

Resident Forum

Tips to write the discussion in a thesis: From analysis to synthesis

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INTRODUCTION

Within the structured framework of the Introduction, Materials and Methods, Results, and Discussion, employed in academic writing, the discussion assumes the final segment of the thesis. However, it plays a pivotal role as it meticulously interprets the data and highlights the profound significance of your research findings. Discussion should be a concise analysis and explanation of your findings that convince the reader of the significance of the study results. The discussion places your manuscript in the context of other studies on the same topic in the literature highlighting the relevant differences and reinforcing the similar findings. The discussion places your research results in the bigger arena of available literature and enlightens the readers about its broader implications. The biological plausibility and potential explanations for the observations acquired in the study are also clarified. Crafting the discussion section of a thesis manuscript is challenging and exhaustive, and it creates a lot of confusion and stress among student researchers while they submit their dissertations. This article aims to provide a simplified stepwise guide to construct an effective and impactful discussion section in the thesis manuscript.

PREREQUISITES FOR DRAFTING THE DISCUSSION

- In-depth insight – A comprehensive understanding of your study result is essential before initiating the discussion
- An extensive literature review – A robust knowledge of existing related literature forms the foundation for building the discussion section.^[1]
- Effective writing proficiency – Good writing skills give a clear picture of the results and their implications and facilitate an engaging narrative.

SKELETAL FRAMEWORK FOR PRESENTING THE DISCUSSION

In general, the discussion is organized from specific to general (Inverted funnel approach), in contrast to the Introduction and review of the literature section (Funnel approach). The commonly followed organizational model^[2] is shown in Figure 1 and explained below.

Summarize the key results of your study

The first paragraph should summarize the results of the study while reminding the reader of the objectives of the study. Provide a brief and insightful interpretation. The manuscript's

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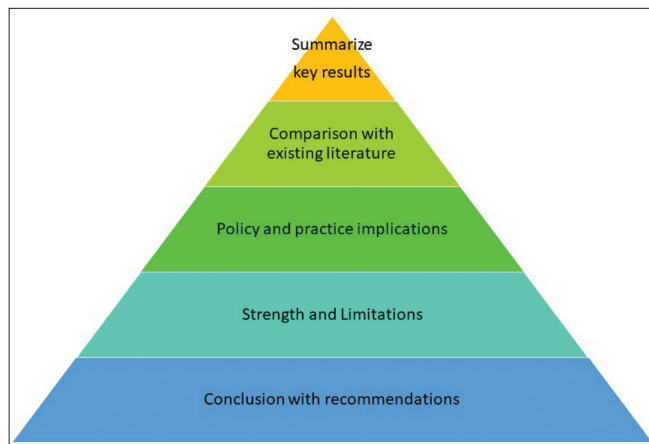


Figure 1: Framework for the discussion section of a thesis (Inverted funnel approach).

contribution to the field of knowledge ought to be clearly and explicitly outlined and addressed. Be cautious to avoid duplicating the statements used in the result section. The first paragraph should summarize the results of the study.

Example: This study aimed to determine the prevalence of anemia among school-age children in selected schools of Puducherry. The results revealed a high prevalence of 74%. Maternal illiteracy, low-income families, and open-air defecation are significantly associated with anemia.

Compare the results with similar studies

This part compares the key results with the existing literature and places your research in context. If you have started with a hypothesis in mind, state if the results prove or disprove your theory. Quote literature that agrees with your results. Furthermore, acknowledge and cite literature contradictory to your findings with possible justifications. It showcases your comprehensive understanding of the research problem. Moreover, highlight and meticulously investigate unexpected findings.^[3] Discussion is commonly organized in multiple paragraphs, with one concept in each. Follow a logical stream in the discussion, and complete the discussion of one concept before shifting to another.

Example: The study revealed a higher proportion, in contrast to similar studies conducted in Kerala and Delhi by ABC et al. and XYZ et al. in 2020 (Ref). The elevated proportion could be attributed to factors such as residing in slums, a higher representation of government schools, and belonging to migrant families. Lack of awareness and unavailability of iron-rich diets and hookworm infestations might contribute to this higher anemia burden in this population.

Policy and practice implications of the result findings

Emphasize how your research could affect future study designs, modify clinical practices, or result in the creation

or modification of guidelines or policies. Mention the contribution of your findings to the broader scientific knowledge, pointing out their relevance to practitioners, researchers, policymakers, or other stakeholders. Preferably using a theoretical framework for guiding policy implications from your research is good practice. These implications should be tangible, actionable, pragmatic, and emerge from the study results.

Strengths and limitations of the study

Mention the methodological strengths of the study and highlight the quality, validity, and reliability assurance steps adopted in your research. Here, the rationale for the methodological choices of the study can be added, and its contribution to the study's validity can be mentioned.

All studies have limitations. Be sure to acknowledge them and suggest solutions to address them. Also briefly describe how they would have impacted the result. You can also include any issues with design, data collection or analytical methods, choice of inclusion/exclusion criteria, and sample size coverage used in the study. Include the study's possible sources of bias risk to internal and external validity. Furthermore, it provides a concise overview of potential challenges in implementing the intervention and delineates the measures undertaken during the research to address the identified limitations.

Conclusion with recommendations for future action and research

The conclusion is the final paragraph, which provides a well-thought-out, take-home message for the reader. Provide a concise take-home message in the below areas (i) major findings of your study, (ii) How the study contributed to the field?, and (iii) Indicate possible applications and extensions. Ensure the conclusion is aligned closely with your results and remains within the scope of your research objectives. In addition, the main question your conclusion should answer is: What do my results mean for the research field and my community? The recommendation section explores unanswered questions and research gaps, proposing potential hypotheses for further research. In addition, provide specific suggestions on enhancing the study methodology that guide future researchers in building on your research.

GENERAL TIPS FOR DISCUSSION WRITING

Compose the discussion section in paragraphs, allowing flexibility for five to six pages if needed. However, prioritize conciseness and precision. Utilize numerous references, emphasizing current publications. It is better to use simple

Table 1: Do's and Don'ts while writing the discussion of a thesis.

Concepts	Do's	Don'ts
Interpretation	Provide interpretations for the results	Don't discuss results that do not answer your research question too much
Concepts discussed	Align the discussion with the objectives of the study	Don't present any new results in the discussion
Implications of the study	Provide the implications which have a direct impact on the policy/practice	Don't make claims which your data cannot substantiate
Language usage	Use terms such as suggestion and indicate	Avoid absolute terms such as prove
Tense used	Be consistent in the tense	Don't frequently change the tense used in the discussion
Sentence construction	Use simple language as this gives clarity to the readers, thereby effectively communicating your idea.	Avoid complex sentence
Limitations	In the limitation, be scientific and to the point	Avoid being too critical and apologetic while writing the limitations
Conclusion	The data should directly support the conclusion	Avoid writing general conclusions or conclusions beyond the results of your study

Table 2: Comparing the content of the results, discussion, and conclusion section.

Result	Discussion	Conclusion
<ul style="list-style-type: none"> • Present all analyzed data. • Wherever possible summarize in non-textual forms such as tables, figures, and charts without interpretation or comparison with other study findings. • Use only past tense 	<ul style="list-style-type: none"> • Explain key findings with deeper interpretation and broader implications. • Compare and contrast study findings with relevant literature. • Establish biological plausibility and methodological issues, offering recommendations for action points and future research. • Can use both present and past tenses 	<ul style="list-style-type: none"> • Summarize significant findings of the study. • Avoid introducing new information, figures, or comparisons with other studies. • Provide a take-home message. • Highlight the contribution of the results to the field of interest

sentence structure as it brings clarity to the readers.^[4] Some of the do's and don'ts while writing the discussion are summarized in Table 1. A common confusion among student researchers is delineating topics that go into results, discussion, and conclusion. It is shown in Table 2.

CONCLUSION

Authors and editors often like the discussion to “narrate the story of your research,” which is the most challenging part. However, a solid foundation in the literature review and a clear understanding of the results are crucial for this task. The iterative process of drafting, reviewing, and re-drafting the discussion is essential. The initial write-up captures the free flow of ideas, while the review stage focuses on identifying inconsistencies and gaps. Subsequently, the draft discussion should be edited for clarity and alignment with the research objectives. Maintaining a reflective and scholarly tone in the discussion is crucial, demonstrating the depth of thought and critical analysis while interpreting the results. This iterative journey refines the discussion into a scholarly piece, ensuring its coherence and academic rigor.

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Declaration of patient consent

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Conflicts of interest

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Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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