EDITORIAL

Papermill publications - Editorial trouble: A first-hand experience

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ABSTRACT

The academic contents are facing the threat of papermill attacks in recent years. The undue intrusions of these falsely prepared academic contents in the field of intellect arena are creating a menace in the current stakeholders of the academic field and also surely have long-lasting effects on society. The Indian Journal of Physiology and Allied Science has recently faced a huge manuscript submission within a span of a short period. The submissions and listed authors were affiliated with a single institute. All of these manuscripts were incomplete and were submitted through a single email address. The incident jeopardized the manuscript management system and challenged the editorial process of the journal. The current write-up is to make a record of the incident with scientific analyses so that the system can learn and remain better prepared for such attacks in the future.

Keywords: Papermill, Editor's dilemma, First-hand experience, Publication fraud, Artificial intelligence.

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INTRODUCTION

The Problem Definition

In the context of academic publishing, the (un)due extrapolation of the literal meaning of 'papermills' is commonly understood. Defining the 'papermill' concept is a stupendous task, particularly for those who are not involved or do not wish to take part in the procedure. Unfortunately, the whole scientific community, including the future generation, is or will be affected by this at some other time, irrespective of someone's innocence. It appears relatively easier to make an umbrella concept so that the procedures or misacts are included as and when they are identified in addition to the existing ones. The 'papermills' are individuals, organizations, or businesses that generate and trade sham academic content in different forms, often of dubious quality, to researchers and students who need to publish but are unable or unwilling to produce the work themselves. These documents can range from classroom assignments and research articles to thesis work and dissertations. The primary goal of these unreal scholastics is to extract profit from the high demand for academic publications, especially in fields where fulfill/publish-or-perish pressure is intense.

Multiple layers of physical and noetic steps are involved in the process of academic writing. These are the products of genuine hard work, cognitive pursuit, cogitating, and often collaboration of great minds. Therefore, these pedantic are highly regarded as intellectual property. Those who fail to achieve these seek easy alternatives with the intention of mocking these prized possessions. Thus, the papermills get the opportunity to tempt them. Generally, these odious acts are operated in multiple ways, including, but not limited to, data fabrication, data breaching, content plagiarism, ghostwriting, and many others; nevertheless, the impact is long-lasting and far-reaching (Figure 1). There is a high possibility that the wide-spread network of papermills compromises academic publication at almost every step involved in the process.

Trustworthiness is key for science communication. Even though, for public awareness, sometimes the science content appears in social or news media in a lucid form as a popular science topic. The scientific information should not be mixed up with the so-called' contents,' as made by 'content creators.' One of the important aspects of scientific content is honesty in reporting. There may be unintended mistakes in the data collection or in inferring the observations, but there must not be a planned falsification of fact. There is no scope for any type of 'prank' to justify the falsification, as we see in social media often. The existence and use of paper mills undermine the trust in academic literature. If readers,

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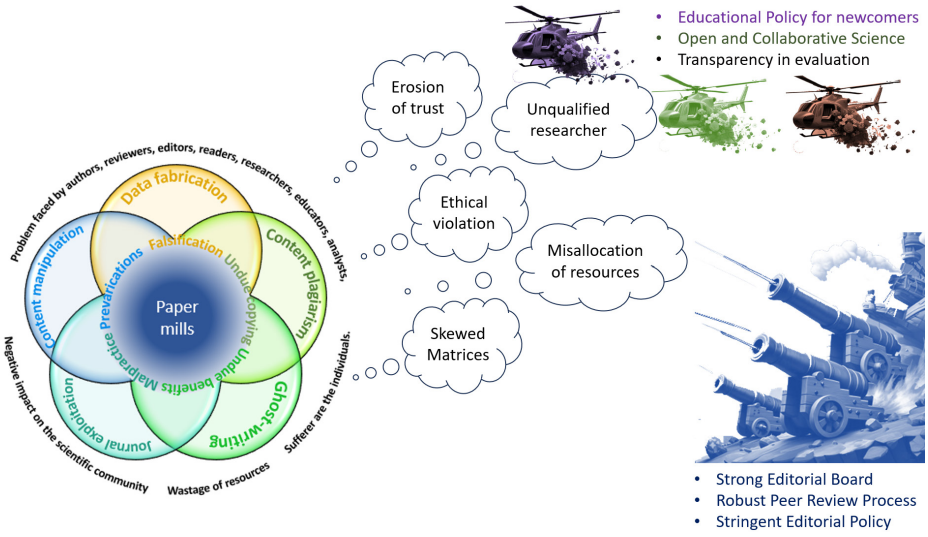

Figure 1. Process and impacts of papermills in the scientific contents and ways to bust or oppose those. (Cartoon pictures of cannons and helicopters are created by WhatsApp Meta)

including other researchers and the public, cannot trust that published research is genuine, it devalues the credibility of scientific findings. Once published, even retracted later, the false contents can create long-lasting effects, and the general public may suffer from such publications. Particularly in the fields of health, medical science, health policies, etc., accepting untrustworthy content can risk the lives of many. In recent years, the prevalence of falsified scientific papers has surged and impacted the scientific record on a broad scale. Within the scientific community, these papers are commonly referred to as "fake papers," as they contain deliberately manipulated data or are entirely fabricated. Many are generated by "paper mills," organizations that operate as criminal syndicates or "science publishing gangs."[1-4] These paper mills offer fake papers across various scientific disciplines, advertising them online and allowing individuals to purchase authorship in a paper of their choosing. The price depends on the desired authorship position and the impact factor of the journal where the paper will ultimately appear. Paper mills also handle the entire publication process.[5] The main drivers behind the proliferation of fake papers include pressures within academic systems for career advancement, financial incentives, and sometimes a personal quest for increased "prestige." The publication of fake papers inflicts significant scientific, economic, and social damage.[6]

The Incident

In September 2024, we noticed that all of a sudden, there were overflowing submissions of manuscripts to the online submission process of the journal. A massive 118 articles, all authored by individuals from a single medical institute, were submitted to IJPAS within just ten days. The chief editor noticed this alarming situation within two days of the start of this process. He tried to find out the source of these submissions and called an emergent meeting of the Editorial Board. The editorial board identified these submissions as potentially malicious, raising concerns about their authenticity and intent. This situation not only strained the journal's editorial resources but also impacted its performance metrics.

In the discussion, it was decided that two of the Editorial Board members would separately call the Dean and Medical Superintendent and try to find out whether this process is happening with their knowledge or not. None of these senior administrators responded responsibly to these calls and refused to take any action or onus on them. However, in the meantime, the Chief Editor assigned all these manuscripts to himself and declined those after confirming that no genuine submission faced undue harassment of desk rejection during the process of this mass rejection. With the initiation of mass rejection, the submission rate decreased and finally stopped.

Overview

A total of 118 submissions in a span of 11 days (from 10th September to 20th September 2024) were unprecedented for the journal (Figure 2).

The initial verification revealed that the authors' names and designations matched faculty information available on the institution's official website, which provides an appearance of credibility. Our editorial team raised the flag of concern on the following points.

- All 118 articles were submitted through the same email address, which is highly irregular for academic journals. Typically, each author or research group uses their institutional or personal email addresses, especially for correspondence. This anomaly raises questions about whether the submissions were genuinely independent or deliberately manipulated.
- All the submissions were incomplete in terms of the journal's requirements. The process has utilized the open

software's less rigorous approach to the manuscript submission system.

- A striking similarity in the types of submissions (medical/health care field and can be categorized as narrative review type) was observed, suggesting a lack of diversity in research focus, methodology, or academic perspective.
- The titles of all these articles were extraordinarily interesting and recent, burning topics of health and medical sectors.
- The contents of these manuscripts were incredibly correct, though general in nature. There was a clear lack of insight and critical thought in the manuscripts. It is highly likely that these manuscripts were written by the use of some sort of artificial intelligence (AI).
- As per the history of the journal, this huge number of submissions over a narrow timeframe was quite extraordinary.

The submission pattern, specific for these submissions that are marked as malicious and rejected by the Chief Editor without allowing them to gain entry into the editorial processing and peer-reviewing, is presented graphically in Figure 2.

The Problem

- These submissions placed an undue burden on the Journal's Editorial Management System. Processing and rejecting these many articles within a short span of time, sometimes on the day of submission, were not only time-intensive but also affected key metrics of the Journal Publication, such as acceptance rate and editorial processing time, potentially tarnishing the journal's reputation. Furthermore, the absence of mechanisms to restrict mass submissions exacerbated the issue.
- During the period of mass submissions, screening the original and quality submissions from those irrelevant or redundant ones became increasingly challenging. This challenge arose because the editorial team had to sift through an unusually high volume of submissions, many of which lacked novelty, relevance, or scientific rigor. This overwhelming workload strained the team's capacity to devote adequate attention to genuine submissions and potentially delayed their review.

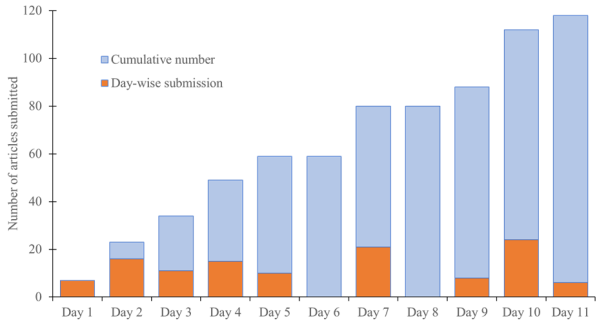

Figure 2. Day-wise submissions (orange bar) and cumulative numbers of submissions (blue bar)

We have also made a list of all the suspicious submissions (not included here; however, the list is available with the authors) and tried to analyze the distribution with respect to so-called authors, their affiliations, and the departments they belong. As there is no proof of malicious intent in paper milling, the identities of the institutes and faculty members are not revealed here. Even though there is no intention to harm anyone's reputation, the Editorial Board of the Indian Journal of Physiology and Allied Sciences strongly discourages this practice.

Observations and Analyses

- All the submissions are from three specific departments - the Department of Physiology (Number of manuscripts: 60), the Department of General Medicine (Number of manuscripts: 51), and the Department of Obstetrics and Gynecology (Number of manuscripts: 5). Interestingly, there are department-specific patterns for the involvement of faculty members.
- From the Department of Physiology, most of the submissions are from Senior residents/Tutors, followed by Professors and Assistant Professors (Figure 3).
- From the Department of General Medicine, most of the submissions are from Assistant Professors followed by Associate Professors and Senior residents/Tutors and Professors (Figure 3).
- From the Department of Obstetrics and Gynecology, most of the submissions are from Professors followed by Senior residents/Tutors (Figure 3).
- All the submissions were from a particular email, and the email does not specify any individual; however, it mentions the Department of Anesthesia of the same institute. Every possibility is there that the email is a ghost one (as we did not receive any reply from our autogenerated emails sent from our system in response to each submission).
- Interestingly, the person(s) behind the process did not have sufficient time to complete the submission meticulously. Thus, a computer-generated system may also be behind the submission process.

When carried out further analysis, some specific individualized or group clusters of submissions can be identified (Figure 4). However, there is no way to ascertain the observations.

Deciphering the Observations

The purpose of the current incident is not clear to the Journal authority. However, there are some speculations that this attack on the Journal's Manuscript Management System was targeted to (a) benefit the faculty members to improve their academic performance fallaciously, (b) these, in turn, might be useful in showcasing the institutional credibility when asked by recognizing or recommending authorities, (c) these inappropriate eudaemonia may be suitable in certain ways of encashing them directly or indirectly.

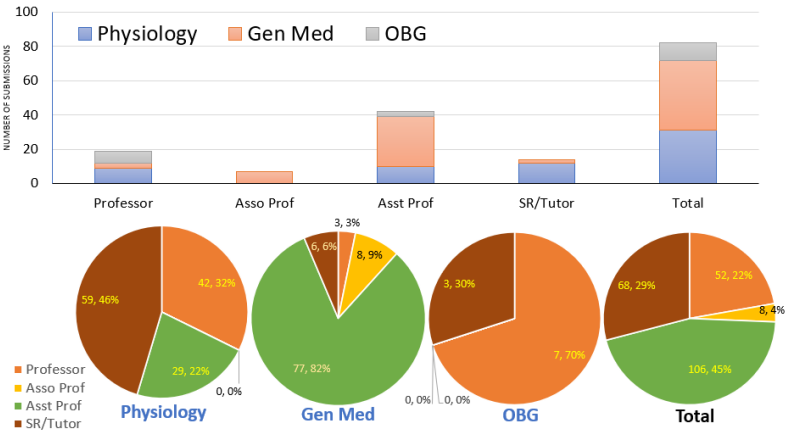

Figure 3. Distribution of faculties (Rank-wise) and departments among the total submissions

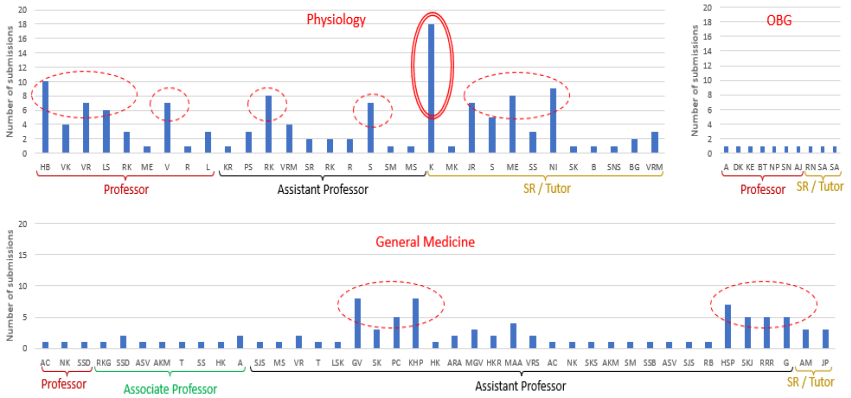

Figure 4. Clusters of submissions (numbers for individuals)

Future Perspectives

While the submissions were ultimately rejected, they hold potential value as a resource for advancing AI in scientific writing. These articles provide a rich dataset for analyzing writing patterns, identifying common errors, and understanding repetitive structures seen in narrative reviews. Using this dataset, AI systems could be trained to recognize and avoid typical mistakes in scientific writing, improving the quality of future AI-generated content.

Furthermore, these articles could be used to refine chatbots and other AI-driven tools designed to assist researchers. By training such tools on real-world examples of flawed submissions, their ability to generate high-quality, ethical, and scientifically rigorous content can be enhanced.

The purpose of publishing this editorial is to record the incident so that the Editorial Board of the journal is not blamed for rejecting articles; at the same time, this shows our transparency and honesty in the system. This publication can also warn other journals and publication management systems about this type of future incident, as we are very sure the current failure of the unidentifiable Papermill Gang is not going to give up and must try to succeed in other journals. However, this publication may also have warned those gangs to come up with better ideas to swindle with other journals. This is also to create awareness among all the stakeholders in the academic publication system.

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