



Background

Mountains of the Moon University, Department of Public Health in collaboration with University of Gent, Department of Public Health and Primary Care have organized an annual short course in Epidemiology, Biostatistics and Qualitative research (EBQ) to be held at Mountains of the Moon University, Fort Portal, Uganda. The annual EBQ course is an intensive five-week training course on the core principles and methods of Epidemiology, Biostatistics and Qualitative research. An in-depth study of epidemiological research with appropriate statistical methods is integrated in the main epidemiological content. Basic principles of qualitative research methods will be explained, and participants will have an opportunity for hands-on experience on analysis of quantitative and qualitative data using R and Nvivo software respectively. Throughout the course each participant will have the opportunity to work with his/her own data set under the guidance of experienced researchers. Each participant will receive soft copies of reference materials as well as other necessary didactic materials (PowerPoint presentations, articles, etc.).

Major Topics

1. Quantitative Epidemiological Study Design

Principles of experimental (randomized controlled trial), prognostic (cohort), etiologic (case-control) and diagnostic (cross-sectional) research will be explained with a focus on study object, data collection (study design methods) and data analysis. In addition, more recent design types will be presented as case-cohort, case-cross-over studies. The participants will be able to select the best research design taking into account the specific context (domain) and the specific research question (etiologic, diagnostic, prognostic). *facili*



2. Methods of Data Analysis/Biostatistics

Analysis progress from basics (t-test, χ^2 , ANOVA...) to advanced analyses related to epidemiological study designs. The students will be able to understand summarizing and presenting data, probabilities theory, testing hypotheses, parametric and non-parametric tests, comparing means and proportions, Mantel-Haenszel methods (classical analysis), Regression methods (Linear regression, Logistic regression, Poisson regression, Cox regression and mixed models

3. Qualitative Study Design

In this basic course on qualitative research, we will focus on the principles, design, conducting, evaluating the quality and reporting of qualitative research. We will combine theory and hands-on practice. After the course students will be able to set up and conduct their own qualitative research in a scientifically rigorous way.

Practical Sessions

4. Introduction To Statistical Software Package (R)

The students will be introduced to data analysis using R and R studio with hands-on statistics exercises. This module will cover getting started with R, data visualization, data wrangling, data importing, data modeling, multiple regression analysis, mixed models with R and hypothesis testing. The practical lessons on descriptive and inferential statistics will provide the basis to comprehensibly analyze their own databases using these software packages.

5. Introduction to Statistical Software Package (Nvivo)

Students will be introduced to Nvivo software and will conduct their own data analysis. This module will cover how to create, name and store your project, creating and importing data, managing data (cases, attributes and sets), editing and linking, coding and working with coded data,



determining relationships (nodes), data modeling, querying the data, exploring patterns in matrices, reporting and core guidelines. Study analysis will be presented by the students throughout the sessions and results will finally be presented in a plenary style session at the end of the course.

Pre-Course Online Preparation

Prospective participants need to prepare in advance for the course given the time constraint. Background knowledge on each of the three training elements: Epidemiology, Biostatistics and Qualitative research methods is very important.

Requirements

- Health training background
- Knowledge of basic statistics
- Basic knowledge of Microsoft office
- Personal laptop

A Certificate of attendance will be awarded upon completion of the course.

Course Fee

The Course Fee \$100. This Covers:

- Participation in the Course
- Didactic Materials
- Software Installation
- Admin Fee

However, the fee does NOT cover travel costs, accommodation and meals. The course fee must be paid in full by 15th July 2024 in order to confirm participation in the training. After that date, your place may be offered to those on the waiting list. Cancellation of attendance after this date may also lead to the loss of all or part of the course fee.