

23

Building a new master's and PhD programme in nutritional epidemiology in Kinshasa: How to face obstacles beyond the control of the project

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Background

Capacity building in health research in low-income countries (LICs) to improve the skills and competencies of local scientists is crucial for improving the availability of evidence-based, effective health interventions and health service delivery systems in resource-poor settings. Developing the capacity to carry out essential health research is a priority focus identified by the World Health Organization (WHO) (Lansang and Dennis 2004). Overall, African countries, such as the Democratic Republic of the Congo (DRC), have small numbers of skilled researchers, and these researchers are under-represented as authors on research publications. The aims of capacity building in research are that individuals and organisations become adaptable and achieve sustainability by identifying problems, seeking and evaluating solutions and disseminating findings (Bates et al. 2011). Both long-term and short-term strategies are required to achieve this, aimed at all levels including individual scientists, organisations and governments (Lansang and

Dennis 2004). Partnerships between research institutions are an important mechanism for developing capacity for researchers in all participating institutions. Partners in LICs gain access to skills, new ideas, technical expertise, a wider audience for their research findings and increased leverage for ongoing research, while partners in high-income countries also gain opportunities to improve their skills and experience. However, such partnerships are difficult to build as they require trust, joint ownership and decision-making, and may be expensive to maintain. At the same time, however, due to the small number of scientists in LICs, it is crucial for longer-term sustainability that the links with outside research communities are maintained.

Good nutrition, with adequate intake of energy and micronutrients, is the cornerstone of good health. Therefore, the study of nutrition and nutritional epidemiology, including factors associated with sub-optimal nutrition, the impact of this on communities, and the identification and evaluation of possible interventions in nutrition is a crucial field of study. This is particularly important for resource-limited countries such as the DRC, where poor nutrition is a primary reason for individuals, particularly children, failing to reach their potential. The GrowNut project aims to develop nutritional epidemiology as a sustainable field of study at master's and PhD level at the Kinshasa School of Public Health (KSPH), at the University of Kinshasa. In this way, we aim to create a pool of senior scientists and researchers with strong skills to provide leadership in the field and contribute to a knowledge base and policy development for nutrition in the DRC.

GrowNut is a collaboration between KSPH, the Centre for Rural Health at the University of KwaZulu-Natal (UKZN) in South Africa, and the Centre for International Health at the University of Bergen (UiB), Norway. It is funded by the Norwegian Programme for Capacity Development in Higher Education and Research for Development (Norhed). GrowNut started in 2014 and was designed in collaboration with the National Nutrition Programme (PRONANUT) under the Ministry of Health in the DRC, with the vision of facilitating the translation of research data into nutrition policy, particularly through the establishment of a rural research site to allow the integration of the nutrition policy into routine activities. A key project aim was to

Developing scientists and staff in nutritional epidemiology

promote sustainability and build institutional capacity by providing opportunities for skills development for junior members of staff at KSPH, and opportunities for research collaborations between participating institutions. As a result, a number of joint scientific articles have been published in international journals. Students have been accepted into the nutritional epidemiology study programme based on their performance in the entrance examinations, including their competence in English. In addition, in each year, five students have received a GrowNut scholarship to cover their costs. One of these scholarships has been earmarked for a student based at KSPH with the aim of internal capacity building, and the four remaining scholarships have been given to students from vulnerable groups, such as people from war-prone areas, people originating from the study site and, to avoid strong gender bias, as many as 10 out of 13 vulnerability scholarships have been given to female candidates.

The intention at the heart of the GrowNut project is to build research capacity in nutrition in the DRC that will continue to grow, building on

the foundation of skilled human resources developed among the GrowNut students. The project is designed to support staff and students from KSPH to identify and prioritise problems, develop and evaluate solutions and disseminate the knowledge acquired in order to translate new knowledge into policy. The project aims to combine academic degrees with a 'learning by doing' approach, taking the students to a rural research site to get hands-on experience, in line with the principles of adult learning. In addition to individual development, institutional development is key to the success and sustainability of capacity building in research, and GrowNut includes a strong development component for teaching and research staff at KSPH. Another important attribute of successful approaches to capacity building in research is the building of linkages with partner organisations in developing and developed countries (Lansang and Dennis 2004). GrowNut is founded on strong linkages with the Universities of Bergen, KwaZulu-Natal and Kinshasa. Hence, the GrowNut vision is a combination of short-term and long-term strategies at individual and institutional levels to develop research capacity.

The establishment of a rural research site is essential for the vision of the GrowNut master's and PhD programmes to ensure that students have the opportunity to learn practical skills in nutrition and research and are exposed to the real problems of rural communities in the DRC. Considerable resources were required to support the development of the infrastructure in order to provide students with facilities including accommodation, transport and study facilities. All students were required to undertake an internship at the rural site, which includes data collection. This was to ensure that the project research agenda had a strong focus on under-resourced rural communities, and to provide opportunities for collaborative research projects at the site. Popokabaka in Kwango province was identified for the rural site. In Popokabaka, master's students undertake a three-month internship for practical teaching and learning. Every two to three weeks a supervisor visits the students for a week for interactive teaching. This field training gives the students the opportunity to interact with communities where they can assess nutritional problems and see the whole spectrum of malnutrition, ranging from acute and chronic malnutrition to vitamin and

mineral deficiencies. Students are also able to observe malnutrition in the local health facilities. During the fourth month of the site training, students are expected to collect data for their theses, as Popokabaka also serves as the research site for the project.

In this chapter we focus on our experiences in developing the master's programme in nutritional epidemiology, which is the fifth master's programme to be established at KSPH. It will focus on three areas. The first is what is needed to integrate a new programme in an existing structure. The second dimension is the challenge of integrating traditions from three different institutes in three countries into one programme, including challenges that were met, both in teaching and in supervision. A third dimension is how to undertake such a collaboration in an area where political unrest led to challenges and delays in planning project activities and resulted in travel restrictions for project partners.

Progress so far

GrowNut was launched on 15 November 2014 by the Rector's Representative, a sign of acceptance and recognition by the University of Kinshasa.

The programme experienced various unexpected challenges during the set-up period, including the untimely deaths of two of the senior collaborators, one in Norway and one in South Africa. There were also challenges in establishing the rural site because the first research site selected was Bwamanda, but due to the loss of the two senior staff members who had the contacts in that area, and problems with getting a collaboration agreement with the local NGO, it was not possible to continue.

Popokabaka was therefore selected as an alternative research site, based on recommendations from PRONANUT. A memorandum of understanding was signed between KSPH and the Diocese of Popokabaka, and the Popokabaka site has been functioning since 2015. GrowNut is housed in a compound owned by the church; however, a fair amount of renovation to the building was required. Students from all four cohorts have undertaken their internships and collected data in

Professor Mapatano, KSPH, at the official opening of GrowNut, November 2014



the Popokabaka area. A mini-conference was held in Popokabaka in February 2019 to provide feedback on research findings to local stakeholders and the local community. It was attended by 70 participants, including key international agencies working in the area.

We are now moving towards the end of the project in December 2019, and a total of 42 students have been enrolled in the master's programme supported by the GrowNut project. Teaching the modules for the master's programme was conducted in KSPH and for the first two years this teaching was supported by visiting facilitators from partner institutions. However, from 2016 it was no longer possible for international staff to travel to Kinshasa due to security constraints, and teaching was undertaken by facilitators from KSPH. In contrast to other teaching at KSPH, the medium of instruction for GrowNut was English. All students have been co-supervised, with the main supervisor from KSPH and with a co-supervisor from UKZN or UiB. As of July

Research site in Popokabaka

2019, 31 students have graduated from the master's programme and one student from previous cohorts is preparing to submit his thesis. The last seven are planning to graduate in early 2020. Two students have dropped out and one is uncertain. In addition, six PhD students have been enrolled, two have graduated, two have dropped out and two are planning to defend their theses in 2020.

Annual meetings have been held each year since 2014, attended by representatives from all participating institutions and from the Norwegian Agency for Development Cooperation (Norad). These meetings have intentionally alternated between the three partner institutions. At the annual meetings, activities have been reviewed and plans for future activities discussed. A level of flexibility in planning was required as the project team worked to mitigate the threats to the project that arose with the political unrest and travel restrictions.

In terms of visibility, one can point out that GrowNut has allowed for several scientific articles that were published in international journals. These articles have been authored jointly with contributions from UKZN, KSPH and CIH/UiB. In 2016, GrowNut was represented at the World Public Health Nutrition Conference in Cape Town with three posters and one oral presentation, as well as representatives from each

of the three collaborating partners. In 2018, nine graduates of the GrowNut master's programme in nutritional epidemiology attended the African Nutritional Epidemiology Conference in Addis Ababa, contributing five oral presentations and five posters.

Integration of a new project into existing structure: What is needed?

GrowNut brought together senior academics from three diverse institutions in different geographical locations with the aim of developing an academic programme at the KSPH, the most under-resourced of the three settings. Each institution had different expectations of students, access to different resources, and different established practices for teaching and supervision. A key challenge for KSPH was to set the academic calendar so that it did not overlap with the other four existing master's programmes. In addition, academic requirements for the completion of master's-level studies were not consistent, and while the language of instruction at KSPH is French, the GrowNut students were expected to learn and write in English. A shared vision of the academic processes to be implemented in the project was a key requirement for integration.

GrowNut delegates to the 8th African Nutrition and Epidemiology Conference in Addis Ababa, October 2018



Good communication is key to developing a shared vision and developing integration; this is more challenging when collaborators are in separate geographical locations. Throughout the planning and implementation of the GrowNut project, senior project staff have communicated frequently via Skype calls and e-mail. Regular calls are scheduled between project leaders at the three sites to monitor progress with project activities, develop common understandings of planned activities, and address challenges as these arise. Minutes of these meetings are circulated to provide an ongoing record of the discussions. However, there is no substitute for face-to-face meetings, particularly to address challenges and develop common understandings of complex issues such as curriculum development or master's-level supervision.

Another important requirement was to develop a strong team and trusting relationships between colleagues at the three institutions. Regular face-to-face meetings strengthened the communication developed at a distance and provided opportunities to build closer relationships with colleagues. Project leaders from all three sites met at least once per year, for the annual meeting with Norad, the senior academic leaders at KSPH and PRONANUT. In addition, team members also met during teaching and supervision in the DRC and at conferences where GrowNut results have been presented. As a result of the continuing positive communication over the project period, and the commitment to working together towards a common vision, a productive working environment with a strong team has been developed.

The aim of the project was for resources and skills to be shared amongst the institutions, with each providing support to project activities according to their strengths and resources. This could be understood to mean that the more highly resourced institutions share their resources and expertise with the University of Kinshasa. However, it was important to the vision of the project that resources and opportunities should flow in both directions and that the collaboration would provide opportunities for all participating institutions to share experiences and benefit from each other's skills. In particular, the project aimed to provide a shared platform for research between the three institutions to allow long-term collaboration to strengthen the research portfolios of all three institutions.

Different institutions are different: Challenges of integrating

The first challenge faced in establishing the master's programme was a lack of access to study resources in the DRC, particularly library facilities, which were inadequate in providing students with up-to-date literature to support their studies. In addition, there were the challenges of interrupted electricity supplies and internet access was slow and unavailable in areas outside the university. As a result, it was not always possible to maintain communication with colleagues and with students. This was addressed by accessing books and journals and physically taking these to KSPH so that there is a small library for GrowNut students to use. In addition, students were given access to the online library at UiB, but this was not well utilised. Students reported that the lack of internet connectivity was the key reason for this but a lack of skills in accessing literature was also a factor.

Another key challenge throughout the project has been to develop a common understanding of the different aspects of the master's supervision, including the curriculum, timelines and deadlines, academic requirements, and administrative processes. Despite efforts to maintain good communication, collaborating at a distance remained a challenge. Thus, practical aspects of the master's programme undertaken by students in Kinshasa was not always clearly understood by colleagues at other institutions, with the result that misunderstandings arose and external facilitators were not always able to comply with giving timely feedback and support to students. In addition, it was difficult at times to reconcile the expectations of each institution. In order to address these issues, a workshop was held in 2017 where team members met with the objective of developing common understandings and clear guidelines for the GrowNut master's students. This workshop was facilitated by an external facilitator and participants agreed to a common list of requirements for the scope of the students' research for the master's programme, as well as the proposal and thesis write-ups. The primary responsibility for the quality of the work, especially the timing of submission for theses, remained with the local-level supervisors.

Although the DRC is primarily a francophone country and most of the courses taught at the KSPH are conducted in French, the GrowNut academic programme is taught in English. This allowed for the participation of the Norwegian and South African partners and provided KSPH students with opportunities to study in English and to have access to English-speaking academic facilities and resources. However, this has added further complexity to an already challenging process, particularly in preparing academic work. It has sometimes been difficult to determine whether students' failure to achieve high quality work was related to a lack of performance or their inability to engage with learning activities conducted in English, or poor skills in written English. This challenge was addressed by including an assessment in speaking English in the requirements for entry to the master's programme, introducing an English class at the beginning of the academic year, and using language editing to improve English written work. However, a few students were requested to prepare their theses in French.

The establishment of the rural site was a challenge; travel to the site was difficult, time-consuming and expensive. The journey to Popokabaka took 11 hours over very rough roads using expensive, four-wheel drive vehicles. Thus, the area was hardly accessible for students and staff, and travel to and from Popokabaka during the period of internship was sometimes impossible. In some cases, students were unable or unwilling to make this journey due to health issues or other responsibilities in Kinshasa, and research was conducted closer to Kinshasa. However, despite the challenges, the majority of students have successfully completed their internship in Popokabaka, and a mini-conference was held in Popokabaka.

Challenge of political violence

During 2016, the third year of the project, political violence arose in the DRC and travel recommendations were that travel to the DRC should be limited to emergency travel only. As a consequence, there was no travel by GrowNut partners to the DRC from 2016 to December 2018. This has resulted in problems maintaining good communication

between role players and made it impossible for the collaborating institutions to provide the support to the KSPH that was proposed in the project plan. Some members of the team did not have the opportunity to travel to the DRC at all.

As a result, project activities had to be re-conceptualised, with the aim of maximising the benefit to the colleagues and students at KSPH, during the period that travel was impossible. This was addressed in workshops and meetings held at UKZN in Durban with all role players coming together, including students who travelled from the DRC, to continue with the development of the academic programme.

Responding to these challenges required flexibility from partners, openness to changing responsibilities, particularly for the team member from the DRC who had to take on additional tasks, as well as flexibility from the funders. As a result of the good teamwork and communication built up over the period of project implementation, and with the support of Norad, the project was able to adapt to new challenges and continue to support the students.

Conclusion

This project provides a framework for integration between academic institutions with very different backgrounds. Developing common understandings, sharing ideas and building long-term partnerships can lead to a rich collaboration providing opportunities for staff and students at all partner universities to enrich their experiences; enable meaningful research; improve leadership for policy change; and link policy to practice.

However, substantial challenges were experienced by the GrowNut team; many of these were the result of the severe political, resource and infrastructure challenges experienced in the DRC and should, therefore, provide strong motivation for continuing and strengthening such collaborations. Challenges were overcome through strong communication and teamwork, the flexibility and commitment of GrowNut collaborators, and support from funders. It is crucial that such partnerships continue to provide support to institutions with the greatest need, and that challenges do not lead to defeat with resources

being withdrawn and redirected to settings where it is easier to work, but where there is less need for support. Facing challenges and overcoming these to achieve the goals set out for the programme, is the most important measure of success.

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