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Lecture 3a: Practice Problem Solutions

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Solutions

1. Define *statistical power* and explain some possible implications of having low power in a study
 - In the context of hypothesis testing, statistical power is the probability of rejecting the null hypothesis when the alternative is the truth
 - In other words, the probability of “rejecting when we should”
 - The probability of finding a difference if it really exists

Solutions

1. Define *statistical power* and explain some possible implications of having low power in a study
 - If we have a study with low power and fail to reject the null hypothesis (fail to find a difference), it is difficult to ascertain whether the null hypothesis is true . . . (there truly is no difference) or whether the alternative hypothesis is the truth (there is a difference) but the study could not detect this difference

Solutions

2. Explain the relationship between power and sample size in a study (all other factors remaining constant)
 - The basic relationship: as sample size increases across both groups, the power of the study increases