

TIPS for quantitative data analysis

Provide both number and percentage.

If only the percentage is reported, it is impossible to know whether the percentage is based on a small or large number of participants. Take, for example, this sentence: “75% of participants reported increased daily exercise.” Is that reporting about 10 or 200 participants? On the other hand, if only the number is presented, as in “20 people reported increased daily exercise,” it is difficult to know if the data represents a small or large percentage of the participants.

Use the correct base, or denominator.

While you may have 100 returned questionnaires, not every respondent may answer every question. In fact, the actual number of respondents may vary with each question and even by items within a question. When calculating the percentage, use the actual number of responses for the individual item.

Avoid averaging percentages.

Do not add up percentages and then calculate an average of the summed percentages. Go back to the original numbers, add all the individual totals, and then calculate the percentage of the total.

Don't average words. See Quick Tip 15.

Do not substitute averages for more complete information.

Sometimes you may calculate an average to summarize outcome data into one number. While this step simplifies data reporting and makes it easier, a few very high or low scores can radically affect the average. There is no information on how the scores are distributed. Reporting the number and percentage of participants for each outcome provides considerably more information on the extent of achievement. Use averages to supplement and summarize the data, but do not use them as a substitute for actual numbers and percentages.

Be careful when collapsing response categories.

When there are multiple response options, it can be helpful to combine them to highlight results. For example, you might combine four levels of agreement (strongly disagree, disagree, agree, and strongly agree) and report results for only two levels (disagree and agree). This process may help the reader, but it can also obscure rich information. Collapsing categories simplifies the reporting but loses the detail.

Don't be afraid to discuss limitations.

Always present and discuss limitations of the data and the data analysis. Revealing the limitations of the information and the process strengthens the analysis.