

Data Collection and Analysis in

Data Collection and Analysis in Epidemiology

1. Introduction

- Sound data collection and analysis underpin valid epidemiological conclusions.
- Methods must ensure accuracy, completeness, and ethical handling of information.

2. Data Sources

- **Primary data:** collected directly through surveys, interviews, or measurements.
- **Secondary data:** existing records such as registries, census, and surveillance reports.

3. Data Collection Methods

- Questionnaires, clinical examinations, and laboratory tests.
- Standardized definitions and tools improve reliability and comparability.

4. Data Analysis

- Descriptive analysis summarizes data with rates, proportions, and measures of central tendency.
- Inferential analysis tests hypotheses and estimates associations.
- **Confounding:** a third variable distorting the exposure-outcome relationship must be controlled.

5. Quality and Ethics

- Validity and reliability of measurement reduce bias.
- Confidentiality, consent, and secure storage protect participants.