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Reading: Angrist & Pischke Chapter on Experiments

1. AP use a parable from a Robert frost poem to demonstrate an important point about economic research. What is that point?

   The road not taken meaning that we can't observe a counterfactual or events that have not taken place. "Acts demolish their alternatives".

2. Table 1 illustrates the problem with comparing the health of people in a survey some of which have health insurance and some of which do not. Look at the table and describe what's going on in column (3). What's the problem here?

   The issue from the survey is that we're comparing two groups in which there are multiple dimensions in which they differ that could affect their health outcome which is the outcome of interest. Also, the sample sizes are vastly different where those with health insurance are overrepresented. The survey doesn't provide a truly randomized experiment and as well as its survey data, the analysis relies on determining health outcomes after a respondent either has or doesn't have health care making the true effect of health care on health outcomes unclear.

3. Describe the subscripting that tells us the effect of health insurance.

   The subscripting here describes people in the form of person or observation "i" and uses another binary subscript to describe whether the person has health insurance or does not, 1 and 0 respectively.

4. What point is AP making comparing Khuzdar and Maria?

   That because Maria and Khuzdar have different baselines and predisposition regarding their health there is little to be understood from the causal effects of their choice to get insurance or not

5. What is selection bias in the context of Khuzdar and Maria?
   Because Khuzdar already has poor health and he opts for the insurance while Maria, in better health opts out, the effects of health insurance appear harmful, so this is adverse selection bias.
6. Why doesn't taking the difference in averages fix selection bias issue? Refer to equations 1.2-1.4 for your answer.

   Because we're looking at two different populations essentially. The outcomes we want to view are the kappa parameter and according to equation 1.4 we are trying to view the same population in two different states, with insurance and without. As that's not possible two different sets of people must be studied who have already decided about health insurance which affects the outcome.

7. Why might it not be wise to simply look people with similar characteristics that you can *observe* but some that have health insurance and some that do not?

There are many underlying factors about health that aren't immediately observable even if two people are making the same income or any other dimension. Khuzdar and Maria are both going to MIT but have different underlying health issues.

8. How does random assignment eliminate selection bias? Use the potential outcomes framework in your answer.

   Because unlike the NHIS survey where it was viewing people who already had or didn't have insurance, random take a group of people who are starting at the same baseline of no insurance and here all metrics can be measured in the uninsured state. From there the treatment group is given health insurance while control remains without. In this scenario you get your variable $E[Y_{0i} \mid D = 1]$ where the resulting outcomes are studying the results between those who got insurance and those without while having started from the same place.

9. Look at table 1.3, what is it showing? Why is this important to establish before you go looking for causal effects?

   It shows the pre-treatment outcomes of the groups formulated for this experiment. It's important to make sure the group before treatment doesn't show any characteristic which is highly variable to ensure that the effects of the applied treatment are obscured by the variation.

10. Look at table 1.4, what does this table tell us about generous insurance and its effects on health?

    Generous plans saw a rise in health care usage and expenses without much of a health dividend or improvement for those people

11. Describe the results of the Oregon health experiment.

    The OHP experiment has similar results to the HIE where those who were given health insurance showed an increase in hospital visits, prescription drugs while providing only a small benefit to physical health.

12. What does this imply about expanding Medicaid?

    Offering more coverage has unintended consequences potentially causing busier ERs and demand for more services that can drive up health care costs in general.

13. What are some problems with Medicaid the experiment?

    Even those who won the lottery still had to choose to apply. Some applicants who lost were later eligible for Medicaid. So, people still had to choose to have health insurance while others in the control had some form of health insurance for some period.

14. Do we have enough information to conclude expanding Medicaid does not increase health?

    No and the authors don't make any declarative statement either way. While they note that there weren't significant health increases for those insured there were other benefits.

15. According to the experiment what is the biggest benefit of Medicaid to individuals?

It was the financial safety of not incurring huge medical expenses for illnesses or emergencies. There was also improvement in mental health as well.