Country Highlights:
Sustainable Human and Institutional Capacity for Improved Nutrition in Malawi

Looking Beyond a Decade of Accomplishments in Nutrition
NIL Legacy Event | September 17th, 2021

Elizabeth Marino-Costello  Sanele Nkomani  Bernadette Chimera-Khombe  Alex Kalimbira
Building Nutrition Capacity in Response to National Priorities in Malawi

Sanele Nkomani, Feed the Future Innovation Lab for Nutrition
THE BURDEN OF MALNUTRITION IN MALAWI

Persistent challenges

- Stunting: 39.0%
- Wasting: 1.3%
- Iron deficiency in WRA: 34.4%

Emerging challenges

- Obesity: 9.1%
- High blood pressure: 15.8-32.9%
- Hospital malnutrition: 62-80%
- Diabetes: 2.4-6%

Significant progress

Little/no progress

GERALD J. AND DOROTHY R. Friedman School of Nutrition Science and Policy
GAPS IN NUTRITION CAPACITY

Clinical dietetics skills

Nutrition competencies for medical graduates

NCD prevention and management policy and programming

Gap in nutrition assessment tools

No food composition database

Suboptimal hospital care practices
- Absence universal nutrition screening & assessment of hospitalized patients
- Inadequate nutrition support resources
Clinical dietetics skills

- Dominated by nutritionist training
  - Lack of uniformity of standards and content of curricula
    - Inpatient management of disease
    - Management of NCDs
- Competencies in public health partly align to govt strategic objectives

- Improved standardization of training & curricula
  - Certification by national body & license to practice
- Strong competencies in clinical management & public health nutrition
- Multiskilled cadre to respond to govt strategic objectives
Barriers to nutrition care perceived by doctors

- Inadequate nutrition knowledge, education and counselling skills
- Inadequate nutrition education in medical school
- Not enough dietitians to refer to
- Lack of an enabling environment for practices (resources)

Nutrition content in medical education

- What is being taught?
- Who is teaching?
- How it is being taught?
- How is it being assessed?

Recommendation that can be adopted

Mogre et al., 2018
TOOLS FOR NUTRITION PRACTICE

Country specific food composition data

Importance of FDCB

• FCDB in nutritional assessment
  – Individual nutrition assessment
  – Food consumption surveys & other nutrient assessment related research

• FCDB as a basis for nutrition counselling
  – Formulation of FBDG for populations

• FCDB in the planning of clinical and therapeutic nutrition

Elmadfa., 2010

Number of Malawian Foods
  • 32 Malawian publications sources
  • Theses data from Malawian universities

Number of Malawian Recipes

Total number of foods in Malawian FCD

63% Malawian data
DIETETICS KEY MILESTONES

Program accredited by Medical Council of Malawi

- 2016: 1st cohort graduates
- 2018: Graduates employed
- 2019: 2nd cohort graduates
- 2020: Graduates employed
- 2021: Graduates employed
FOOD COMPOSITION DATABASE KEY MILESTONES

- **2016**: The scoping phase
- **2017**: Collection of nutrient data
- **2018**: Data quality assurance phase
- **2019**: Database complete
- **2020**: MAFOODs dissemination
KEY MILESTONES MEDICAL CURRICULUM REVIEW

- 2018: Development of adaptable framework
- 2019: Review of curriculum
- 2021: Completion of survey
COLLABORATORS IN SUCCESS

Core Partners: Malawi

Key Collaborators
Lessons Learned in Multistakeholder Nutrition Capacity Building in Malawi

Dr. Bernadette Chimera-Khombe, Kamuzu University of Health Sciences
FIRST DIETETICS TRAINING PROGRAMME

FIRST MEDICAL CURRICULUM REVIEW FOR MEDICAL NUTRITION CONTENT

FIRST FOOD COMPOSITION TABLE
Government delegates at Grooteschuur hospital, Capetown; understanding clinical nutrition support
President Lazarus Chakwera at the FCD booth during the scaling up nutrition 3.0 launch.

Stakeholder commitment

- Continuous engagement and sensitization.
- Stakeholder capacity building.

Jonathan Misolo RD at Kamuzu Central ICU - 27 new post at tertiary hospital level
LEVERAGING STRENGTHS OF LOCAL, REGIONAL AND GLOBAL PARTNERSHIPS

- The Core partnership
  ✓ Community/public nutrition from LUANAR
  ✓ Biomedical sciences and clinical experience from COM
  ✓ Dietetics, leadership and coordination from Tufts.
  ✓ South Africa Medical Research council for technical expertise in FCD development.
TARGETED RESPONSE TO NATIONAL NEEDS

Program responds directly to the Malawi skills gap

- Increase in human capacity for clinical nutrition
- Improved the enabling environment for nutrition
- Generation of tools and evidence for evidence-based practice

Comprehensive scoping
Nutrition and health policy/strategic plan analysis
Needs assessment
Early and sustained engagement with government and other stakeholders
MEDICAL CURRICULUM REVIEW LESSONS

Necessity for standards for nutrition gaps in medical practice.

Gap in application of nutrition knowledge

Establish a nutrition curriculum committee or task force.

ADAPTABLE FRAMEWORK OF STANDARDS FOR NUTRITION IN MEDICAL EDUCATION

All medical students should graduate with the knowledge required to explain how food and nutrition influence health and disease. They should be equipped to recognize nutritional risk, deficit, and excess in their patients. New doctors should be competent in the role of nutrition in prevention and treatment of acute and chronic diseases in order to advise patients about lifestyle strategies for dietary change, in particular as it relates to common conditions such as malnutrition, heart disease, diabetes, and obesity.

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<thead>
<tr>
<th>BASIC NUTRITION PRINCIPLES AND PRACTICE SKILLS</th>
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<tbody>
<tr>
<td><strong>NUTRITION FUNDAMENTALS</strong></td>
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<tr>
<td>Nutrient Metabolism</td>
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<tr>
<td>1. Describe the digestion, absorption and metabolism of proteins, fats, and carbohydrates in health and disease</td>
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<td>2. Describe the absorption and functions of essential micronutrients</td>
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<td>3. Recognize deficiency syndromes of vitamins and minerals</td>
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<td>4. Recognize signs and symptoms of vitamin and mineral excess</td>
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<td>5. Differentiate nutrient metabolism in starvation versus response to metabolic stress, infection, or disease</td>
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<td>6. Identify standards for nutrient adequacy</td>
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<th>Energy Regulation and Energy Balance</th>
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<tr>
<td>1. Describe normal regulation of energy balance and influencing factors</td>
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<tr>
<td>a. Physiologic</td>
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<tr>
<td>b. Environmental</td>
</tr>
<tr>
<td>c. Social</td>
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<th>NUTRITION ASSESSMENT</th>
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<td>Anthropometrics</td>
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<tr>
<td>1. Assess basic anthropometrics</td>
</tr>
<tr>
<td>a. height/length</td>
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<tr>
<td>b. weight</td>
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<tr>
<td>c. body mass index</td>
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<tr>
<td>d. waist circumference (adolescents/adults)</td>
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<tr>
<td>e. midarm muscle circumference</td>
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<td>f. midarm muscle area</td>
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FOOD COMPOSITION DATABASE (FCD)

01
Quality data and missing data
Data quality workshops.
Matching and borrowing.
Food composition table modules in universities

02
Discovered local capacity
Possibility of compiling the FCD using locally generated data.
Sustainable Impact in Building Nutrition Capacity in Malawi: What the Future Holds

Dr. Alexander Kalimbira, Lilongwe University of Agriculture and Natural Resources
Prevention and management of overnutrition and nutrition-related NCDs

Nutrition education, social mobilization, and positive behavior change

Creating an enabling environment for nutrition

Lack of skilled dietitians

Unknown nutrition competencies of medical graduates

Lack of nutrition content in preservice medical education

Lack of country-specific nutrient availability of foods

Increase in human capacity for clinical nutrition

Improved the enabling environment for nutrition

Generation of tools and evidence for evidence-based practice

Dietetics professional practice

Strengthened multidisciplinary practice

MDs better equipped to manage nutrition problems

FCD data to drive research and targeted programming
STRENGTHENING HUMAN CAPACITY

**Individual and institutional level**
- Mentorship
- Clinical Curriculum development and implementation.
- Database development and data generation.

**Country level**
- Genesis of dietetics practice.
- National food composition database.
- Multidisciplinary action in nutrition response.

**Regional level**
- Model implementation of dietetics program.
- Adaptable framework for medical curriculum review
- Regional food composition table developed from local data.
My overall feeling is honor, and I am very excited to be one the pioneers of this program in Malawi. I feel extremely happy to be a dietitian trained in Malawi, because to me I feel the best dietitian for Malawians is a Malawian dietitian, trained in Malawi, and who can understand what Malawians want for their health.

Humphrey Chatenga RD
1st cohort graduate
IMPROVING THE ENABLING ENVIRONMENT FOR NUTRITION

**PRACTICE REGULATION**

Establishment of regulatory structure for regulation of dietetics practice and update and utilization of FCD.

**HUMAN CAPACITY**

Multidisciplinary action in clinical nutrition response i.e. trained dietitians, nutrition-skilled doctors and policy makers.

**ADVOCACY CAPACITY**

Capacity built at individual, institutional and national level creates advocates for dietetics, quality data generation and medical nutrition education.

**DATA FOR EVIDENCE GENERATION**

FCD serving as a source of data for used to develop a web-based tool for estimating micronutrient intakes, adequacy and deficiency.
FUTURE DIRECTIONS

• **Africa’s opportunity to;**
  • Continue building dietetic capacity-regional/local using available resources.
  • Draw lessons from Malawi and begin to create networks for further capacity building.

• **Malawi’s opportunity to;**
  • Invest in local stewards to sustain and grow these initiatives
  • Development of interventions to respond to medical nutrition education gaps.
  • Provide mentorship to regional institutions.