

DD: Describe yourself in three words.

SB: So first off, I've gone for big picture. So, I really always like to take as much into account as possible when making any decisions. Second is 'curiosity' or being curious because I think it's so core to my work as an academic, so thinking about research questions and then thinking about going round answering them, and being very willing to being wrong. And then finally, 'integrity', and I'll leave others to decide whether they think I have it or not, but I certainly aspire to being able to say what I think, do what I say, and not being afraid.

DD: Hi everyone, welcome to Global Health Lives. I'm Delan Devakumar and today I'm with Dr Sunil Bhopal, who's a clinical lecturer in paediatrics in Newcastle University. Sunil is a clinician and academic working in paediatrics and global health. He's an expert in child development and stress, and now in COVID-19. Sunil, it's really great that you can join me today and talk about your work and your life. You're someone who thinks very deeply about topics and I'm really looking forward to exploring some of these with you.

SB: Thanks so much Delan, great to be here.

DD: So, we first met as part of the RCPCA at the Royal College of Paediatrics and Child Health Advocacy Committee and then you were part of the International Child Health Group (ICHG), and in many ways our careers have followed similar paths in clinical paediatrics, clinical lecturer posts. But can you tell me a little bit about what drew you to this combined paediatric and public health career?

SB: Yes, absolutely and I totally agree that you and I have been on similar trajectories for a while now and what you were doing seemed impeccably glamorous when we met for a coffee somewhere in Bloomsbury, just as I was hoping to get into my Wellcome funded PhD programme. So, it's great to be talking about this. Yes, I've known for a long time really, since I was in medical school that I'm interested in the big picture stuff, I'm interested in prevention and health in its wider sense and I suppose the natural home for that in terms of a medical specialty, if you're a doctor, is public health. And I think it's been a good decision so far.

I really love seeing children in my clinic; I really love seeing them in the hospital, getting that face-to-face interaction, and it just adds something different to my life that I don't get through the academic bit, which is all about children, but with very little interaction directly. It brings

challenges, and it's not always easy. I'm seen as being a paediatrician but always with my eye on that big picture. I'm enjoying things at the moment and long may it last.

DD: Fantastic. So, going back to your background and how you grew up; you're part of a fairly large, and quite a close, family with three brothers. And it's a very medical family, your father and one of your brothers are doctors and public health academics, your mother's a physiotherapist. It sounds like you had a really stimulating childhood discussing health and politics, and sort of the wider determinants of health at the dinner table. What was it like growing up in this kind of environment?

SB: It was an amazing childhood I have to say. I was very fortunate, and I still am very fortunate to have my parents and have my three younger brothers, to not only have fun with but to bounce ideas around with and even write papers with, so it's a special family and I appreciate that. Yes, the dinner table in our house was constant discussion about health and wellbeing. "Is it right to ban smoking in indoor places?" "Should we be increasing the price of alcohol?"

At different times in my childhood, I had different views on these matters, and I remember being the first in our small town to be wearing a cycle helmet. My dad was a big advocate of cycle helmets. We were really, really pushed on seatbelts when others weren't, so there's a lot of these early public health debates going on in the early 1980s that were part of my upbringing and what we talked about and discussed.

Just to extend it a little bit, my grandparents would come from India every summer and they'd come and stay with us for a month or two, and my grandfather had been in the United Nations, so that extended it out to a global stage, particularly around nutrition and agriculture. So, there was a whole range of discussions from the medicine, physiotherapy, public health, politics but it was always big picture stuff.

DD: That sounds so interesting, it's something I sort of aspired to with my own children, having these kinds of discussions and getting them to think about things. So, you're a proud Northerner and I was really interested in the different places that you've lived in. You were born in Glasgow, lived in the North-East of England, in Scotland, in North Carolina, went to university in Leeds, PhD in London and in India. How have these different places influenced your work and maybe even your broad outlook on life?

SB: Well, I think a little bit of each of these places is somewhere inside me. I don't really know where I'm from, which in the eyes of some is a major detriment but I think I've made it part of me in a good way. I've had accents ranging from Glaswegian to Geordie to American and whatever I have now.

DD: You sound very different to the other members of your family.

SB: Well yes absolutely. My dad has a broad Scots accent and several of my brothers so, who knows? Who knows? But I think what I like about this sort of upbringing and way of living, which I think is a privilege, is that you get to approach the same topic from a number of viewpoints, and what could be more important to that kind of curiosity bit and finding some sort of truth or answer out there? So, just a really silly example, but when I was at school I learnt about World War II in history classes in England, Scotland and the United States and then when I went for a gap year aged 18 to India, I learnt about World War II in the museums there from an Indian perspective. So, four perspectives, the same event or series of events, and wildly different understandings of how those events unfolded, where the right and wrong lay and what history tells us about the events of '39 to '45.

DD: Absolutely, we shape our history as sort of a community or society and they end up being very different versions. I was also interested in your time briefly in America; my wife, similarly as a young adolescent had a year in the US. What was it like changing from, you were in Scotland at the time?

SB: We went from the North-East of England, from Whitley Bay to Chapel Hill, North Carolina. My dad was on sabbatical there. Really wonderful to switch to a new context, went to school there, made lots of American friends. Things were different; we didn't wear school uniform, we referred to teachers much more like normal people rather than people that had to be obeyed and respected, and we had fun.

It also opened my eyes hugely to inequality, racial inequality in particular. In my school there were children of different ethnicities and races, and I remember making friends with different children and not really having a sense of how things worked. It's a new context, I didn't really understand it, and then being asked by a schoolteacher to fill in a form about my race – I think they call it race in the United States. So, about my race, and I honestly didn't know what my

race was, so I ticked the Hispanic box, which was quite funny looking back. So, I ticked Hispanic and then I asked my mum and dad when I got home and they explained to me patiently.

DD: Yes, I find it really interesting that, particularly I've found that when I go somewhere as an outsider, I notice things much more and I look at things and I look at differences, and you see things differently when you're coming into a different place. The race discussion's really interesting as well. I had a moment, I think a year ago, when I was in Sri Lanka. So here, I would tick Asian Other as my ethnicity category, and then it occurred to me in Sri Lanka that I wouldn't obviously tick Asian Other but I would classify myself as mixed race or ethnicity. Then I thought maybe I should put that on my form here, but that doesn't really work because, there are particular kinds of mixed in the UK categories, and it isn't a mixture of different Sri Lankan ethnicities, that doesn't come into it...

SB: It's interesting, isn't it? This whole question of identity and categorisation is interesting, and I come from this perspective where I am genetically, you could say or something like that, fully Indian in some senses, and then I was born and brought up in this country and so on. But on the other hand, in India I'm half Punjabi, half Gujarati, so in India you are from a particular state or probably, even lower level than that, probably town or village. So, where you are certainly shapes who you are and when I'm in the UK I'm Indian, and when I'm in India I'm Brit, and when I'm in Africa I'm probably white, so it's interesting.

DD: So, tell me about your interest in global health, this seemed to advance in University? What kind of things were you involved in there?

SB: So, I arrived at University of Leeds in 2004 and started looking around at the big picture stuff in addition to the medical studies that I was doing, and really enjoyed hanging on the coattails of my friends who were studying politics or economics or other subjects that interested me. I got really involved in student politics, so I ended up being the speaker of our student union and chairing the big meetings and all that sort of thing, which was a really interesting experience. I found Medsin which is now called Students for Global Health, which really formed incredibly formative thread through my years at medical school; I made some of my best friends, met my now wife, and spent a lot of time, many weekends and many evenings, running events, conferences, organising campaigns and thinking about global health. It was a really formative year, I met some of my best friends and got to have a really good time.

Later on, I ended up in Newcastle doing the Academic Foundation Programme and as part of that I was really, really lucky to be able to go to India to a place called Gadchiroli where Dr Abhay Bang and Dr Rani Bang have been working for many decades on some really pioneering stuff, around treating new-borns at home for sepsis. So, working with community health workers, really working in a deeply embedded way with the community. It was so inspiring to go there to the middle of rural India, walk around what is often described as a kind of public health laboratory and see public health in action in this kind of out the grass roots. So, it was really inspiring and it just changed the way that I think about global child health and made me want to do it even more.

DD: And now your main work is in child development and more broadly a best start in life. Can you tell me about what you've done in this field?

SB: Yes, I think that's a good way to put it. I want to focus on those early years, so that period through pregnancy and the first few years of life and getting kids off to the best start in whatever ways are necessary. And I think there are going to be different contexts depending on whether you're growing up in the North-East of England or the North-East of India, but there are many similarities too. I worked a lot on the Spring Trial, around the most controlled trial of home visiting, to improve health and development through that period in India and Pakistan, and I spent a couple of years in India working on that.

I think what we're discovering is that the science tells us it's really, really important to intervene and support all children at that time of life, but it also tells us that it's really, really difficult to figure out what works. So, I think the more trials and the more research that we can do to bolster this area of policy, I think the better. My own specific work, I think about adversity, events and socioeconomic factors that influence children's wellbeing and what's becoming clearer and clearer to me is that it's a multiple build-up of multiple factors. So, intervening on just one thing is likely not to be enough.

So, just thinking about whether the child's mum is depressed and whether we can do anything about that is an important thing to do, but it's not going to radically shift that child's trajectory. Similarly, just dealing with their diarrheal disease is probably not enough or just dealing with their nutrition, we need to go holistically.

DD: And I find these topics fascinating, and I guess what draws me to this work is almost that complexity, and the fact that you've got to take so many aspects into account. On a personal level I'm very much a fox rather than a hedgehog, so Isaiah Berlin's parable about the fox- The fox knows many small things, the hedgehog knows one big thing. And I know little bits about lots of things, but I find in these kinds of topics that's where it becomes useful so you're picking a bit of nutrition, you pick a bit of the environment or air pollution, you focus a little bit on mental health, and you sort of have to in these kind of complex...

SB: Yes, and I think it helps being a paediatrician; the clinical bit helps because it allows you to start to put things together and take a bird's eye view almost which is, in the end, probably what matters if you're a child, because you're a person and things need to be looked at from that view outwards rather than the other way down. I don't know if everybody has fully understood yet that what happens to you in those earliest periods, and stress and adversity for babies when they're in the womb and when they're in the first year or two of life, really do, well they say, *get under the skin*, because active biological change that can go on through childhood and into adolescence and adulthood. So, this is what I wanted to explore. I wanted to ask the question, *okay, what is happening in children's lives in rural India, and can we measure the impact of some of these events and environments on children's biological stress levels?*

So, I looked around and started thinking about which biological measures and settled on looking at cortisol, one of the stress hormones. It's interesting because I came with this colonel of an idea; I approached the person who turned out to be my PhD supervisor, Professor Betty Kirkwood, at the London School of Hygiene and Tropical Medicine, and I approached her with this idea that her trial, the Spring Trial, of home-visiting for early childhood development, there was an opportunity to understand the stress levels of these children. So, in the end, with lots of difficulties and challenges along the way, we took saliva samples, several thousand saliva samples and several thousand hair samples from children in rural India and analysed them for cortisol, for this stress marker.

DD: What did you find?

SB: Well, the key finding yesterday is that adversity and adverse experiences and adverse living circumstances is really closely associated with stress, biological measures of stress, this cortisol measure of chronic stress in babies' hair. So you can actually see that as the number

of adversities and the types of adversities increase for each individual baby, the likelihood of their chronic cortisol being high goes up.

DD: And how old were the children?

SB: We followed them through pregnancy, so roughly when they were conceived or the mum knew she was pregnant, followed them up to one year of age, and that was when the cortisol measurements were done, and the cortisol measures reflect a few months of stress. We followed them up to when they were six months older and did full developmental assessments on them and, again you can see that those children who were more stressed did poorer in their developmental assessments as they grew up.

DD: At such a young age as well you're able to pick up these differences.

SB: It's remarkable. It's remarkable because you look at babies and think, *well you're just lying in your mum's arms or maybe you're sitting up banging a rattle or something, or fine, you're starting to walk*, but actually to be able to pick this up in their hair, I was quite surprised.

DD: So, I've learnt a little bit about these topics, but more with adolescence and so looking- I guess most of the literature is the US link to child abuse and those kind of extreme forms of stresses but broadening it out like you're doing is just a whole new perspective.

SB: This is much more normal. This is you're living in a house, it's not the best house maybe, but it's perfectly reasonable, and you have a mum and maybe other family members, and you're getting on with your day to day. You haven't been put in one of these orphanages for example, but even in these circumstances we can see, the more adversities you're exposed to the more chronic stress you have.

DD: So more recently you've got involved in work on Covid-19, and in particular in relation to children. First more in terms of quantitative work, looking at the numbers, and then more in terms of advocacy. Can you tell me about the kind of work that you've done and where has this led to?

SB: Children didn't seem to be getting sick from Covid-19 which was one of the very few blessings you could say of this pandemic. So, I had some time to think about what else was happening

and I just got the sense from the parents that I was talking to and the teachers around and the press; that people have not really understood that children were not suffering greatly from Covid-19. So I started looking at the numbers and getting data from around the world and the different statistical agencies, and one of the early papers which we published in April kind of put those figures around Covid-19 mortality into some context that people could understand.

So put them next to the numbers of deaths in children from all causes, from road traffic accidents, from influenza and so on, so really trying to give some context to what was happening in children.

DD: And that was really surprising to me. It's something you told me about, how flu mortality in children is higher than Covid mortality and it's something I didn't know.

SB: It's really difficult to tell because every year flu affects children differently, but yes, if you look over a trend, Covid-19 is not as severe as flu.

DD: And, linked to this, you've been quite outspoken on some of the measures that have taken effect, particularly how they affect children.

SB: I just got really worried Delan that people, health people, public health people, politicians were not thinking deeply or broadly enough about the impacts of Covid-19 restriction measures here in the UK on children. They were rightly focused on controlling the pandemic, and that's totally understandable and acceptable, but with my background in child development, stress, adversity, with my clinical background, I could see that this was coming. I could see it down the line, and in my clinical work I do a lot of child protection work, I do a lot of work with vulnerable children and I just worried.

Well, what's going to happen to these children with disabilities, especially severe disabilities? Their schools are closed, that's where they get a lot of their health and wellbeing support. What about parents? The respite centres are closed. What's going to happen to these parents? Are they going to be able to manage? What about children who live with violent adults, violent parents? They're just going to be abandoned or lost to the system.

So major alarm bells ringing really, and I didn't see discussion of this happening as the schools closed in the UK and children were sent home. I felt that children lost their importance as an

issue of public policy and I was really, really worried. So, what did I do? Well, I kind of started approaching people that I thought might be useful in this discussion, and Professor Sir Al Aynsley-Green, the former Children's Commissioner and I wrote a letter to the Guardian very early on in April, asking the question, *Who in the government is responsible for needs and the rights of children?* We've been following up that strand of work with several other pieces since.

We don't see that this is being- was, I should say, I think it probably has now, was being taken seriously by government. Then I got involved in Twitter. Suddenly, I found myself with this feeling that someone needed to listen, so I just started speaking out and it was interesting that the more I said, the easier it became to say and essentially my message was, *we need to think about children. We need to think about their needs, we need to think about their rights.* It felt that children were sent home and because they were at home they could be forgotten, and so lots of the advocacy work that I did and research work, we published a little paper on child protection assessments and how the children had disappeared from child protection systems, on A&E assessments and how children disappeared from the Accident and Emergency Departments. I felt that these things were really worth saying and saying it consistently and with increasing frustration ended up with me being on the BBC, which was an unexpected experience but hopefully it contributed to the debate.

I don't think I'm a born advocate or a born campaigner, but I've decided that it's important and I have decided that it should be part of my career. If I don't do it, why should anyone expect themselves to do it, and whose job is it?

DD: You live with your wife and your two young boys. How did you cope personally with the lockdown? How was it for you?

SB: The first few weeks were really fun. My boys are two and six, so Leo, the eldest, is at school normally, Ethan was at home. But we decided that even though we were both key workers and therefore entitled to send Leo to school, we just thought we'd do our bit for the country and keep as many people out of the schools as possible. So, we kept him out of school. It became harder and harder as time went on; my wife and I were both working hard, the kids were- There wasn't a huge amount for them to do and the rules in the UK were that you could only go outside for half an hour of exercise per day, even if you're a child. I have to say it was a difficult period.

DD: And tell me a little bit about your hobbies and interests and this kind of work/life balance.

SB: I think it's really tough. I think it's an ongoing conversation. We're encouraged as clinical academics to maintain this sort of work/life balance or work/work/life balance if you have two jobs. I don't know that I've found it yet, I don't know about you?

DD: I don't yet- I'm terrible

SB: I think there's an understanding that it's something to aspire to, that we should be going out and taking exercise, and enjoying the arts and culture when we're not in lockdown and doing hobbies and so on. So, I like doing pottery, I like going to ceramics class, I like playing tennis and I do that occasionally, but I mainly at the moment work and have fun with my kids and with the family. We like going to the beach, I like taking them to the skate park. If they're on roller-blades I want to be on roller-blades! We always end the night before they go to bed with a good bit of dancing which is just really fun.

DD: So, I was in lockdown in Sri Lanka initially and their rules were quite strict, so we could walk around a building but not really anywhere else, so I thought they need some exercise, so we started this dancing similar. They call me "Papa" so it was 'PD' Papa Dancing, like PE, so it was strictly no one else could see this, it was behind closed doors, just the three of us.

SB: Yes, I think the three of us is strictly not for adults to watch as well, I'm certainly not a Strictly Come Dancing candidate, that's for sure.

DD: And, my last question, just looking forward into the future in terms of the kind of areas you work in. What's your kind of ideal future?

SB: I want to keep working with really passionate and clever and exciting people all around the world, whether it's India or Southern Africa or here in the North-East of England. It's the people and the relationships with your colleagues that makes it all interesting and worthwhile, but I think one thing I would like to see a little bit of change on is that development through my career where I've been first studying international health, and thinking about lower-middle income countries specifically, and then going off and working in India specifically, or Ghana specifically, and start to think about the factors that really bind us all together. I'd like over my career – I've probably got about 30 years left or something – I would really like to

keep working on early childhood but drawing the best of India, drawing the best of Ghana, the best of England altogether and sharing perspectives.

I think the era of British academic going elsewhere and having ideas is probably drawing to a close and it becomes much more about inter-related, back and forth with colleagues across the world and that's where I'd like to end up.

DD: So, thank you very much for joining me today. You talked about wanting to follow some of the trailblazers in paediatrics and public health and child health more broadly, and I think already you've done that, and I look forward to seeing your next accomplishments.

Thank you very much.

SB: Thanks so much Delan for having me in today, and what a great experience to be able to share a few thoughts, many of them unformed and I think ongoing, so I won't be held to them over the next decades.

DD: Thank you to my guest Sunil Bhopal. The episode was produced by Priscila Sato, Paula de Sousa and myself, with editing by Jo Hornby, artwork by Beth Stinchcombe and our theme song is Paper Stars by Liam Aiden. This is a Global Health Lives podcast, thank you for listening.