Observational Bias

Observational bias (also called **observation bias** or **ascertainment bias**) refers to systematic errors in the measurement, recording, or interpretation of data that occur due to the **observer's expectations**, **knowledge**, or **study design**.

It can affect the validity of results in both **clinical** and **epidemiological** research, especially in **non-randomized** or **open-label** studies.

Types of Observational Bias

- **Detection bias**: Outcomes are more likely to be observed in one group due to **increased monitoring or surveillance**.
- **Observer bias**: The person collecting data **intentionally or unintentionally distorts** measurements due to prior beliefs or expectations.
- **Reporting bias**: Selective recording or emphasis of certain outcomes over others.
- **Recall bias** (in self-reported data): Patients may remember or report information differently depending on exposure or outcome status.

Example

In an unblinded clinical trial, a physician who knows which patients are receiving the active drug may **more closely monitor** them and detect side effects that go unnoticed in the control group — artificially inflating adverse event rates.

Prevention Strategies

- **Blinding** of participants and investigators
- **Standardized protocols** for data collection
- **Objective outcome measures**
- Use of **independent adjudicators**

Related Concepts

- Selection Bias
- Information Bias
- Confirmation Bias