



SALAMI PUBLICATION: AN OUTLOOK FROM THE LENS OF ETHICAL PERSPECTIVE

Dental Science

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ABSTRACT

In the increasing quest for publication of research papers, the authors become overzealous to section their research articles which can help in portraying a big number of research papers in the credit of the author. The scientist community and the medical fraternity values the researcher based on their number of publications with a researcher having less number of so called acceptable number of research papers getting vanished in the crowd of renowned researchers. This narrative review aimed to explore the ethical considerations related to salami publication (salami slicing) in research. It was concluded that salami slicing is not entirely an ethical misconduct. However authors and editors of the journals have a liability to protect the research integrity by stating that this piece of research is a salami publication.

KEYWORDS

Salami Slicing, Salami Publication, Publication Ethics, Research Ethics

INTRODUCTION

Any researcher has an occult desire of publishing his research work. Publishing research articles has become important in many field especially in the medical profession. With this, every researcher is likely to face the stress of increasing the number of publications over a period of time^[1]. This brings to notice the sudden upsurge in the number of research paper achievements with deliberate attempt of segmenting the data so that it can be presented in segmented form in multiple journals. Although the relevance rate of salami publication is difficult to estimate. The available literature suggests prevalence rate of 1-12%^[2,3]. Only few journals have been observed to have specific author instruction pertaining to salami slicing. This is derived by the quest for more number of research articles. The trend of salami slicing is especially evident in medical science and the social sciences^[4]. The rising trend of salami publication raises a question on the quality of research documented in the journals. The aim of this review was to explore the ethical perspectives related to salami publication in the research.

Salami publication and Duplicate publication

Salami publication or precisely called as **Salami slicing** refers to splitting the data collected from a single research is split into number of research articles, each of which is published separately in different journals^[5]. Although unethical, duplicate as well salami publication are increasing in number. Salami publication is deemed to be detrimental to the scientific community. In a handful of journals, journal policies to curb salami publication are present. In contrast, **duplicate publication** refers to publication of same research in multiple journals^[5].

Theoretical understanding of salami publication

Assessing the theoretical perspectives underpinning the emergence of salami publication, **Mertonian theory of cumulative advantages** specifies that salami publication bears a reasonable impact on upholding the prestige of the researcher by mentioning an astonishingly higher number of publications. The number of publications is directly linked to the number of citations^[3,7]. This indicates the probable reason of researchers to be attracted to the phenomenon of multiple fragment researches. Acknowledging the demographic inconsistencies, contrasting results have been found. Majority of the budding researches concluded that young researchers are in race of competing to publish more number of articles^[8]. On the other hand, some of the studies have found that the younger researchers are naïve to indulge in salami publication^[6].

Practice of salami slicing

The budding researchers indulge in the practice of salami slicing by extensive isolation of the information collected during the process of data collection. Dhakal^[9] specified that when a study involves several correlates or independent variables, the rescuer tends to segregate the effect of independent variables as independent correlates, ignoring the cumulative effect of the independent (predictor) variables on the dependent (outcome) variables. Similarly some of the authors have reported that some of the researchers manipulate the post hoc subgroup analysis in order to derive multiple effects^[6].

Currently we have research tools to check for plagiarism, however there is no research tool to gauge the practice of salami publication. According to Pflieger, Katz, Bowers^[10], salami slicing of qualitative data is even more difficult to detect than the clinical trials due to compulsory registration of ongoing randomized trials in clinical trial registry maintained by the government. Thus, researchers have malaria accountability for determining the use of one study in a fragmented portion. As per Ma^[11], keeping the salami slicing out of the umbrella of misconduct can promote researchers to accept that the piece of research has been fragmented frame the main research. This will also help the readers to assess the facts and figures associated with the original research.

Ethical perspectives in salami publication

Ethics refers to the set of norms for conduct of research and its publication in the fair manner^[12]. Adherence to ethical standards is essential to promote quality of research especially in medical field. Salami slicing has been found to be borne out of publish or perish culture where in non-publishing of research disfavors the academic success for the researchers^[8,10]. The escalating trends of salami slicing draws attention to the potential role of ethics in this filed. Here comes in light the necessary question that whether salami publication is ethical unethical or ethical dilemma. Duplicate publication is an unethical conduct as per the COPE (Committee on Publication Ethics) guidelines. However no such comments have been made for salami publication^[12].

Evaluating the ethics in salami publication it can be viewed that it is not a huge misconduct or falsification as a single study may involve different variables and thus the interrelationships between the variables may varying. Natarajan^[13] mentioned that for salami publication, the researchers are inclined to publish one research article unit with minimal information acquired from the main study. It was supported by study conducted Urbanowicz, Reinke^[14] by stating that it is not a fraud to publish a large study in parts and there's no evidence of distortion of facts in salami publication. Moreover,^[15] specified that it may not be easier for the readers to gulp the excess information provided by a research in one go. To make the reach publication comprehensive, salami slicing permits dissemination of information in an amount which is easy to comprehend for the readers. Similarly Joob, Wiwanitkit^[5] mentioned that publication of thesis in the form of research articulate is impossible unless slicing of data in done to 'fit in' the journal manuscripts. The authors further mentioned that any journal ate the maximum accepts a research article of 3000 words whereas a research thesis usually accounts for 15000-20000 words. Thus, to publish a manuscript for journals, researcher's area compelled to perform salami slicing.

Studies against the salami publication report that such publications are focused on the quantity rather than quality of the research. In addition to this, it is perceived to be a case of data dredging^[2,9]. Rao, Andrade^[16] mentioned that it is unethical to practice salami slicing as it will be misleading the audience namely health care professional and researchers. The flawed research reported in split forms in multiple journals over estimates the causal role of the variables on the disease and illness^[11]. Adding on Smart^[3] indicated that salami slicing

perpetuates unnecessary burden on the journal editors and reviewers. According to Deshmukh et al.^[17], salami slicing is a dishonest practice to waste the time of readers. Salami publication stems out of academic pressure for career advancement to push the researchers to enhance their number of researches.

In contrast to above mentioned ethical perspectives governing salami slicing a few studies regard this as ethical dilemma for researchers which predicates their intention of increasing their number of cited publications. One of the research mentioned that salami publication is an ethical dilemma rather than unethical practice^[18]. The researchers experience the dilemma that whether they should fragment their research or shall they publish it as a whole. It was further highlighted that researchers encounter conflicts regarding how much amount of data fragmentation is permissible to uphold the ethics in research publication. Theoretically, there is no scale to measure the permissible amount of data slicing from a single research^[4,5]. This is juxtaposed by the knowledge and intention of the researcher.

Interventions to reduce the occurrence of salami publications

Salami slicing is not entirely unethical. It stays justified when slicing of the research papers is done because some of the research topics are large and thus for answering that research question a large amount of data is collected in the process of research^[19]. However, this practice shall be discouraged among the researchers to reduce any sort of biased opinion arising out of the fragmentation of data. The sliced publication may lose focus on the effect of confounding factors as a whole in describing the disease causation or the treatment effect of the interventions used in the original/ main study. To mitigate the practice of salami publication, interventions need to be focused on the researchers as well as journal policies. The journals need to practice strict policies regarding the information obtained from authors pertaining to the main research they have conducted^[6,14].

Furthermore, the researchers need to be cautious regarding the ethical implications of salami slicing. It is recommended to the journals to add a column in the article clearly stating the standpoint of authors mentioning that whether it is a salami publication or the main research study^[11,16,18]. This will be valuable for the reader to access the main research to arrive at definite conclusions. Last, to protect the integrity of research, it is recommended to reduce the unnecessary burden of publishing large number of researches to gain a qualitative edge in career.

CONCLUSION

With sharp rise in the published research articles, keen thoughtfulness provokes attention to the salami slicing. Due to the reported inconsistencies in journal policies to report the salami publication, it becomes extremely difficult to restrict this practice of slicing the data into multiple number of researches. Salami publication is not same as duplicate publication, which by large is established publication misconduct. Salami publication is ethical as far as the researcher doesn't distort the facts in context of the research question. It can be concluded that although it not exclusively an unethical conduct however salami slicing shall not be encouraged. Salami publication is acceptable when there is no blatant falsification of the study results for the sake of increasing the number of research publications. The decision regarding salami publication is quite intriguing. With attractive academic benefits in context of career, there is a potential inclination towards salami publication. This review presented with a snapshot of reasons for salami publication and its associated ethical concerns. This review adds to the literature findings by substantiating the fact the researchers and editors needs to be aware of the trivial differences in the plagiarism, duplication and salami publication. Further research is warranted to assess the possible solutions to deal with the issue of salami publication to shed further light on the practice of salami slicing and its effect on the evidence based research. To maintain transparency, the researcher can quote their main study in the methodology section. This will reduce the incidence of bias incorporated due to splitting of data in the research articles.

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