**Semester abroad as a pharmacy student in Malawi - by Julia Gabel**

Since November 2017 I have been an exchange student in Blantyre, Malawi, in southern Africa. There is a university partnership between the Pharmaceutical Institutes of the University of Tübingen and the University of Malawi, which is funded by the German Academic Exchange Service. After having met four Malawi pharmacy students in Germany in October 2017, I returned with them to Malawi to attend their lessons and get to know the country for five months. The Malawians I met were all incredibly friendly and helpful so I felt welcome right away.
For the first two weeks I was able to attend a workshop on "Traditional and Complementary Medicine in Malawi". Unlike Germany, herbal medicines and traditional therapies in Malawi are not integrated into the healthcare system and thus are not regulated. This complicates quality assurance and may jeopardize patient safety. Many Malawians, especially from rural areas, trust the traditional healers rather than conventional medicine. It is therefore important for people working in the health sector to use such a workshop to raise awareness that these traditional medicines also play a major role in patients.
Complementing the topic of herbal medicines and traditional medicine, right after the workshop I had the opportunity to visit the Botanical Garden in the city of Zomba with Malawian pharmacy students. There, many Malawian endemic species and local medicinal plants are cultivated and preserved.
Of course, after these exciting insights into traditional medicines, I also wanted to get to know modern pharmacy studies more closely. I participated in the local lectures, especially those in the fourth year of study. Since 2006, a bachelor's degree in pharmacy has been offered here in Malawi. The program consists of a so-called "pre-med" year, four years of pharmacy studies and one year of practical training. Thereafter, students can register with the regulator, the Pharmacy, Medicines & Poisons Board (PMPB), as a pharmacist. So far, Malawi does not offer a master's degree in pharmacy, although students are very interested in it.

In the "Pre-Med" year, scientific and medical fundamentals are taught. At the same time, the pharmacy students have lessons with students from other programmes, such as Medicine and physiotherapy. In the actual pharmacy studies, introductions to pharmacy, anatomy, biochemistry, microbiology and physiology will be given in the first year. In the second year, mainly Pharmaceutical Technology, Pharmaceutical Chemistry, Pharmacology, and Pharmacognosy (= medicinal plants) are taught. The third year will include Medical Supplies Management, Pharmaceutical Law, Theory and Practice of Research, and Pharmaceutical Practice. In addition, medical chemistry, pharmacovigilance and clinical pharmacy will be taught the last year.

The subsequent practical training year is divided into four sections. At least six months must be spent in a hospital pharmacy, the remainder in a community pharmacy, in the pharmaceutical industry, and in the national drug supply system, the Central Medical Stores Trust.
The subject of pharmaceutical practice should prepare for the practical life in the pharmacy before the practical training year, which I personally thought very useful. Case studies discuss various patient groups and the treatment guidelines that apply to these groups (pregnancy, viral hepatitis, etc.).

In classes in clinical pharmacy, I noticed positively that this subject is taught in great detail and also involves a lot of time in the hospital pharmacy and on the wards of hospitals. For example, students must consult patients about their medication plan and match the information received with the doctor's prescription. It is about the correct treatment of typical clinical pictures, but also about what mistakes can occur in the prescription of medication. In the practical training year, too, attention is focused on the medication plan, whereby the pharmaceutical interns also have to work on a so-called "patient journey" in which they critically analyze a patient's medical history and medication plan with the aim of optimizing the medication plan.

The subject Medical Supplies Management deals with all aspects of the needs planning, ordering, storage and distribution of medicines as well as financial management, etc. In Malawi it is more common than in Germany that an order does not arrive or the medication is not deliverable. Therefore, longer-term planning and good medical supplies management is incredibly important for securing health care. In conversation with my Malawian classmates, it became clear that they find this subject very important, as it will later occupy an important part of their daily work routine.

Particularly exciting for the fourth year students is the carrying out of their own research work, which deals mostly with questions of pharmaceutical practice in hospitals, rural health facilities or public pharmacies. I was allowed to attend one of these projects and drove to the rural district of Ntcheu with my Malawian classmates to collect data on the quality, availability and storage of oxytocin in state and church health facilities. My fellow students and I supported the PhD students Nhomsai Hagen (University of Tübingen) and Felix Khuluza (University of Malawi) with their doctoral theses as part of a Malawian-German cooperation project. In September 2018, four participants of the new Tübingen course "Pharmacy in Development Cooperation and Disaster Relief" will travel to Malawi for four weeks to carry out such research together with the Malawi pharmacy students. In this annual Tübingen course, in which both pharmacy students and pharmacists participate, I was allowed to prepare myself last year for my stay in Malawi.

A central and positive experience for me was how much emphasis in Malawi pharmacy study is placed on the professional subjects and training in the hospital pharmacy and hospital wards. However, my Malawian fellow students have also criticized that there are so few laboratory internships (in contrast to the German pharmaceutical studies) because of shortage of funds and materials. On the other hand, the Malawian students find it positive that they are not only trained in science and pharmaceutical subjects, but also acquire skills in medical supplies management, which later gives them the opportunity to bring their knowledge in pharmaceutical companies, wholesalers or their own pharmacy.

In my own time, I could get to know the country a bit. During the Christmas holidays I drove to the Mulanje massif in the south of Malawi, then to Nhkata Bay on the beautiful Lake Malawi, to the Vwaza Marsh Wildlife Reserve and to the north to the Nyika National Park.
My stay here has been a very enriching experience overall. I am impressed by how far the Pharmacy department has developed since its foundation in 2006, and I am very excited to see how this development will continue in the future!