Global Health Needs a Multidisciplinary Approach

Since the onset of the COVID-19 pandemic, the topic of global health has once again come into sharp focus. “Ensuring healthy lives for all”, one of the United Nations’ Sustainable Development Goals, is also a key focus for Prof. Clarissa Prazeres da Costa, a specialist in the fields of medical microbiology and infectious disease epidemiology. Together with Prof. Andrea Winkler she founded the Center for Global Health at the TUM School of Medicine.

Prof. da Costa, what exactly is “Global Health”?
It is both a concept and a global commitment on the part of UN Member States to ensure healthy lives and promote wellbeing for all. However, the topic of global health is not limited to the field of conventional biomedicine. Instead, the focus is on the prospects for healthcare systems. It is therefore vital that we adopt a multidisciplinary approach to the issue.

As someone who conducts basic research, how did you become involved in the topic?
My father is of Indian descent; he worked for an American company and we traveled a lot. I have worked as a doctor in Nepal and the Philippines, where I saw the extent to which people suffer from avoidable acute and chronic infectious diseases. After completing my medical training, I immersed myself in the field of infectious diseases. Since then, I have expanded my focus, which now ranges from the lab to hospital beds. I just want to provide tangible benefits through my research and raise students’ awareness of global health through my teaching.

What diseases do poorer countries typically face?
Unlike in high-income countries, infectious diseases are among the most common causes of death in low-income countries. Even putting their generally weak healthcare systems to one side, these countries also lag behind in the development of new medications. To give you an example, 230 million people currently suffer from schistosomiasis, a worm infection that can result in chronic inflammation of the bladder and liver if left untreated. For context, the same number of people have malaria. Only one medication is currently capable of fighting the infection – but it is often not affordable and unavailable. This is why it is donated by pharma companies and administered in mass-medication

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Weltgesundheit braucht einen multidisziplinären Ansatz

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„Gesundheit für alle“ (Health for all) gehört zu den Nachhaltigkeitszielen der Vereinten Nationen (UN). Prof. Clarissa Prazeres da Costa, Grundlagenforscherin, Infektiologin und Fachärztin für Medizinische Mikrobiologie und Infektionsepidemiologie, arbeitet daran, medizinische Forschung in das Global Health Konzept einzubetten und entsprechende Forschungsnetzwerke aufzubauen. □

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programs supported by the World Health Organization, primarily to school children. This approach, however, raises the risk that the parasites will develop resistance to the medication. Although drug development is urgently needed, this work is rarely supported because the enormous costs involved make it less lucrative for pharma companies. At the same time, however, we also urgently need innovative diagnostic techniques that are robust and inexpensive in order to measure the success of such large therapy programs.

How can research become established in countries where there is little structure?

By initiating research networks. We are part of specific programs set up by the German Research Foundation and the Federal Ministry of Education and Research (BMBF) aiming to do exactly that. Another example would be the German Center for Infection Research (DZIF) – a research association bringing together more than 500 doctors and scientists working on new methods to prevent, diagnose and treat infectious diseases. It also has partnerships with four institutions in sub-Saharan Africa.

Could you briefly explain the objectives of the projects you are involved in?

In Cystinet Africa, a sub-Saharan research network supported by the BMBF, my colleague Andrea Winkler and I are working on an interdisciplinary approach to containing a parasitic pork tapeworm infection. This involves taking a “one health” approach to humans, animals and the environment. In another DFG-supported project in the Central African nation of Gabon, our working group is researching the immunological effects of worm infections, more specifically schistosomiasis, during pregnancy. In previous investigations, we have been able to show that an infection during pregnancy can protect the progeny against allergies. It is important to understand the mechanisms involved in order to understand their effects; initial indications are that maternal infection could even have an impact on the efficacy of vaccinations in children. German and African doctoral students are working hand in hand on this project. At present, we are establishing a network on the topic of global women’s health together with academics at TUM and internationally at the Center for Global Health. The research field of immunity and pregnancy will become embedded in this network.

■ *Interview by Eve Tsakiridou*