

Biostatistics 203A – Fall 2023

Final Project Submission Template

Student Name: Sebastian Martinez

Data Subset Number: 43

Written responses to items I, II, III in Step 2

- I. Of all the meeting locations, which one corresponded to the highest percentage of respondents endorsing Excellent relationship quality?

Answer: Vacation at 74.29%

- II. Of all the different routes of introduction, which one corresponded to the highest percentage of respondents endorsing Excellent relationship quality?

Answer: Family at 64.00%

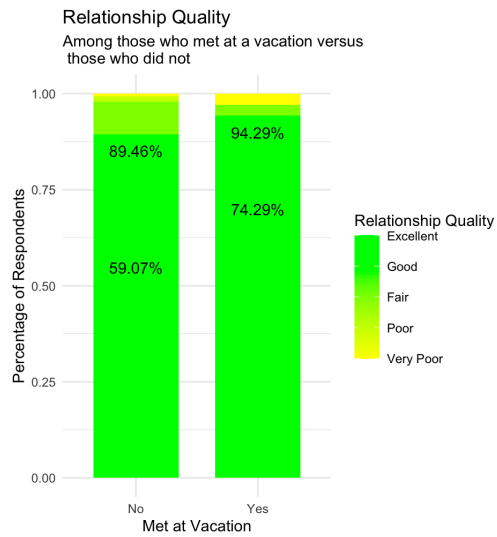
- III. What percentage of respondents whose partners were a similar age endorsed Excellent relationship quality?

Answer: 60.60%

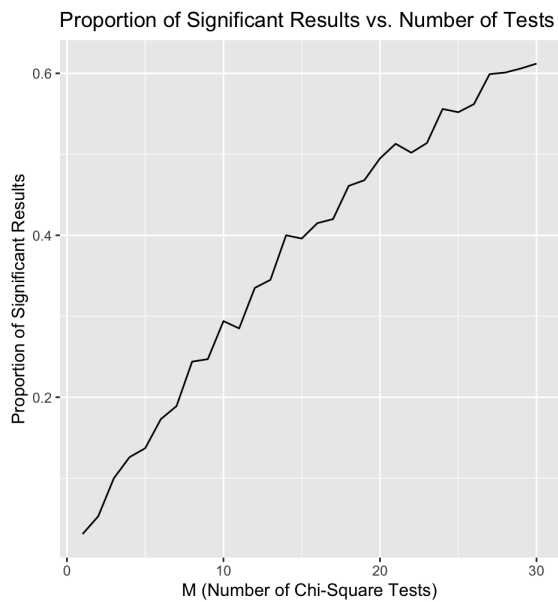
Did this percentage differ significantly ($p < 0.05$) relative to respondents whose partners were not a similar age?

Answer: There is statistical significance at the 0.05 level with a p-value of 0.0240. Thus, the percentage differs significantly based on whether their partners are a similar age or not.

Proportional (100%) stacked bar graph generated in Step 2



Line graph generated in Step 3



2-3 sentences you wrote as part of Step 3

Describe the results you obtained and how they may have implications for situations in which multiple hypothesis tests are being conducted.

The line graph above describes the proportion of significant results and number of chi-square tests, M , that were performed. Based on the upward trend we can see that as M increases, the probability of obtaining significant results also go up. Therefore, when larger tests are performed, we can expect that there will be more significant results which raise the probability of encountering false positives. The false positive results can affect the interpretation of significance leading to the consideration of results as significant when they are truly not significant.