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### Correspondence

Prof. Dr. Jay N Shah  
Editor in Chief, Journal of Patan  
Academy of Health Sciences,  
Lalitpur, Kathmandu, Nepal  
Email: editor.jpahs@pahs.edu.np,  
drjaywufei@gmail.com

## How to write 'discussions, conclusions' in scientific journal article

Jay N Shah

Editor in Chief, Journal of Patan Academy of Health Sciences

Discussion is about how the findings fit into the body of literature appropriately introduced in the Background. It gives meaning to the results, "why" this finding and places the results in context of theory or conceptual framework by assesses importance of findings, limitations if any in the methods, identifies new areas for exploration, what next?

Begin discussion from the principal findings, interpret in context of literature, for e.g. are the findings consistent with previous research or do they counter previous findings? Discuss why this might be, how the results might be generalized, what might be the implications (e.g. clinical, methodological, theoretical etc).

This Section is used to expand knowledge in the field of study by putting the findings into the context of the previous researches from the literature review. If the results are very different, either it is a new discovery, or there are flaws in study design. Share your findings, has it contributed to the knowledge in the field, or not but be careful to be too broad and generalize your result to change wider world! Self reflection is important to mention the limitations of the study design, sampling and what improvements you propose.<sup>1</sup>

Starting discussion is difficult like beginning to write the article itself. Each article has its own unique results up on which the discussion should be written.<sup>2</sup> Even the best of the findings will fail to impress reviewers, if results are not interpreted meaningfully. Often a bad discussion leads to rejection.

This is important to know what to include and what avoid in discussions section, how to contrast the findings to the published literature without attacking other investigators or preaching to the reader.<sup>3</sup>

This section is important part of paper where we effectively demonstrate our critical thinking of the issue, provide solutions to the problems based on findings, present meaning to the results for possible implications and discuss any new issues we have discovered.<sup>4</sup>

Before beginning discussion, it is worthwhile to reread introduction to stay focused research question. Write in chronological order, by importance, or by categories, in 'pyramid' shape with the most important findings first. Expand your discussion to contextualize by citing the relevant literatures. Finally close with implications and need of any further research on the topic.<sup>5</sup>

In summary- begin the discussion by summarizing the main finding, without repeating in detail the information from introduction or the results section. Provide explanations in the context of the totality of the relevant literature, limitations of the study, and implications in clinical practice, policy or future research. Does the conclusions and aim of the study match, avoid statements not supported by the data.

**Table1. What to include and not to include in the discussion section of scientific journal articles**

Include	1	Begin with major findings
	2	Critically explain what these findings mean
	3	Critically relate with literature for similar or different findings
	4	Relevance of the findings- clinical or scientific/research implication
	5	Limitations of the study- what and why? how this could be addressed
	6	Way forward based on findings- not unanswered by your study, further research needed
	7	Take-Home Message – at the end of discussion or separately in conclusion section
Do not include	1	Over representation of the results- careful not go beyond what is supported by the data.
	2	Unwarranted Speculation - not supported by findings
	3	Inflating the Importance of the Findings- unwarranted importance, exercise 'humility'!
	4	Tangential issues- remain focused on hypothesis, objectives and study results
	5	The "Bully Pulpit" - Do not use discussion to attack others or preach the reader
	6	Tangential issues- remain focused on hypothesis, objectives and results
	7	Conclusions Not Supported by Data- avoid the temptation

Note: modified from<sup>3</sup>

## References

1. Writing a discussion section. <https://explorable.com/writing-a-discussion-section>
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