

# Publish or perish, information overload, and journal impact factors - A conflicting tripod of forces

## ABSTRACT

The academic mantra, to the point of cliché, is “publish or perish.” Academia is generally too preoccupied with research and publishing to stand back and consider the driving forces behind the actual processes and systems involved. Indeed, academics are generally unaware of the factors that influence one’s ability to publish: The drive to publish itself, readers’ information overload, and editors’ desire to increase journals’ impact factors. This paper will detail these forces, and it behooves potential researchers to keep this veritable tripod of forces in mind since understanding the tripod may facilitate publication chances through the invocation and active implementation of news media theory. Media writers’ remuneration is dependent on readers clicking on their articles. The media reel in readers by displaying an intriguing/bold/provocative headline and then keep the readers interested and hooked with initial sentences that not only give information but also tantalize with the promise of more to come. A paper’s title and abstract should adhere to these precepts so as to increase the chances of avoiding immediate rejection at editorial or initial reviewer level.

**Key words:** Bibliometrics, biomedical research, humans, \*journal impact factor, \*periodicals as topic, publishing/\*statistics and numerical data

## Introduction

Academia is generally too preoccupied with the daily minutiae of generating research and publishing, to stand back and consider the broader picture and the driving forces behind the actual processes and systems involved. Academics are usually only vaguely and peripherally aware that several influences govern one’s ability to publish: The drive to publish itself, readers’ information overload, and the universal editorial desire to increase journals’ impact factors. This paper will outline these forces, and it behooves potential researchers to keep this veritable tripod of forces in mind since understanding the tripod may facilitate publication chances by invoking and actively implementing news media theory.<sup>[1]</sup>


## Researchers

The universal academic mantra, to the point of cliché, is “publish or perish.” Academia is in two minds as to whether to revere or dread this aphorism.<sup>[2]</sup> The pressure behind the publication drive is twofold – the enhancement of one’s curriculum vitae for the purposes of promotion and for the sake of academic and professional repute, and for plausibility when applying for grants/funding.<sup>[3]</sup> This has even led to web-based author publishing metrics that can be easily searched via Google Scholar as part of the workup on an applicant’s job/funding submission.<sup>[4]</sup> The extreme pressure to publish has resulted in a number of unfortunate practices

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in scientific publishing with the most odious being the proliferation of predatory open-access journals that fail to provide adequate peer-review and are only there to fleece young and inexperienced researchers who are charged hefty article processing charges.<sup>[5]</sup>

Yet another novel *modus operandi* is that of preprints. A preprint is an ostensibly final draft of a paper that is shared online before being submitted for peer review. This protects prospective authors' intellectual property rights and may garner online feedback that may allow improvement of the manuscript prior to submission. The concept was initially adopted by physics researchers with the creation of arXiv.org in the early 1990s, an online and open repository for research papers.<sup>[6]</sup> Similar measures were adopted in 2013 by biology and shortly after by medicine.<sup>[6]</sup> At the time of writing (2021), some medical journals are preprint friendly, but with highly variable guidelines.<sup>[7]</sup> The debate pro and con has been fuelled by the explosion of preprints from research that has been engendered by the ongoing COVID-19 pandemic, and many believe that the potential for harm outweighs the potential benefits.<sup>[7]</sup> Indeed, a recent study with regard to preprints related to COVID-19 posted on bioRxiv, medRxiv, and Research Square (January 1, 2020 to May 31, 2020) showed that of 5,061 preprints, only 5.7% were published, and that published preprints had a significantly higher citation rate than unpublished preprints suggesting that overall, preprints may include lower quality material that fails traditional peer review.<sup>[8]</sup> For these reasons, this journal does not accept preprints (Abdelazeem Ali Eldawlatly, Editor, SJA – personal communication).

## Readers

As a result of the above, readers are bombarded with a continually growing deluge of materials to absorb, to the point of information overload which may even impede the adoption of evidence-based practices.<sup>[9]</sup> The situation is rendered more difficult by filter failure in that the traditional methods of collating and evaluating information cannot cope with the new and ever more complex realities of the digital age.<sup>[9]</sup> Truly, “technology matters as much as science in improving healthcare,”<sup>[10]</sup> Clearly, editors must be selective in order to include papers that are not interesting and relevant to readers. However, editors also seek citability, as will be outlined below.

## Journal Editors

Journals are most often assessed by their impact factor, a measure of the frequency of citation of articles published in

a journal over a given period of time. The higher the impact factor, the more prestigious the journal, and the more it attracts high-quality papers from which editors can pick and choose which to send out for review.<sup>[4]</sup> The impact factor also has direct financial implications for a journal in that the higher the factor, the wider the circulation and the higher the advertising revenues.<sup>[8]</sup> While the impact factor has been frequently criticized, it remains the most commonly used metric to swiftly assess a journal's ranking. For these reasons, editors' primary drive is the improvement of their journal's impact factor. This is why the more prestigious the journal, the higher the rejection rate, as can be seen from this excerpt from the British Medical Journal's website:

We publish only about 7% of the 7000–8000 articles we receive each year (and just 4% of the ~4,000 research articles). Roughly two-thirds of all submissions are rejected without sending them for external peer review.<sup>[11,12]</sup>

## Outcome

The end result is the perpetual struggle of these three forces. Researchers should be cognizant that publication chances may be increased by several dynamics. A scientific paper is expected to be submitted in the IMRaD format (introduction, methods, results, analysis and discussion), the layout pioneered by Louis Pasteur in 1876 in his “Study on Yeasts.”<sup>[13]</sup> Even abstracts must adhere to this format.<sup>[14]</sup> However, when submitting a paper for publication, one's chances may be increased by acceding to news media theory. This is because the first hurdle is the journal editor who assesses a submitted paper's title and abstract, and based solely on this and the authors' reputation/s, decides whether to send a paper out for review or to simply reject outright with a polite, generic, rejection rejoinder such as “thank you for submitting ... however the journal receives far more submissions than can possibly be published ... thank you for your interest in the journal ... we hope that you will consider the journal for future submissions.”

## Discussion

For this reason, news media theory is very applicable to the creation of paper titles and abstracts that are submitted for review. Media writers' remuneration is dependent on readers clicking on their articles. The media reel in readers by displaying an intriguing/bold/provocative headline and then keep the readers interested and hooked with initial sentences that not only give information but also tantalize with the promise of more to come.

A paper's title and abstract should adhere to these precepts in order to hook the editor into sending out the paper for review, and the effect will be the same on the reviewers.<sup>[15]</sup> Three short examples from this author's oeuvre will be given. The first title demonstrates not only the topic but also that this paper is population based, so rates can be estimated which might be generalizable to other populations, and hence make the paper more citable.<sup>[16]</sup> "Assisted reproductive technology and multiple pregnancy in Malta - A population based study." Note the brevity, clarity, simplicity, completeness and precision of the abstract. The "so what" at the end is a crucial hook on which to hang a paper, in this case, the restraint of infertility services for the avoidance of surges that might overwhelm the neonatal intensive care unit with premature multiple deliveries.

**Introduction:** Assisted reproductive technology (ART) is increasingly used to overcome growing rates of infertility and subfertility. Perinatal and maternal morbidity and mortality are elevated in ART conceptions even in vaginally delivered singletons. Malta is a small archipelago with comprehensive national data. This study was carried out in order to investigate ART rates in Maltese deliveries for 2000–2019 inclusive.

**Methods:** Anonymous data was obtained from the Malta National Obstetric Information System. For this study, all ART methods were aggregated into one group. Deliveries refer to single pregnancies. A  $P$  value  $\leq 0.05$  was taken to represent statistical significance.

**Results:** This study analyzed 82,356 deliveries over the period with overall 2% ART. There was a significant rising trend in all deliveries (ART plus non-ART) with time ( $P = 0.012$ ). Of these, 1262 were twin deliveries (18% ART) and 56 were triplet deliveries (66% ART). Multiple deliveries (ART plus non-ART) also rose significantly ( $P = 0.00035$ ). The proportion of ART deliveries rose significantly overall and individually, for singletons (3.4–4.6%) since 2018, and over a quarter of such deliveries since 2013 for twin and further multiples.

**Discussion:** The Maltese rate of twins and triplets plateaued before reaching the peaks experienced by other countries and it may be that more infertile couples were and are only having one embryo transferred. In smaller countries with only one neonatal unit, ART services should strive to produce a smooth throughput so as to minimize surges and strains on downstream neonatal services which may have deleterious effects on outcomes, especially neonatal.<sup>[16]</sup>

The second paper is more topical and its attraction is the fact that Malta is one of the leading countries in terms of high COVID vaccine population coverage rates: "Mass population

vaccination for COVID-19 in Malta." The abstract is in the same vein as the previous and concludes with sobering comments that go slightly beyond the actual scope of paper but are very acceptable to a journal editor who wishes this paper to be cited.<sup>[17]</sup>

**Introduction:** COVID-19 remains pandemic with countries scrambling to mass vaccinate populations, prioritizing health-care workers, the elderly and the vulnerable. Malta is a small Mediterranean country with a population of circa half a million with free healthcare at point-of-care. This paper reviews the adaptations made to cope with mass vaccination.

**Methods:** Permission was obtained to tour hospital facilities. Photographs were taken with and edited on a mobile phone, a previously utilized methodology.

**Results:** Vaccination commenced on December 27, 2020 with priorities as above. Malta Medical School lecture halls were initially used, followed by outpatients at the country's regional hospital, as well as other lecture halls, and National Health Service clinics. Virtually all medically vulnerable individuals have had their first doses as well as most individuals  $\geq 60$  years of age, with the 55–60 year age group currently targeted. Malta is well ahead of the European Union average.

**Discussion:** Exacting logistics and cooperation by all local authorities (such as the University of Malta) has resulted in a highly successful vaccine rollout. The eventual licensing of vaccination for children and the availability of booster dose/s will further facilitate the eventual attainment of herd immunity. This must be a global effort lest escape variants render these efforts futile.<sup>[17]</sup>

The final example is a case report: "Propranolol, infantile hemangiomas, and serendipity: New use for an old drug" and the title makes it clear that there will be a brief discussion on the new lease of life that propranolol has experienced in the treatment of infantile hemangiomas. The abstract is deliberately short, a boon for editors who are always conscious that space is at a premium in the printed format of the journal.<sup>[18]</sup>

Capillary hemangiomas are benign lesions that may occur anywhere on the skin, may grow rapidly in the first two years of life and may impair vital organs. Propranolol has been recently discovered to shrink these lesions effectively. We report the first such patient treated in Malta with this drug.<sup>[18]</sup>

## Conclusion

The road to publication is onerous, littered with hurdles, and rejection is common. Cognizance of the tripod of publishing

forces and the utilization of news media theory may facilitate the process.

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### Conflicts of interest

There are no conflicts of interest.

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