

## HS 261 Principles of Epidemiology

### Studying-a-Study Assignment

One of the goals of this course is to help you better understand public health research. To accomplish this goal, it helps to have a practical step-by-step approach for critically reading and evaluating published articles. People who can read the literature while understanding and accepting its limitations are better able to draw meaningful conclusions about health and disease while integrating findings into practice.

You must first select a **topic**. Select a topic that interests you and you already know something about. For example, if you work in a respiratory health, the epidemiology of asthma might interest you. If you work in HIV, then select a topic having to do with HIV and AIDS. Sometimes having an ailment yourself or having a loved one with a serious ailment motivates interest in a topic. Select your topic carefully.

After selecting your topic, you must then identify an appropriate **article**. The article must be published in a high-quality journal and include one of the measures of disease frequency (incidence or prevalence) or association (relative risk or risk difference) studied in class. Your study may be a trial, field survey, ecological study, cohort study or case-control study. Avoid complex hybrid designs. Pick your article wisely.

Read through your article, carefully, several times, taking notes in preparation for your report. If you cannot understand your article, there is no use in going forward with it. Another article must be selected.

You are now ready to write your report. Your report must have the following sections:

**(A) Research question:** What is the primary objective of the study? What is the central objective? Are there secondary objectives? What does the investigator's causal model look like? (Consider induction periods / time-response relationships, causal interactions, dose-response relations.) What educated hunches were put forward before the study was begun?

**(B) Study design:** What type of study design was used? Why do you think this design was selected? What are the strengths and weaknesses in using this design? How were subjects identified and selected for study? To what population will inferences be made? List person, place, and time factors that define the source population. Were admissibility criteria applied? How was the source population sampled? How successful was enrollment and retention of study subjects.

**(C) Explanatory variable:** What is the main exposure variable in this study? How was it measured? How many levels of the exposure were classified? Was the exposure ascertained accurately?

**(D) Study outcome:** What health outcome was studied by this research? How were cases defined? What criteria were applied, and how were cases verified? Is the study outcome relevant? What criteria were applied to avoid “missing” events?

**(E) Measures of frequency and/or association.** Was incidence, prevalence, or neither studied? What measures of association was applied? What statistical method applied to control for confounding (if any)? What factors were controlled for? Was an association observed? How strong was the association? How precise was the estimate? How would you interpret the results?

**(F) Sources of error:** Consider the sources and extent of random error? Consider potential sources of selection bias, information bias, and confounding. Can results be generalized?

**(G) Bottom line:** How strong is the case for causality? Do the findings agree with the central objectives and hypothesis of the study? In one or two brief sentences, state the “bottom line” of the study. What recommendations can you take forth?

#### **Checklist for understanding the numbers:**

1. Familiarize yourself with reported numbers, figures, and tables.
2. Calculate the crude risk ratio or odds ratio based on reported values.
3. If strata-specific results are provided, calculate strata-specific risk ratios or odds ratios
4. Look up background information about the statistical risk model (e.g., logistic regression, Cox proportional hazards model, etc.) that was used to control for confounding.

#### **Manuscript requirements**

1. Use heading (A) – (G) identified above.
2. Keep a copy of your report. (Your report will not be returned.)
3. Your report must be typed. Use a 12 point font.
4. There is not a specific word count requirement, but keep in mind that “concise” is better than “long-winded.” I have an aversion to polemics and hot air.
5. Select words carefully.
6. Plagiarism will not be tolerated. You must work independently.
7. Attach a photocopy of the original article to your report.
8. Due date = published date of the final (see Schedule of Class and/or class website).