioral counseling and nicotine replacement therapy. But we just kept finding [00:05:00] really no quit rates amongst these subgroups or priority populations, as we refer to them here. Then some years ago, a well conducted trials research was emerging from our New Zealand colleagues suggesting that e-cigarettes are at least as effective as other forms of quit support, but also had the benefit of being quite attractive to users.

So people who might've given up on their quit attempt with more traditional forms of nicotine replacement therapy actually stuck with e-cigarettes and the trials didn't report any significant safety concerns. So from that, we thought. Why not test e-cigarettes with these smokers who find it hard to give up nicotine completely e-cigarettes might provide a mechanism to use an alternative form of nicotine that is not as [00:06:00] harmful as commercial cigarettes.

Nicola Lindson: Amazing. Yeah. Sounds like a great idea. So. Interestingly you are our first podcast guest based in Australia. And it would be amazing if you could just tell us a little bit more about the regulation of e-cigarettes and availability of them, where you are.

Billie Bonevski: Yes. I feel so honoured to be your first Australian based guest.

Um, in general, I think it's fair to say that access to nicotine containing cigarettes is fairly restricted in Australia. It is illegal to sell or buy nicotine for use in e-cigarettes unless they are being supplied or access through a prescription from a healthcare provider for a quit attempt and this prescription model was introduced fairly recently in Australia.

It was October last year, [00:07:00] 2020. In terms of e-cigarette use in most states and territories. It is also illegal to use e-cigarettes in places where smoking is illegal. So no smoking areas are also no e-cigarette areas and promotion and display of e-cigarettes is also prohibited or restricted in most states, it's a little bit complex there are some differences from state to state around the country, but generally speaking, it's fairly restrictive.

Nicola Lindson: So yeah, it's quite different to what we have here in the UK. And it's useful to know that kind of context as well. Brilliant.

Billie Bonevski: Yes, that's right.

Nicola Lindson: Um, so the study that we're really interested in hearing about is your Quit ENDS study. And I was wondering if you'd mind telling us a little bit about that and in particular, the population that [00:08:00] you chose to investigate in the study

Billie Bonevski: the quid ENDS project is really investigating the effectiveness of e-cigarettes for smoking cessation. So people who are in treatment for other substance use or substance use disorders, and in particular opiate use disorder. In Australia probably much like the UK I think people who use substances have

much higher smoking rates than the general population. It's about 85% of people in drug and alcohol treatment, smoke tobacco within that subgroup of people who use other substances, people who are in treatment for opiate use tend to have the highest smoking rates.

So say about 95% compared to say about 70% of people who are in treatment for, for drinking alcohol [00:09:00] at harmful levels. And the quit rates, are about zero. And there is no evidence-based smoking cessation strategy that has demonstrated a long-term success in helping people quit amongst this group. And the other important consideration for us was that particularly with people in opiate agonist treatment like for example, people in methadone maintenance programs or substitution therapy is that they are open and understanding of harm reduction approaches that involves substituting a very harmful form of a drug with a less harmful form. And in a way e-cigarettes particularly when used longer term could be viewed [00:10:00] in this way, while probably not entirely harmless, they are likely to be a lot less harmful than continued commercial cigarette smoking.

So we thought it was worthwhile testing and we are starting by assessing acceptability of e-cigarettes and pilot testing e-cigarettes with a small number of people in, in treatment. And these are our Quit ENDS projects.

Nicola Lindson: Amazing. Yeah. It's really interesting what you say about the people you're studying, being open to that harm reduction approach.

And I haven't quite thought about it like that, but that's yeah. Interesting way to think about it. So with your study I'm particularly interested in the way that your study is comparing two different approaches to using an e-cigarette to quit smoking. So, you are looking at people using them to quit abruptly and also that in the other group to reduce smoking [00:11:00] before quitting.

And I have to say, I have a particular interest in that because it kind of aligns with my own research interests. It'd be great to hear a bit more about that element.

Billie Bonevski: Yes. Yes. And this was a genuine question that we didn't have an answer to when we were initially thinking about testing e-cigarettes for smoking cessation and particularly with these population groups was: what is best practice for how people should use e-cigarettes to optimize their chances of quitting? And what advice, what, what protocol do we put our study participants on. And so for a long time, the recommendation generally for smoking cessation has been to set a quit date, not too far in the future, and to stop all smoking on

that date, often referred to as abrupt cessation, but our smoking cessation research with many people in [00:12:00] priority groups found that they just really struggle with that approach with, with the abrupt nature of it and that for them a gradual intentional reduction method was much more feasible and something they're more likely to stick with. And there is evidence that gradual or abrupt may not be too different, may not affect cessation success rates too differently. So we thought it would be good to test it out in a pilot to then aid our design for a larger trial. And the way that we did that was we conducted a randomized trial where all participants received the nicotine e-cigarette devices, but participants were allocated to either being [00:13:00] advised to follow an abrupt cessation protocol or a gradual reduction protocol.

And in the abrupt cessation group participants were told that they would receive training on how to use their e-cigarette and that the training day would be their quit day and that they had to stop smoking on that day. And that day was usually scheduled between a week or two later. In the gradual reduction group participants were told that their quit date would be in four weeks time and they were instructed to reduce the number of cigarettes smoked by 25% in week one, 50% in week two, 75% in week three, and then entirely by week four. So it was a longer [00:14:00] stepped reduction in the number of cigarettes that they were using. And we also ask participants what their preferred quitting method was. So before putting them into one of these groups, we asked them what generally would their preference be.

Nicola Lindson: Really interesting? Have you had a sense of what their preference would be. Did you find more people were interested in the reduction?

Billie Bonevski: Oh yes. Yes. Yes. That's that's right. And, and we have had a chance to look at these results now they're not yet published, but hopefully we'll get them into a journal soon. And we had about 60 participants and, and we followed them up for 12 weeks and we found that adherence to the use of the e-cigarettes was, was high across the board. It was, you know, up almost a hundred percent. It was about 96, 97% [00:15:00] of participants who use the e-cigarettes for the entire study period. There was a preference, as you say, for the gradual reduction method with, with 60% of participants allocated to that group.

Getting their preference as well. Whereas only 33% of the people who are allocated to the abrupt cessation group said that that was their preferred group. However, at the end of the 12 weeks, when we checked on their smoking and, and any quit attempts and their quitting, there were no differences in smoking

cessation between the groups suggesting that smokers should be encouraged to use whatever method they prefer and are more likely to adhere to.

Nicola Lindson: That's really interesting. And it is kind of what we're seeing in the reduction versus abrupt field in general. Isn't it. So it's really interesting that your kind of study also follows that trend. That that's what we're seeing in [00:16:00] this study is really interesting.

Yeah. And so you've already got a paper published in the Journal of Addictive Behaviors on the study and that's reporting the findings of some interviews that you did with your participants. Are you able to give us any idea of how the people who took part in the study felt about it and using the e-cigarettes?

Billie Bonevski: Yes. Yes. We wanted to ask participants about e-cigarettes because particularly here in Australia, they're still relatively uncommon. They are becoming more common. But at the time that we did the study, we didn't, we didn't know whether the experience of using e-cigarettes was acceptable to people who smoke to warrant testing as a smoking cessation strategy, because if it's not acceptable and likely to be picked up, then, you know, it's unlikely to be effective.

And what we found was that many participants expressed benefits of having something, a [00:17:00] smoking cessation aid that addressed both their nicotine cravings. But also that hand to mouth action, the behavioral aspects of smoking that they could substitute as well. And although many participants reported that the e-cigarettes that we gave them were easy to use some found that maintaining the device to be a little bit challenging. So we had given them tank devices that require liquid nicotine refilling, as well as remembering to charge your device. So, you know, it wasn't too bad, but some of them thought that that was a little bit of work and some participants did describe the Australia's regulations and limiting their use of e-cigarettes as problematic, and that that might reduce their desire [00:18:00] to seek them out and, and use them as a cessation aid, many participants attempting to quit tobacco and cannabis simultaneously stated that e-cigarettes alone would be insufficient to help them quit. So there were subgroups within the group that we were looking at that might need additional support.

Nicola Lindson: That's really interesting. So, as you've already mentioned, the Quit ENDS trial is obviously a pilot study. Um, so be really interesting to know what you think your next steps are going to be when the trial is complete and whether you do have a follow-up trial planned.

Billie Bonevski: Oh yes. And we've actually started the follow-up trial Nicola and it's, it's called the Harmony trial. Amazing. And so it's got a slightly name because we did some consumer testing and, uh, came up with this [00:19:00] acronym that came up with the word harmony that was very acceptable to our participants. And this is now a large multi-site fully powered randomized control trial of the effectiveness of e-cigarettes for people in opiate agonist treatment programs versus combination nicotine replacement therapy as the, as the comparison group. And yeah, so this, this came about fairly recently and, because of our work we were approached by the chief health officer of New South Wales to conduct this trials. Because smoking in people with opiate use disorder has no answers has no solutions and is a significant health problem here and so the chief health officer wanted to trial alternative forms of nicotine and we were [00:20:00] successful in attracting a large competitive grant. So recruitment into the harmony trial has commenced recently, the trials registered now. Recruitment has commenced late last year, we had a few false starts last year to, to Covid and we had multiple lockdowns in Australia. I don't know whether you heard about us, but it was, you know, very tricky, but now we're underway and yes, our pilot study informed our decision to recommend abrupt or gradual reduction based on participant preferences.

Nicola Lindson: Amazing. That's really great. It's really good to see how the pilot worker has kind of influenced the main trial and brilliant that you've managed to get the funding to do that amazing and we'll be looking at for that one [00:21:00] as well. Thank you so. Now, I guess thinking a bit more broadly than that. If you had a magic wand and you could choose the next steps for e-cigarette research carried out by anyone in the field. So it doesn't have to be something you're particularly interested in, I suppose.

What do you think those steps should be?

Billie Bonevski: Huh? Well, I'm going to talk about something I'm interested in and that is working with population groups with really high smoking rates. I would like to see more work along the lines of Quit ENDS and Harmony with these groups. And I think in the UK there's investigators like Dr Sharon Cox and Lynne Dawkins who are doing similar, great work with, um, people who need, uh, assistance due to homelessness. And some countries like New Zealand down here have included e-cigarettes in their national smoke-free action [00:22:00] plans. Uh, so, so there may be a role for e-cigarettes in reducing smoking in these population groups with really high smoking, rates.

And we need to test this and we need to grow an evidence base and, and we need to do really good high quality research in that area. The other, the other

area that I think is important from an Australian perspective, I'm sure worldwide as well, but of great concern here in Australia is a youth vaping and concerns that countries where e-cigarettes are much more available and accessible as consumer group goods, young people are taking up vaping in large numbers. And what the consequences of that may be is quite a big issue in Australia and is part of the reason why we have such restrictive and prohibitive legislation.
[00:23:00]

There's mixed evidence regarding gateway theories to cigarette smoking and the potential for nicotine dependence to develop amongst youth, which is, which is undesired. And until firm answers provided about youth vaping, does it lead to nicotine dependence? Does it do harm to kids? Does it lead to cigarette smoking and how can we ensure these undesired outcomes don't develop that we minimize risk and maximize any potential benefits. Until we have those answers then it's really difficult for countries like Australia to, to move forward with, with e-cigarette policy.

Nicola Lindson: Thank you very much. That's a really interesting answer. And I guess finally, is there anything that you would have wanted to cover that we haven't covered yet.

Billie Bonevski: No, [00:24:00] no, no Nicola there, there isn't. I think I've, I think I've probably said too much and you'll probably end up cutting some, some of it out no.

Nicola Lindson: No, it's wonderful. Thank you so much. It's been really lovely to meet you and brilliant to hear about your research. So thank you so much.

Billie Bonevski: Oh, you too. Thank you very much.

Jamie Hartmann-Boyce: That was really interesting, Nicola. I have to say I loved having you interview someone cause then I was able to listen to it a fresh, not worrying about how I sounded on that side of the line. So thank you for doing that and obviously massive, thanks to professor Bonevski as well. I think it was really exciting to have our first Australian guest on and hear a little bit about the regulatory environment there.

Nicola Lindson: It's nice to hear about how these things differ across the world. And I think what that is going to allow us to do down the line is look at how that's affected people's behavior between different countries, which will be really interesting to find out about.

Jamie Hartmann-Boyce: Absolutely. And [00:25:00] one thing that she ended on was talking about really the need for more research to inform e-cigarette policy when it comes to youth use.

And I just wanted to touch upon that briefly. Maybe that's something we'll do a whole podcast episode on at some point, but it's something we're looking into in our team as well, because. E-cigarettes are obviously not a simple intervention. It's very complex. And their impact on young people is likely to be varied depending on the regulatory environment and also the history of that young person.

And obviously there are a lot of concerns that e-cigarettes if they're made readily available, might lead young people to take up use of e-cigarettes, who wouldn't have otherwise smoked, or may even be a gateway to smoking. And there's a bunch of different ways to interpret the data on that. And another way I suppose, that could be possible, but which we don't talk about as much is that it could be that kids who are going to smoke normal cigarettes use e-cigarettes and as they're reduced harm product, that actually might be a benefit. So we just, I think there's a lot of unanswered questions [00:26:00] there and really difficult research to unpack. And maybe we could cover it in a future episode in a bit more.

Nicola Lindson: Yeah, I definitely agree, Jamie. I think it's something we've not had the chance to cover yet because it's not directly specific to our review, but it definitely contextually is a really important factor to consider when we're thinking about how these products might be used because them being used for smoking cessation doesn't happen in a vacuum and there are obviously other impacts that it will have on other populations.

Jamie Hartmann-Boyce: Absolutely. Well, I think that is it from us this month. Thanks so much for listening. Please subscribe on iTunes or Spotify and stay tuned for our next episode.

Musical extract: 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 of switching to vaping do it, that's what the experts agree, smoking's so bad for you they all concur that vaping beats burning there's much to learn of effects long term yet to be seen.[00:27:00]

Jamie Hartmann-Boyce: thank you to Jonathan Livingston Banks for running searches to Ailsa Butler for producing this podcast. And to all of you for tuning

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