Epidemiology: HLSC 2003

Group Assignment 3

Odds Ratios, Relative Risk, and Difference Measures

Group ID: _____

Group Members in Attendance: 1. _____ 2. _____

3. _____ 4. _____

Researchers are interested to know if there is an association between excessive screen time (i.e. mobile phones, computers, and other devices) and depressive symptoms among university students. 1522 cases, selected from university health centers, and 1363 controls, selected from the same university campuses, are enrolled in the study. Cases and controls are then questioned about average daily screen time. Results showed that 827 of the cases and 342 of the controls used their phones excessively (> 4 hours per day on average).

1. What type of study design is this? _____
2. What is the exposure of interest? _____
3. What is the outcome of interest? _____

4. Complete the 2X2 table to display findings of this study:

5. What is the prevalence of depressive symptoms in this sample group (both cases and controls)?

6. Calculate and ***interpret*** the Odds Ratio in this sample.

Two studies are conducted using random samples of adults were selected from the general population in Alberta. **In study 1**, participants are screened for lung cancer. Those who are free of the disease are asked if they smoke or not, and then followed for 10 years. **In study 2**, participants are screened for heart disease. Those who are free of the disease are asked if they smoke or not, and followed for 10 years. After 10 years the cumulative incidence of lung cancer and coronary heart disease (CHD) among smokers and non smokers in each study was examined. This information is displayed in Table 1. Use this information to complete the blank spaces in the last 2 columns of the table, and to answer the questions below:

Table 1. Lung Cancer and CHD Mortality Rates in Study

	Smoking status	Cumulative Incidence per 100,000	Relative risk	95% CI for Relative Risk	Attributable Risk per 100,000
Study 1: Lung Cancer	Yes	140		9.1 to 22.4	
	No	10			
Study 2: CHD	Yes	669		1.2 to 1.8	
	No	413			

7. Study Types: _____

   Exposure: _____

   Disease Outcomes: _____

8. Is the relative risk for the association between smoking and lung cancer statistically significant? _____

9. Based on the relative risks, is smoking a stronger risk factor for the development of lung cancer or CHD? _____

10. If no one had smoked in Study 1 or Study 2, would more cases of lung cancer or more cases of CHD have been prevented? _____

11. Why are the answers to Q9 and Q10 different? On which disease does smoking have a greater public health impact?

_____

_____

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12. Calculate and interpret **the percentage** of cases of lung cancer and CHD attributable to smoking in this study sample (i.e., the attributable fraction):

Lung cancer:

CHD:

13. The overall incidence of lung cancer in Canada is 59 per 100,000 adults. Using this information, and data from Table 1, calculate the *population attributable risk* (PAR) to answer the following question: **If no one smoked in Canada, how many cases of lung cancer would be prevented each year?**

Calculation:

Answer: