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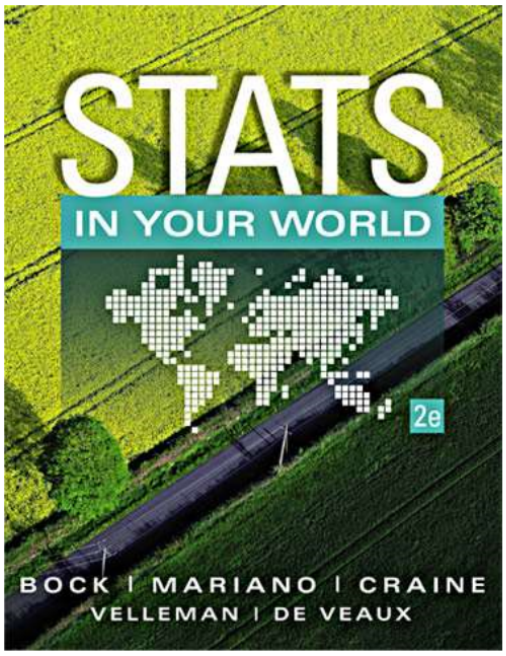
Licameli, Joseph
Thomas, Madellyne
Doucette, Jillian
Roe, Sara
Corsoneti, Michael
Sliwa, Jerry
My desk
DelVecchio, Anthony
Higman, Thomas
Killgrove, Heather
Waite, Olivia
Graham, Alexis
Collier, Brett
Butera Jr, August
Table
Branshaw, Chloe
Young, Kayla
Knowles, Valerie
Jolley, Sadtel
Dorsey, Cameron
Seguin, Matthew
Hamm, Robert
Harkola, Audra
Rickman, Mallory
McCullar, Courtney
Rodgers, Julia
me
Chalkboard

Chapter 10

Observational Studies and Experiments



Observational Studies

- In an observational study, researchers don't *assign* choices; they simply observe them.
  - The text's example looked at the relationship between music education and grades.
  - Since the researchers did not assign students to get music education and simply observed students "in the wild," it was an observational study.

Observational Studies (cont.)

- Because researchers in the text example first identified subjects who studied music and then collected data on their past grades, this was a retrospective study.
- Because retrospective records are based on historical data, they can have errors.
- Had the researchers identified subjects in advance and collected data as events unfolded, the study would have been a prospective study.

Observational Studies (cont.)

- Observational studies are valuable for discovering trends and possible relationships.
- However, it is not possible for observational studies, whether prospective or retrospective, to demonstrate cause-and-effect relationships.

While there are many situations where observational studies provide us with the best information we have, at best they can establish the existence of an association between two variables. That can be important. A recent medical study revealed that among men who have had a heart attack, those with a higher level of a certain protein in their blood are at greater risk to have a second attack. In situations like this, students should think of three possibilities.

1. *X* causes *Y*: The protein causes heart attacks.
2. *Y* causes *X*: The risky condition of the patient's heart produces the protein.
3. *X* and *Y* both result from a third (lurking) variable: Some other unknown aspect of the patient's physical condition or body chemistry causes the second heart attack and also produces the protein as a harmless by-product.

Which is it? We don't know. The fact that an observational study can't tell us doesn't make the study worthless, though. Knowing that the mere presence of this protein signals greater risk is valuable information for doctors working with heart attack patients.

Homework:

Read Ch10 - pages 241-245

Complete the front of the

Reading Guide (10-7)