

Course Outline and Competencies

BASIC QUANTITATIVE RESEARCH METHODS

Course Description

This is a 2 week long course which will provide an introduction to quantitative research methods especially for public health research. The aim of the course is to familiarize students with quantitative research methods, as well as deliver the students with the basic skills needed to conceptualize different research methods. With audio visual contents the students will receive additional reading materials which will guide them to understand the lecture contents. And finally the students will be evaluated to assess their understanding.

Course Audience:

Young professionals and field level programme managers who are working in the public health. Health care professional such as recent medical graduates are also welcome to participate.

General Objectives of the Course:

Within these three weeks the course will try to provide:

- Basic concepts of quantitative research
- Guidance to generate research ideas and the way to convert it into a research question
- Fundamental concepts of different concepts of research methods
- Details about the steps of research methodology
- Key points regarding tool development and data collection
- A way forward for data analysis and interpretation

Course Format:

The duration of this course is 2 weeks. Each week the course will consist of:

- Lecture videos of 25-30 minutes lengths with integrated quizzes for ensuring clarification of the contents
- Additional reading materials which will support the lecture contents
- Separate evaluation process which will be quizzes, exams and assignments

Prerequisites for the participating this course:

If you are planning to participate in this course the following prerequisites are preferred:

- High school level arithmetic knowledge
- Average comprehension of English for read and understand the contents
- Basic idea about statistics (eg: mean, median, proportion)
- Basic idea about data representation (eg: pie chart, histogram)
- Dedicated 4/5 hours per week to go through the

Achievable general competencies:

On completion of the course participants are expected to be able to:

- Understand the basic language of quantitative research methods
- Linking a hypothesis to basic research methodology
- Construct data collection tool and use them in the field
- Guide themselves to go forwards for data analysis and interpretation
- Understand quantitative research literature and link the results with their own context

Evaluation:

- End of first week : Quiz 01- 10 minute short quiz (10 points)
- End of second week : Assignment 01- Critically review a peer review journal article (15 points)
Assignment 02- Final Assessment (25 point)

Course Outline

Time Line	Deliverable	Contents of the Lecture	Expected Competencies to be Developed
Week 1 Time- 4 Hours	Lecture 101: Introduction- Part 1 Additional Reading:	<ul style="list-style-type: none"> ➤ What is research? ➤ Types of research? ➤ Quantitative vs. Qualitative research? ➤ Where and when to do quantitative research? 	<ul style="list-style-type: none"> ➤ Understand the concept of scientific research ➤ Distinguish basic difference between Quantitative vs. Qualitative research ➤ Understand strength and weakness of Quantitative and Qualitative research
	Lecture 102: Introduction- Part 2 Additional Reading:	<ul style="list-style-type: none"> ➤ Introduction to Quantitative Research ➤ Types of quantitative research ➤ Steps of quantitative research 	<ul style="list-style-type: none"> ➤ Understand the concept of Quantitative research ➤ Distinguish basic difference between Experimental vs. descriptive study research
	Lecture 103: Study Designs: Understanding the concepts of different research designs Additional Reading:	<ul style="list-style-type: none"> ➤ Basic description and methodological difference of Randomized Control Trial, Cohort, Case Control. Cross sectional research methods ➤ In brief describing the methodology of Randomized Control Trial, Cohort, Case-Control. Cross sectional research methods 	<ul style="list-style-type: none"> ➤ Understand the differences between different research design ➤ Identify the application of different research design ➤ Comprehend the methodology of Randomized Control Trial, Cohort, Case-Control. Cross sectional research methods
	Evaluation: Quiz 01: A short 10 minutes quiz		
Week 2 Time- 4 Hours	Lecture 201: Survey Methodology- Part 1 Additional Reading:	<ul style="list-style-type: none"> ➤ Formulate a research question ➤ Logically linking it to a research design ➤ Constructing a methodology ➤ Brief description of Study site, population, sampling frame, sampling method, sampling with inclusion and exclusion criteria 	<ul style="list-style-type: none"> ➤ Assess a public health problem ➤ Formulate an appropriate research question ➤ Decide what type of study method should be adopted to answer the question ➤ Develop a foundation for designing valid and efficient studies to address public health problem ➤ Understanding concept of extracting samples from population pool
	Lecture 202: Survey Methodology-- Part 2 Additional Reading:	<ul style="list-style-type: none"> ➤ Data collection tool and methods ➤ Questionnaire designing and pretesting ➤ Ethical issues regarding field Preparation & data Collection 	<ul style="list-style-type: none"> ➤ Formulation and validation of quantitative data collection tool ➤ Comprehend the ethical issues related with Quantitative Research
	Lecture 203: The Next Step Additional Reading:	<ul style="list-style-type: none"> ➤ Introduction to analysis ➤ Short description data presentation and visualization ➤ Critical review of a peer review journal article and understand the contents 	<ul style="list-style-type: none"> ➤ Interpret basic descriptive epidemiologic results ➤ How to proceed with statistical methods of estimation and hypothesis testing ➤ Become a critical reader of qualitative literature
	Evaluation: Assignment 01: An critical analysis of quantitative article Assignment 02: Final Assessment		