

Dr. Madhumita Sinha  
Behind the Mask  
March 22, 2021

Barr: Good afternoon. Today is March 22, 2021, and I have the pleasure of speaking with Dr. Madhumita Sinha. Dr. Sinha is an Associate Research Physician with the Diabetes Epidemiology and Clinical Research Section of the Phoenix Epidemiology and Clinical Research Branch at the National Institute of Diabetes, Digestive, and Kidney diseases (NIDDK). Today she's going to speak a little bit about her time volunteering with COVID patients, as well as some of her other COVID initiatives. Thank you for being with us today.

Sinha: Thank you, Gabrielle.

Barr: To start off, over the summer Arizona was definitely a [COVID] hotspot. Can you relay a little bit of what it was like to be there during that time? Many of your colleagues were in Maryland and DC. It was a very different experience.

Sinha: Yes. You know, it's almost been a year, or a few days over a year since the WHO [World Health Organization] declared COVID-19 as a pandemic. [In] the initial days, like everyone else, we didn't know what we were dealing with, so there was a lot of scare [and] anxiety. Initially, when the pandemic first started, the cases in Arizona were pretty low. We were hoping that like every other respiratory virus, that when it became summer and temperatures rose this would probably not be a problem in Arizona, but it was just the opposite. We saw cases rising, especially in the months of May and June. All around as the adult emergency departments were filling out. I sometimes volunteer at the emergency department in the county hospital or the public hospital here; our pediatric ED (emergency department) was overnight converted into the COVID unit. It was scary at that time. You know, we are near the Navajo Nation also; they started putting curfews in their areas. It was scary, like everywhere else, but the initial reports that we got from China and Italy, they were all pointing towards children being affected as not too serious, and the case rates among children were low. That was the only reassuring part: that there would be probably fewer cases in children.

Barr: How did you start volunteering with COVID-19 at the Phoenix Indian Medical Center?

Sinha: You know, it's interesting. The Diabetes Epidemiology and Clinical Research section is actually located on the campus of Phoenix Indian Medical Center, which is an Indian Health Service Hospital, and [is] for Native Americans. Building 1 is the old Phoenix Indian hospital, so it's very historical. And so, just as every other place in the Phoenix area, and I'm sure nationwide, [they] were asking for volunteers. I sort of put my name too on the PMC [Phoenix Indian Medical Center] volunteer list, but then a few weeks went by, and I didn't get a response. I emailed the Chair of Pediatrics who I know. She used to be my resident a long time ago, and I sort of immediately got a response back from her that "yes, yes, yes, we need you." That's how it started. I was already credentialed in pediatrics. All I needed was very brief training regarding how their electronic health care or health record system worked, and some orientation as to how the clinic functioned. My job was to do the sick in-person visits every Friday, all day.

Barr: How long was your training before you could begin?

Sinha: I am a general pediatrics and a pediatric emergency medicine fellowship-trained and board-certified physician. That's my background. The medical part was very easy because you saw just sick walk-ins. That wasn't difficult, but of course, anywhere you go in a new environment, especially in a medical setting; you would want to know how the flow is, how things work. The pace is very different from an emergency department setting, which I'm used to.

Barr: It's very different.

Sinha: It's less intense. I would say it's more relaxed. For me, it was way easier. The good part of the PIMC [Phoenix Indian Medical Center] pediatrics is they are very well organized, and the flow is extremely good. What was new, which I was not used to, and you know things were still developing, is for the kids who had COVID-like symptoms, they had set up a drive-thru for testing. For those who needed to be examined, you had to sort of don the whole PPE [personal protective equipment] and go out and there was a tent outside, and sometimes we even did full exams inside the patient's car. So that was new, outside, but I was used to the tent exam because I'd been in Phoenix during the H1N1 epidemic, and at that time, we did a lot of our exams outside the ER in the tents. This was new. Yes.

Barr: Can you talk more in detail about your role in caring for these children?

Sinha: Yes, so I have been working and I still am continuing actually to work as an attending physician. So pretty much taking clinical history, doing a physical exam, providing treatments, sometimes minor procedures, so, pretty much everything.

Barr: Can you describe what a typical shift might look like for you in terms of the number of patients you saw [and] the types of cases you encountered, especially as it related to COVID? And what it was like to work with staff from another health facility?

Sinha: Yeah, so my typical day on Fridays begins at eight o'clock. You know, a patient's sick visit is scheduled every 15 minutes. I see 12 to 15 patients per shift, a lot of children actually. A lot of the COVID-related questions come as telemedicine consults, which I don't do but my colleagues do. Mothers or parents [are] calling in to say that they've had contact and the child is now a little sick. Those are handled by an assigned staff member or members. I do the sick walk-ins. A lot of the children are usually what you would see in a pediatric urgent care setting. There will be kids with COVID-like symptoms like cough, fever, sore throat, [and] headache; these upper respiratory symptoms are sort of the typical symptoms, but we also see our equal share of other things like musculoskeletal injuries and other medical problems, gastroenteritis, etc. Lately, which is very interesting, is that I've been seeing a lot of behavioral problems among younger children, and among teens, especially they're coming with symptoms of anxiety. They're often not saying that "I'm anxious", but you know, they come with abdominal pains, choking symptoms, headaches, these kinds of symptoms. When you delve into it a little bit more then, you realize that a lot of it is stemming from anxiety.

Barr: Yeah, that's so interesting. How has your post at the Phoenix Indian Medical Center, informed your research on childhood obesity and other pediatric cardiometabolic disorders? That's really your area of specialty.

Sinha: Yes, so I joined NIDDK [National Institute of Diabetes and Digestive and Kidney Diseases] in 2014, but I have been an emergency room physician in this area, at the public hospital, for over a decade before I joined. I have been very much used to the inner-city minority population and their issues. Most of them, my population are Hispanic and Native American children, and so I'm sort of keenly aware of what their health issues are. One of the major things is that a lot of it has been driven by just economic social issues as well that give rise to poor nutrition, lack of physical activity, absence of really safe parks or places where children can have normal physical activity, and all that leads to obesity. A lot of this problem is the poor health status, or the basic health status is not very good among our children. As you know, the prevalence of obesity in the United States is high but has stabilized over the past decade, but in children who are from minority populations, it's rising, not only obesity, but severe obesity, and the prevalence of things like youth onset diabetes and fatty liver disease which run parallel with the rise in obesity is rising among minority populations. My clinical work at PIMC [Phoenix Indian Medical Center] and also [as] I continue to do voluntary work at the public hospital has just reinforced my belief that we need to improve and do more research. The basic issues like obesity and its related cardiometabolic risks and what we have seen play out over the last year is that you will have one pandemic and one acute medical crisis and everything sort of falls apart because it compounds what you already have, a poor health status, pre-existing. I think that has sort of reinforced and made me more motivated, that we need to focus on this issue in the future,

Barr: Definitely. Have children who have obesity and other comorbidities, have they gotten sicker or [are] more likely to pass away from COVID than their peers like in the adult population? Or that has not really been a trend that has been seen amongst the pediatric population?

Sinha: The trend that you see in the adult population is pretty obvious, but it is less so in the pediatric population. The severity of [the] disease and the cases are less in the pediatric population. There have been, though, some studies and one study that was ICU based that looked at ICU patients, children, with COVID-19 who were admitted to the intensive care unit, both in the United States and Canada. Almost, about 80%, of these children had some underlying condition, and a lot of them had congenital heart disease, medically complex. Luckily though, the death rates or mortality rates in children has not been that high. But, in the research that we have done, we have seen that there is a racial disparity in test positivity among COVID patients who were tested for COVID-like symptoms, but it's not that evident as in adult populations.

Barr: Right. Okay. You were speaking about this earlier, but I was wondering how you as a pediatrician who studies childhood obesity and other associated comorbidities, how you and your colleagues can leverage COVID-19 to try and to turn around some of these other epidemics in the United States like diabetes and things like that?

Sinha: Yeah. I think that, as I said before, that if we have learned or are still learning anything from this pandemic, [it] is that we need to improve the basic health status of our children in particular, but both adults

and children. And this is not only the physical but also the mental health status. Because a lot of issues arise with obesity, things like self-esteem, and we have seen a lot of that with children sitting at home, with socially isolated, with inadequate physical activity, and they have gained weight, their social self-esteem has declined, and the parents may be working during this time, and the children are at home by themselves, their screen time has increased. Among minority populations, we see a lot of them have relatives who they have lost or who have been very sick, and nobody's being able to visit them in the hospital. They have also suffered a lot of economic hardships. And these are, we just started realizing or understanding this because we are still in the middle of a health crisis, we are looking at more medical issues, but the psychological scars will be there for years to come. I think what we have learned from this pandemic is that there should be a concerted effort to improve their basic health. And there should be a big educational effort to [encourage] not only the parents, [but] the teachers, the counselors, to have a healthy lifestyle, to promote a healthy lifestyle among children. Because children don't exist by themselves, they don't live in a void; they live within a microsystem. Their family, their homes, their community, their schools, and the nation as a whole; I think at all levels, there should be a big emphasis on learning lessons for the health policy people to really push forward with healthy lifestyle interventions because you don't want to give medications to children to improve their health, lose weight, and lower the metabolic risk. What you want to do, and it's very easy for kids if they eat the right food, or have enough physical activity, a lot of this [will] stabilize into healthy weight. I think it should be a wake-up call for all of us to improve, and really push this agenda of improving the basic health of our children.

Barr: Yes. Another one of my questions is, you are a big proponent of putting scientific messaging into plain language, especially given the fact that you work with a pediatric population. Do you think that COVID information that has been disseminated has been as much in plain language as possible? And if not, what do you think more could be done about that?

Sinha: Yes, I think so far as dealing with a medical crisis the messaging has been about preventing infections, masking up, social distancing, and, now vaccinations, etc. That was the need of the day, and it's been pushed, but I think as we, hopefully, optimistically, get out of this acute medical crisis which we are in now, what's something that is looming in the background is the huge mental health crisis or toll that we have not talked about, and I hear very little of that being discussed. I, as a pediatrician, am starting to see a lot of that in children. I think, as a nation and as a global citizen, we have collectively gone through a once-in-a-lifetime experience of a medical crisis. As this gets over, we have to talk more about the long-lasting psychological issues in children because it's a developing mind in a developing body, and there is a lot of trauma that children have endured over this past year as far as anxiety, as far as fear of the unknown, what if my parents get sick? I think the message has also needs to be about recognizing the signs and symptoms and providing adequate support in that area.

Barr: That's definitely true. Since the summer, what other COVID-related research and initiatives have you been involved in?

Sinha: One of the studies that we are doing right now, is that we are doing an observational study to look at clinical characteristics, outcomes, [and] concurrent infections in children who tested for COVID in a large public hospital health system. We are still collecting data, we have data until the end of February, maybe we'll go a

little bit further to get a whole year's data. We have over 2,500 children who were tested for either, for COVID-like illness, and that is what we're focusing on. We're looking at the predictors of test positivity, looking at the predictors of hospitalization in this primarily inner-city minority children.

Barr: How is it going? The study so far?

Sinha: It's been going well. Another interesting thing we will also be looking at is "How effective was telemedicine in the less sick people, kids, and how many of these children actually ended up in the emergency room after a telemed [telemedicine] visit?" I think even the way medical consults are deployed has undergone change that has been forced upon by the pandemic. You know, telemedicine is something that can have huge access in areas where you don't have specialty care like endocrine and things like that. "How effective has telemedicine been during this pandemic?" is something interesting, and we're looking at that, so it's going well.

Barr: That's exciting! What has been your role in this study?

Sinha: I am sort of the senior author, and one of the things is that I have remained very active clinically during this entire pandemic. I have seen children in person, so it's, as a researcher and as a clinician who is active, it's given me a good perspective as to how things evolved. I'm the senior author in this study.

Barr: That's very exciting. Now, I'm going to transition from your role as a scientist to your role as a person who is living through this pandemic, just like so many of us. Personally, what challenges and opportunities have arisen for you, during COVID?

Sinha: You know, I think for most of us, just going through this once-in-a-lifetime experience has been an eye-opener. For me, I feel very passionate because as a teenager, I was a typical metabolic syndrome and ended up having diabetes. It's very personal for me, but the pandemic, in the initial part when there was a lot of talk about people with diabetes being at very high risk, I had an introspection, and I said, "What can I do to make my life better?" I actually started exercising and just jogging in my neighborhood two miles every day, and I haven't stopped. It's been so wonderful. Not only [has] my glycemic parameters improved, my health improved, but I also realized that I can do this. I can have me time to do something for myself. Because as a parent, as a mother, as a clinician, as a researcher, you sometimes get overwhelmed, and you don't know that "Can I find time?" That's been one good thing for me, and I hope I can help my patients and my research participants with a better perspective than just telling them [have a] healthy lifestyle.

Barr; Yeah. Definitely. You said that you've continued to jog, but have you pursued any other hobbies during this time? You sound like you've been very busy between your work and your family.

Sinha: Yes, I've been busy, but I do some painting. You know, I haven't been trained as an artist, but I just...

Barr: What kind of paintings do you like to do?

Sinha: Mostly watercolors. It's something I like doing and being at home a lot more [of the] time, it's better than just watching television and getting more scared. That's something that I have been pursuing.

Barr: That's so nice. How many have you done during the pandemic? And are they mostly scenery?

Sinha: Mostly of scenery. Four or five, you know, Arizona is beautiful. Just getting up early in the morning so I can jog before I can drop my son at the bus stop. I hear the birds; I see nature, and it's very, it's very beautiful, Arizona.

Barr: It really is!

Sinha: Yeah, it's very beautiful. So, that's sort of been an inspiration.

Barr: That's really nice. This is a fun question. What is the activity that you miss the most during the pandemic?

Sinha: Traveling. Absolutely. You know just when the pandemic started in January, actually, last year, we were in Egypt, because I love history. Since then, we've not been able to go anywhere; even to cross the state you may need testing [or] other requirements and you really don't want to go into crowds. I'm just hoping that things will improve, and we'll be able to travel sometime late this year or next year because I love traveling.

Barr: Where's the place that's highest on your list right now?

Sinha: The first thing is to visit my parents in India; they're in their 80s. I'd love to visit them. I'm worried more about them than myself because I've been vaccinated. So going to meet my parents in India would be first on my priority list.

Barr: That's very nice. Well, is there anything else that you would like to add as a clinician, as a researcher at NIH?

Sinha: No, I think that sort of sums it up, but it's been interesting, as I said, having a front-row view of how this pandemic evolved, both as a healthcare professional, as a clinician, and as a researcher, and it's given me a much better perspective. I hope we can make [a] positive change from here.

Barr: Most definitely. Well, I wish you all the best with all your pursuits, and I hope that you and your family continue to stay healthy.

Sinha: Thank you very much. It's been a pleasure talking to you. Thank you.

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