

Stat 2, Summer 2010

Solutions to Homework set 1:

June 30, 2010

Chapters 1-2:

3. No, they were not right. In the Salk trial, the higher-income parents were more likely to consent than the lower-income parents. Their children were more at risk for polio, to begin with (see page 4).
4. (a) Since people of different ages have different smoking habits, and different risks (older people are more at risk for lung cancer), they were trying to control for the confounding factor of age. Also, there are many more males than females who smoke, and males are also more at risk for heart disease, so they were trying to control for gender.
(b) Well, people usually stop smoking because of health problems, and recent ex-smokers include many sick people. So this is an incorrect conclusion.
7. (a) Observational study.
(b) Because all of these are potential confounders (women of different ages, education, and marital status, have different patterns of sexual activity, and so are exposed to different risks).
(c) Sexual behaviour. Women on the pill are more active, and have more partners, and this may account for the higher rates of cervical cancer.
(d) No, by part (c).

Chapter 3:

2. (a) More at age 1 (density greater).
(b) More at age 21
(c) More people of age 0-4.
(d) 50%
4. (a) 25%
(b) 99%
(c) 135 – 140mm
7. (i) Natural causes (ii) Trauma. (Old people more likely to die of natural causes, and young people from some trauma such as accidents or murder).

Chapter 4:

- 1(a). Average = 50, SD = 5
5. 80mm is more than 3SDs below the average, and so it is unusually low. 115mm and 120mm are about average, and 210mm is unusually high.
9. (a) Yes, the average is affected. It goes up by $\frac{986000 - 98600}{1000} = 887.40$ dollars.
(b) No, the median is not affected.