This section features conversations with personalities related to science, highlighting the factors and circumstances that guided them in making the career choice to be a scientist.

Doctor, Scientist and Leader

Charged to Create a Healthier World!

Soumya Swaminathan talks to Subhadra Menon*

Dr. Soumya Swaminathan took charge in December 2017 as the World Health Organization's Deputy Director General, becoming the first Indian to assume this leadership position at WHO.

Before this, she held the prestigious posts of Secretary to Government of India in the Ministry of Health and Family Welfare's Department of Health Research; and Director General of the Indian Council of Medical Research, the apex organization for the formulation, coordination, and promotion of Biomedical research in India. She has had a long association with WHO, having served previously on its advisory bodies and committees including the expert panel to review the global strategy and plan of action on public health, innovation, and intellectual property; and as co-chair of the Lancet Commission on TB.

Dr. Swaminathan has more than 30 years of experience in the medical world and is well known for her research work in the field of tuberculosis. She joined the National Institute of Research in Tuberculosis, Chennai, in 1992, later becoming its Director. Here, she started a multidisciplinary group of clinical, laboratory, and behavioural scientists, studying various aspects of TB and HIV. The team was among the first to scale up the use of molecular diagnostics for TB surveillance and care, and undertake large field trials of strategies to deliver TB treatment to underserved populations. She continues to be associated with the TB Zero City Project – Chennai's new strategy to eliminate Tuberculosis.

Dr. Swaminathan is credited with over 300 peer-reviewed papers. A member of several national and international science academies and professional bodies, she is the recipient of several prestigious awards such as the NIPER oration in 2016; The Tamil Nadu Science and Technology

*In a face-to-face interview on Skype.

Award in 2012; Lifetime Achievement Award, Indian Association of Applied Microbiologists in 2011; Kshanika Oration Award, ICMR in 2008, etc.

She gained M.B.B.S. from the Armed Forces Medical College, Pune; M.D. from the All India Institute of Medical Sciences, Delhi, along with a Diplomate of National Board from the National Board of examinations. Subsequently, she did a Post Doctoral Medical Fellowship in Paediatric Pulmonology at the Children's Hospital Los Angeles, Keck School of Medicine at the University of Southern California. She is the daughter of Prof. M S Swaminathan, considered the Father of Green Revolution and Mina Swaminathan, a leading name in preschool education. She is amongst the few women scientists featured in *Lilavati's Daughters*, a publication of the Indian Academy of Sciences, Bangalore.

Subhadra Menon (SM): Where is it that you see yourself today, as against where/when you began your professional career as a doctor because it has obviously been quite a journey. So, when you look back and think of the time when you got into the medical practice, and where you are today, what goes through your mind, Soumya?

Soumya Swaminathan (SS): I think it is a journey that has been rather unexpected. I did not predict that this is the route that my career would take when I started off. Of course, since I was very interested in research, I always wanted to combine my clinical work with research. But I saw myself doing a lot of clinical work, and I enjoyed that, being with patients (children). I had specialized in paediatrics, and I wanted to use my skills and continue to do clinical practice, as well as do research. But I realized that it was difficult to combine those two and do a good job of both of them in India. Which is how I ended up in ICMR, definitely more on the research side than on the clinical side.

Also the kind of diseases that I started working on, when I finished my MD in paediatrics, I did not think that I would be focusing on TB or HIV. But I realized that these were, particularly TB, such a big priority for India. There were not a lot of people in this field, and I found it very fascinating and interesting. There were so many unanswered questions, a field that was really open for research, not only in terms of childhood TB but also overall.

After my training in paediatrics and paediatric pulmonology, I ended up focusing on TB and then TB and HIV co-infection for most of my career which was unexpected – that wasn't something I had set out to do. Then of course, becoming head of the ICMR was again not something that I was thinking would happen in my career, because I was really focused on the technical aspects of research.

So, where I find myself now is even more unexpected and unusual. While the position of ICMR head was a logical one from being a productive researcher, having been part of the ICMR system for many years, but certainly, coming to the WHO at this level was not part of my career plan at any point, or expected. So I must say, this is a very wonderful opportunity to contribute to health programmes at a global level where one can actually have quite a big impact.

SM: So, when you say unexpected, is it that you were constantly focused on what you thought needed to be done, and these things just came along? How did it pan out, for instance, how did WHO happen?

SS: Yes, you are exactly right. I was basically focused on what needed to be done at ICMR and in India, and I was not looking beyond that because there was so much to be done, and I felt that I needed to focus on that. So, this was when two things happened at the same time. Both the Director-General of WHO and the Indian Health Minister, reached out to me asking whether I would be interested in this position and it was something they had discussed. It was really quite a surprise for me. I was really focused on ICMR at that time – strengthening research infrastructure and capacity in Indian medical colleges, and really trying to move medical research to a much higher level. Getting this offer with a complete shift of focus was out of the blue, I should say.

SM: That's interesting! How much do you think this unexpectedness has made it even better, because obviously, otherwise, a lot of people spend so much time – for want of a better word – plotting their careers, isn't it? It must be very interesting and wonderful to get this kind of acknowledgement of your work, a lot of which has come quite organically?

SS: Yes, that's quite right. When you get something like this that you have not been lobbying for or trying for, then it is much nicer. It is in a way an affirmation of what you have already been able to achieve. It is a vote of confidence, from the government and also from the global health community. It was a wonderful feeling. Even though I thought about the offer very seriously, because my top priority was research in India, it wasn't something I automatically jumped at. The fact that both the Indian government and WHO wanted me to take up this position obviously was a big factor. I felt I could contribute because of the confidence they had in me.

SM: How do you view the fact that TB remains such a grave burden, particularly in countries like ours? With this huge body of work that you have done around TB, how do you feel about this?

SS: Well, I think it has taken a very, very long time and much hard work on the part of a

lot of people to actually get to this point where not only the Indian government but a lot of governments around the world are focusing on TB. I agree that it has been a long, slow, and occasionally frustrating process, but I think today we have finally reached a point where we want to be. Of course, this is only the beginning, because once you have this kind of high-level political commitment, then you can begin serious work, and hope to get things done. Similar to what happened with HIV 20 years ago – when the government of India made a very concerted and prioritized action plan to contain HIV, and all that needed to be done was done, which is why we were successful. So, we are at that point today, when there is all around, some attention, some commitment, and a feeling that we have to get on with it, but now the real work will begin. So I see this as the beginning of the real journey on TB in terms of making a real dent on the epidemiology of the disease.

SM: What particularly does that mean for us in India in terms of moving it to the next level?

SS: So, I think we can use the analogy of HIV – there was an empowered body created, there was enough budget allocated, there was freedom, and the real empowerment of the National AIDS Control Organisation. They could freely work with civil society, they could have partnerships, there was substantial external funding, and program driven by data and evidence. So, a lot of things happened fairly fast. I think a similar movement needs to happen with TB now. I think the analogy of HIV is a good one, in terms of the path or the process that could be followed.

SM: What about children today, are things better for them in terms of TB?

SS: I wouldn't say so. I think, in terms of prevention, we are not doing enough. We are not screening all the children who are contacts of TB patients; we are not giving them prophylaxis; we are not diagnosing all the paediatric TB that is there in the community; we are not detecting all the Multidrug-Resistant (MDR) TB that is there among children; and we are not treating them adequately. So, I think our response to paediatric TB is still very far from where we want to be, and that will have to be part of this response; I think a much stronger push, especially with the prevention part is required. The prevention part can have a huge impact. So will the training healthcare workers and making sure that kids get diagnosed promptly, MDR gets detected promptly, and they are put on treatment promptly, and ensuring that the social support is there.

SM: Going back to the longer journey of your career, what or who has been your greatest support, and what has challenged you the most?

SS: The biggest support, I think, has been my family and my husband in particular. He has always supported my choices in terms of what I wanted to do, always. And in terms of shoul-

dering responsibilities at home, we have always shouldered responsibilities equally.

In terms of challenges, I think, these have come from my colleagues and peers in the medical profession, where I have come across the most dogmatic people, who insisted on doing things in a particular way because that was the way they knew, or because of certain beliefs that they had, were very judgmental and unwilling to look at new ways of working. So my biggest challenge has been really convincing my own colleagues that there could be a different way of working. This was particularly true when it was to do with partnerships with the private sector or civil society, or with partners outside India. There was a lot of resistance. Early in my career, I was discouraged from working in the laboratory, from writing grants, from collaborating with scientists outside India, from traveling abroad to conferences – all because the culture of the institution was different.

So, yes, challenging times. I faced the same dogma with colleagues in the government hospitals in Chennai. I remember colleagues saying when treating HIV patients: "Why do you want to work so hard for these HIV patients, they are going to die." I remember one doctor asking me about a patient, "Is he your relative?" I said, "No, he is not a relative, he is a patient of mine and I am looking after him." So he said, "I don't know about you, but we want to live, so we are not really interested in working with these HIV-positive patients." This was a surgeon you know! We were trying to get a surgical procedure done. Of course, this was pre-Anti-Retroviral Treatment (ART), or just around the time ART drugs were about to come in. That was the stigma among the medical practitioners, and the kind of attitudes that we faced. I remember telling the neurologist, that a particular patient had cryptococcal meningitis, he needed to be treated, and he said, "Look, I have spent my entire life as a neurologist, but I have never seen a case of cryptococcal meningitis. I am not going to treat him." He refused to treat that patient. In those days, it was very common, most HIV+ patients used to die of cryptococcal meningitis because the CD-4 count would go down to 8 or 10. It was such a simple diagnosis, you do a CSF, and you could see the *Cryptococci*. Yet the neurologist said to me, "I have never seen a case so far, I will not treat this patient" – an example of an inflexible and dogmatic attitude that one in the medical profession should never have.

SM: Have you seen that change, Soumya, the dogma and the rigidity that we see in a lot of our systems, not just the medical system. In the years of your work, till ICMR, have you seen that dogma change?

SS: There is a change, but it is very slow. I hope that with the next generation, it will change more. Unfortunately, what happens is that people get indoctrinated into this way of thinking. By the time you become a Director, you have the same approach. When I was the DG at ICMR, I used to get a lot of such feedback from scientists in different institutes, saying that

the Directors or their seniors were not really supportive and were suppressing them. That is largely different from the science and the way it is practised in the West, where young people are encouraged to excel and shine. They are not kept hidden away by their bosses. The bosses, in fact, promote them, take pride in them. We have some sense of insecurity – the seniors have a sense of insecurity – that somehow they would be outshone by the juniors.

SM: How many of these challenges and any others are there that you may have faced being a woman leader in the field? Not just in the domain of clinical research and practice, but in terms of the bureaucracy of science, research, and medicine. Have you felt in any way that it has impacted you?

SS: Being a woman? I have never felt that it has been either an advantage or a disadvantage in my career. I have never experienced that even though I often find myself in a room full of men. But I have never felt that I have had a lesser voice or have been less listened to, or was given less opportunities because I was a woman, nothing like that. I think in ICMR as a whole, there is a lot of gender parity, about 35% of the scientists are women, and about a third of the Directors are women. So it is not 50–50, but overall, women have a very good presence and voice in ICMR.

SM: Let's say a young Soumya Swaminathan today, a young woman who moves through a clinical degree but wants to become a health research person – are the opportunities fairly equal for them today because they are women? Or have you felt the need to support them or be there for them?

SS: I get a lot of letters from young women; they are all looking for a role model and mentor, so there is obviously a dearth of such role models. But I think there are more and more opportunities now, and things are changing. Today, young women are much bolder, and they do speak up, and the methods of communication have improved – you can email somebody, you can Tweet. So they are able to network more, they reach out, speak up. I think what they are looking for like I said, is role models. They know then that a particular journey has been travelled well, and they get the confidence that they also will be able to juggle these multiple responsibilities that women do.

SM: Going back to your journey, between pure medical research, medical policy creation and implementation, and now, global medical diplomacy, how do you see this package? The way I see it, there is obviously a lot of strength because you come from the core community of practitioners who practice medicine, and today you are on a global stage. But how does it all feel, Soumya?

SS: It feels really good. Though I stayed very focused, with almost a single-minded focus on

TB-HIV, and a particular area of research, having spent most of my time in that same area, at the same time, I think one difference was that I knowingly or unknowingly kept doing advocacy on the side. This was because I could not just do technical work, keep quiet and not respond to what was going on in the environment in which patients lived. So I was speaking up, which would have brought attention to my work. To come from that strong technical and research background is today an advantage for me. I am coordinating the technical work of a very large number of doctors and scientists as I am heading the technical programme portfolio at WHO. It is a huge spectrum of work – so much is being done in terms of normative work by the best scientists and the best experts in the world. Here, it helps to have a very strong science background, because you cannot be an expert in everything. You should be able to look at something and know the quality of the work; look at a piece of research and know what kind of impact that work would have if it is translated into policy. You should also know how to translate that research to policy.

So, having had some experience with all of this, I think is extremely helpful now, especially as we have formulated the next five-year strategic plan at WHO, that is the General Programme of Work – the GPW 13. Essentially, the whole focus of WHO is now going to change, and there is going to be a shift from only being a normative, policy-making body to helping to move the agenda on the ground in countries. For that, my past experience would come in useful.

SM: That is music to my ears. I have felt of late that WHO had distanced it from these ground realities, and it is hard because you have an expectation when the organization is there in the region. It is wonderful if it is coming back in a big way.

SS: You will see much more work in countries in the coming years.

SM: My last question, coming back to India. Having had some experience at the top level in managing the medical bureaucracy here, how optimistic do you think we can be about the health status of our population because I sometimes get very concerned that we are just not able to budge on some things. There are so many indicators where we are zooming ahead, but sometimes one feels we are in a feudal kind of society, whether it is under-nutrition or maternal health, infections, do you think we can be optimistic? If so, then why?

SS: Well, I think we can be optimistic of course, but we also have some caveats there. That is because health is a state subject and so, within the country itself, you find there is so much of difference between the states. That is going to be our major worry or conundrum – how are we going to help the states that are not doing so well? How can the central government play a bigger role? I think we will have to think of some way out. Maybe there is a role, if some states are lagging very far behind, the central government has to try to bring them to par. But the various ways of doing that, the incentives and disincentives, need to be worked out. The

recent announcements of a National Health Protection Scheme and strengthening the primary healthcare are very important; implementation is going to be the key.

But at some point the bottom line will have to be that it cannot be a matter of choice, it cannot be left to the states to progress at their own pace. The Niti Aayog is trying innovative measures. They are ranking, incentivizing, and creating some competition between the states. If we have to achieve the Sustainable Development Goals (SDGs), and provide all Indians with basic health services (preventive, promotive, curative, and rehabilitative), we need to think of innovative ways of fast-tracking progress. It is also about measuring the equity part of it. So, looking at indicators in terms of coverage would be important. I hope that equity in coverage would be one of the indicators in the Niti Aayog scoring system for states on health indicators. Health has now become a political priority in India, and this is a great step forward.

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