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MONT 106N

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Pgs. 24-27 #4-12

1. a) You should not conclude that Minnesota is more law abiding because there is a population difference. Considering that Michigan has almost two times the population of Minnesota, and there is only a difference of 498 crimes between the two states, it is more correct to say that Michigan is a more law abiding state with a ratio of crimes to people of 4,082 : 10,006,266 and Minnesota with a ratio of 3,584 : 5,019,720.

 b) The United States did not necessarily become more law abiding during that time because other factors may have contributed to the change in crime rate, such as more crime committing people being in prison at that time

4. a) Men and women were studied in different groups and age was separated into different groups because they are confounding factors. For example, the age of the smoker matters because older people most likely have been smoking for a longer time compared to someone who is younger and may have just started smoking.

 b) By stopping smoking recently, the body of the previous smoker is adjusting to the shock of not having the extra nicotine in the system constantly and their health may need to adjust to their new system of health. Eventually their health should get better after not being shocked from recently quitting smoking, and addictive habit.

5. No, the zinc sulfate should not be giving as a treatment because the design of the second experiment was much better, being double blind. Since none of the participants or doctors knew whether they were having the placebo or the actual medication, there was no bias in the results, but in the second experiment the doctors knew who was being given the zinc sulfate so they could have had a biased outcome.

6. The placebo effect would be one way to explain the results of the study. Since some of the subjects improved over the first period of time, there could have been influence throughout groups as well as the fact that the subjects were given two “different” types of medication, in half of the cases, there may have been a mental effect.

7. a) This was an observational study.

 b) The investigators adjusted for age because that could effect how long one of the subjects has been taking the oral contraceptive because the length of time someone has been taking the pill could have a greater effect. Also, the HPV virus which causes cervical cancer in more common in women under the age of thirty. Education was adjusted for because it could influence women’s lifestyle choices, like whether to engage in sexual activity with different partners, or possibly get a vaccine for the virus. Lastly, the marital status of the subjects had to be adjusted for because married women are most likely only going to be having one sexual partner compared to no married individuals who are more likely to have different sexual partners, which comes with a greater risk of receiving the STI (sexually transmitted infection) of cervical cancer.

 c) It is almost definite that the users of the oral contraceptive are have sex, while most likely the women not using the oral contraceptive are not engaging in sexual activity.

 d) No, because it is more likely that the women using the oral contraceptive are engaging in sexual activity more than the non-users, so the possibility that more sexual activity occurring could be a possibly cause of cervical cancer contradicts the conclusion given in the example.

8. No, I do not think that the statistics prove more crime happens between Memorial Day and Labor Day because there are approximately three months time in between these two days (June, July, and August). Since it states that 25% of crime happens during that time shows that a normal amount of burglaries compared to the rest of the year because there are twelve months in a year, the three summer months being 25% of the year all together.

9. a) False, because the observational study suggested that the vitamins would decrease death rates from cancer compared to non vitamin takers which was not shown in the first experiment and was completely contradicted in the second experiment.

 b) True, since the fact that different lifestyles may include exercise, smoking, drinking, ect., there is a big chance that the difference of lifestyle all together is the reason for lower cancer deaths.

 c) False, because the study was randomized, the amount of people who actually were eating the vegetable in the first place were randomly put into the groups so the lifestyle effects may have affected that outcomes.

10. a) This was an observational study.

 b) Yes, there was an association found between controlling mothers and overweight children.

 c) It could explain the association because maybe children with controlling mothers are only able to find an outlet of their own control in their food intake, especially when they might not be around their mothers. This food intake being their only control could definitely be an effect of their body weight.

 d) No, it would not explain the association because first of all, the study does not state whether or not the controlling mother is overweight, a possibly carrier of the gene, and second of all, any possibly child could have the gene, even one with out a controlling mother.

 e) The association could be explained by their food outlet, without their controlling mother being around the child during times at school or friends houses, altering their food intake.

 f) Not necessarily because “fat kids” in general may not all have “controlling” mothers.

11. a) The treatment group was the Boot Camp participants and the control group was the inmates.

 b) This was on observational study.

 c) False. The data did not show that the book camp worked because the entrance into the boot camp was optional to the inmate. Since it was optional, the general inmate who would enter it shows that they are more willing to change and take charge of their actions compared to an inmate who is not willing to go into the boot camp program.

12. This is false because of Simpson’s Paradox. An example of Simpson’s Paradox is that there is a higher death rate at a city hospital compared to a rural hospital, but in the city there are more patients in poor conditions than in the rural area and among the poor condition patients, the death rate is higher in the rural hospital compared to the city hospital.

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