

ACKNOWLEDGMENTS

This training manual is the product of a partnership among numerous institutions and individuals. The authors (in alphabetical order) are Tony Castleman (FANTA/AED), Craig Jagers (FANTA/AED*), Dorcas Lwanga (Africa's Health in 2010/AED), Stephanie Martin (LINKAGES/AED*), Sandra Remancus (FANTA/AED), Eleonore Seumo (AED), and Mofota Shomari (ECSA-CH).

Technical input was provided by (in alphabetical order) Inam Chitsike (WHO), Boitshepo Giyose (ECSA-CH*), Fred Grant (FANTA/AED), Sarah Kibuka (ECSA-CH*), Sabas Kimboka (Tanzania Food and Nutrition Commission), Joyce Kinabo (Sokoine University), Olive Munjanja (ECSA-CH*), Robert Mwadime (FANTA/AED), and Savitha Subramanian (FANTA/AED*).

Administrators and instructors from nursing schools in the region who participated in regional workshops in Dar-Es-Salaam, Tanzania, in December 2003 and in Lilongwe, Malawi, in November 2006 provided critical input into the content and form of the manual. Antonia Wolff (Africa's Health in 2010/AED) and Wendy Hammond and Heather Finegan (FANTA/AED) provided extensive editing and production support.

The manual is adapted from *Nutrition and HIV/AIDS: A Training Manual*, published in 2003 by the Regional Centre for Quality of Health Care (RCQHC), the FANTA Project/AED, and the LINKAGES Project/AED, with funding from the USAID Regional Economic Development Service Office/East and Southern Africa (REDSO/ESA). The authors of the 2003 manual were Robert Mwadime (RCQHC/LINKAGES/AED), Tony Castleman (FANTA/AED), Lora Iannotti (LINKAGES/AED), Dorcas Lwanga (SARA/AED), Wamuyu Maina (Kyambogo University), Sarah Naikoba (RCQHC), Eleonore Seumo (AED), and Denis Tindyebwa (RCQHC).

* Formerly with the project

Suggested citation:

East, Central, and Southern African Health Community (ECSA-HC), Food and Nutrition Technical Assistance Project (FANTA), and LINKAGES Project. 2008. *Nutrition and HIV/AIDS: A Training Manual for Nurses and Midwives*. Arusha, Tanzania: ECSA-HC.

TABLE OF CONTENTS

Abbreviations and Acronyms	iii
Introduction	iv
Part I. Background Information	1
Session 1. Basics of HIV and AIDS	3
Session 2. The Basics of Nutrition	29
Session 3. Links between Nutrition and HIV and AIDS	79
Part II. Knowledge: Technical Update	99
Session 4. Nutrition Management of HIV-Related Symptoms	101
Session 5. Management of Nutrition Implications of Antiretroviral Therapy	119
Session 6. Infant Feeding and Prevention of Mother-to-Child Transmission of HIV	147
Session 7. Food Security and Nutrition Care and Support of PLHIV	171
Part III. Client Services: A Life Cycle Approach	197
Session 8. Nutrition Care and Support of Adults Living with HIV	199
Session 9. Nutrition Care and Support for Pregnant and Lactating Women and Adolescents Living with HIV	225
Session 10. Infant and Young Child Nutrition in the Context of HIV	269
Session 11. Nutrition Care for Children Living with HIV	293
Session 12. Nutrition Care for Adolescents Living with HIV	343

Abbreviations and Acronyms

ACC	Administrative Committee on Coordination
AFASS	Acceptable, feasible, affordable, sustainable, and safe
AIDS	Acquired immune deficiency syndrome
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral drug
BMI	Body mass index
BMR	Basal metabolic rate
CDC	Centers for Disease Control and Prevention
ECSA-HC	East, Central and Southern African Health Community
EIA	Enzyme immune assay
ELISA	Enzyme linked immunosorbent assay
FANTA	Food and Nutrition Technical Assistance Project
FAO	Food and Agriculture Organization of the United Nations
HAART	Highly active antiretroviral therapy
HIV	Human immunodeficiency virus
IATT	Interagency Task Force
IDD	Iodine deficiency disorder
IMR	Infant mortality rate
LBW	Low birth weight
MUAC	Mid-upper arm circumference
MTCT	Mother-to-child transmission of HIV
NRTI	Nucleoside reverse transcriptase inhibitor
NNRTI	Neo-nucleoside reverse transcriptase inhibitor
OI	Opportunistic infection
PCR	Polymerase chain reaction
PEM	Protein energy malnutrition
PLHIV	People living with HIV
PMTCT	Prevention of mother-to-child transmission of HIV
PI	Protease inhibitor
RCQHC	Regional Centre for Quality of Health Care
RDA	Recommended daily allowance
ROI	Reactive oxygen intermediate
STI	Sexually transmitted infection
UNAIDS	Joint United Nations Program on HIV/AIDS
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
UNU	United Nations University
USAID	United States Agency for International Development
VAD	Vitamin A deficiency
VCT	Voluntary counseling and testing

Introduction

Many people living with HIV (PLHIV) in Africa report that food is their most urgent need. Even among populations in the region not affected by HIV, food insecurity and malnutrition are common. HIV worsens the situation through a vicious cycle in which HIV causes or exacerbates malnutrition and food insecurity, and malnutrition and food insecurity limit capacity to cope with the disease and its impacts.

Nutrition interventions can help break this cycle by strengthening immune response, promoting response to treatment, supporting management of symptoms, and improving functioning and quality of life. Nutrition interventions are therefore a critical component of comprehensive HIV care and treatment. USAID/East Africa has worked with the Regional Centre for Quality of Health Care (RCQHC), the East, Central and Southern African Health Community (ECSA-HC), the Food and Nutrition Technical Assistance (FANTA) Project, the LINKAGES Project, and the Africa's Health in 2010 Project to strengthen the capacity of health care providers in sub-Saharan Africa to integrate nutrition interventions into HIV care and treatment services.

As front-line care providers, nurses play a critical role in HIV care and often have regular opportunities to provide counseling and other support to PLHIV. Equipping nurses with nutrition and HIV knowledge and skills enables them to provide effective nutrition care and support, but nursing school curricula in the region include limited information on this subject. This training manual is designed to address that gap by providing materials for nursing school instructors to use to equip nursing students with knowledge of nutrition and HIV and skills to provide nutrition care and support to PLHIV.

The manual is based on *Nutrition and HIV/AIDS: A Training Manual* (2003), developed by RCQHC, FANTA, and LINKAGES with funding from USAID/East Africa and used by medical schools, nutrition departments, ministries of health, and others for pre-service and in-service training of health care providers. This manual updates the 2003 manual with recent evidence and approaches and includes additional sessions and information relevant to nurses, such as nutrition care for people nurses support at various contact points.

Purpose. The purpose of the manual is to support nursing instructors and trainers in training nursing students to provide effective nutrition care and support to PLHIV. To achieve this purpose, the manual includes a range of training materials with extensive information on nutrition and HIV topics.

Audience. The primary users of the manual will be nursing school instructors, although others, including in-service trainers of nurses and other health care providers, may also use the manual as a reference and training guide. Users of the manual are expected to have experience training adults, including using participatory training techniques; basic knowledge of nutrition, HIV, food security, and maternal and child health; and familiarity with the health care systems where nurses work.

Use. The manual is designed to be incorporated into existing pre-service nurse training curricula, but it can also be used for in-service training of nurses or other health care providers. Each session contains lecture notes with detailed information about the session's topic; a presentation that can be used as a PowerPoint, as overhead slides, or as handouts; exercises, case studies, and/or role plays for students; handouts for students; and references and suggested reading materials.

Depending on time availability and relevance, instructors can use all of the sessions or select individual sessions that are most relevant. Sessions can be incorporated into a larger curriculum throughout a course or taught together in sequence.

Organization. The twelve sessions are organized into three parts. Part I includes three introductory sessions with basic information about HIV and nutrition and the links between the two. Part II aims to build the technical knowledge of nurses in nutrition management of symptoms, nutrition implications of HIV therapy, infant feeding and prevention of mother-to-child transmission, and food security constraints to nutrition care and support. Part III provides guidance on nutrition care for different clients living with HIV. Because nurses see different types of patients at different contact points, these sessions are organized based on a life cycle approach, with separate information on caring for adults, pregnant and lactating women, infants and young children, children 2–9 years old, and adolescents living with HIV.

