

Impact and Attention of Open Access COVID research at McMaster

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CAHL

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Altmetrics

Real-time, qualitative data that provide a record of how research has been shared, discussed, and reused **online**:

- Blogs
- News
- Policy documents
- Twitter
- Etc...

To avoid naming confusion...

CONCEPT =

"Bibliometrics"

"Altmetrics"

COMPANY =



Dimensions



Altmetric

 **DIGITAL**
science

Methodology

Searched *Dimensions*:

- McMaster University
- 2019 -> April 20, 2022
- Topic: "COVID OR COVID-19"

RESULTS:

- 1,380 records
- Exported records with:
 - "Altmetric attention"
 - "Times cited"
- Statistical analyses in R

The screenshot shows the Dimensions database search results for the query "2019 OR 2020 OR 2021 OR 2022" with filters for "McMaster University" and "COVID OR COVID-19". The results are displayed in a table with columns for Publications (1,442), Datasets (42), Grants (94), Patents (0), and Clinical Trials (40). The first result is a policy document titled "Race-based data collection among COVID-19 inpatients: A retrospective chart review" by Clara Lu, Achieng Tago, Oluwatobi Olaiya, and Madeleine Verhovsek, published in 2022. The second result is an article titled "Coping strategies mediate the associations between COVID-19 experiences and mental health outcomes in pregnancy" by Jennifer E. Khoury, Leslie Atkinson, Teresa Bennett, Susan M. Jack, and Andre... published in 2021. The page also features a sidebar with filters for Groups, Publication Year (2022: 259, 2021: 689, 2020: 492, 2019: 2), Researcher, Funder, Country of Funder, and Research Organization (McMaster University: 1,442). On the right, there is an "ANALYTICAL VIEWS" section showing research categories and a line graph of citations over time, with a total of 30K citations and a mean of 21.13.

Most publishers have made COVID research articles *Open Access*

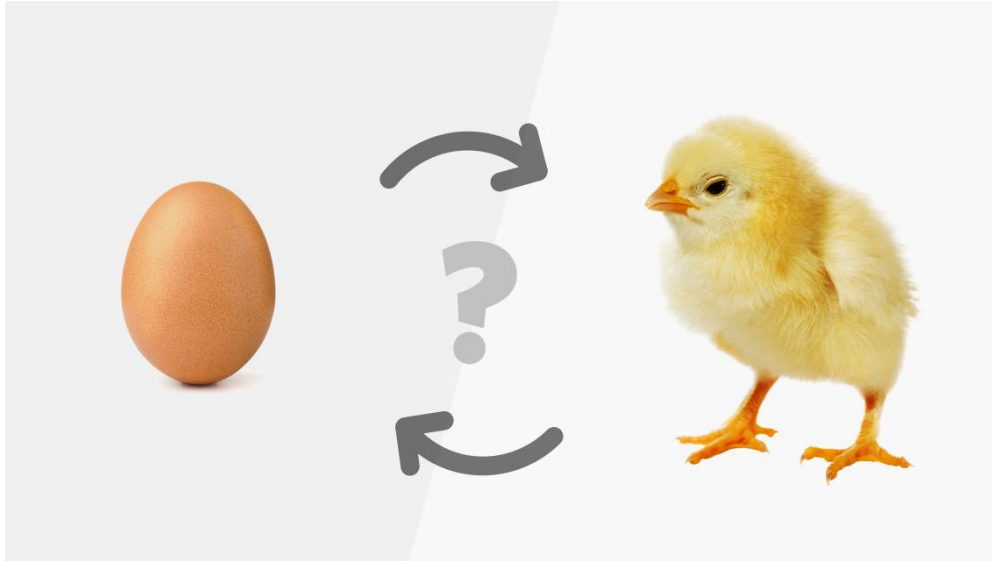
1. What was the interest in McMaster's COVID research?
 - Academic citations (*Bibliometrics*)
 - Altmetric attention score (*Altmetrics*)
 - Was there a correlation?
2. Was there a difference in interest between OA and "Closed" articles?
 - Did Open Access articles receive more attention / citations?

H_0 #1 = There is no correlation between Altmetric attention and times cited.

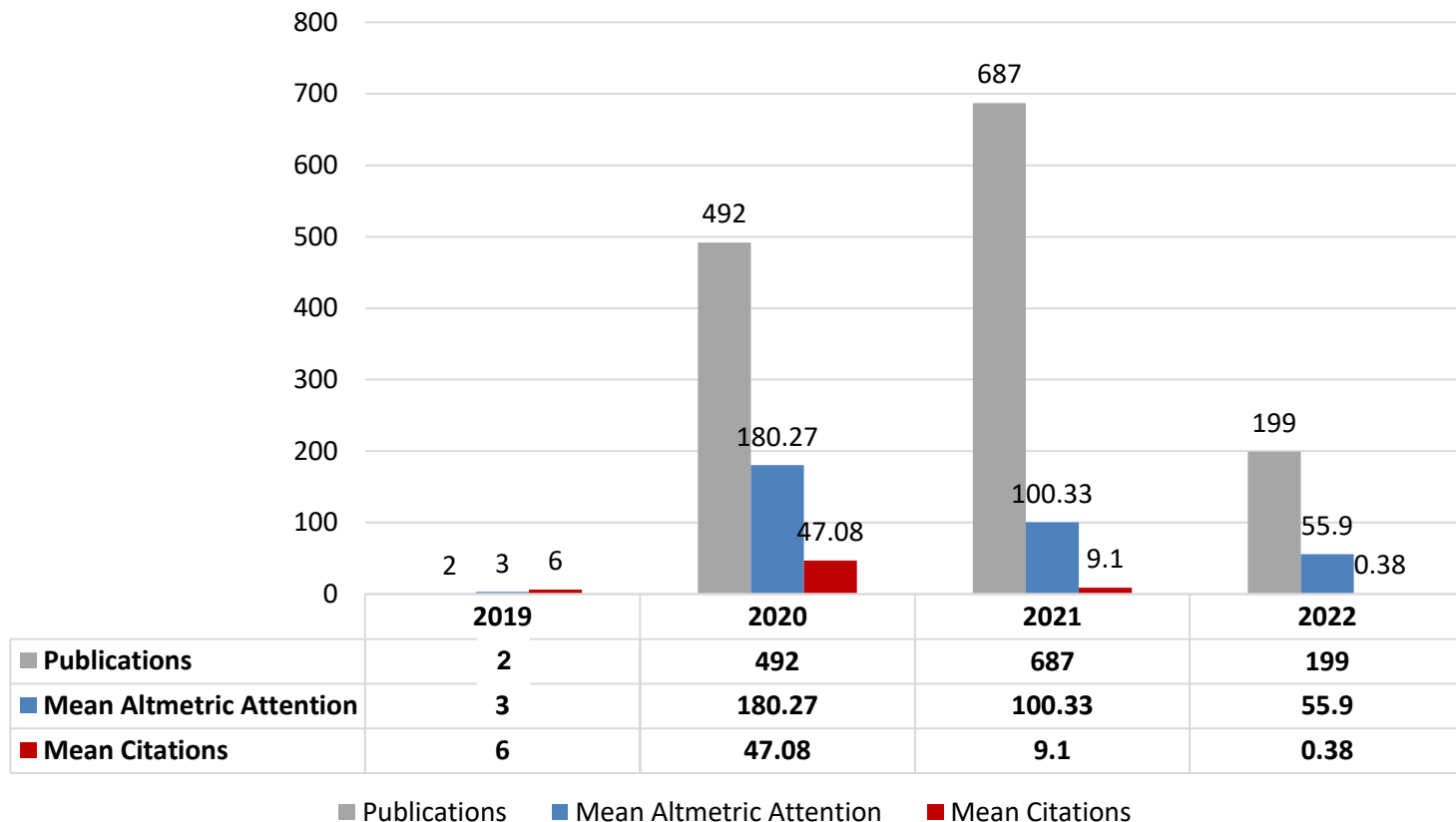
If H_0 is FALSE:

H_0 #2 = There is no difference in the correlation between OA and Closed.

Which comes first: *Altmetric Attention* or *Citations*?

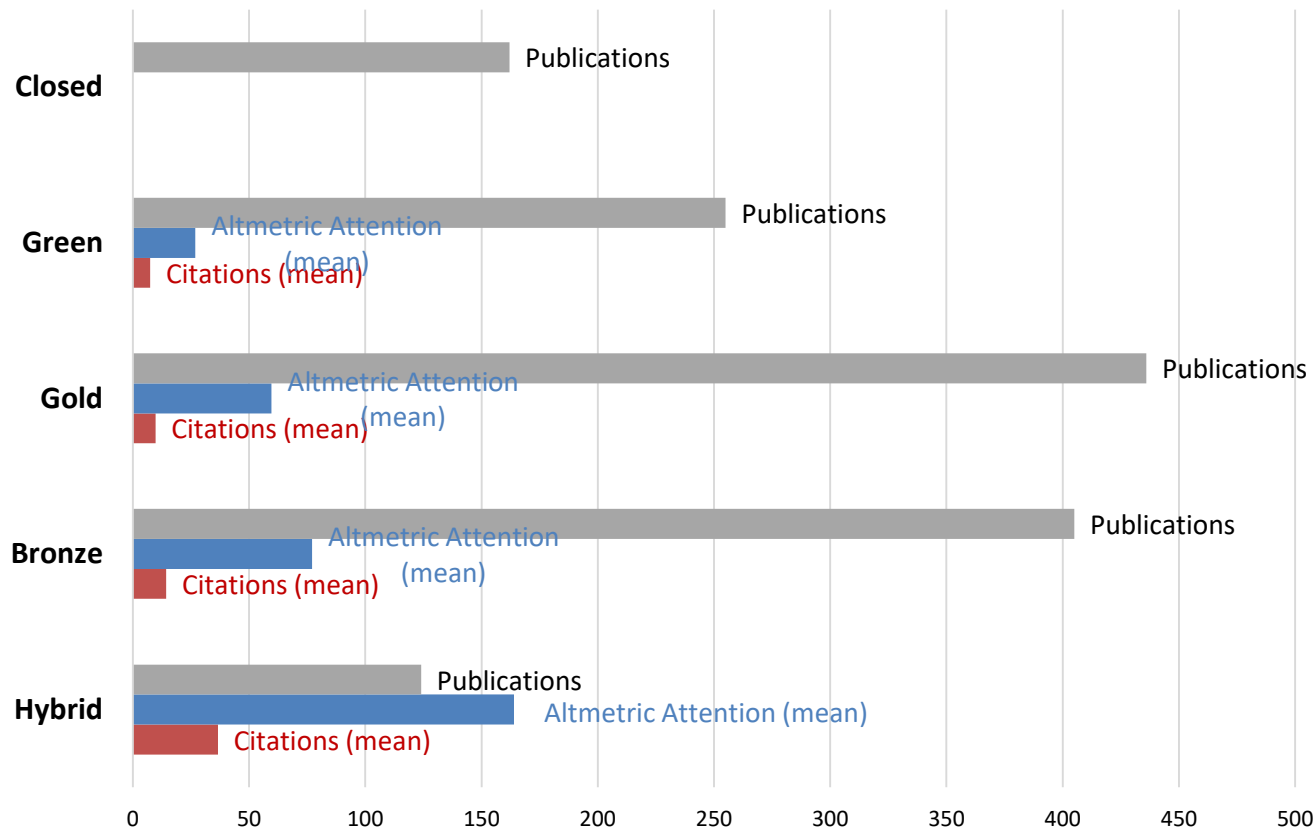


Attention & Citations by Year



■ Publications ■ Mean Altmetric Attention ■ Mean Citations

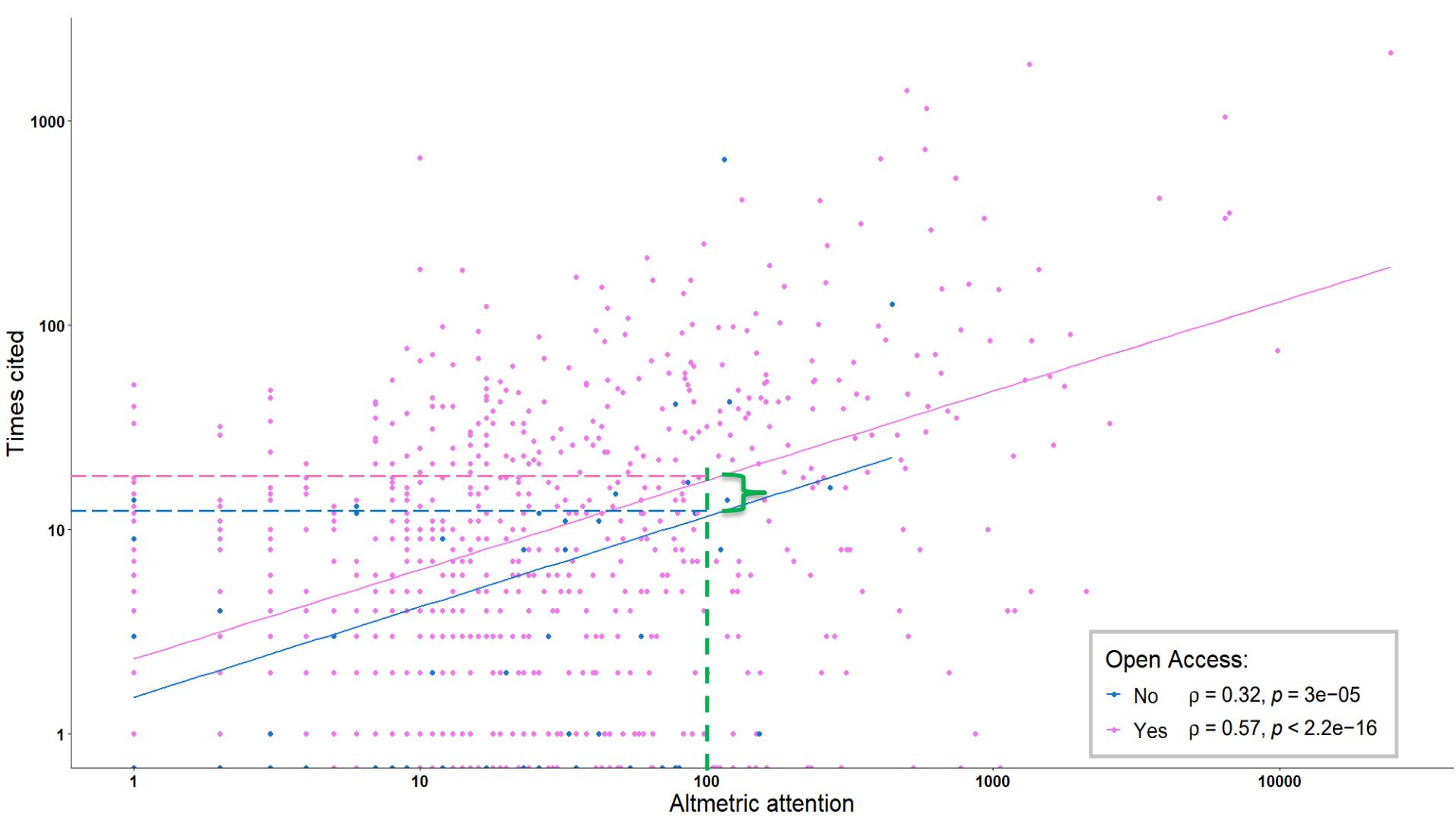
Publications and impact by Open Access “flavour”



Attention & Citations are both correlated with type of OA:

*Hybrid >
Bronze >
Gold >
Green >
Closed*

Most publications = **Gold**
Most attention/cites = **Hybrid**



Spearman rank-correlation between attention and citations, by year.

Year	Open Access			Closed		
	N	Rho	p	N	Rho	p
2019	1	-	-	1	-	-
2020	462	0.6849	2.2e-16	30	0.4671	0.0092
2021	594	0.5691	2.2e-16	93	0.3231	0.0016
2022 < 20 April	163	0.2782	0.0003	36	0.1737	0.3106
TOTAL	1,220	0.5719	2.2e-16	160	0.3234	3.02e-05

BOLD = Where p-value < 0.05, we accept the alternative hypothesis that true rho is not equal to 0.
We can REJECT the NULL HYPOTHESIS #1

Interpretation of these results...

- There **is a correlation** between Attention and Citations.
- This is true for both OA and Closed articles.
 - *Effect is twice as strong for OA.*
- There is a difference (X^2) between OA and Closed in terms of the average citations and average attention.
- *What does that tell us about chickens and eggs?*

The most-cited article in each year **also** has the highest Altmetric Attention score

Year	Most Cited Publication	OA Type	Times Cited	AA Rank [Total]
2020	Chu, Derek K, Elie A Akl, Stephanie Duda, Karla Solo, Sally Yaacoub, Holger J Schünemann, COVID-19 Systematic Urgent Review Group Effort study authors, et al. 2020. “Physical Distancing, Face Masks, and Eye Protection to Prevent Person-to-Person Transmission of SARS-CoV-2 and COVID-19: A Systematic Review and Meta-Analysis.” <i>The Lancet</i> 395 (10242): 1973–87. https://doi.org/10.1016/s0140-6736(20)31142-9 .	Hybrid	2158	1 st [24476]
2021	Greinacher, Andreas, Thomas Thiele, Theodore E Warkentin, Karin Weisser, Paul A Kyrle, and Sabine Eichinger. 2021. “Thrombotic Thrombocytopenia after ChAdOx1 NCov-19 Vaccination.” <i>New England Journal of Medicine</i> 384 (22): nejmoa2104840. https://doi.org/10.1056/nejmoa2104840 .	Bronze	1045	1 st [6449]
2022	Reis, Gilmar, Eduardo Augusto dos Santos Moreira-Silva, Daniela Carla Medeiros Silva, Lehana Thabane, Aline Cruz Milagres, Thiago Santiago Ferreira, Castilho Vitor Quirino dos Santos, et al. 2022. “Effect of Early Treatment with Fluvoxamine on Risk of Emergency Care and Hospitalisation among Patients with COVID-19: The TOGETHER Randomised, Platform Clinical Trial.” <i>The Lancet Global Health</i> 10 (1): 42–51. https://doi.org/10.1016/s2214-109x(21)00448-4 .	Gold	75	1 st [9869]

2020 - Most highly cited

Publication - Article

Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis

[The Lancet](#), 395(10242), 1973-1987 - June 2020

[https://doi-org.libaccess.lib.mcmaster.ca/10.1016/s0140-6736\(20\)31142-9](https://doi-org.libaccess.lib.mcmaster.ca/10.1016/s0140-6736(20)31142-9)

Publication metrics

[About](#)

Dimensions Badge



” 2.2k Total citations
↻ 2.2k Recent citations

••• 1383 Field Citation Ratio
••• 342 Relative Citation Ratio

Altmetric



■ News (731)
■ Blogs (83)
■ Policy documents (13)
■ Twitter (28442)
■ Facebook (77)
■ Wikipedia (7)
■ Reddit (15)
■ F1000 (1)
■ Video (13)
■ Mendeley (4321)

2021 – Most highly cited

Publication - Article

Thrombotic Thrombocytopenia after ChAdOx1 nCov-19 Vaccination

[New England Journal of Medicine](#), 384(22), nejmoa2104840 - April 2021

<https://doi-org.libaccess.lib.mcmaster.ca/10.1056/nejmoa2104840> ↗

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[3 more](#)

Dimensions Badge



	1.1k	Total citations
	1.1k	Recent citations
	n/a	Field Citation Ratio
	n/a	Relative Citation Ratio

Altmetric



	News (255)
	Blogs (21)
	Policy documents (2)
	Twitter (6658)
	Facebook (17)
	Wikipedia (12)
	Reddit (2)
	F1000 (1)
	Video (5)
	Mendeley (1010)

2022 – Most highly cited

Publication - Article

Effect of early treatment with flvoxamine on risk of emergency care and hospitalisation among patients with COVID-19: the TOGETHER randomised, platform clinical trial

[The Lancet Global Health](#), 10(1), e42-e51 - October 2021

[https://doi-org.libaccess.lib.mcmaster.ca/10.1016/s2214-109x\(21\)00448-4](https://doi-org.libaccess.lib.mcmaster.ca/10.1016/s2214-109x(21)00448-4)

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[25 more](#)

Publication metrics

Dimensions Badge



	78	Total citations
	78	Recent citations
	n/a	Field Citation Ratio
	n/a	Relative Citation Ratio

Altmetric

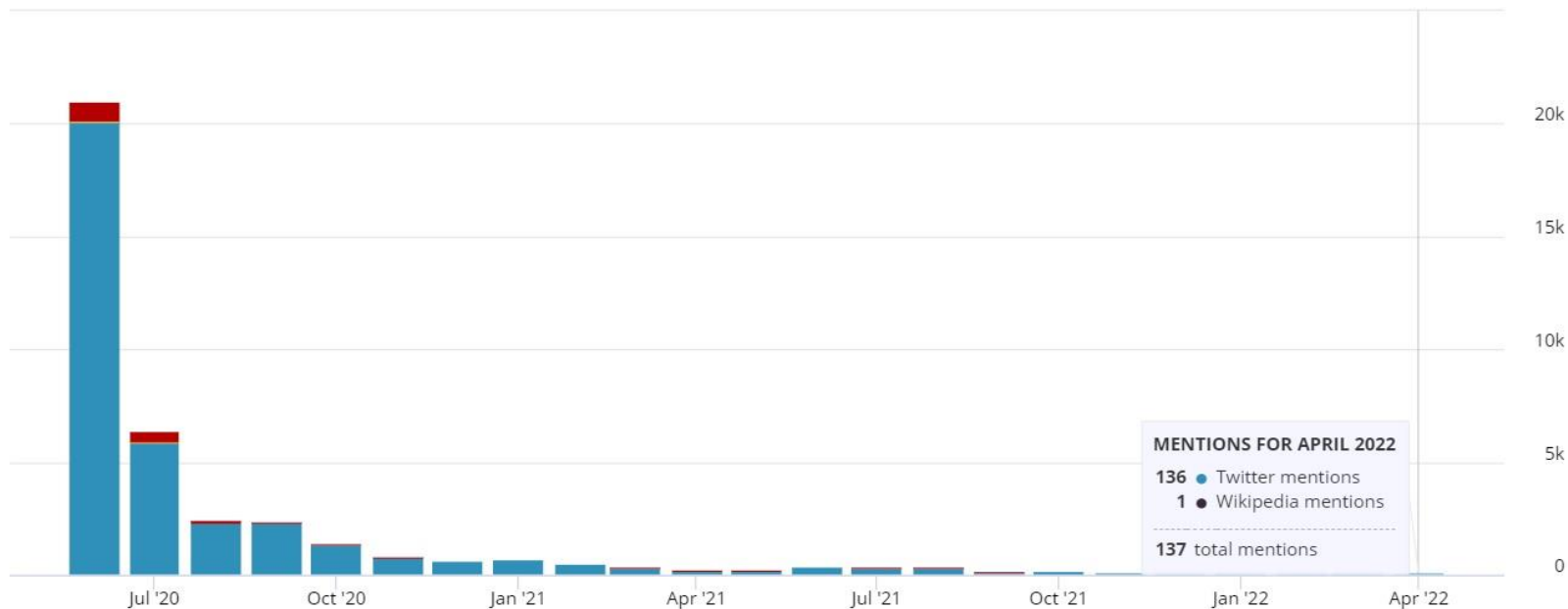


	News (477)
	Blogs (26)
	Twitter (11238)
	Facebook (9)
	Wikipedia (9)
	Reddit (13)
	Video (3)
	Mendeley (192)

2020 - "Physical distancing..." (2158 citations)



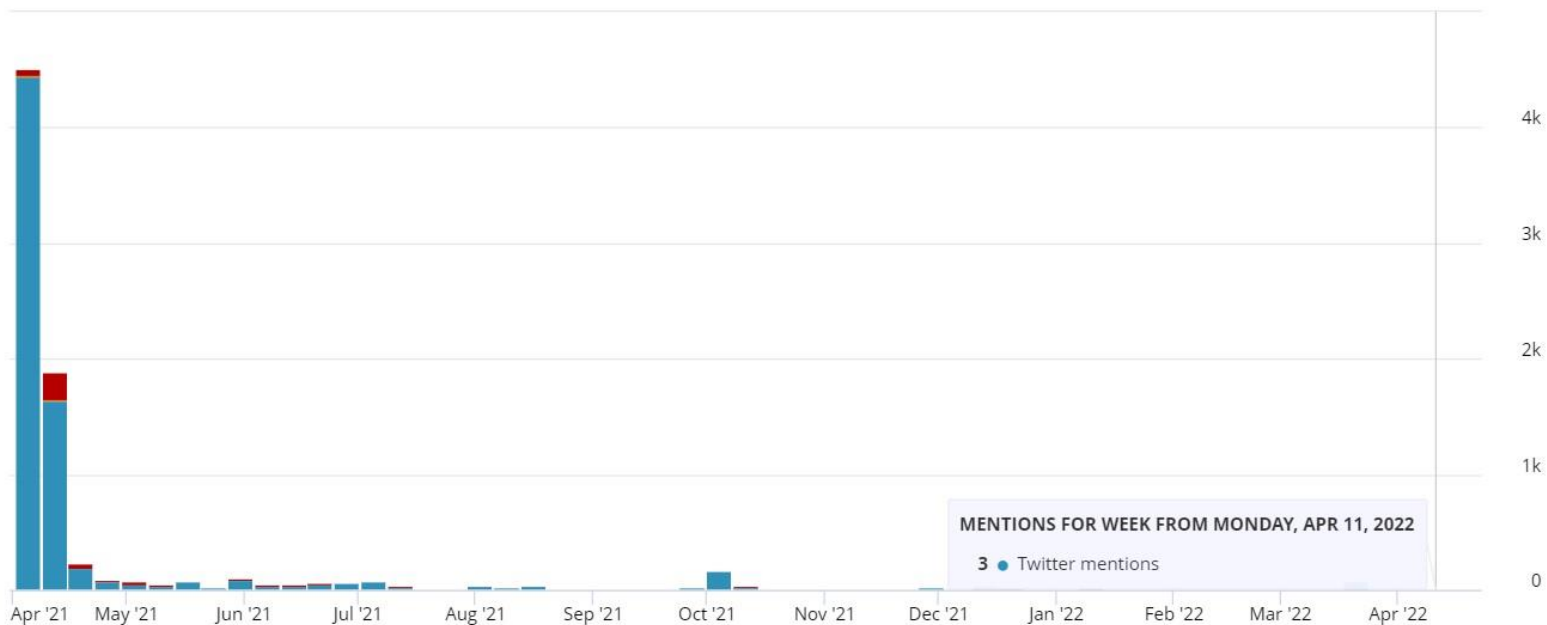
ZOOM 1 week 1 month 3 months 6 months 1 year All time



2021 - "Thrombotic Thrombocytopenia ..." (1045 citations)



ZOOM 1 week 1 month 3 months 6 months 1 year All time



Mike's final words of wisdom...

- We shouldn't be too surprised about a correlation: the Altmetric score is a general indicator of attention, including news, blogs, Wikipedia, policy, Tweets, etc. News coverage is linked to citations (Phillips et al, 1991); blog authors are good predictors of quality (Shema et al, 2014); academics comprise a large % of research sharing Twitter users etc.
- Despite publicity around the sharing of low-quality research/inappropriate sharing on COVID19, this "disappears into the noise" (of the chickens?)
- The data strongly suggests that OA generates both more citations and more altmetric attention, and that in a field dominated by OA, this isn't a question of "the best research is selected for open"
- Journals that are mixed OA/traditional model could be the highest performers, but they could also be from *Nature* etc
- COVID19 'broke the rules', but are they staying broke?

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Questions?