

## MOD 2

### 1. Study Design

- Definition: A specific plan for conducting research that allows the investigator to translate a conceptual hypothesis into an operational one.

- Importance: Helps achieve research objectives in a scientifically valid way.

### 2. Types of Studies :

- Prospective Studies: Follow patients from now to collect data.

- Retrospective Studies: Rely on existing records to gather information.

- Descriptive Studies: Such as case reports and case series, focus on describing one or more cases.

- Analytical Studies: Like case-control studies, compare two groups to identify risk factors.

### 3. Surveys and Questionnaire Design :

- Importance of Questionnaires: Used to gather patient attitudes about diseases, medications, or quality of life.

- Common Problems in Wording: Questions should be clear and non-sensitive to avoid bias.

### 4. Clinical and Experimental Trials :

- Clinical Trials: Compare two or more treatments to determine effectiveness.

- Community Trials: Focus on the impact of interventions on entire communities, such as smoking cessation programs.

## 5. Statistical Analysis :

- Relative Risk (RR) and Odds Ratio (OR): Used to evaluate the relationship between risk factors and disease occurrence.

## 6. Comparison Between Prospective and Retrospective Studies :

- Prospective Studies: More expensive but provide more accurate data.

- Retrospective Studies: Less costly but may lack precision due to reliance on memory.

## 7. Importance of Observation :

- Helps Discover New Relationships: Clinical observations can lead to new research ideas.

## Conclusion:

The document provides a comprehensive overview of research study design, types, and the importance of each type. It emphasizes the use of surveys, clinical trials, and statistical analysis to understand risks and influencing factors on health.

Done 

## Examples

### 1. Types of Studies:

#### - Prospective Study:

- Example: Following a group of patients over time to assess how exposure to a certain medication affects their health outcomes.

#### - Retrospective Study:

- Example: Reviewing medical records of patients diagnosed with a disease to identify previous exposures or risk factors.

#### - Descriptive Study:

- Case Report: A detailed account of a single patient's unusual symptoms or adverse reactions to a medication.

- Case Series: A collection of reports on multiple patients with similar rare conditions or reactions to a treatment.

#### - Analytical Study:

- Case-Control Study: Comparing patients with a disease (cases) to those without it (controls) to identify past exposures (e.g., comparing patients with stomach cancer to healthy individuals to find risk factors).

## Continuation of examples

### 2. Types of Experiments

- Clinical Trial:

- Example: Conducting a trial comparing the effectiveness of Drug A versus Drug B in treating a specific condition, with participants randomly assigned to each treatment group.

- Community Trial:

- Example: Implementing a smoking cessation program in two different cities and comparing the rates of smoking reduction between the communities.

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