

## The past and future of dietetics education in Malawi: a model of collaboration for other countries building dietetics practitioners

Malawi is a small, relatively poor country in south -central Africa with a population of approximately 18 million people. Life expectancy, if born in 2016, is 61 years and continues to improve; while infant mortality rate is high (42/1000 live births), it has been steadily declining from 65.8/1000 live births since 2006 ([https://www.who.int/gho/countries/mwi/country\\_profiles/en/](https://www.who.int/gho/countries/mwi/country_profiles/en/)). It is well known that malnutrition has been a problem in Malawi for decades and has shown slow improvement. Undernutrition is a major factor contributing to morbidity and mortality among vulnerable populations, especially children, pregnant and lactating women, the elderly, and people living with HIV (Lartey et al., 2008). Malnutrition has long-term adverse effects on intellectual and physical ability of an individual and undermines the individual's academic and professional achievement and work productivity (de Onis, Blossner et al. 2012). It is contributing to poor human capacity development and economic growth in Malawi.

Malawi, like many low- and middle-income countries, is experiencing the double burden of malnutrition, also called *nutrition transition*, where diseases of over-nutrition and under-nutrition exist simultaneously. More infants are surviving into adulthood, yet slightly more than 50% of deaths are now related to non-communicable diseases (NCD's), in particular, cardiovascular and respiratory diseases, diabetes mellitus, and cancer. Evidence of this transition is seen in the World Health Organization (WHO) estimate that in addition to undernutrition, 9% of children in Malawi were overweight in 2014, while 21% of adults were overweight; overweight prevalence was higher amongst adult women (24% vs 17 % in men) (<https://www.fantaproject.org/sites/default/files/resources/Malawi-National-Multi-Sector-Nutrition-Policy-2018-2022.pdf>) which contributes to the NCD burden, as it does in higher income countries.

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In Malawi, the first National Nutrition Policy (NNP) was produced in 2007 and nutrition programs began scaling up. In 2010, the Nutrition Education and Consumer Awareness Group of the Food and Agriculture Organization (FAO) and FAO of the United Nations published a report highlighting the results of a survey to assess nutrition, education, and nutrition awareness in seven African nations, including Malawi. The survey also looked at a nutrition training needs assessment (FAO, 2011). The surveyors and respondents identified a clear need for nutrition education, nutrition educators and nutrition education training across countries. At that time, the countries' national nutrition strategies mainly focused on direct nutrition interventions like food fortification or supplementation, while the health sector focused mainly on infant and young child feeding (IYCF). The *nutrition transition* was also observed in many countries. The group found that prevention was missing, along with training health care providers in nutrition. The surveyors generally also noted the low priority of nutrition across communities and sectors. Across countries there were few nutrition positions available at national and district levels and few trained nutrition professionals (FAO, 2011).

In their second edition of the NNP and Strategic Plan (<https://www.fantaproject.org/sites/default/files/resources/Malawi-National-Multi-Sector-Nutrition-Policy-2018-2022.pdf>) the Malawian government renewed their support for adequate nutrition as a national priority. It highlighted that adequate nutrition is a requirement for human growth and development, and the report acknowledged that nutrition is essential for the work productivity and socio-economic development of the country, placing nutrition high on the national development agenda. As part of that policy the government specified "Nutrition assessment, counselling, and support .... are scaled up to ensure a continuum of care" adding a focus on infectious and other chronic illnesses. The policy aims to ensure that overweight and nutrition-related NCDs will be detected and managed early through increased *access to services* and *health care providers* who are able to provide counselling

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and behavior change communication

(<https://www.fantaproject.org/sites/default/files/resources/Malawi-National-Multi-Sector-Nutrition-Policy-2018-2022.pdf>). These health care services are ideally provided by Registered Dietitians, yet in

2015, only six existed in Malawi, all were trained in the US, and most were not working in a clinical capacity. Malawi's NNP calls for nutrition specialists in each ministry and department. Although there remains is a lack of trained nutritionists, considerable progress has been made.

In response to Malawi's NNP and Strategic Plan, in 2014, Lilongwe University of Agriculture and Natural Resources (LUANAR) developed a post-graduate curriculum for the training of clinical Registered Dietitians (RD). The aim is to build human capacity and produce graduates that will be strategic in three of the NNP's nine identified priority areas: (1) Prevention, (2) Treatment, and (3) Nutrition Related Non-Communicable Diseases. The goal is for Malawian -trained nutrition professionals to provide nutrition assessment and therapy/dietary guidance to patients with a variety of diseases or conditions and to the greater community for prevention of diet related disorders. LUANAR has collaborated with numerous partners in the US to ensure that the education and training program meets international dietetics standards, but also meets the specific nutritional needs of Malawi. LUANAR has support from University of Malawi's College of Medicine, with assistance in teaching didactic courses such as nutritional biochemistry and providing practical clinical teaching.

**Dietetics advancement through collaboration (Malawi:USA)** With funding from USAID, Tufts University in Boston, USA, coordinated development of the curriculum with local experts at LUANAR and the College of Medicine. Funding also supported one Registered Dietitian from the US to live in Malawi and deliver parts of the educational and training program. The first class of four graduated in 2017. A second cohort is in process and will graduate in 2020. Six Registered Dietitians from three universities and three medical centers shared clinical nutrition course material, including slides, activities, case studies and

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exams to be adapted for use in LUANAR's curriculum. This is the first example of collaboration across countries: funding, sharing of expertise and teaching materials. In development of the clinical rotations, it was identified that there was no specialized nutrition support expertise or related products available in Malawi hospitals, which presented a challenge for comprehensive dietetics training, so outside country expertise resources were investigated.

**Dietetics advancement through collaboration (Malawi: South Africa)** South Africa is more advanced and experienced in educating and training dietitians. The first postgraduate Diploma in Dietetics was offered in 1987 (<http://dietetics.ukzn.ac.za/History.aspx>). Therefore, the Malawian dietetic interns in the LUANAR postgraduate dietetics program receive the critical care rotation through the University of Cape Town, South Africa. Additionally, Registered Dietitians from North-West University also shared their materials for use in the development of classroom and clinical education materials. This is second example or model of sharing training expertise and experiences across countries. A third example of inter-country collaboration is that two of the recent LUANAR graduates are in an MS Dietetics program at North-West University, South Africa. When they complete their studies, it is anticipated that these MS registered dietitians will be able to serve as preceptors in the current Malawian dietetics' programs, part of the beginning to make training of dietetic instructors and preceptors sustainable.

**Dietetics progress and advancement through collaboration (Malawi:USA:Malawi)** A fourth example is the first intern exchange between dietetics programs at LUANAR and California Polytechnic State University, San Luis Obispo (Cal Poly) planned for 2019-2020. Two dietetic interns from Cal Poly will participate in clinical and community rotations in Malawi. A unique feature will be a rotation focused on environment, agriculture, food systems on the African continent. Two Malawian interns will experience

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clinical hospital and community rotations in California. All involved institutions are excited about the opportunity and hopeful that funding for this exchange can be sustained in the future.

These exchange opportunities provide a rich opportunity to learn of different health care systems and the application of the Nutrition Care Process, of different disease and treatment options, of nutrition focused physical findings, of cultural aspects of MNT and behavioral approaches to change. Self- confidence is gained in working outside one's comfort zone and culturally sensitive communication skills are built.

**Collaborations for the future** In a country with only a handful of dietitians, there is a challenge of inadequate expertise for precepting interns, for comprehensive learning experiences (such as critical care nutrition and food service management) and for delivering didactic teaching. The Ministry of Health began establishing posts for dietitians in 2018, with the aim of hiring seven RDs per each of the four public service hospitals. Development of the 28 positions has created a demand that the postgraduate LUANAR program alone will not be able to meet in terms of graduates in the next ten years. With that in mind, the College of Medicine is developing an undergraduate program to train more dietitians to meet the national demands. This presents an exciting and rewarding opportunity for dietitians and dietetic educators in the US and other countries to volunteer to help in nutrition capacity building through training, precepting and educating the first and subsequent generations of in-country trained dietitians and to develop dietetic capacity in Africa. Nutrition educators can assist remotely, by sharing curriculum and course materials from the comfort of one's own office or physically through the support of a Fulbright Scholarship, which am I am doing in Malawi in 2019, which supports an in-country experience for precepting and exchange of ideas.

This could serve as a model for [dietetics advancement through collaboration between two or more countries](#) in some of the following ways:

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1. Countries with established dietetics professional practice can share or provide:
  - a. program, curriculum, course materials with countries developing dietetics training;
  - b. expertise in review and assessment of program materials and competencies.
  - c. volunteers in person or virtually as preceptors and educators to train the first generation of locally trained clinical dietitians.
  - d. Dietetic internship experiences
2. Countries developing their dietetics programs can share their:
  - a. methodologies and strategies for building support for their program
  - b. knowledge of food, culture and behavior change
  - c. experience in nutrition-focused physical exams
  - d. dietetic internship experiences
3. Ideally a forum could be formed where there is an exchange and sharing of materials and expertise:
  - a. requests for expertise and materials could be posted
  - b. a repository of dietetic education, curriculum, course materials and assessment processes could be shared,
  - c. identification of expertise available

### References

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FAO. (2011) The Need for Professional Training in Nutrition Education and Communication: Report on seven case studies carried out in Botswana, Egypt, Ethiopia, Ghana, Malawi, Nigeria, and Tanzania

Lartey, A. (2008). Maternal and child nutrition in Sub-Saharan Africa: challenges and interventions. *The Proceedings of the Nutrition Society*, 67(1), 105–108.

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Website address of all organizations mentioned

California Polytechnic State University (Cal Poly), Dept of Food Science and Nutrition:  
<https://fsn.calpoly.edu/>

Cal Poly Dietetic Internship: <https://fsn.calpoly.edu/dietetic-internship>

University of Malawi, College of Medicine: <https://www.medcol.mw/>

Fulbright: <https://www.cies.org/>

Lilongwe University of Agriculture and Natural Resources: <http://www.bunda.luanar.mw/luanar/>

LUANAR Department of Human Nutrition and Health:  
[http://www.bunda.luanar.mw/luanar/department\\_human\\_nutrition\\_health.php](http://www.bunda.luanar.mw/luanar/department_human_nutrition_health.php)

Tufts Dietetics Program in Malawi: <https://nutrition.tufts.edu/news/malawi-dietetics-program-accredited>

USAID: <https://www.usaid.gov/malawi>

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