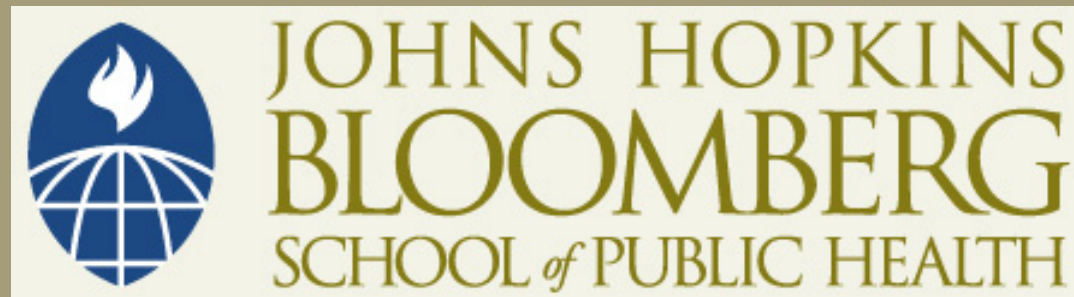


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Section B

Methodological Issues Related to Evaluation—A Focus on
Effectiveness, Part 2

Analysis: Interval Data

I. Univariate analysis (descriptive)

- Mean, median, mode
- Need for confidence intervals (if sample)

Analysis: Interval Data

- For example:
- ISS among drivers in frontal crashes
(n = 5003) (Note ISS range: 0–75)
 - ▶ Mean 6.4
 - ▶ St. Dv. 15.6
 - ▶ Range 0–75
 - ▶ Median 1; quartiles 0 / 0 / 1 / 4 / 75; mode 0

Analysis: Interval Data

II. Bivariate analysis

- If outcome is interval and other is categorical or ordinal: Compare means (e.g., T student)
- If outcome and other variables are intervals: Correlation (e.g., Spearman rho)
- Linear regression (with only one independent variable)

III. Multivariate models

- Linear regression models
- Regardless of type, if outcome has:
 - ▶ Normal distribution: Normal regression
 - ▶ Poisson distribution: Poisson regression

Analysis: Interval Data

- Interpretation: One unit change in any independent is associated with a mean (x units) change in dependent (y)

Analysis: Ordinal/Categorical

- I. Univariate analysis (descriptive)
 - Frequency counts
 - Needed for confidence intervals (if sample)

Analysis: Ordinal/Categorical

II. Bivariate analysis

- Comparison of proportions (e.g., Chi square)
- (Ordinal, multinomial) logistic regression with only one independent variable
- Intra-class correlation coefficient

Analysis: Ordinal/Categorical

III. Multivariate analysis

- Regression models
 - ▶ If outcome is ordinal: Ordinal logistic
 - ▶ If outcome is categorical:
 - If several categories: Multinomial (polytomous) logistic
 - If two categories: Logistic

Analysis: Ordinal/Categorical

- Issues on ordinal regression models
 - Outcome has ordinal properties
 - Interpretation: One unit change in any independent variable is associated with x change in probability of y category to happen