2021 AMA Research Challenge finalist: Naga Ganti, MBBS
MAKING THE ROUNDS

AMA
Lung disease among e-cigarette users, 2021 AMA Research Challenge finalist

Dec 3, 2021

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In this episode of Making the Rounds, resident candidate, IMG and AMA Research Challenge finalist Naga Ganti, MBBS, discusses her research on the prevalence of lung disease among e-cigarettes users, especially given that more than 2 million U.S. youth use e-cigarettes.

Learn more about the AMA Research Challenge.

Speakers

- Naga Ganti, MBBS, residency candidate and international medical graduate
- Brendan Murphy, senior news writer, American Medical Association

Host

- Victoria Danan, 2020 co-winner of the AMA Research Challenge

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Transcript

Danan: The AMA Research Challenge is the largest national, multi-specialty research event for medical students and residents. Hello, I’m Victoria Danan, co-winner of the 2020 AMA Research Challenge with Shamsh Shaikh. Today’s interview features one of this year’s five finalists for the 2021 AMA Research Challenge, interviewed by AMA Senior News Writer Brendan Murphy.

Murphy: Hello. My name is Brendan Murphy. I am a senior staff writer for AMA news covering issues related to medical students and medical residents. And I am delighted to have Dr. Naga Ganti, an...
international medical graduate who is applying to residency programs with me today. Naga is one of five finalists in the 2021 AMA Research Challenge for her research on e-cigarettes. Thank you for joining me, Naga.

Dr. Ganti: Yes. Hello, Mr. Brendan. Thank you so much for having me here. It's my pleasure to be part of this podcast. My name is Naga as you already told. I'm an international medical graduate from India. I did my med school back in my home country and did my United States Medical Licensing Exams and looking forward for specialty trainings in the United States.

Murphy: That's very exciting! Thank you again for joining us. And we really are impressed by your research as are your peers. You were voted one of the five finalists for the 2021 AMA Research Challenge on your project on e-cigarettes. And I also should point out this is a hot topic. The 2020 AMA Research Challenge had two winners and one of them did some research on e-cigarettes as well. Can you tell us about your research on e-cigarettes? What makes it unique and why did you find this topic appealing for a poster presentation?

Dr. Ganti: Yeah. That's a great question, actually. So, when our team was studying the literature, we came across some interesting points particularly on the e-cigarettes. According to article by Hajek et al, which was published in New England Journal of Medicine, e-cigarettes were more effective for smoking cessation than Nicotine Replacement Therapy when both products were accompanied by behavioral therapy. And also there is an article published by Pierce et al in JAMA, in which it says that
the individuals who switched from traditional smoking to e-cigarettes were more likely to relapse.

Also, according to National Youth Tobacco Survey in 2021 from FDA and CDC, more than two million U.S. youth currently use e-cigarettes. Absence of strict policies and age cut off or product approval before marketing are key factors that make them more available to adolescent population. All these numbers and statistics spiked our interest to go with this unique project. And our study was to evaluate epidemiological characters and prevalence of lung disease in e-cigarette users as this was a hot topic, after this, FDA authorizing the marketing of first set of Electronic Nicotine Delivery Systems. So, we tried to create awareness or statistical results from our study with the potential prevalence of lung disease in e-cigarette users.

**Murphy:** So, Naga, you are in the states as an international medical graduate. How did you go about doing this research? What institutions were you involved with when you did it?

**Dr. Ganti:** I do follow about the current medical updates. I am enrolled as a member in American Medical Association. I want to keep myself updated with all the happenings or with all the new evidence-based medicine. So, I go through this research articles and all time to time. So, when I saw this research big challenge and myself and our team, we thought this would be a best chance for us to do lot of research and then publish our work.

**Murphy:** This topic certainly is a public health issue. And one that seems to be front of mind from any public health officials. What were some of your findings? How did you go about your research and how might those findings be applied to increase the health of the nation?

**Dr. Ganti:** So, we studied National Health and Nutrition Examination Survey data of CDC from years 2015-2018. And out of 178,000 study population, we found that in females and Mexican Americans, prevalence of e-cigarette smoking was higher in comparison to traditional smoking. The prevalence of COPD was higher among dual smokers in comparison to e-cigarette smokers. Prevalence of asthma was higher in e-cigarette users compared to traditional smokers.

The odds of having asthma with traditional smoking is 1.27, whereas with e-cigarette it is 1.47. The odds of having COPD with traditional smoking is 7.05 compared to e-cigarette, it is 11.28. These findings will help us to plan more prospective observation studies evaluate the long-term health effects of e-cigarettes, especially in high-risk population like females, Mexican Americans and pre-existing childhood asthma population.

**Murphy:** That's really interesting. Can you talk a little bit more about those high-risk populations and some of the interesting demographic information you discovered in your research?

**Dr. Ganti:** Yes. We found out that e-cigarette smokers were younger in comparison to traditional smokers with a median age of 25 years. And females are more into e-cigarette smoking compared
traditional smoking. Mexican population is also more into e-cigarette smoking compared to traditional smoking. And we also found out an interesting fact that the population in which annual household income is about a $100,000, we found out that e-cigarettes is more prevalent in that come community.

**Murphy:** Do you have any plans to expand the scope of this research? If so, how would you do that?

**Dr. Ganti:** Yes. We are actually looking forward to expand our studies, to learn more about the effect of e-cigarettes on morbidity and disability, among lung disease population to evaluate the role of e-cigarettes in developing lung cancer. And also, we would like to thoroughly evaluate the high-risk population that is females, Mexicans and adolescents in whom e-cigarette use more prevalent.

**Murphy:** Are there other areas of your research you would like to highlight that we haven't covered?

**Dr. Ganti:** Yes. So, we all also found that the toxins that are present in e-cigarettes like acetaldehyde, formaldehyde and benzaldehyde are potential carcinogens. The vapors from e-cigarette affect the cellular level of metabolism and damage the DNA repair mechanisms. Acrolein and metallic particulate matter less than 2.5 nano microns are associated with increased risk of ventricular arrhythmia, impaired vascular repair and increased risk of thrombosis. Pregnant females who use e-cigarettes are at high risk of stillbirth and preterm delivery. According to a recent study by Gaia et al, e-cigarette users have five times higher risk of contracting COVID-19.

**Murphy:** Well, that is certainly timely and relevant. We've covered your research in some good depth. I would like to know a little bit about you. You mentioned you have come to the states from India. Can you tell us about your journey in medicine and where you see it going from here?

**Dr. Ganti:** Yes. I immigrated to United States and I did all the Medical Licensing Exams. I'm looking forward to be a primary care physician in the near future, after completing my specialty training. I would like to emphasize on primary care and promoting wellbeing in the community level and creating awareness about various emerging health problems and the necessary steps to be taken, to prevent or to control them. That's my aim in the near future.

**Murphy:** Great. My last question, this is a fun one. The research challenge comes with a $10,000 prize sponsored by Laurel Road. Do you have any thoughts on what you do with those winnings if you did win?

**Dr. Ganti:** Yes. That's an interesting question. Yes. This will encourage our team to continue research, to spend it on research-related expenses like article publishing cost, to publish good, impactful journals like JAMA or BMJ and so on, so that this work would be helpful.

**Murphy:** Well, that is very exciting that you would continue this research and we look forward to seeing the next iteration of it. We also look forward to seeing you one of five finalists in the 2021 AMA
Research Challenge presenting before judges. And that will be on December 8. So, thank you so much for joining us Naga and best of luck!

Dr. Ganti: Thank you so much for having me here today.

Danan: Join us on December 8 at 7 P.M. Central time to see all five finalists present their research to an elite panel of judges. The overall winner will receive a $10,000 grand prize sponsored by Laurel Road. For full details, visit ama-assn.org/research2021.

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