Writing up advice

BlinkR App

1 Introduction

- **Background:** Provide a clear and concise biological context. Ensure it's understandable for peers in your field.
- **Literature Reference:** Use and cite relevant scientific literature properly.
- **Hypothesis:** State a clear null and alternative hypothesis. Justify the alternative hypothesis.

2 Methods

2.1 Data Collection

- **Clarity and Detail**: Describe your methodology clearly and in detail.
- **Procedure**: Include exact steps and procedures followed during data collection.
- **Participants/Samples**: Mention the number of participants or samples used in the experiment.
- **Technical Replicates**: Provide details on the number of replicates to ensure accuracy.
- **Outliers**: Explain whether any data points were excluded and why.
- **Ethics and Data Protection**: Specify any measures taken for ethical compliance and data protection (e.g., consent forms, anonymisation).

2.2 Data Analysis

- **Tools**: List the software and its version used for analysis.
- **Tests and Methods**: Include the specific statistical tests and methods applied.
- **Reproducibility**: Ensure the description is detailed enough for others to replicate your analysis step by step.

3 Results

3.1 Descriptive Statistics

- **Key Measures**: Include the mean and standard deviation for both groups, along with the total number of participants in each group.
- **Group Comparisons**: Clearly indicate how the descriptive statistics compare across groups.
- **Relevance**: Highlight how these statistics relate to the hypotheses or objectives of the study.

3.2 Data Visualisation

- **Clarity**: Present data in a way that both groups can be directly compared.
- **Graphs**: Use appropriate visualisations like histograms or box plots to represent the distribution of data for both groups.
- **Labels**: Ensure all axes are clearly labeled and any legends are informative.

3.3 Hypothesis Testing

- **Reporting Results**: Clearly provide the results of the hypothesis test, including the p-value and effect size.
- **Interpretation**: Relate the test results to the original hypothesis, formulating clear and logical conclusions.

4 Discussion

Your discussion section should discuss your findings in the context of the existing literature and interpret what your results mean. You should also discuss the limitations of your study and how these may have impacted the results (with evidence!), and how they could have been mitigated.

Remember to use peer-reviewed studies to support your discussion. You should also consider the implications of your findings and how they could be applied in practice.

For example:

- What do your results show? Was your hypothesis correct?
- If you are studying the effect of a new drug on a disease, you should discuss how your findings compare to other studies that have looked at the same drug or disease.

  - Are your results the same or different? What could account for that difference?

- You should also discuss the limitations of your study, such as the sample size or the study design.
  - How could you mitigate these limitations?

Remember that your discussion should be clear and concise. You should not include any new results in this section.

5 Future Work

- **Next Steps**: Propose a follow-up experiment to address any unanswered questions that emerged from the current study. Consider gaps in the findings and how further investigation could provide clarity.
- **Innovation**: Highlight how the proposed research builds upon the current results or explores new directions. Discuss whether it introduces novel methodologies, tests alternative hypotheses, or expands the application of the findings.
- **Details**: Briefly describe how the proposed experiment would be conducted, including key aspects such as study design, methodology, and expected impact. Explain why it is important and how it could contribute to the broader field.