

⚠ Methodological Weakness

Definition: A *methodological weakness* refers to any flaw, limitation, or inconsistency in the design, conduct, or analysis of a study that undermines the **validity**, **reliability**, or **generalizability** of its results.

□ Common Types of Methodological Weaknesses

- **Small sample size** → low statistical power
- **Lack of randomization** → selection bias
- **Absence of blinding** → observer or performance bias
- **Poor control group** → invalid comparisons
- **Inadequate follow-up** → incomplete outcome data
- **Confounding variables not controlled** → false associations
- **Inappropriate statistical methods** → invalid conclusions

□ Why It Matters

Methodological weaknesses reduce the trustworthiness of a study's findings and may lead to:

- Overestimation or underestimation of effects
- False causal claims
- Poor reproducibility
- Misleading recommendations

□ Related Terms

- [bias](#)
- [confounding](#)
- [internal validity](#)
- [external validity](#)

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