Nemours Biostatistics Core Statistics Course

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Outline

- Some Thoughts

- A Sample Data Analysis
  - Annotated version with sample interpretations of usual statistics will be available on class webpage
  - Webpage will remain to be accessible

- Sample Size & Power Calculation

Summary

- Session 1: Variable identification & typing
- Session 2: Descriptive Statistics
- Session 3: Hypothesis testing, statistics perspective
- Session 4: Hypothesis testing, medical perspective
- Today: application of concepts

Another Sleepiness Study

- Design: Single-center prospective longitudinal cohort study

- Sampling technique: Convenient Sampling

- Outcome Measure Instrument: ESS

Strength & Weakness in Design

- Strength: rapid data collection, cost-effective, within-group homogeneity (internal validity, spontaneous adjustment for exposure risk, unmeasured confounding variables.

- Weakness: limited generalizability (single-center), some unadjusted hidden bias, etc.

Sample Data Analysis

Possible points of critique

- ESS may not measure sleepiness well among fellows (questions are not relevant to lifestyle)
- Pediatric fellows are systematically different from fellows in other specialties in some way
- What we call different (time of surveys) are not different (both in the morning)
- What else?

Future studies possible

- Are fellowships across nations of the same stress intensity?

- Is sleepiness a accurate and reliable indicator of stress compared to another measure (comparative study on surrogacy)?

Sample Power & Sample Size Calculation

Thank you

- I appreciate your participation and time
- Future possible assistance with projects
- Evaluation – Return to Jamie