Speaker 1:

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Ishita Verma (guest host):

I'm Ishita Verma and I'll be hosting today's episode. I'm a Sophomore studying biology at Stanford and an Intern for Stanford Medcast. Dr. Latha Palaniappan is an Internist in Clinical and Population Research. She's currently a Professor at the Stanford School of Medicine in the Cardiovascular Department. Her research has focused on studying diverse populations, chronic disease and prevention. Dr. Palaniappan specifically seeks to address the gap in knowledge of health in Asian subgroups and other understudied racial and ethnic minorities. She's the Faculty Co-Director of the Stanford Biobank with Dr. Brooke Howitt and Joachim Hallmayer, designed to accelerate translatable scientific discoveries. She co-founded with Dr. Bryant Lynn, the Center for Asian American, Native Hawaiian and Pacific Islander Health Research and Education Care at Stanford in 2018. Thank you so much for talking with me today.

Latha Palaniappan, MD, MS (guest speaker):

Thank you for the invitation.

Ishita Verma (guest host):

Starting off the conversation, let's talk about your medical direction. A lot of your work has focused on Asian health in particular. What led you to this path?

Latha Palaniappan, MD, MS (guest speaker):

My father unfortunately died of a heart attack at 39. I was 13 years old and I noticed that when I was in medical school there wasn't a lot of data on South Asians and heart disease. And as I looked more into the data that were available in the United States, it said that Asians were not at higher risk for heart disease. And it's because some groups with higher risk like South Asians are averaged with other groups like Japanese and Chinese populations that have lower risk for heart disease. And so when you average two disparate groups together, the average looks like there's no difference, but you're hiding very important signals in the subgroups.

Ishita Verma (guest host):

First I want to say I'm sorry for your loss. I also love how you noticed a gap in your medical education and decided to take action on it. Before we dive deeper into the conversation on this topic, could you give us a little bit more of a background on what populations these Asian subgroups consist of and the implications of this data?

Latha Palaniappan, MD, MS (guest speaker):

The major Asian subgroups in the US that are listed on the census are Asian, Indian, Chinese, Vietnamese, Japanese, Korean, and Filipino. So those six groups make up 85% of the Asian population in the United States. But there are other Asian subgroups that are large countries that are not listed among those six in the US census categories such as Indonesia, Thailand, for instance, are not included, but those are all Asian subgroups. And there are some Asian subgroups like Chinese for instance, that have higher risk of cancers and when they're averaged with South Asians that have lower risk for cancers, we're also missing signals for important cancers that are higher in some Asian subgroups. For instance, gastric cancer is much more pronounced in Koreans and non-smoking related lung cancer is particularly higher in women of Chinese descent that are non-smokers. So we're able to uncover with disaggregated data more of these signals that were not available when I started out my career.

Ishita Verma (guest host):

There really is so much life-saving health data and information that gets hidden by this way of grouping. And so a focus of your work seems to be disaggregating this data and uncovering these risk factors that are specific to subgroups.

Latha Palaniappan, MD, MS (guest speaker):

Yes, absolutely. So it's sort of that epidemiologic part of the work. I've also done work on lifestyle interventions, so looking at clinical interventions to address the risk factors associated with cardiovascular disease. So I've done physical activity interventions including training for normal weight diabetes, looking at frequency of exercise. And also I did a study for Bollywood dancing in South Asian women, which showed that Bollywood dancing intervention three times a week lowered hemoglobin A1C, which is a diabetes risk marker in South Asian women and in just eight weeks. And also looking at not only the disease differences, but also risk factors and socioeconomic and sociodemographic differences such as measures of acculturation, income, education, all explaining the differences that we see in people.

Ishita Verma (guest host):

As we talk about these differences, I feel like many of them can be attributed to genetics. Could you talk more about this? Are there certain genetic components or factors that make populations more at risk?

Latha Palaniappan, MD, MS (guest speaker):

Unfortunately, there are few genome-wide association studies that are focused on those of Asian descent. Asians still make up only 10% of genetic databases despite the fact that they make up 60% of the world's population. They're presented by a factor of six. So we have a long way to go to understand genetic risk in Asian populations. However, there are a few studies that do exist that have shown some differences. There are differences in variants that implicate susceptibility to diseases such as diabetes and heart disease. And then also Dehydrogenase deficiency, which is common among Asians and causes the alcohol flush syndrome. This is associated with cancer risk, particularly gastric cancer and esophageal cancer. And we've also had studies that show that there's an overlap in risk loci for certain cancers between East Asian and European populations and some cancer risk factors that we found by studying Asian populations such as EGFR associated with lung cancer in Chinese populations, for instance.

Ishita Verma (guest host):

So it seems that though we've made some progress, there's definitely still much more to be learned and hopefully with this kind of dialogue and awareness around this, more research can be sparked that specifically looks at subgroups and we can be able to have this health data. From a clinician standpoint, we've talked about the gaps in our current knowledge and how we're slowly learning more and more specific information about these subgroups. I want to shift the lens to patient awareness. Since this data that we're learning is still relatively new information, could you talk about the effectiveness of this information being communicated to these high risk patient groups themselves?

Latha Palaniappan, MD, MS (guest speaker):

We definitely have a ways to go on this, and that's why it's been so important that we establish the Center for Asian Health Research and Education in 2018 at Stanford. And myself and over a hundred colleagues at Stanford are very passionate about the topics that I discussed in terms of the major chronic diseases like cardiovascular disease and cancers. And an important part of our center's work is not only research to advance these topics, but education of our clinicians and our community. So that is an important pillar. We have been fortunate in the Bay Area to have wonderful partners in the South Asian Heart Center, for instance, that we are able to work with to communicate this higher risk in South Asians for heart disease. And I'm pleased to report that heart disease rates have gone down significantly in the time that I've been a physician and of course not entirely due all to my own work, but many other new therapies such as cholesterol lowering therapies and angioplasties and stents and all kinds of wonderful new technologies that have been brought to bear.

We have seen a lowering of cardiovascular deaths by 60%. And now we've also seen that the rate of first heart attacks is higher in South Asians, which is wonderful. So people aren't having events at 39 and dying like my father, but they're having events in their fifties and living through them and going on to live long, healthy lives. So we have had some successes in community education. We also have lots of room and opportunity for improvement such as educating, I'll take South Asian populations as an example. And we are seeing this that people are surviving their cardiovascular events and going on to have cancers and breast cancers, for instance in South Asian women are going up and we have found that South Asian women are less likely to get mammograms. And so educating the salvation population, particularly on their cardiovascular risk, but also being mindful of other preventive screenings like colonoscopies, mammograms, pap smears, immunizations, the whole gamut.

And we need to do the same for other populations. I've worked with many wonderful colleagues. I'll mention Sam So who started the Asian Liver Center three decades ago, and he has really worked to increase knowledge about hepatitis B and C and its relation to liver cancer and has been able to, through his years of policy work, get hepatitis B screening covered for all people in California. So not only Asians where he first noticed the increased risk, but expanding the policy to include all Californians. And we hope soon all Americans. And that's what we really hope to do by studying diverse populations, studying the disease signals where there's opportunity to understand the pathophysiology and the biology, and then create generalizable knowledge for all population.

Ishita Verma (guest host):

The initiatives that you were talking about sound amazing. Having organizations dedicated to Asian populations is such an important step in making medicine more inclusive. And hearing those numbers like a 60% reduction of cardiovascular deaths and higher ages of first heart attack are such affirming signs that having these focuses really does carry impact and progress.

Latha Palaniappan, MD, MS (guest speaker):

Thank you.

Ishita Verma (guest host):

Do you mind talking us through your approach, for example, raising more awareness and trying to get patients to adapt better lifestyle choices that might help accommodate these conditions? How do you go about raising this awareness and reaching this audience since there are many inherent barriers such as language and transportation?

Latha Palaniappan, MD, MS (guest speaker):

It does take a multipronged approach. And I try to think of it, and I'm a population health scientist using the socio ecological model. When a patient comes to us in a clinic room, there are many factors that affect what we see in the clinic room. So I'll use an example of smoking for instance. So let's say a patient smokes. You can as an individual clinician, work with the patient by offering tobacco cessation therapies or groups, but we have to understand that patient made the decision in many layers. So one layer above the individual is the community. So what are the smoking rates of the community that they live in? How often are cigarettes sold? Are cigarettes sold to minors, for instance, in that community? And is there access to vaping and flavored tobacco?

So those are all community level factors that affect an individual's decision to smoke or not smoke. And then the community is embedded within our larger sociopolitical structures. So for instance, taxation of tobacco or policies of where people can smoke and not smoke, for instance, on airplanes and hospital. And we see this vary from country to country and we have to understand and affect and work on all of those factors to change risk factors in the individual.

Ishita Verma (guest host):

As you said, it really is a multipronged approach, and this is where the social determinants of health are especially important in understanding not only the biological state of the patient, but also the environment around them and its influence. And as we talk about trying to understand patients and their worlds, it brings us to precision health, which many argue is the future of medicine. I know for the past year you were in Australia on a Fulbright looking at the implementation of this health style. Could you start by defining it for us?

Latha Palaniappan, MD, MS (guest speaker):

Precision health is preventing, predicting, and treating diseases through personalized care. And we can do this as physicians by understanding each patient's unique risk profiles and understanding the intersection of biological, cultural and socioeconomic factors to provide personalized and targeted disease prediction, prevention, and treatment.

Ishita Verma (guest host):

And in terms of implementation for minority subgroups, what sorts of data do you collect and how does this patient interaction unfold?

Latha Palaniappan, MD, MS (guest speaker):

We provide targeted care to race ethnic minority groups, for instance, by understanding their unique health risk factors. And we use adaptations of the socio ecological model, particularly the National Institutes of Minority Health, and has a framework that highlights the unique issues contributing to health outcomes at all levels of influence. So similar to the example that I used with tobacco, thinking about personal, interpersonal, community, and societal effects that influence health for these minoritized groups. And I'll give you an example, at the Center for Asian, we have studied native

Hawaiian populations and an adaptation of the socio ecological framework from the National Institutes of Minority Health highlights the impact of historical context such as colonialism on health outcomes. So understanding where all of the biology, cultural and socioeconomic factors come together to affect health and disease in these populations.

Ishita Verma (guest host):

And then from your experience working in Australia, what were some of the particular challenges and learnings that came from that?

Latha Palaniappan, MD, MS (guest speaker):

Australia has a national health insurance program, and so their health system is very uniquely ready, I would say, for some of these precision health innovations that have been a little slower to be adopted in multi-payer healthcare system in the United States. And there's a lot of enthusiasm in Australia for these precision health interventions and innovations. And what I really appreciated and that I did not anticipate in the Fulbright work to Australia is really the similarities and differences between indigenous populations in Australia and Native American populations in the United States. I was very impressed with the acknowledgement of land that was in every setting in Australia from a scientific conference to when a pilot is landing a plane, there's an acknowledgement of indigenous lands at formal ceremonies and acknowledging that the indigenous lands are quite diverse and being very mindful of this history was very advanced in Australia compared to what I observe in the United States and something that I can work to affect change and adopt here in the United States.

Ishita Verma (guest host):

It's amazing that Australia seems to be so cognizant of indigenous lands and these acknowledgements are truly so valuable. And I agree on the importance of this and hopefully other countries like the United States, we can start taking more steps towards this inclusivity as well.

Latha Palaniappan, MD, MS (guest speaker):

Yes, and we are doing a better job of studying our [inaudible 00:17:07] communities in the United States. We still have a ways to go with Native American populations, and Australia had a great focus on indigenous populations and trying to overcome some of those health barriers.

Ishita Verma (guest host):

And cycling back to precision health, it seems that Australia's healthcare structure and mindset are really what lent it to being such a rich place to try to implement precision health. Within the next 10 or 15 years, what changes or what implications of precision health do you see unfolding the United States to be able to accommodate this practice?

Latha Palaniappan, MD, MS (guest speaker):

I think it's important that we focus as a scientific community on the acquisition and analysis of large amounts of omics data. So not only genomics, but going beyond genomics to proteomics, transcriptomics, metabolomics. We can have large libraries of biological samples and robust tools for data analysis. We're uniquely positioned at Stanford to have talent both in bioinformatics, data acquisition and analysis along with healthcare. And we really need to bring these threads together to weave the next chapters for personalized medicine and also as we move forward in this innovation, and

Stanford has also been a leader in medical ethics, so keeping in mind privacy, consent to use patient data, social justice, and potential under-representation of minoritized groups and genomic databases as I mentioned, and disparate access to lifesaving therapies including gene therapies as we move forward. And I do know at Stanford that we have all this talent in one place. So I'm looking forward to working with my colleagues to move this innovation forward responsibly.

Ishita Verma (guest host):

That sounds like there is a clear direction of where we need to hide in the progress that still needs to be made. And in terms of collecting this data, is it through things like clinical trials or is it trying to understand the data we already have and trying to glean as much information as we can from it?

Latha Palaniappan, MD, MS (guest speaker):

I think it's both. And we do have a treasure trove of information in not only in our electronic health records, but also our research records at Stanford and linking these with national databases, for instance, birth records, mortality records, and also utilizing some of our national health surveys like the National Health Information Survey, National Health and Nutrition Examination Survey, the Behavioral Risk Factor Surveillance Survey. We have so much wonderful data and we are working with care. We have a scholars program in big data and artificial intelligence. And so we are really trying to leverage all of the existing data sources to create as much new knowledge as we can about Asian American native line, Pacific Islander populations and other minoritized groups.

And moving forward, making sure we pay attention to increasing the diversity in clinical trials. So I'm working on a project now in which we are testing different diversity enhancing strategies to increase diversity in clinical trials, so we don't have that under-representation in trials and the genomic databases that I mentioned earlier.

Ishita Verma (guest host):

And as we wrap up our conversation, do you have any last words or anything you would like to say to the audience?

Latha Palaniappan, MD, MS (guest speaker):

I would like to convey that there is much, much more work to be done and we would love everyone that is interested to join the fight and to help us improve the care of populations everywhere.

Ishita Verma (guest host):

Thank you so much for chatting to us.

Latha Palaniappan, MD, MS (guest speaker):

Thank you.

Speaker 1:

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