

Salami Slicing of Data Sets: What the Young Researcher Needs to Know

Sir,

With increasing emphasis on publications for career advancement and obtaining research grants, there is a veritable proliferation in the number of manuscripts being submitted to journals. Among the many ethical and academic dilemmas that this phenomenon has thrown up, salami slicing of research data poses several unique questions. In essence, salami slicing refers to splitting of data derived from a single research idea into multiple smaller “publishable” units or “slices.”^[1] This practice is neither new nor entirely culpable. However, because of a poor understanding of the situations where salami slicing can be justified, young researchers may get used to looking at data in smaller pieces and not as a whole. This is dangerous from an academic perspective as often, valuable conclusions, that could have been derived if the data were presented as a whole, are missed and contributes to stall scientific advancement. Instead, what we would get is merely incremental or repetitive findings that are at best, of limited value and worse still may end up distorting scientific literature. Further, salami slicing of data may do more harm than good to a researcher’s career over time because it significantly reduces their chances of publishing in high impact journals, thereby lending lesser weight to their accrued body of work.

So when is salami slicing of data justified? Expert consensus is that if the “slice” of the study in question tests a different hypothesis as opposed to the larger study or has a distinct methodology or populations being studied, then it is acceptable to publish it separately.^[2] A good example would be large epidemiological trials where multiple research questions are sought to be addressed simultaneously. However, one should specify the hypothesis being tested in each paper and ideally, disclose the information that the paper represents a fragment of a larger study. These hypotheses must have been framed *a priori* and not after the data has been collected. Often, longitudinal data with several outcome measures may be published independently, but the authors must ensure minimal overlap with published results and they should also mention the

original source and obtain the original authors’ consent. Merely citing the previous work in the bibliography does not suffice.^[3] Rarely, manuscripts derived from identical or overlapping patient samples can be published in multiple journals catering to different but related professional disciplines.^[4] For instance, a manuscript on suicidal behavior can be considered for publication in journals related to sociology as well as epidemiology provided they describe different points of view. The authors must, then, explain, why they think it is necessary to present the findings in a different context.

In summary, salami slicing of data may need to be considered on a case by case basis. Blanket recommendations are difficult and shades of gray abound. As with all ethical dilemmas, an ethical self-test may often serve up some answers. Academics should ask themselves before proceeding: If I am an editor of a reputed journal, would I like this paper to be published separately or would it make more sense to publish related findings together? Young researchers, when in doubt, would also be well advised to consult a senior professor or any other appropriate authority who can guide them correctly in such situations.

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Conflicts of interest

There are no conflicts of interest.

Vikas Menon, Aparna Muraleedharan¹

Department of Psychiatry, Jawaharlal Institute of Postgraduate Medical Education and Research, ¹Department of Anatomy, Pondicherry Institute of Medical Sciences, Puducherry, India

Address for correspondence: Dr. Vikas Menon
Department of Psychiatry, Jawaharlal Institute of Postgraduate Medical Education and Research, Dhanvantri Nagar, Puducherry - 605 006, India.
E-mail: drvmenon@gmail.com

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