

HS 267D “Checklist”

The Labs encompass the complete curriculum. Use this checklist to help organize your studies.

Tutorial: measurement scales (quantitative, ordinal, and categorical); data table (variable, value, observation); SPSS basics (variable creation, data entry, basic menus); descriptive stats (stemplot; frequencies, mean, standard deviation, median, boxplot); Normal distribution; binomial distribution; confidence interval basics (z and t); hypothesis testing basics (z and t).

Lab 1: Inference about a proportion (Ch 16)

- a. Data conditions: one sample, binary response; information quality; sample quality
- b. Notation: $p \equiv$ proportion parameter; $\hat{p} =$ sample proportion
- c. CI for p (large sample and small sample)
- d. Hypothesis test of $H_0: p = \text{some value}$ (large sample and small sample)
- e. Sample size for estimating p with given margin of error

Lab 2: Comparing two proportions (Ch 17)

- a. Data conditions: two (independent) groups; binary response
- b. Notation: $RR \equiv$ relative risk parameter; $\hat{RR} \equiv$ relative risk estimator
- c. Interpretation of \hat{RR}
- d. CI for RR
- f. Hypothesis test of $H_0: RR = 1$
- e. Systematic error (info bias, selection bias, confounding) in analytic research

Lab 3: Naturalistic and cohort samples (Ch 18)

- a. Data conditions: naturalistic sample or purposive cohorts, categorical response; no systematic error
- b. Chi-square distribution (characteristics, table, df , relation to z)
- c. Cross-tabulation (incidences/prevalences, relative risks, chi-square test of association)
- d. Fisher’s test
- e. Sample size requirements

Lab 5: Stratified tables: confounding and interaction (Ch 19)

- a. Data conditions: binary explanatory variable, binary response, categorical confounders
- b. Confounding
- c. Crude (overall) vs. strata-specific results
- d. Mantel-Haenszel summary RR
- e. Test for interaction

Lab 6: Correlation and regression (Ch 14)

- a. Data conditions: quantitative explanatory variable, quantitative response variable
- b. Scatterplot
- c. Notation: $\rho \equiv$ correlation parameter; $r \equiv$ correlation estimator (strength and direction)
- d. Test of $H_0: \rho = 0$
- e. Notation: $\beta \equiv$ slope parameter; $b \equiv$ slope estimator (effect of X on Y)
- f. CI for β
- g. Coefficient of determination r^2
- h. Dealing with nonlinear and non-normal relationships