



Government of Pakistan



Fostering Young Minds



Health Services Academy

Course Title: Epidemiological Research Designs

Course overview: Choosing an appropriate study design is a critical decision that can largely determine whether your study will successfully answer your research question. In this course, you will learn about the analytical study designs used in epidemiology, including Case-Control, Cohort studies, and Randomized controlled trials, which is often considered the optimal study design, especially in clinical research. You will also develop the skills to independently conduct an epidemiological study and will be able to critically appraise a study design by identifying its strengths and limitations. This is a project based course.

1. **Course Aim:** This course aims to enable researchers in planning and conducting an epidemiological study, learn how to report scientific findings according to standard guidelines and being able to critically appraise the strengths and gaps in a study design.
2. **Course Credits:** It is a Postgraduate Certification
3. **Course Objectives**
 - a. Ability to independently conduct an analytical epidemiological study
 - i. Case-Control
 - ii. Cohort Studies
 - iii. Randomized controlled trials
 - b. How to plan a study and write research proposal.
 - c. Understanding of measures of association (Odds ratio, Relative risk)
 - d. Knowledge about strategies employed to minimize bias
 - e. Understanding of blinding and randomization in RCTs
 - f. Able to critically appraise methodology of a study
4. **Topics Covered:**
 - a. **Introduction to Epidemiological study designs**
 - b. **Methodology of Case-control study**
 - i. **Steps of conducting a Case-control study**
 - ii. **Selection of cases and controls**
 - iii. **Biases**
 - iv. **Measure of association-Odds ratio**
 - v. **Interpretation and reporting of results**
 - c. **Methodology of Cohort studies**
 - i. **Steps of conducting a Cohort study**
 - ii. **Selection of participants**

- iii. Biases
 - iv. Measure of association-Relative risk
 - v. Interpretation and reporting of results
 - d. Methodology of Randomized controlled trials
 - i. Types of Randomized controlled trials
 - ii. Steps of conducting a Randomized controlled trials
 - iii. Selection of participants
 - iv. Biases
 - v. Blinding in Randomized controlled trials
 - vi. Interpretation and reporting of results
 - e. Developing a research proposal
 - f. Critical appraisal epidemiological study designs
 - 5. **Course structure:** objectives will be met by means of following activities;
 - a. Online interactive sessions, group discussions and exercises
 - b. Relevant examples from the field
 - c. Review of learning objectives
 - d. Evaluated Research project and presentation (mandatory)
 - 6. **Target audience:** This course is open to under-graduate, graduate or post graduate students, research staff, academics or anyone interested in epidemiological research.
 - 7. **Duration:** 2 weeks

Participant Fee- Rs: 60,000/-