

Ruth Adewuya, MD:

Hello, you're listening to Stanford Medcast, Stanford CME's podcast where we bring you insights from the world's leading physicians and scientists. If you're new here, consider subscribing to listen to more free episodes coming your way. I am your host, Dr. Ruth Adewuya. This episode is part of the COVID-19 mini series addressing up-to-date insights in COVID-19. In today's conversation, I am joined by Dr. Bonnie Halpern-Felsher. Dr. Halpern-Felsher is a professor of pediatrics and a developmental psychologist. Her research has been instrumental in changing how providers discuss sexual risk with adolescents and has influenced national policies regulating adolescent and young adult tobacco use. Dr. Halpern-Felsher thank you so much for chatting with me today.

Bonnie Halpern-Felsher, PhD:

Thank you. I'm excited to be here.

Ruth Adewuya, MD:

The focus of our conversation today is around COVID-19 and vaping and I wanted to start our conversation by asking you some questions about an article in which you were a senior author that was published in the Journal of Adolescent Health. And in that article, you examine the associations between youth vaping and COVID. Can you provide some insight into that study and what was the method that was used to get that data?

Bonnie Halpern-Felsher, PhD:

Yeah, absolutely. So, the study actually was a national study of about 4,500 adolescents and young adults between the ages of 13 and 24 and they were purposely recruited through an online panel called Qualtrics. Like we use the survey Qualtrics they also have a panel of participants from which you can recruit. And so, we recruited a sample half of whom were self-reported to have ever used a vaping device and half of whom reported never having ever used a vaping device. That was the screening that we had to recruit them. So we wanted to sample half had and half had not ever reported using an e-cigarette.

Bonnie Halpern-Felsher, PhD:

We also wanted to recruit about a third who were between 13 and 17, about a third who were between 18 and 20, and a third who were between 21 and 24. The reason for that sampling is the original idea of the study was not just to look at COVID, we actually started designing this project before COVID was even a pandemic, it was to really get an update on adolescents and young adults use of vaping devices, flavors, how they're accessing those products and what's influencing them to use them. But it was a perfect opportunity since we were already in the field to add the questions around COVID symptoms and diagnosis and testing and diagnosis.

Ruth Adewuya, MD:

What were some conclusions from the study that you conducted?

Bonnie Halpern-Felsher, PhD:

So, we found that if you're an adolescent or a young adult and you have ever used an e-cigarette in your life that you're five times more likely to be diagnosed with COVID-19. If you were a dual user, and that's

defined as having used an e-cigarette and/or a cigarette in the past 30 days, that you're seven times more likely to be diagnosed.

Ruth Adewuya, MD:

Wow, those numbers are staggering, right?

Bonnie Halpern-Felsher, PhD:

Yes. Those numbers are extremely high. We want to make it clear and we've had people questioning us about the meaning of it, especially of ever use of an e-cigarette but current use past 30 day use of both e-cigarettes and cigarettes being important. I think there are a few factors going on here. First of all, with adolescents and young adults today, in the last few years, they start with electronic cigarettes. Tobacco use is not started through a cigarette anymore with the younger people.

Bonnie Halpern-Felsher, PhD:

So, they start with an e-cigarette and we know that a lot of teens who start with an e-cigarette are then more likely to go on and use a cigarette. If you've ever used an e-cigarette you are five times more likely to be diagnosed. But then a lot of those teens and young adults transition from ever using an e-cigarette to having used both in the last 30 days. And we don't ask the number of times. In the study we do ask but in this paper we ask presence or absence of use of these products. And again, the pattern is most teens start with an e-cigarette and then try other tobacco products. And so, we're seeing that in the past 30 days.

Bonnie Halpern-Felsher, PhD:

So why do we think this is going on? Part of it may be lung damage. And when I talked to my adolescent medicine physician friends they're worried about acute use as well as long-term use, but particularly long-term use. If you've been using tobacco particularly inhaled and you've been using it for a long time then you might have lung injury, lung disease, and that you're more likely to be susceptible to other things that you put into your lung. But we also know that teens share their vaping products and even though most of the teens in our study we're sheltering in place we don't know if they're in their backyard with a friend over. And even if they're a few feet apart maybe they're sharing their vaping device. We know most teens share and when they're sharing they're more likely to increase their exposure to the virus.

Bonnie Halpern-Felsher, PhD:

We also know that when you are vaping or smoking you can touch a doorknob and then you get the virus on there, touch your mouth and expose yourself that way. Also, you're taking your mask off. Early on we knew that the virus was transmitted by spit or droplets but more recently said that the virus is also transmitted through aerosol. And e-cigarette creates an aerosol. So we're not necessarily saying that e-cigarettes or cigarettes cause coronavirus, of course not, or even that it's just through lung damage. We think it may also be behavioral, that you're just increasing your exposure, but whatever it is you're right, very, very significant increased odds if you are a vaper or a smoker.

Ruth Adewuya, MD:

You mentioned that a lot of teens and adolescents are starting with e-cigarette use, what is the national data on the use of e-cigarettes by teenagers?

Bonnie Halpern-Felsher, PhD:

So it depends on which data set you look at and when but the data at the national level we're certainly showing that e-cigarette use started increasing pretty dramatically around 2017. And around 2017, 2018, we saw a 78% increase in the number of adolescents in high school who were reporting past 30 day use and a 48% increase in past 30 day use amongst middle-school students. That translates to the 2017, 2018 data we're seeing about 27%. It went up after that. The more recent data was showing a little above 30% of youth. But then a different data set suggests that in the last few months in 2020 from January to March we saw it decrease to about one in five teens, still high but it's a decrease. We don't know if that decrease is because of sheltering, if it's because of coronavirus. There was also what we call EVALI The CDC talks about that, the e-cigarette and vaping associated lung illness, that whatever it is it may be that thankfully teens and young adults are getting the message that these products can hurt your lungs.

Ruth Adewuya, MD:

Last year you wrote an op ed piece calling this a youth vaping crisis. In fact, you called it a JUUL'ing epidemic which personally was the first time I heard that terminology. Can you expand on what you mean by that?

Bonnie Halpern-Felsher, PhD:

Yeah, absolutely. Yeah, that was an [inaudible 00:08:13] that I wrote in the LA times. And what I was really trying to show is that the numbers of youth who were using e-cigarettes has been going up since around 2014 but at a slow pace. And we didn't see a lot of uptick in use of these earlier e-cigarette products. JUUL came on the market in 2015 and in 2017 when they became particularly popular we saw tremendous increases I mentioned of that 78% increase in use amongst the high school students and 48% amongst middle school students.

Bonnie Halpern-Felsher, PhD:

And if you look at the market share of e-cigarettes. JUUL, starting in March of 2017, had about 70 to 80% of the e-cigarette market share. And even though their market share has gone down they still have, I haven't seen the latest numbers but somewhere in the 60 to 70 plus percent. That means that of all the e-cigarettes that are sold in the United States the majority of e-cigarettes purchased are JUUL. With JUUL owning 60, 70, 80% of the market share of e-cigarettes that means connecting the dots here that there's been an increase in youth use that youth are most likely using a JUUL. So that's why I call it a JUUL'ing epidemic. It really is JUUL. When you ask teens, older data and we even have some newer data suggesting that the majority of the products that they're using overall have been a JUUL.

Bonnie Halpern-Felsher, PhD:

Now more recently, there's been some data at the national level suggesting that it's Puff Bar so a newer e-cigarette product that is on the market and maybe used more. But overall the product that is used the most before starting in 2016, 2017 and more recently would be the JUUL and that's why we call it a JUUL'ing epidemic.

Ruth Adewuya, MD:

Is it fair to say that there seems to be maybe a mixed message that might be impacting this situation? Because as an example, the CDC listed smokers to be at increased risk for a severe version of COVID-19

but when you look at a lot of that data it indicates smokers, it doesn't talk about vaping. It says smoking brings you at risk, not vaping. Are you seeing that in the data that it's also the language that we use that could be maybe informing teenagers that vaping doesn't count?

Bonnie Halpern-Felsher, PhD:

I think that's a fabulous question and yes the shorter answer is the complicated answer but I'll make it short which is we don't have a lot of data right now on vaping and health risks, it's a newer product. E-cigarettes came on the market in the U.S. in 2007. We didn't really start paying much attention to it until 2013, 2014 and then of course more recently, two, three years with the vaping epidemic. So, most of the data we have on short and long-term consequences are on combustible cigarette smoking including with coronavirus. We don't have a lot of vaping data. I mean, we have the first epidemiological study out there and there were a few other suggesting that vaping may play some role but we don't really know what. And also when you're thinking about the CDC or other federal agencies they're often talking about the lung complications and they often are also looking at people who were diagnosed or were already in the hospital.

Bonnie Halpern-Felsher, PhD:

So if you're looking at severe lung disease or severe illness from coronavirus and they're in the hospital and then you ask, "Were you ever a smoker or a vaper," most people are probably going to be smokers. And so, the relationship between severe lung disease and some product yes it's going to probably be more likely to be cigarette smoking. Then the complication is, is that we're again talking about not just the lung component but the exposure piece and I think that's where we need more data. We need more studies absolutely. But I think your other part of the terminology is also important.

Bonnie Halpern-Felsher, PhD:

When we talk to a teen, and I was on a call not long ago with some federal health agencies and some other medical health agencies, and saying, "We can't call it smoking, it's vaping. There's a difference." Actually, I say e-cigarettes but there's a difference between e-cigarettes and conventional cigarettes and we need to use the right language when we're communicating with anybody and particularly teens.

Bonnie Halpern-Felsher, PhD:

And I think there's also been a lot of confusion because there are a lot of people who focus on adult cigarette smoking who think about harm reduction and say, "Well, if you're an adult at least using an e-cigarette may be less harmful than a cigarette. So don't take our e-cigarettes away. It may be a way to help adults quit smoking." Well first of all, the trials aren't necessarily showing that adults quit through e-cigarettes but even if they did teens were not starting tobacco through cigarettes, they're starting it through e-cigarettes. And so, to have a product that has a huge amount of nicotine, that's very flavored, that you can hide, those are the products that are attracting young people. And that's where I get concerned is that we are attracting more youth to start using these products than we are necessarily helping adults quit.

Ruth Adewuya, MD:

When providers are talking to their adolescent patients or even to parents of adolescents how should they be discussing vaping? What would be your recommendations for clinicians?

Bonnie Halpern-Felsher, PhD:

Well first of all, talk about it. A lot of physicians don't even bring up the question of are you using electronic cigarettes? Are you vaping? Now to their defense, they have 10 minutes and I get it. But, a lot of times we hear across the country that physicians or any healthcare provider are asking, "Do you smoke?" And that gets your other question. Teens are going to say no because they do not consider vaping to be smoking. Or a provider may say, "Are you using an e-cigarette?" And even though I say that as a public health person, really they're not e-cigarettes to a teen, they're vaping or JUUL'ing or a JUUL pen or a vape pen.

Bonnie Halpern-Felsher, PhD:

So, one is healthcare providers need to ask the question. Second is they need to ask to accurately incorrectly using the right terms that teens use so they're getting the right information. They also have to understand the different devices and we need to educate healthcare providers about these products, how much nicotine is in there, what the flavors do, that the flavors themselves can be harmful. Because then they're more equipped to be able to talk to a teenager.

Bonnie Halpern-Felsher, PhD:

The other is, is we don't know how to treat teens who are addicted and we have a lot of addicted teens right now. We have right now no FDA approved nicotine replacement therapy for anybody under the age of 18. Now my adolescent medicine physician friends will still prescribe it and they seem to be having good success but healthcare providers need to know that you actually can prescribe it to somebody who is under 18. They can't get it themselves but you can prescribe it. You have to check within the laws of your state but you can do it. And that we need to consider and we need more studies to really help us understand what dosage to give a teen, how to keep track, how to monitor. Do they need supplements like nicotine lozenges, nicotine gum? What about the role of motivational interviewing or cognitive therapy that probably just giving the meditation is not enough? We also need therapy. Therapy itself may not be enough, we may need the medication. So it's hard when we talk to health care providers because we don't have the magic bullet for them.

Ruth Adewuya, MD:

We have our work cut out for us in terms of stopping this epidemic and just caring for the safety of our teens and our adolescents. So just to recap what you said in terms of what health care providers can do is one talk about it, use the right language to talk about it. Educate yourself and what is out there in the market so that then you can have better conversations with your patients. If you have the opportunity to do research on it, be part of the group that studies it and gets more data on it as well and just continuing to keep the conversation going.

Ruth Adewuya, MD:

Thank you so much for sharing your insights on this topic. I know that there is a lot more that we need to learn about vaping in general and still trying to understand the links and associations between COVID and vaping. But I think this information will be tremendously helpful for those who are trying to understand this topic. So thank you so much for your time.

Bonnie Halpern-Felsher, PhD:

Thank you very much.

Ruth Adewuya, MD:

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