Operator Bias

Operator bias refers to systematic differences in outcomes that arise due to variations in the skill, experience, decision-making, or preferences of the individual performing a procedure or intervention.

⚠ Key Characteristics

- Outcomes influenced by **who performs the procedure**, not just what is done
- Particularly relevant in **surgical** and **interventional** studies
- Often unacknowledged in retrospective analyses
- Can confound comparisons between techniques or centers

Example in Neurosurgery

- A high-volume vascular neurosurgeon may achieve better outcomes with clipping than general neurosurgeons, skewing results in favor of surgery when comparing to endovascular treatment performed by less experienced interventionalists.

Why It Matters

- Distorts the apparent efficacy or safety of a procedure
- Makes multicenter or multitechnique comparisons unreliable
- Introduces hidden bias in non-randomized studies

Best Practice

- Report operator volume and experience
- Perform stratified or sensitivity analyses by operator
- Acknowledge as a potential confounder in observational studies