

Biometry 726

Fall 2010

Project 1 Grading Rubric

NAME _____ TOTAL _____

ITEM

1. Style and structure	1	2	3	4	5	6	7	8	9	10
2. Grammar	1	2	3	4	5	6	7	8	9	10
3. Graphics and tables	1	2	3	4	5	6	7	8	9	10
4. Descriptive and univariate analyses	1	2	3	4	5	6	7	8	9	10
5. Multivariable analyses	1	2	3	4	5	6	7	8	9	10
6. Goodness of fit	1	2	3	4	5	6	7	8	9	10
7. Abstract	1	2	3	4	5	6	7	8	9	10
8. Introduction and methods	1	2	3	4	5	6	7	8	9	10
9. Results and discussion	1	2	3	4	5	6	7	8	9	10
10. Supporting documentation	1	2	3	4	5	6	7	8	9	10

Comments: _____

1. **Style and structure:** Manuscript follows a logical flow; organization is sensible with a title page, abstract, introduction, methods, results, and discussion; presentation of listed items follows a parallel construction with respect to presentation in the text and in tables and graphs; paragraphs are focused and topically unified; avoid passive voice (e.g. “*A study was conducted examining the effects of air pollution on asthma incidence*” is better written as “*We conducted a study examining the effects of air pollution on asthma incidence,*” or “*Lyles and colleagues³ conducted a study examining the effects of air pollution on asthma incidence.*”); clear direct writing is preferred to flowery, over-stated prose; appropriate reporting of numerical summaries in manuscript (e.g. two significant digits is sufficient); manuscript length (8 pages total, excluding title page and bibliography) and line spacing (double-spaced, please) is followed.
2. **Grammar:** Spelling; punctuation; subject-verb agreement; no run-on sentences; appropriate use of pronouns; acronyms are used appropriately; avoid inappropriate use of verbs for non-human subjects (e.g. “*To gather this information, a study which collects information from the time of diagnosis is needed.*” A study can not ‘collect information’. Only the humans conducting the study can do that. Rewrite the sentence as “*To address our aim, we measured data on subjects from the time of diagnosis.*”
3. **Graphics and tables:** Graphics and tables are purposefully included; graphs are constructed to convey the maximum amount of information while simultaneously being ‘true’ to the data (i.e. data are not distorted); graphics and tables are self-contained, that is, interpretable without reference to the text; appropriate captions are included; for graphs, axes are appropriately labeled, font size is large enough to render the figure visible, colors (if used) add to the interpretation of the data and are not used just because ‘they look good that way;’ rows and columns of tables are labeled appropriately.
4. **Descriptive and univariate analyses:** Appropriate descriptive summaries of the data are included - e.g. sample size (overall and in each group, if appropriate); percent and frequency male and female; correct use of mean and SD, or median and IQR (or range); correct use of SE versus SD; one-at-a-time association assessments of each variable with

response included and summarized appropriately; correct statistical methods used depending on the nature of the data (e.g. categorical, continuous, skewed, clustered); sample sizes are appropriately reported (N.b. missing data can change the sample size across variables).

5. **Multivariable analyses:** modeling strategy is justified in the text; approach is appropriate for the data structure; analytic approach is described in sufficient detail as to be reproduced exactly if the reader had the data in hand; software and any packages used is referenced, including the version number; sample size for multivariable analysis is reported.
6. **Goodness-of-fit:** Overall model fit is assessed; functional form of continuous covariates is assessed; response and covariate transformations are reported and appropriately justified; influential observations are identified and investigated; outlying observations/covariate patterns are identified and investigated. (N.B. *Depending on the statistical method for multivariable analysis, not all goodness-of-fit diagnostics are currently developed. Sometimes there is a paper available, but no corresponding code - which means you should attempt to code it yourself given sufficient time. Other times, method development is an area of active research, in which case you can attempt an ad hoc approach.*)
7. **Abstract:** Abstract is included and succinctly summarizes the problem, the approach, and the seminal findings; abstract styles vary depending on the journal. Please write yours in the style of a Statistics in Medicine abstract.
8. **Introduction and methods:** Introduction motivates the current study and ends with a thesis statement - i.e a statement of the study's primary aim. Note that for a clinical paper, the introduction typically is written by the clinical investigator. Since you are not all experts in the field represented by this study, a paragraph summarizing the intent of the study is sufficient. Methods describe the study's experimental design; all variables are described in detail; statistical methods describe all aspects of descriptive, univariate and multivariable analyses. Do not put results in the methods section.

9. **Results and discussion:** Results provide a logical and sequential summary of the findings, with appropriate reference to figures and tables; results are interpreted on the original scale of measurement wherever data transformations were implemented; appropriate reporting of p-values and confidence intervals included; results are presented in a clinical context; discussion section summarizes the major findings; strengths and limitations of the study are considered; discussion contains details pertaining to future or follow-up work based on the current study.

10. **Supporting documentation:** Bibliography is included; references are correct; don't include a reference unless you have actually read it - i.e. don't rely on secondary references; non-peer reviewed references are discouraged; electronic appendix (i.e. .R file) is submitted accompanying the manuscript which reproduces ALL analyses, figures and tabular results presented in the manuscript; .R file is appropriately commented to make it easy to locate material.