

Understanding Base Rates in Psychological Assessments: Why Context Matters

Understanding Base Rates

Psychological tests are widely used in legal settings to assess mental health conditions, but their accuracy depends on three key factors:

Sensitivity – How well the test detects true cases (avoiding false negatives).

Specificity – How well the test rules out non-cases (avoiding false positives).

Base Rate – How common the condition is in the population being tested.

Even a highly accurate test can be misleading when the condition is rare. False positives can outnumber true positives—leading to misdiagnosis, misinterpretation, and flawed legal arguments.

Case Study: Schizophrenia & the SCID-5 in Legal Contexts

Schizophrenia is rare in the general population (~1.5%) but more common in forensic settings (~10%).

The SCID-5 is a structured clinical interview used to diagnose schizophrenia.

Sensitivity: 90% (correctly identifies 90% of true cases).

Specificity: 95% (correctly rules out 95% of non-cases).

Impact of Base Rates on Accuracy

Scenario 1: General Population (1.5% Base Rate)

Out of 1,000 people, only 15 actually have schizophrenia

True Positives: 14 (90% of 15)

False Positives: 49 (5% of 985)

Total people who test positive = 63 (14 true cases + 49 false cases)

Only 22% of people who test positive actually have schizophrenia.

78% of positive results are false alarms!

Scenario 2: Forensic Population (10% Base Rate)

Out of 1,000 people, 100 actually have schizophrenia.

True Positives: 90 (90% of 100)

False Positives: 45 (5% of 900)

Total people who test positive = 135 (90 true cases + 45 false cases)

Now, 67% of people who test positive actually have schizophrenia.

Higher base rate = fewer false positives and more reliable results.

Key Takeaways for Legal Professionals

- Low base rates increase false positives, reducing test reliability.
- The higher the base rate, the more accurate positive test results become.
- Screening tools should never be used in isolation—full clinical evaluation is essential.
- Understanding base rates, sensitivity, and specificity ensures that psychological evidence in court is interpreted accurately, ethically, and fairly.