

# Rethinking biomedical scientific publishing: What is expected of each player to keep the wheel spinning

**Fernando Fernandez-Llimos**  
Pharmacology Lab.  
College of Pharmacy  
University of Porto  
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## Center for Pharmacy Practice Innovation (CPPI) Seminar

Rethinking biomedical scientific publishing: What is expected of each player to keep the wheel spinning - 9/27/2021  
Provided by Center for Pharmacy Practice Innovation/Department of Pharmacotherapy and Outcomes Science

**Speaker(s):** Fernando Fernandez-Llimos, M.Pharm., MBA, Ph.D

**Topic:**

CPPI invites various health care professionals from around the country and globe to speak on issues relating to innovation in the health care space.

Please contact the Center for Pharmacy Practice Innovation to request a meeting password by clicking [here](#)

[Please click here to join the webinar](#)

Meeting ID: : 972 0552 6057

**Purpose or Objectives: At the conclusion of this activity, the participant will be able to:**

- 1 Review changes in health care delivery that likely impact pharmacy practice.
- 2 Describe current trends in contemporary pharmacy practice as they relate to interprofessional collaboration.
- 3 Discuss practice innovations designed to improve health outcomes.
- 1 Review changes in health care delivery that likely impact pharmacy practice.
- 2 Describe current trends in contemporary pharmacy practice as they relate to interprofessional collaboration.
- 3 Discuss practice innovations designed to improve health outcomes.
- 4 Discuss role delineation for pharmacists on the interprofessional health care team.
- 1 Review changes in health care delivery that likely impact pharmacy practice.
- 2 Describe current trends in contemporary pharmacy practice as they relate to interprofessional collaboration.
- 3 Discuss practice innovations designed to improve health outcomes.
- 4 Discuss role delineation for pharmacists on the interprofessional health care team.

**Date/Time:** 9/27/2021 12:00:00 PM

**Accreditation:**



In support of improving patient care, VCU Health Continuing Education is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

**Credit Designation(s):**

0.75 ANCC contact hours.



This activity provides 0.75 contact hours of continuing education credit. ACPE Universal Activity Number (UAN): Pharmacist: JA4008237-0000-21-044-L01-P Technician: JA4008237-0000-21-044-L01-T

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**Disclosure of Commercial Support:**

We acknowledge that no commercial or in-kind support was provided for this activity.

**Disclosure of Financial Relationships:**

The following planners, moderators or speakers have the following financial relationship(s) with commercial interests to disclose:

Name of individual	Individual's role in activity	Name of commercial interest/Nature of relationship
Dave Dixon, PharmD, FACC, FCCP, FNLA, BCACP, BCPS, CDE, CLS	Activity Director	Contracted Research-Boehringer Ingelheim Vetmedica GmbH - 08/04/2021
Fernando Fernandez-Llimos, M.Pharm., MBA, Ph.D	Faculty	
Dana Burns, DNP	Planning Committee	Nothing to disclose - 09/29/2020
Teresa Salgado	Planning Committee	Nothing to disclose - 09/29/2020
Evan Sisson, Pharm.D., MSHA, BCACP, CDE, FADE	Planning Committee	Nothing to disclose - 05/18/2021
Madeleine Wagner, BA	Planning Committee	

# Conflicts of interest

The screenshot shows the website for the Center for Pharmacy Practice Innovation at Virginia Commonwealth University. The header includes the VCU logo and the text "VIRGINIA COMMONWEALTH UNIVERSITY". Below the header, the center's name and "School of Pharmacy" are displayed. A navigation menu includes links for Home, Our Team, Research, Seminar Series, Partners, News, and Contact Us. The main content area features a "Seminar Series" heading and a list of events. The highlighted event is for September 27, 2021, featuring Fernando Fernandez-Llimos, M.Pharm., Ph.D., Professor at the University of Porto. The seminar topic is "Rethinking biomedical scientific publishing: What is expected of each player to keep the wheel spinning". The description states that Fernandez-Llimos is a professor at the Laboratory of Pharmacology, Department of Drug Sciences at the Faculty of Pharmacy, University of Porto. He graduated with a degree in pharmaceutical sciences from the Complutense University (Madrid, Spain) and obtained his Ph.D. in drug research and development with focus on drug information from the University of Granada (Spain). He also obtained master's degrees from the University of Santiago de Compostela and the University of Valencia and an MBA from the Vigo Business School. He obtained the Habilitation in 2019 by the University of Lisbon (Portugal), where he was a professor and member of the Institute for Medicines Research (iMed.Ulisboa) for 12 years. His research interests are drug information with special emphasis on evidence synthesis and in design and assessing clinical pharmacy services. The event details include a time of Noon - 12:50 p.m., location at Smith 545/Zoom, and information about CE credit from ACPE, ANCC, and IPCE. A "Register here" link is provided.

~~Fernandez-Llimos is editor-in-chief of **Pharmacy Practice**.~~ His research interests are drug information with special emphasis on evidence synthesis and in design and assessing clinical pharmacy services.

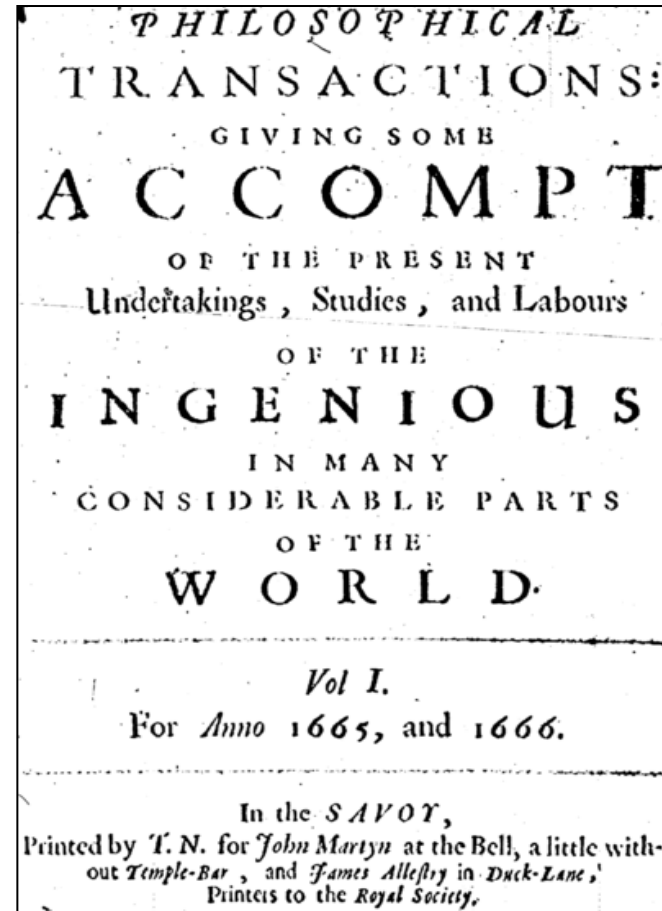
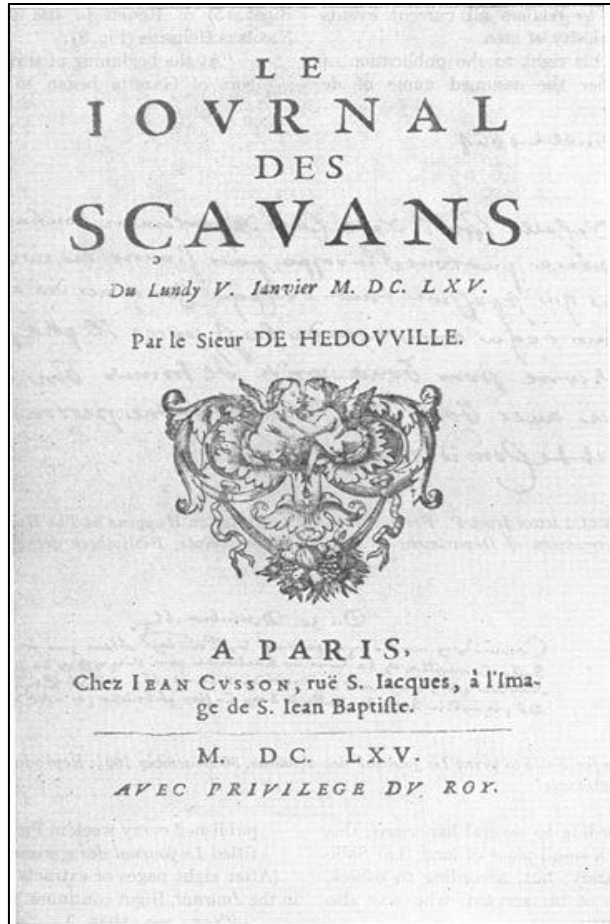
- I'm a pharmacy practice researcher

# Outline

- **What is ‘scientific publishing’?**
- **Who are the players involved in ‘scientific publishing’?**
- **What are the problems in the publication process?**
- **What are the problems in the publication process? Solutions?**
- **Wrap-up message**



# What is 'scientific publishing'?



The Royal Society authorized Henry Oldenburg to publish at his own expense a monthly collection of scientific papers communicated to him either by members of the society or by foreign scientists.

- Journal des Sçavans (5-Ene-1665)
- Philosophical Transactions of the Royal Society (6-Marzo-1665)

# What is 'scientific publishing'?

- The aim of the new publication [Philosophical Transactions] was to create a public record of original contributions to knowledge and to encourage scientists to “speak” directly to one another.
- By providing intellectual credit publicly for innovative claims in natural philosophy, the journal encouraged scientists to disclose knowledge that they might otherwise have kept secret.

**We publish to disseminate scientific findings and knowledge**

# What is 'scientific publishing'?

- The Philosophical Transactions of the Royal Society created a sense of competition among scientists to be the first to publish a new scientific finding, an incentive that is continued in modern scientific journals.
- If the journal is a prominent one, publication endows the author with an extra measure of prestige.

**So, we publish to beat the others !!!!**



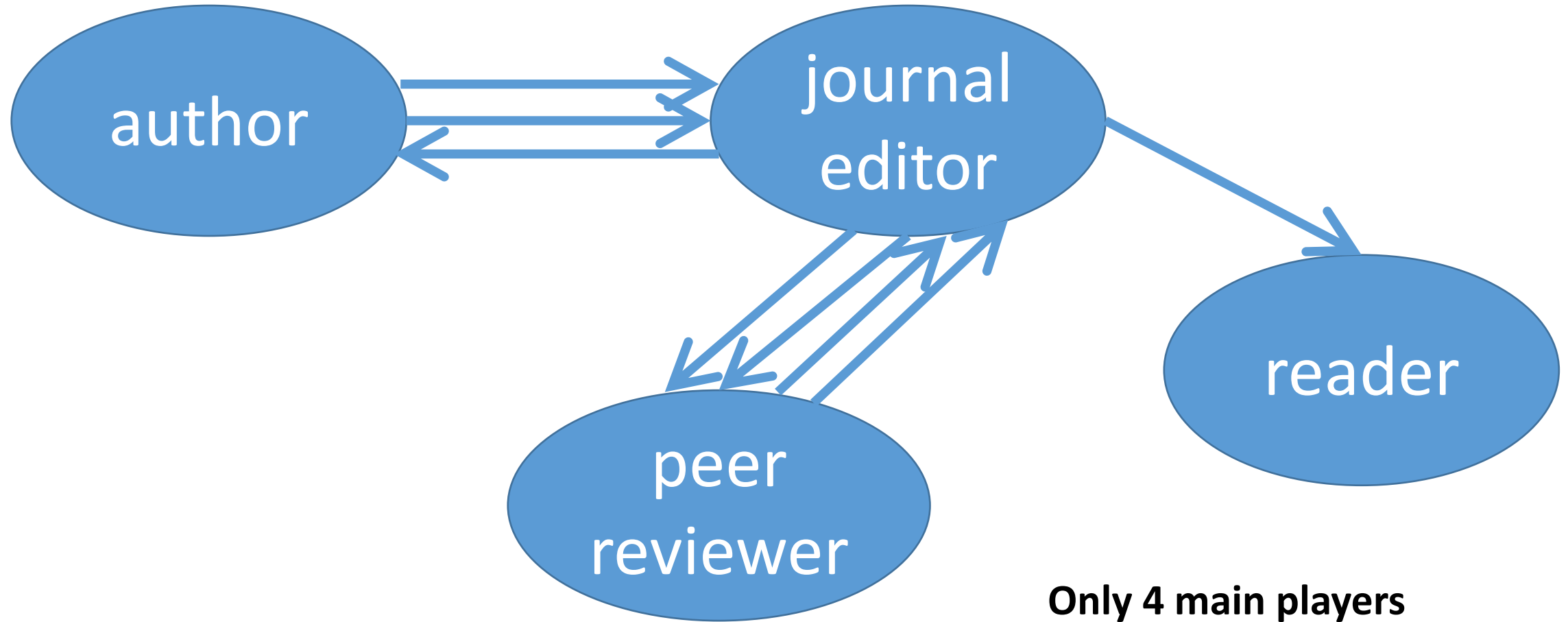
# What is 'scientific publishing'?

**Disseminating  
knowledge**

**Beating the  
others**



# Who are the players involved?



**Only 4 main players**

# Who are the players involved?

- **Authors:**
  - Researchers in the area interested in reporting findings
- **Editors:**
  - Researchers in the area interested in publishing scientific journals
- **Peer reviewers:**
  - Researchers in the area interested in contributing to others' papers
- **Readers:**
  - Researchers in the area interested in receiving scientific knowledge

**The same people playing four different roles**

**ONE player with FOUR roles**

# Who are the players involved?



# What are the problems in the publication process?

## Complains:

### • Authors:

- Too long editorial process
- Too much desk rejection
- Bad peer reviewers and poor comments
- Low Impact Factors in my area
- Too high APCs

### • Peer reviewers

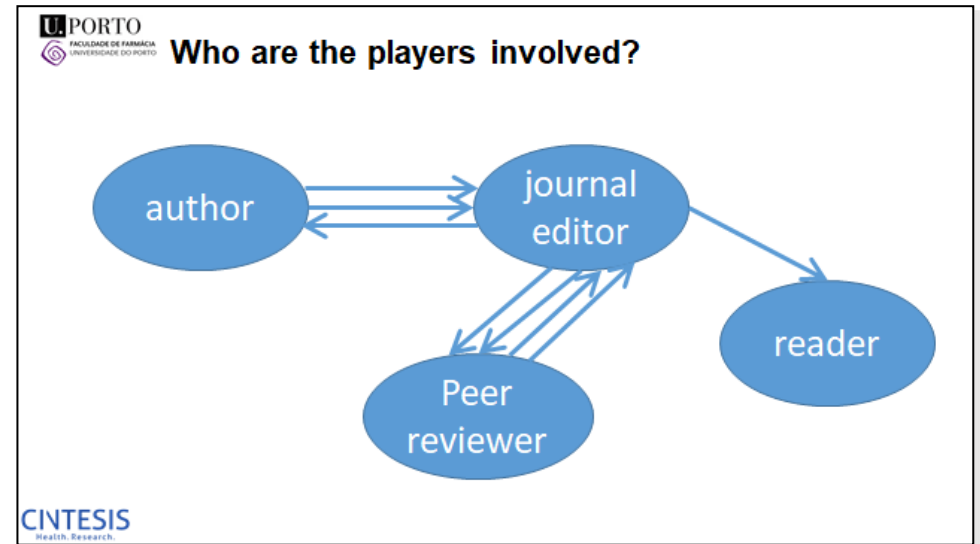
- Too many invitations to review
- Poor quality manuscripts

### • Editors

- Poor quality manuscripts
- Few peer reviewers accepting invitations
- Many authors complaining about the editorial process duration
- Low Impact Factor

### • Readers

- Poor quality articles
- Article not citing my previous article



**ONE player with FOUR roles**

# What are the problems in the publication process?

- We publish too much

## Biomedical research: increasing value, reducing waste

Global biomedical and public health research involves billions of dollars and millions of people. In 2010, expenditure on life sciences (mostly biomedical) research was US\$240 billion.<sup>3</sup> The USA is the largest funder, with about \$70 billion in commercial and \$40 billion in governmental and non-profit funding annually,<sup>4</sup> representing slightly more than 5% of US health-care expenditure. Although this vast enterprise has led to substantial health improvements, many more gains are possible if the waste and inefficiency in the ways that biomedical research is chosen, designed, done, analysed, regulated, managed, disseminated, and reported can be addressed.

Macleod MR, Michie S, Roberts I, et al. Biomedical research: increasing value, reducing waste. *Lancet*. 2014;383(9912):101-104. doi:10.1016/S0140-6736(13)62329-6



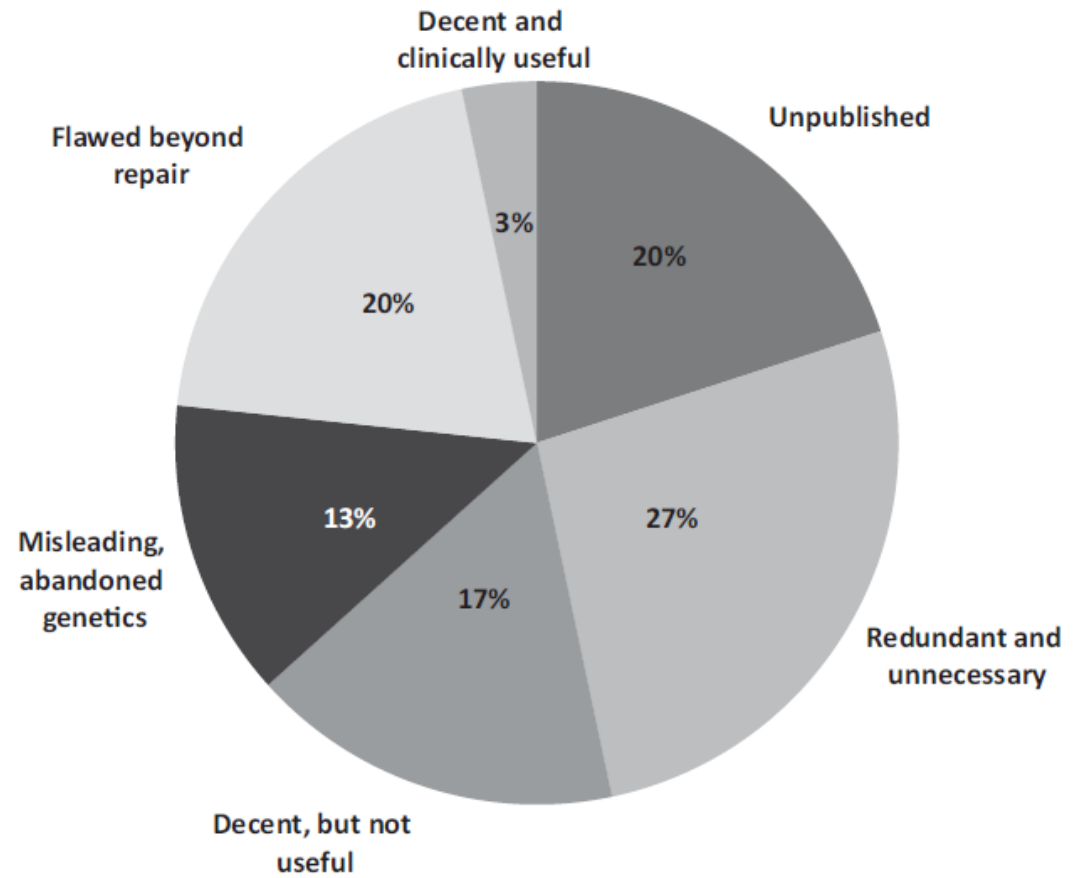
# What are the problems in the publication process?

- We publish too much

The Mass Production of Redundant, Misleading, and Conflicted Systematic Reviews and Meta-analyses

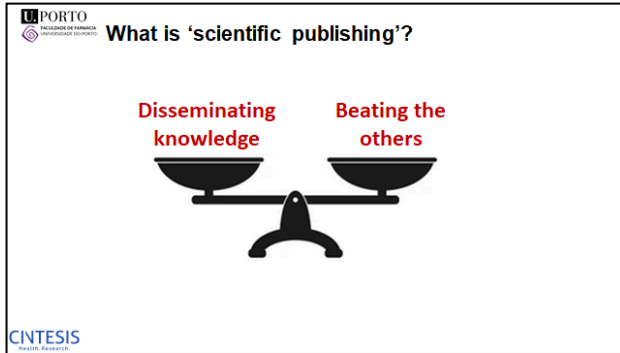
JOHN P.A. IOANNIDIS

Figure 4. A Summary Overview of Currently Produced Meta-analyses



# What are the problems in the publication process?

- We publish too much: Why?



## “PUBLISH OR PERISH”

Today there is much being written in the various scientific fields by researchers who must “publish or perish.” In order to receive grants or promotions it is necessary for them to keep their names in print over articles that show their capacity for learning and writing. Although they may be engaged in full time teaching, it is mandatory that they conduct research and report it in the literature.

# What are the problems in the publication process?

- We publish too much: Why?



**Publishing as a prerequisite  
and not as a merit**

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3. Deadlines and procedures for the thesis submission:
4. Other relevant information

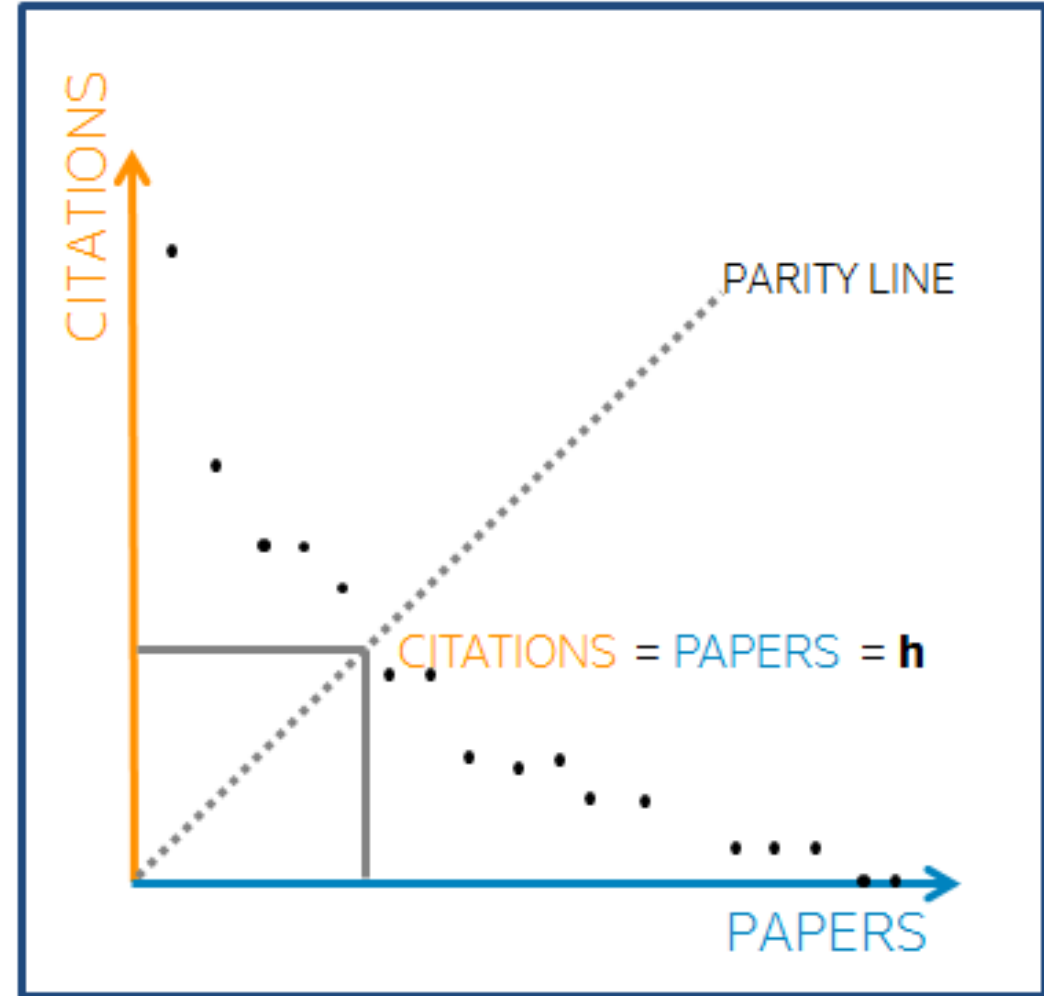
4. At least one **original publication** that includes some of the results of your doctoral thesis. If the manuscript has already been accepted but has not been published yet, you must attach a letter from the journal editor indicating the title and author(s) of the work. You must also include the quality indicators<sup>1</sup> of the publication<sup>2</sup>.

# What are the problems in the publication process?

- We publish too much: Why?



**The more, the better**



# What are the problems in the publication process?

- **Citations: a misleading metric. The Lancet Res Med case study**

AU	TI	PD	VI	IP	PG	Cited in 2020
Benjafield, et al.	Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis	2019	7	8687-698		176
Reck, et al.	Atezolizumab plus bevacizumab and chemotherapy in non-small-cell lung cancer (IMpower150): key subgroup analyses of patients with EGFR mutations or baseline liver metastases in a randomised, open-label phase 3 trial	2019	7	5387-401		152
Lynch, et al.	Diagnostic criteria for idiopathic pulmonary fibrosis: a Fleischner Society White Paper	2018	6	2138-153		110
Schauwvlieghe, et al.	Invasive aspergillosis in patients admitted to the intensive care unit with severe influenza: a retrospective cohort study	2018	6	10782-792		104
Matthay, et al.	Treatment with allogeneic mesenchymal stromal cells for moderate to severe acute respiratory distress syndrome (START study): a randomised phase 2a safety trial	2019	7	2154-162		103
Fleischmann-Struzek, et al.	The global burden of paediatric and neonatal sepsis: a systematic review	2018	6	3223-230		71
Calfee, et al.	Acute respiratory distress syndrome subphenotypes and differential response to simvastatin: secondary analysis of a randomised controlled trial	2018	6	9691-698		70
Bui, et al.	Childhood predictors of lung function trajectories and future COPD risk: a prospective cohort study from the first to the sixth decade of life	2018	6	7535-544		64
Bafadhel, et al.	Predictors of exacerbation risk and response to budesonide in patients with chronic obstructive pulmonary disease: a post-hoc analysis of three randomised trials	2018	6	2117-126		62
Floyd, et al.	The global tuberculosis epidemic and progress in care, prevention, and research: an overview in year 3 of the End TB era	2018	6	4299-314		60

Data from Web of Science (JCR) obtained on Sep 23, 2021

# What are the problems in the publication process?

- Citations: a misleading metric. The Lancet Res Med case study

## Correspondence

Mar 13, 2020

### Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection?

The most distinctive comorbidities of 32 non-survivors from a group of 52 intensive care unit patients with novel coronavirus disease

of ACE2.<sup>5</sup> ACE2 can also be increased by thiazolidinediones and ibuprofen. These data suggest that ACE2 expression is increased in diabetes and treatment with ACE inhibitors and ARBs increases ACE2 expression. Consequently, the increased expression of ACE2 would facilitate infection with COVID-19. We therefore hypothesise that diabetes and hypertension treatment with ACE2-stimulating drugs increases the risk of developing

We declare no competing interests.

Lei Fang, George Karakiulakis,  
 \*Michael Roth  
 michael.roth@usb.ch

Pulmonary Cell Research and Pneumology, Department of Biomedicine and Internal Medicine, University Hospital Basel, CH-4031 Basel, Switzerland (LF, MR); and Department of Pharmacology, School of Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece (GK)

1 Yang X, Yu Y, Xu J, et al. Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, Ch

Mar 11, 2020

The screenshot shows the ESC (European Society of Cardiology) website. The navigation bar includes: The ESC, Congresses & Events, Journals, Guidelines, Education, and Research. The breadcrumb trail is: European Society of Cardiology > Councils > Council on Hypertension > News. The main heading is "Council on Hypertension". A sidebar on the left lists: About, Education, Events, News, Publications, and "Become a member of the ESC Council on Hypertension". The main content area features a "Position Statement of the ESC Council on Hypertension on ACE-Inhibitors and Angiotensin Receptor Blockers" dated 13 Mar 2020. The text discusses the association between hypertension and COVID-19 mortality, the potential adverse effects of ACE-inhibitors and ARBs, and the concern that these drugs may increase the risk of infection and severity of SARS-CoV-2. It notes that ACE2 levels are increased following treatment with ACE-i and ARBs. The statement concludes that because of social media-related amplification, patients and doctors have become increasingly concerned, and in some cases, have stopped taking their ACE-i or ARB medications. A note at the bottom states: "This speculation about the safety of ACE-i or ARB treatment in relation to COVID-19 does not have a sound

[https://www.escardio.org/Councils/Council-on-Hypertension-\(CHT\)/News/position-statement-of-the-esc-council-on-hypertension-on-ace-inhibitors-and-ang](https://www.escardio.org/Councils/Council-on-Hypertension-(CHT)/News/position-statement-of-the-esc-council-on-hypertension-on-ace-inhibitors-and-ang)



# What are the problems in the publication process?

- **Citations: a misleading metric. The Lancet Res Med case study**

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10.1016/S2213-2600(20)30116-8 (DOI)

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1 Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection? 1,276 Citations

Fang, L; Karakiulakis, G and Roth, M  
Apr 2020 | LANCET RESPIRATORY MEDICINE 8 (4) , pp.E21-E21

5 References

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Data from Web of Science obtained on Sep 23, 2021

# What are the problems in the publication process?

- **We publish too much: solutions?**
- **Academic institutions should have their own assessment systems not based on other processes assessment systems.**
  - **Publishing should be an additional merit and not a prerequisite**
- **Academic institutions and funders should evaluate academic and researchers by their best contributions, not by the number of contributions or the citation metrics.**
  - **Some assessment processes ask for the five best papers in the last five years.**

**Solutions mainly associated to university policymakers**

# What are the problems in the publication process?

- We publish too much: solutions?

Poor international collaboration in pharmacy practice

**Publish less,  
 publish better**

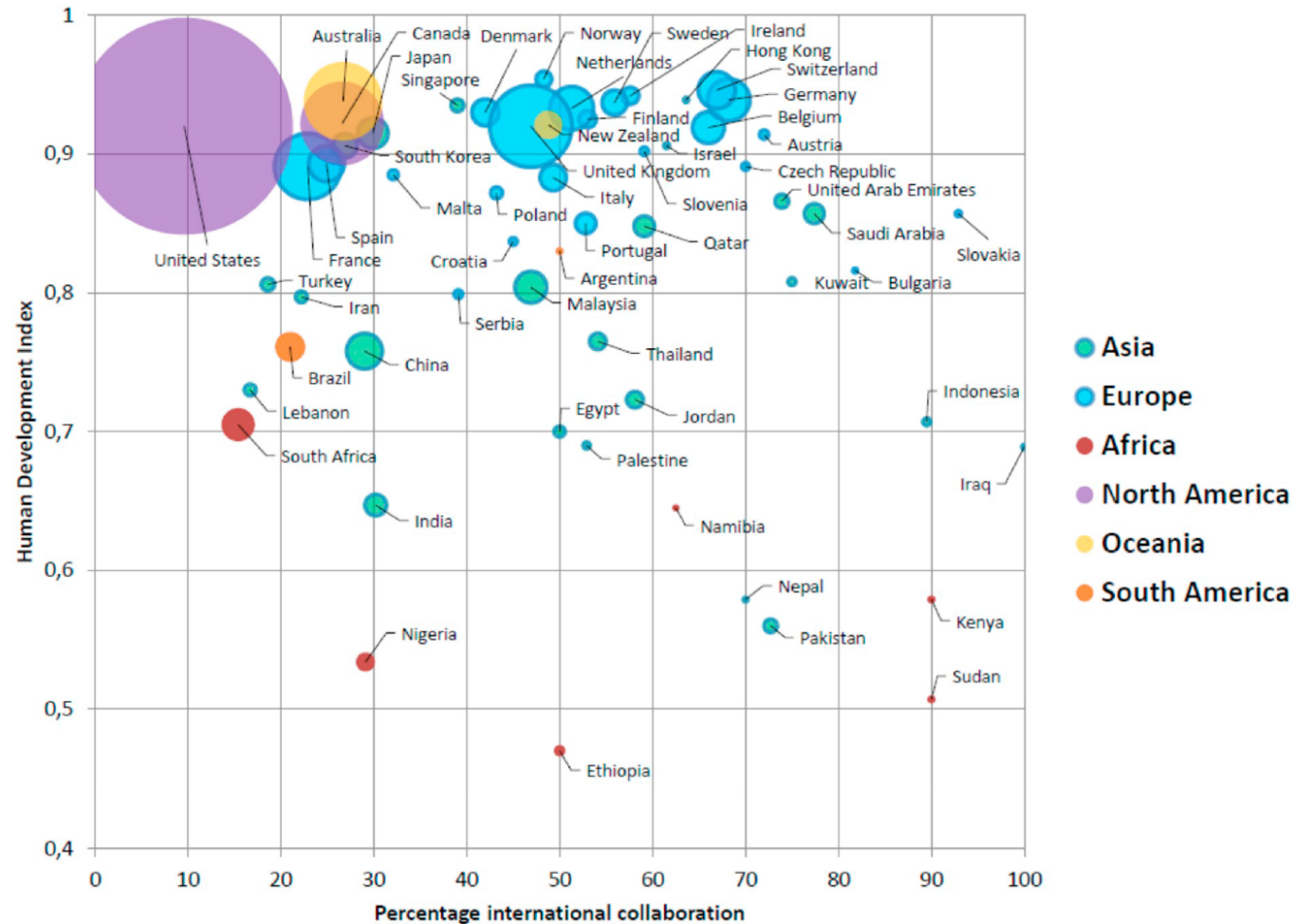


Fig. 1. The relations between human development index and international collaboration output.

# What are the problems in the publication process?

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### • Peer reviewers

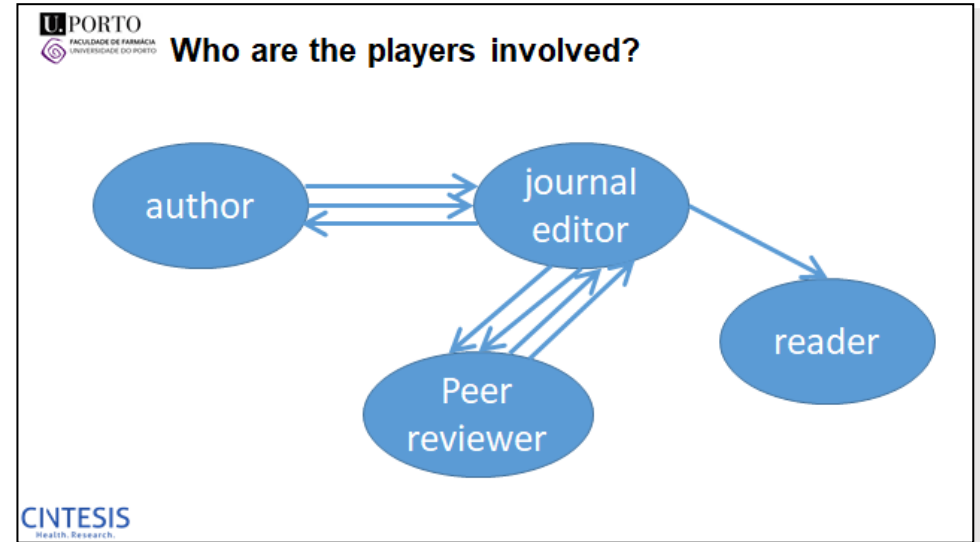
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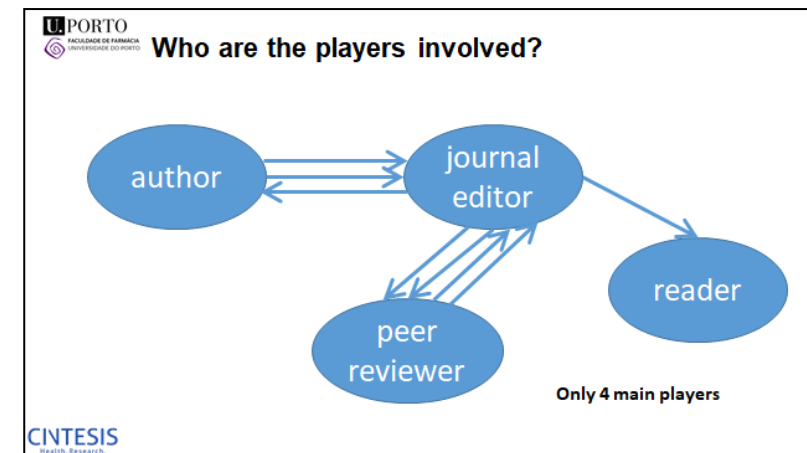
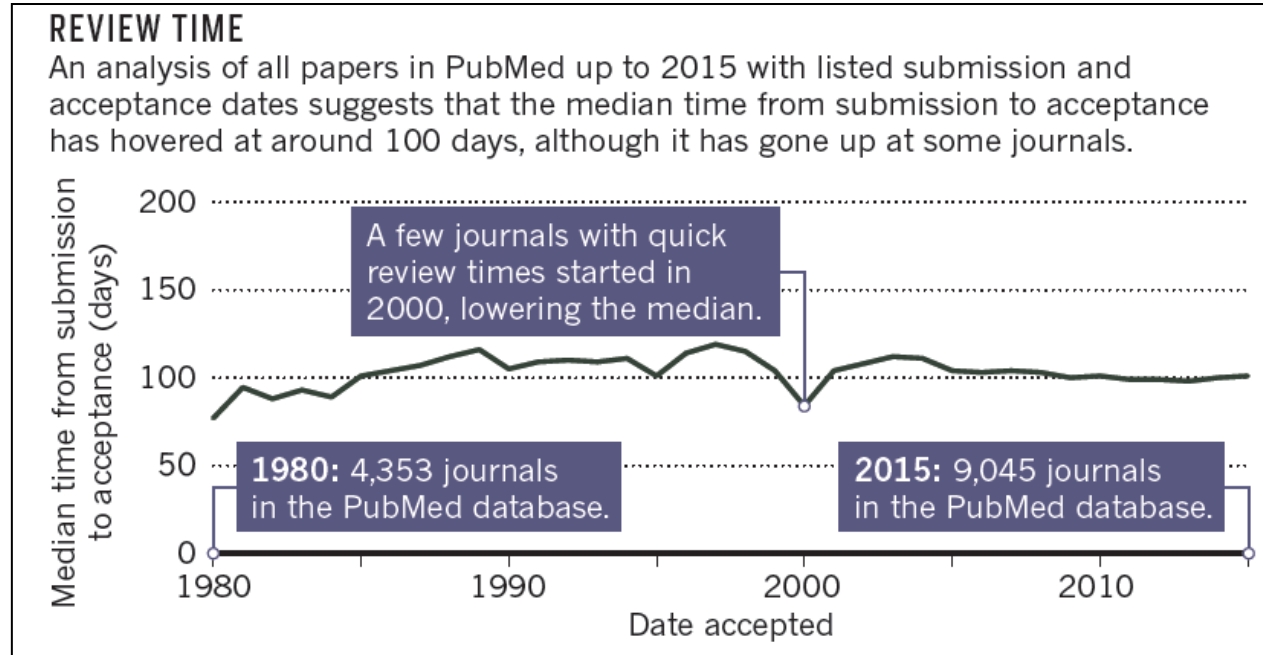
- Poor quality articles
- Article not citing my previous article



**ONE player with FOUR roles**

# What are the problems in the publication process?

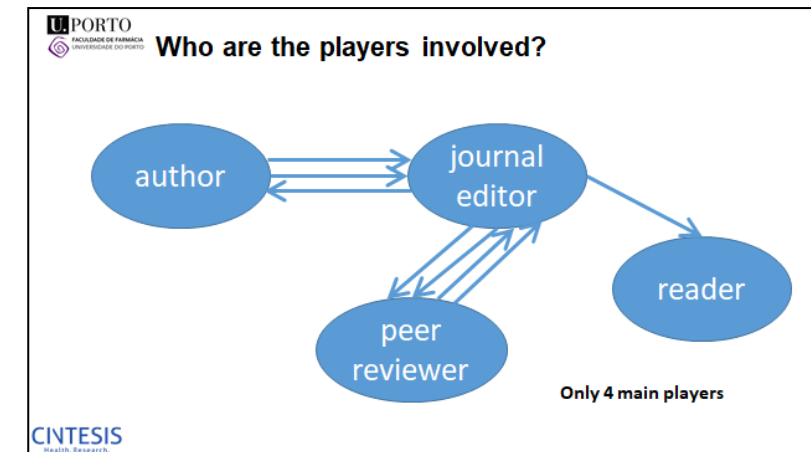
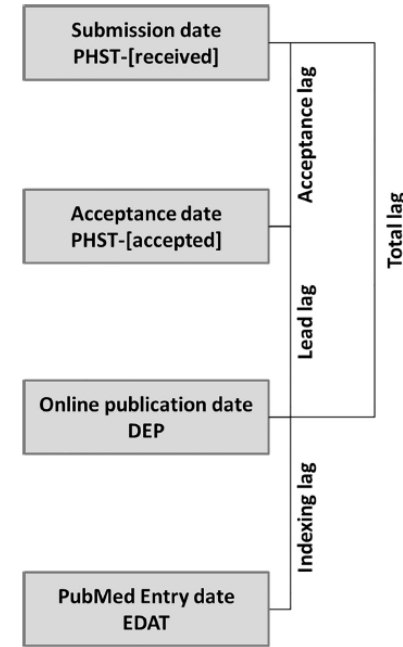
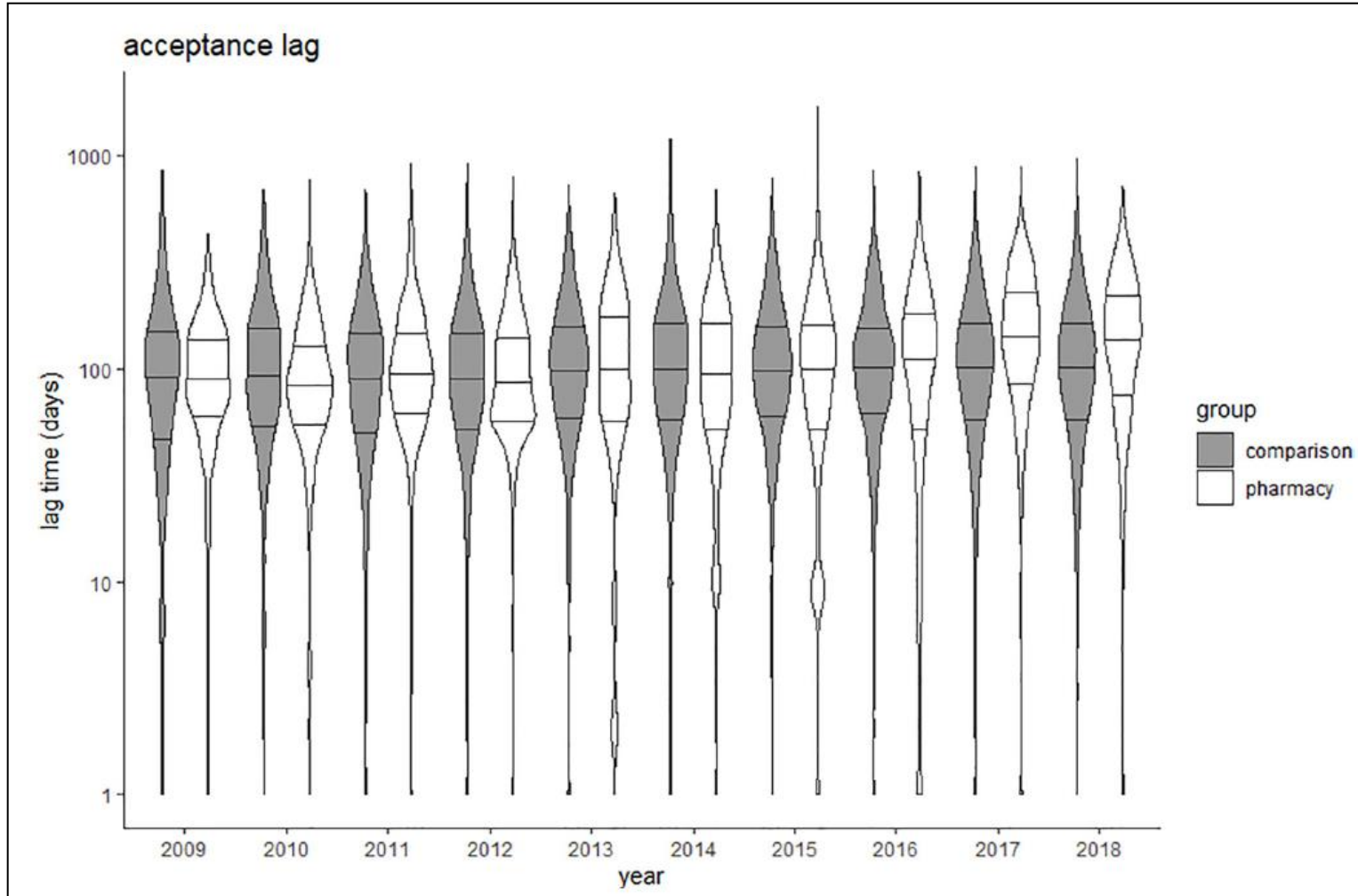
- We want to publish quickly



Powell K. Does it take too long to publish research?. Nature. 2016;530(7589):148-151. doi:10.1038/530148a

# What are the problems in the publication process?

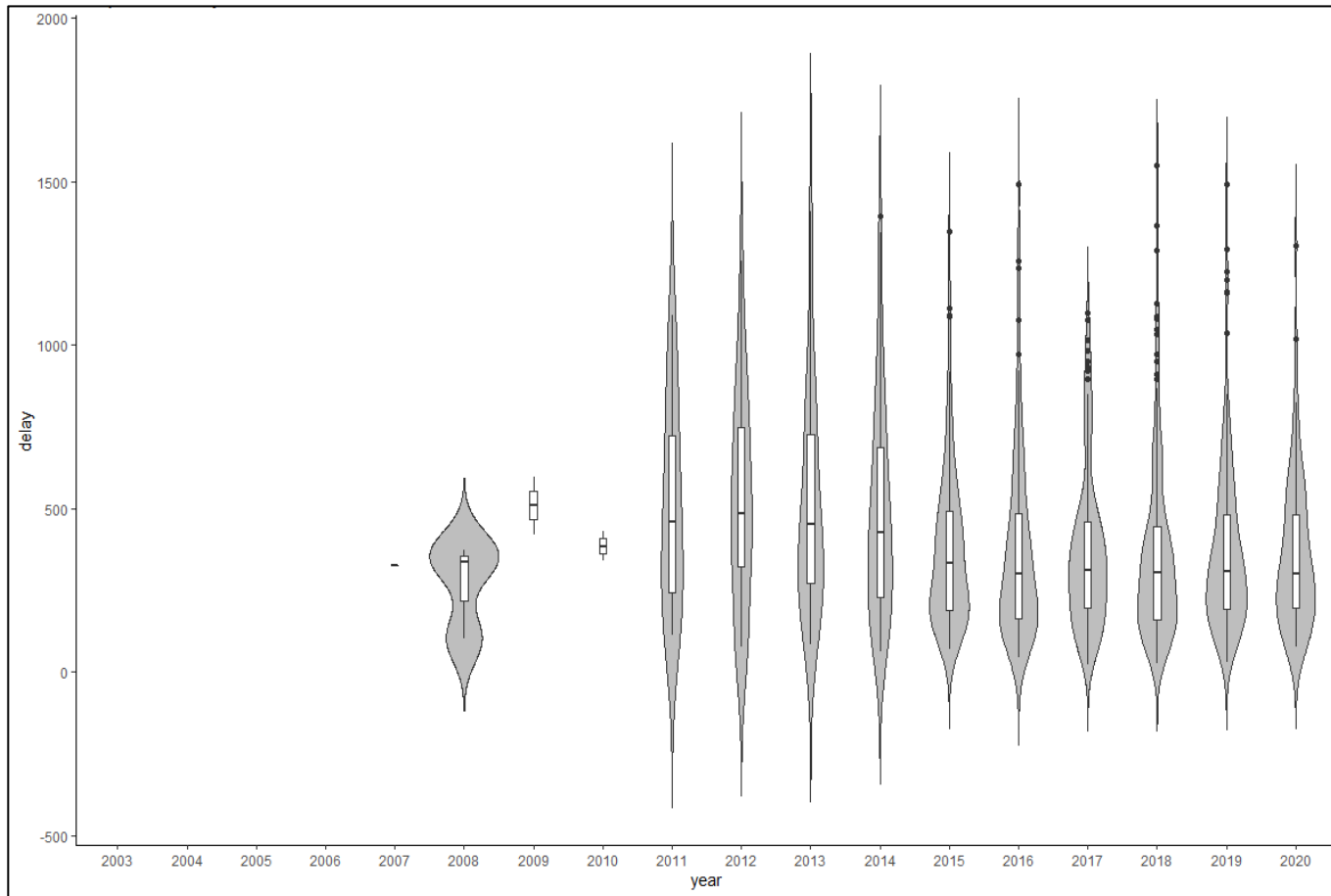
- We want to publish quickly



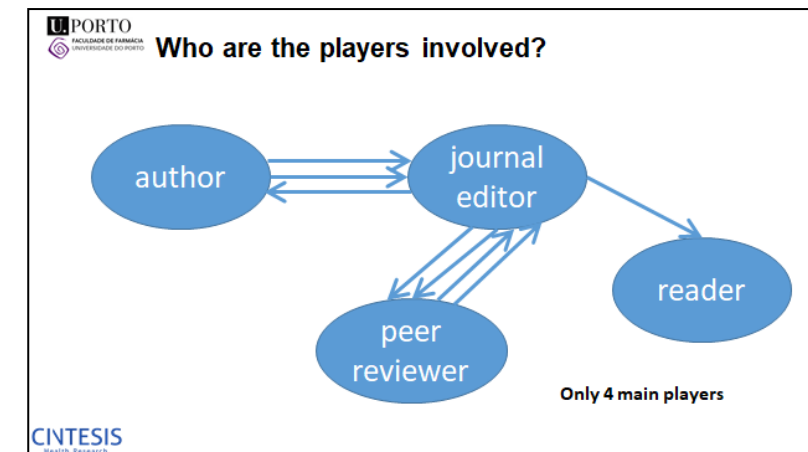


# What are the problems in the publication process?

- We want to publish quickly



The median time from search to submission was 191 days (IQR 84–370; minimum –339 and maximum 1358), which represents approximately 6.4 months, with a maximum lag time of 1358 days (45.3 months). A total of 42 (5.0%) NMAs had their search updated after submission (eg, as requested by editors or reviewers during revision), thus presenting a negative value on the lag time. The remaining 801 articles present a median submission



# What are the problems in the publication process?

- We want to publish quickly: solutions?

Version 1. [ArXiv](#). Preprint. 2021 Sep 17: arXiv:2109.08633v1.

PMCID: PMC8452106

PMID: [34545336](#)



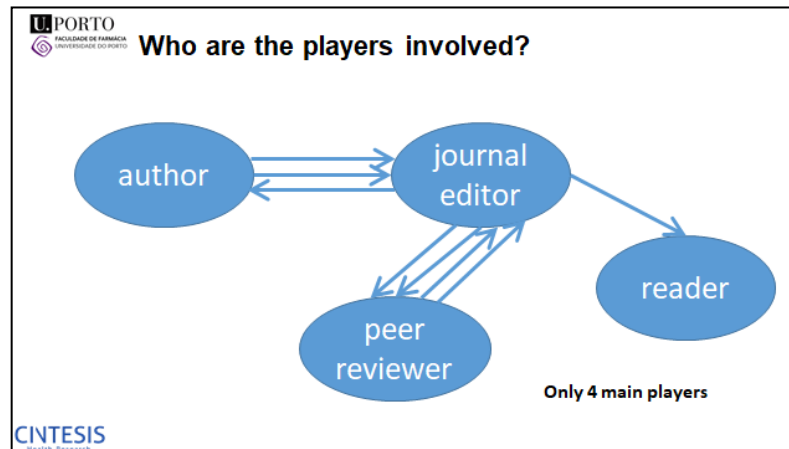
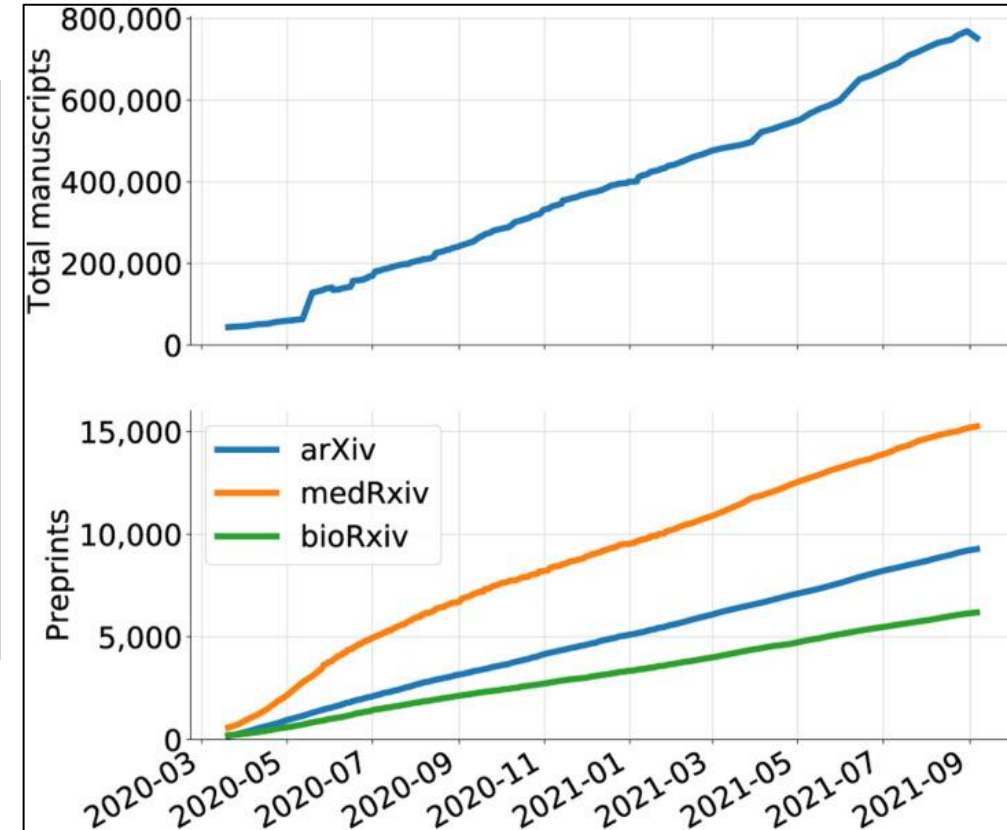
This article is a preprint.

Preprints have not been peer reviewed.

To learn more about preprints in PMC see: [NIH Preprint Pilot](#).

## An Open-Publishing Response to the COVID-19 Infodemic

[Halie M. Rando](#),<sup>1,2,3</sup> [Simina M. Boca](#),<sup>4</sup> [Lucy D'Agostino McGowan](#),<sup>5</sup> [Daniel S. Himmelstein](#),<sup>3,6</sup> [Michael P. Robson](#),<sup>7</sup>  
[Vincent Rubinetti](#),<sup>1,3</sup> [Ryan Velazquez](#),<sup>8</sup> COVID-19 Review Consortium, [Casey S. Greene](#),<sup>1,2,3,9</sup> and  
[Anthony Gitter](#)<sup>10,11</sup>



# What are the problems in the publication process?

- We want to publish quickly: solutions?



## Benefits of the preprints:

**Benefit #1:** You are likely to receive higher citation counts

**Benefit #2:** You receive more exposure with a preprint

**Benefit #3:** Your work sees the world quicker

**Benefit #4:** Your article may improve

**Benefit #5:** It's a place for “unpublishable” data

**Benefit #6:** You can publish your research with open access for free

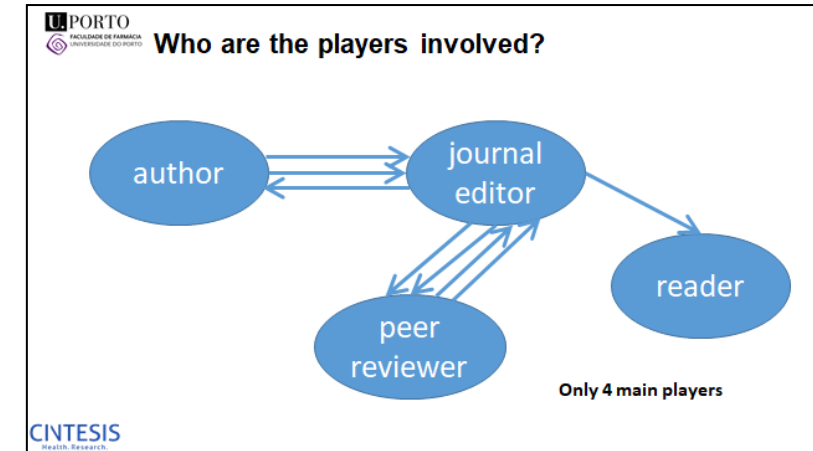
**Benefit #7:** Your work gets published when you are still excited about it!

**Scholarly scientific publishing =**



# What are the problems in the publication process?

- We want to publish quickly: solutions?



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Physics



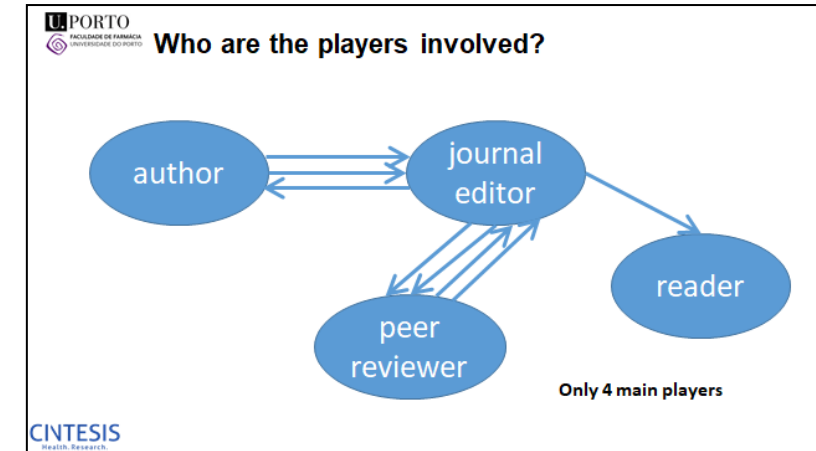
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# What are the problems in the publication process?

- We want to publish quickly: solutions?



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**WITHDRAWN** Comments (21) Previous

Posted September 24, 2021.

**mRNA COVID-19 Vaccination and Development of CMR-confirmed Myopericarditis**

Tahir Kafil, Mariana M Lamacie, Sophie Chenier, Heather Taggart, Nina Ghosh, Alexander Dick, Gary Small, Peter Liu, Rob S Beanlands, Lisa Mielniczuk, David Birnie, Andrew M Crean

doi: <https://doi.org/10.1101/2021.09.13.21262182>

**This article is a preprint and has not been certified by peer review [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.**

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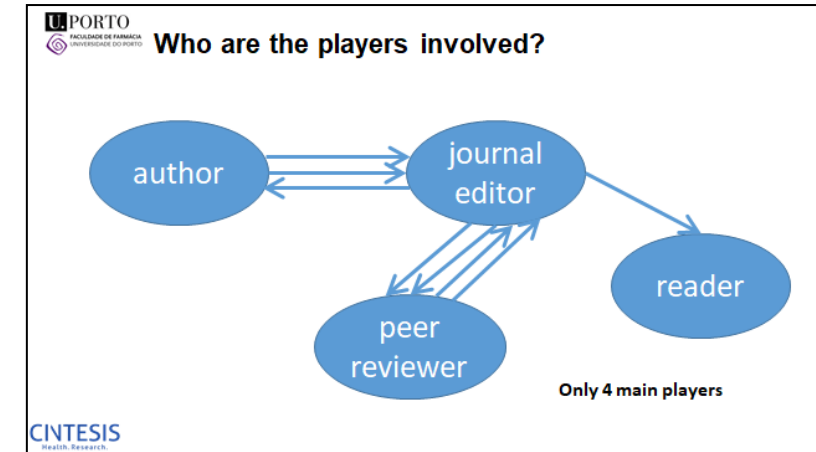
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**Preprints should not be used for clinical decisions or for evidence-generation**

In summary, the authors have withdrawn this manuscript because of a major error pertaining to the quoted incidence data. Therefore, the authors do not wish this work to be cited as reference for the project. If you have any questions, please contact the corresponding author.

# What are the problems in the publication process?

- We want to publish quickly: solutions?



**The Linux Law:**

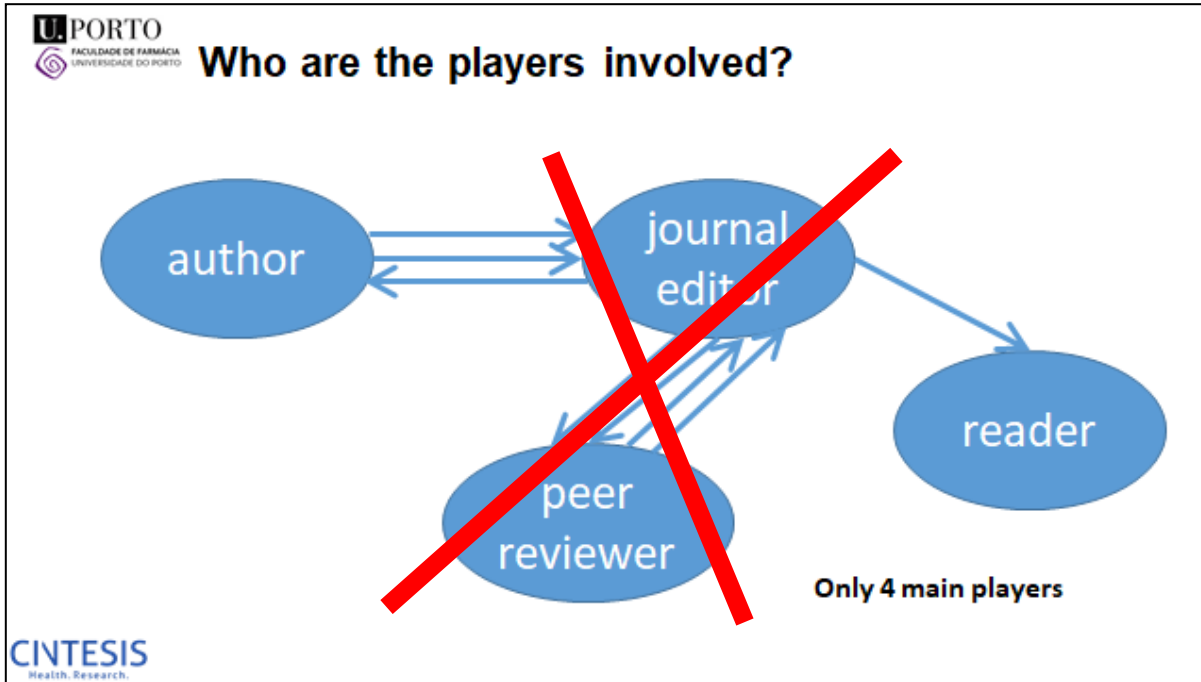
**Given enough eyeballs, all bugs are shallow**

**(Eric S. Raymond)**

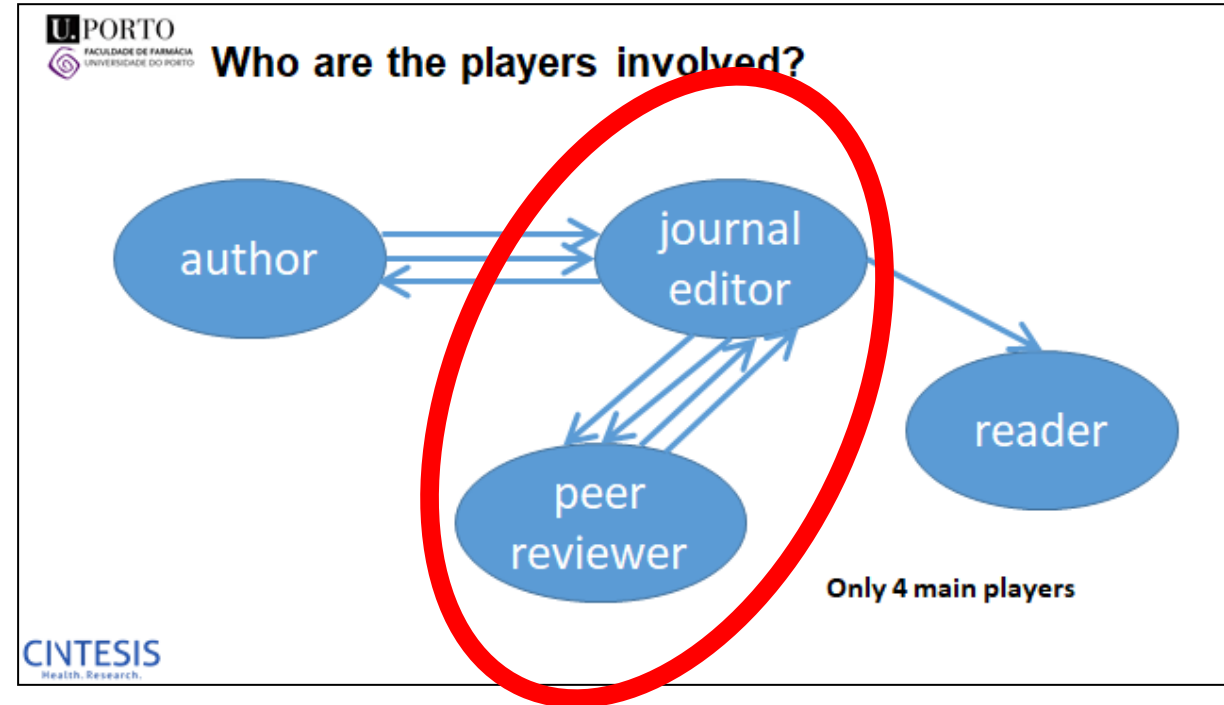


# What are the problems in the publication process?

- We want to publish quickly: solutions?



**Kill the peer review process**



**Reinforce the peer review process**

# What are the problems in the publication process?

- We want to publish quickly: solutions?

## WORLD VIEW *A personal take on events*

RICHARD P. GRANT



### Why I said no to peer review this summer

*Taking a well-earned break will benefit your productivity in the long run, says Jennifer Rohn.*

- I'm at the end of the semester
- I'm about to go on vacation
- I'm on vacation
- I've just returned from vacation
- I'm at the beginning of the semester

I NO LONGER FEEL  
I HAVE A  
**MORAL**  
**OBLIGATION**  
TO PEER REVIEW  
DURING MY  
**TIME OFF.**

- Rohn J. Why I said no to peer review this summer. *Nature*. 2019;572(7770):417. doi:10.1038/d41586-019-02470-2
- Fernandez-Llimos F, Salgado TM, Tonin FS; Pharmacy Practice 2019 peer reviewers . How many manuscripts should I peer review per year?. *Pharm Pract (Granada)*. 2020;18(1):1804. doi:10.18549/PharmPract.2020.1.1804

# What are the problems in the publication process?

- We want to publish quickly: solutions?

$$total\_reviewers = (R * A) + (R * A * T) + (R * A * T * T) + \dots + (R * A * T^N)$$

$$total\_reviewers = \sum_1^N R * A * (T)^{N-1}$$

And the number of articles published will be:

$$published = A * (1 - T) + A * T * (1 - T) + A * T * T * (1 - T) + \dots + A * T^{N-1} * (1 - T)$$

$$published = \sum_1^N A * T^{N-1} * (1 - T)$$

So, the total number of required peer reviewers per published article will be:

$$reviewers\_per\_article\_published = \frac{R * A * \sum_1^N T^{N-1}}{A * (1 - T) * \sum_1^N T^{N-1}}$$

$$reviewers\_per\_article\_published = \frac{R}{(1 - T)}$$

$$reviewers\_per\_article\_published = \frac{R}{(1 - T)}$$

**80% rejection rate**

**3 reviewers per manuscript**

**A= articles received**

**R= reviewers per article**

**T= rejection rate**

$$articles_{to\_review} = \frac{Articles\_published(by\_the\_team)}{Num\_team\_members} * 15$$

# What are the problems in the publication process?

## Complains:

### • Authors:

- Too long editorial process
- Too much desk rejection
- Bad peer reviewers and poor comments
- **Low Impact Factors in my area**
- **Too high APCs**

### • Peer reviewers

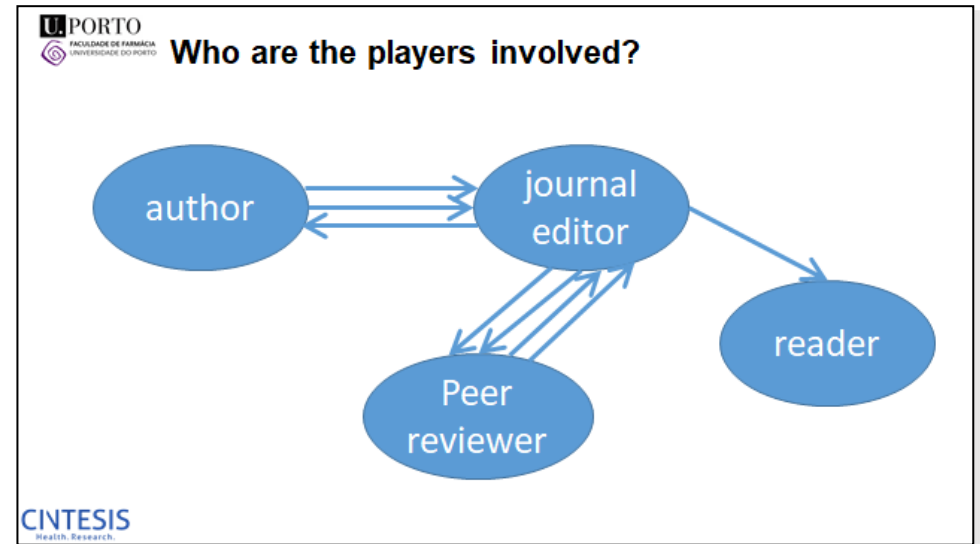
- Too many invitations to review
- Poor quality manuscripts

### • Editors

- Poor quality manuscripts
- Few peer reviewers accepting invitations
- Many authors complaining about the editorial process duration
- **Low Impact Factor**

### • Readers

- Poor quality articles
- **Article not citing my previous article**



**ONE player with FOUR roles**

# What are the problems in the publication process?

- Low Impact Factor journals

$$IF_{2020} = \frac{cites_{2018} + cites_{2019}}{articles_{2018} + articles_{2019}}$$

## PERSONAL DISCLAIMER

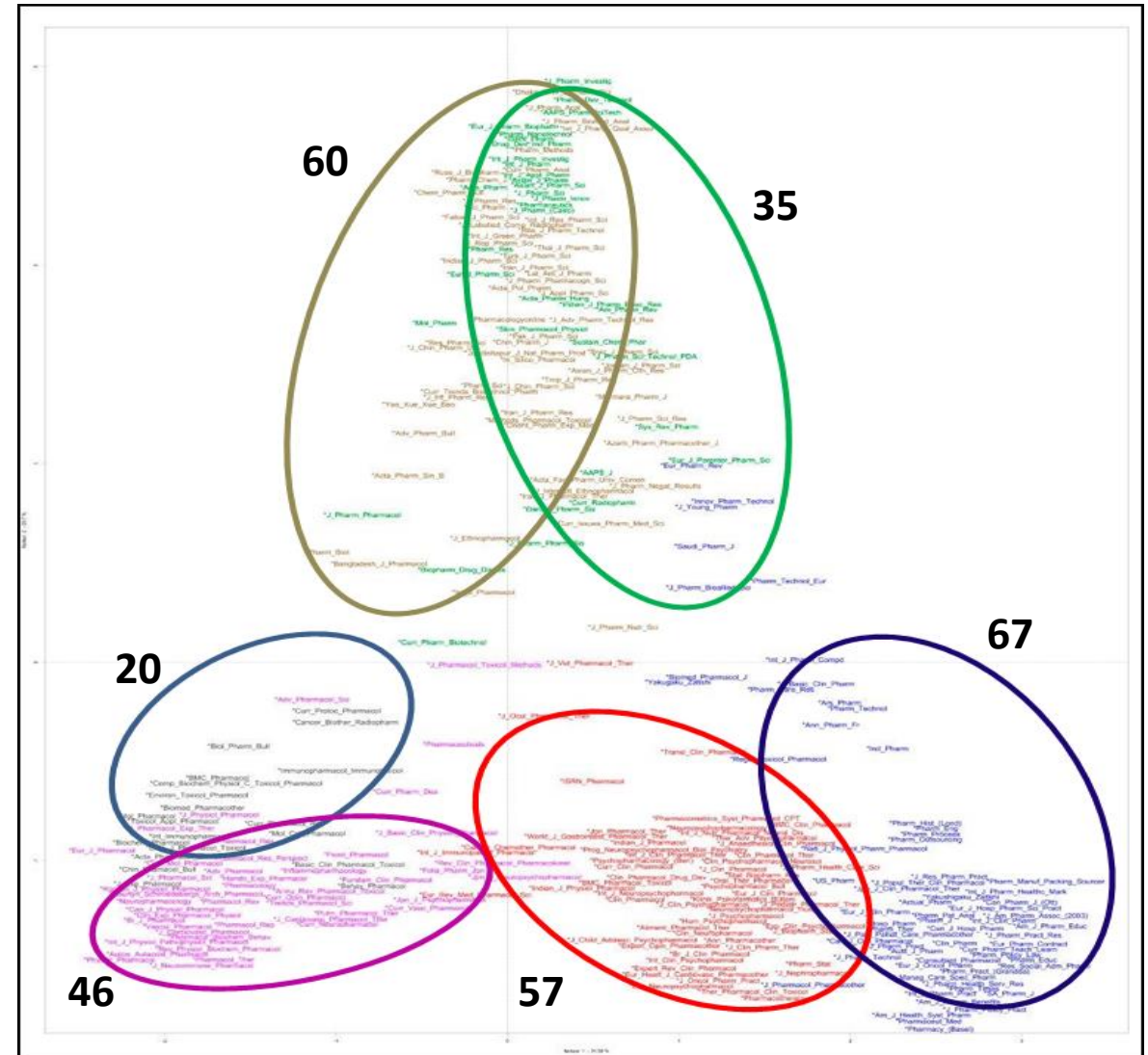
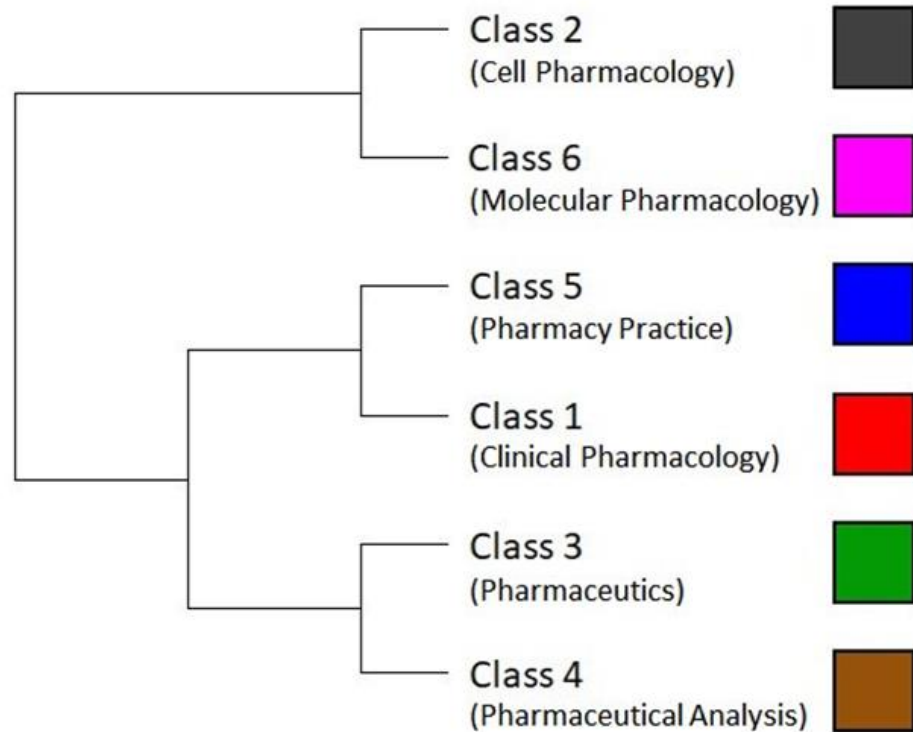


## General Recommendation

- Do not use journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist's contributions, or in hiring, promotion, or funding decisions.

# What are the problems in the publication process?

- **Low Impact Factor journals**





# What are the problems in the publication process?

- **Low Impact Factor journals**

Class	Area	N. of journals	Impact Factor - JCR 2016		
			Journals with IF n (%)	Median (IQR)	Range (min. - max.)
2	Cell Pharmacology	20	13 (65.0)	2.76 (1.95 – 3.51)	1.48 – 4.58
6	Molecular Pharmacology	46	32 (69.6)	2.89 (2.40 – 4.70)	1.44 – 17.89
1	Clinical Pharmacology	57	35 (61.4)	2.44 (1.57 – 3.41)	0.44 – 7.29
5	Pharmacy Practice	67	10 (14.9)	1.40 (1.01 – 2.20)	0.32 – 2.30
3	Pharmaceutics	35	21 (60.0)	2.46 (1.98 – 3.70)	0.25 – 4.56
4	Pharmaceutical Analysis	60	16 (26.6)	0.75 (0.59 – 1.83)	0.30 – 6.01
	Total	285	127 (44.6)	2.42 (1.67 – 3.38)	0.25 – 17.89

Kruskal-Wallis p=0.000003  
 IF: Impact Factor; IQR: Interquartile range; JCR: Journal Citation Reports



# What are the problems in the publication process?

- **Low Impact Factor journals: Solutions?**

Journal Impact Factor™ is calculated using the following metrics:

$$\frac{\text{Citations in 2020 to items published in 2018 (12,638) + 2019 (10,546)}}{\text{Number of citable items in 2018 (212) + 2019 (200)}} = \frac{23,184}{412} = 56.272$$

**The right to choose,  
 the responsibility to choose carefully.**

TA	IF(2020)	# articles 2018+2019	increase by 1 citation
Am J Health Syst Pharm	2.637	333	0.003
Am J Pharm Educ	2.047	299	0.003
Eur J Hosp Pharm Sci Pract	1.652	141	0.007
Int J Clin Pharm	2.054	350	0.003
J Am Pharm Assoc (2003)	2.217	244	0.004
J Manag Care Spec Pharm	2.903	288	0.003
Regul Toxicol Pharmacol	3.271	468	0.002
Res Social Adm Pharm	3.336	318	0.003
Saudi Pharm J	4.330	309	0.003
Yakugaku Zasshi	0.302	391	0.003
Lancet	79.321	539	0.002
N Engl J Med	91.245	649	0.002
JAMA	56.272	412	0.002

# What are the problems in the publication process?

- **Low Impact Factor journals: Solutions?**


Pharmacy practice journals without Impact Factor		
Actual Pharm	Int J Pharm Compd	Pharm Eng
Am J Pharm Benefits	Int J Pharm Healthc Mark	Pharm Hist
Ann Pharm Fr	Int J Pharm Pract	Pharm Hist (Lond)
Ars Pharm	J Basic Clin Pharm	Pharm J
Aust J Pharm	J Pain Palliat Care Pharmacother	Pharm Manuf Packing Sourcer
Biomed Pharmacol J	J Pharm Bioallied Sci	Pharm Outsourcing
Can J Clin Pharmacol	J Pharm Health Serv Res	Pharm Pat Anal
Can J Hosp Pharm	J Pharm Policy Pract	Pharm Policy Law
Can Pharm J (Ott)	J Pharm Pract	Pharm Pract (Granada)
Clin Pharm	J Pharm Pract Res	Pharm Process
Consult Pharm	J Pharm Technol	Pharm Technol
Curr Pharm Teach Learn	J Pharmacol Pharmacother	Pharm Technol Eur
Eur J Clin Pharm	J Popul Ther Clin Pharmacol	Pharm Ther
Eur J Oncol Pharm	J Res Pharm Pract	Pharm Times
Eur Pharm Contract	J Young Pharm	Pharmaceut Med
Eur Pharm Ver	Jpn J Clin Pharmacol Ther	Pharmacy (Basel)
Hosp Pharm	Natl J Physiol Pharm Pharmacol	SA Pharm J
Ind Pharm	Pharm Care Res	US Pharm
Innov Pharm Technol	Pharm Educ	Yakushigaku Zasshi

Fernandez-Llimos F, Pharmacy Practice 2020 peer reviewers. Authors, peer reviewers, and readers: What is expected from each player in collaborative publishing? Pharmacy Practice 2021 Jan-Mar;19(1):2284.

doi: <https://doi.org/10.18549/PharmPract.2021.1.2284>

## Editorial

# Authors, peer reviewers, and readers: What is expected from each player in collaborative publishing?

Fernando FERNANDEZ-LLIMOS , Pharmacy Practice 2020 peer reviewers.  
Published online: 14-Jan-2021

- **“The more manuscripts you agree to review, the faster you’ll have your own manuscripts published”.**
- **“The more trash you put into the system, the more trash you will have to consume”.**
- **“The more you take care of your scientific area, the more your scientific area will take care of you”.**