



Objectives

The coronavirus pandemic accelerated the acceptance of preprints by the clinical research community, with the need to rapidly share new research findings even leading to the inclusion of COVID preprints in PubMed/PMC. This occurred even though preprints are not properly vetted, final published versions of works, but rather preliminary scientific research reports that have not yet been evaluated and certified by peer review. To enhance our understanding of health science preprint server posting adoption, we characterized/analyzed the 2020 research manuscripts related to COVID-19 posted to preprint servers by researchers at our institution.

Methods

Thirty-three preprints meeting our inclusion criteria were identified via targeted searching. The preprint server, PubMed/PMC, and journal publisher records were consulted to verify: manuscript posting, revision, and publication dates; author and affiliation information; linkage to the final published versions on the preprint and PubMed/PMC records. Altmetrics and Dimensions, both products of Digital Science, were used to capture online attention and any citations received by the preprints and their subsequent peer-reviewed articles.

Results

Of the 33 preprints, two were duplicates: one a revised preprint version with title change, the second a submission of the same preprint to two different servers. Eight different servers were used overall, with 51.5% posted to medRxiv and 24.2% to bioRxiv. PubMed indexed 54.6% of the preprints, with 19/31 preprints eventually being published in a peer-reviewed journal. 11/19 published papers were linked to from their preprint server record and 79% were published in NPG, Elsevier, Springer, or Wiley journals. Of the 31 unique preprints, 90% included co-authors from other institutions, with 14/31 involving international collaborators. Of the 19 preprints published in journals, posting to a server accelerated the release of the manuscript to the public record by a mean of 102.3 days. Preprints indexed in PubMed (16/31) garnered a mean of 2.8 times more citations than preprints not indexed in PubMed (15/31), which approached statistical significance ($t_{(29)}=2.04$; $p=0.051$).

Conclusions

During COVID times, it was assumed that the motivation for posting to a preprint server was closely tied to a desire to get information out as widely and as quickly as possible. Our findings suggest that posting a manuscript as a preprint was generally worth the effort in terms of accelerating research sharing and visibility. Future research exploring whether authors who utilized preprint servers during the pandemic will continue to do so post-COVID will be interesting for establishing if this experience will have changed researcher behavior with regards to preprints going forward.

Fig 1. Preprint Server Choice

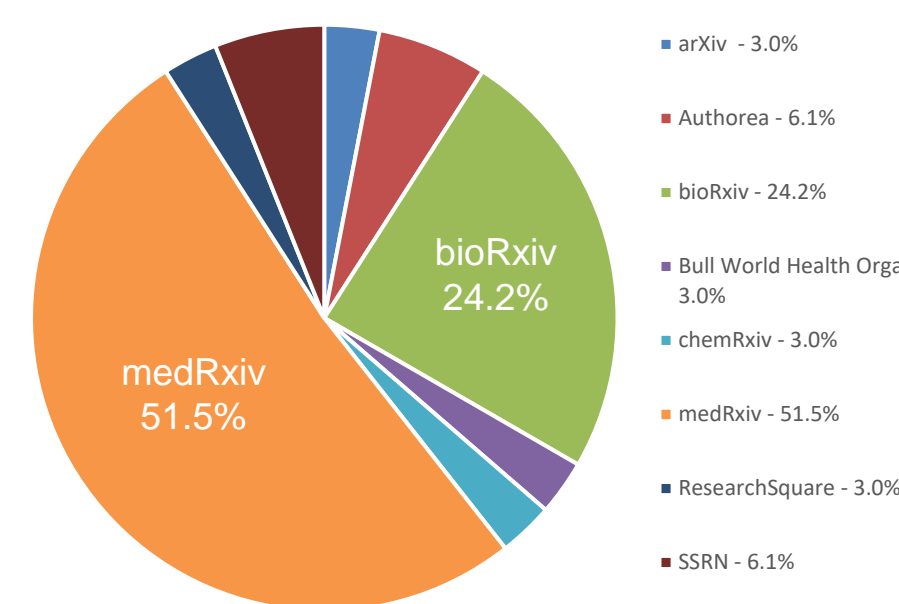


Fig 2. Preprint Indexing, Publication & Linking

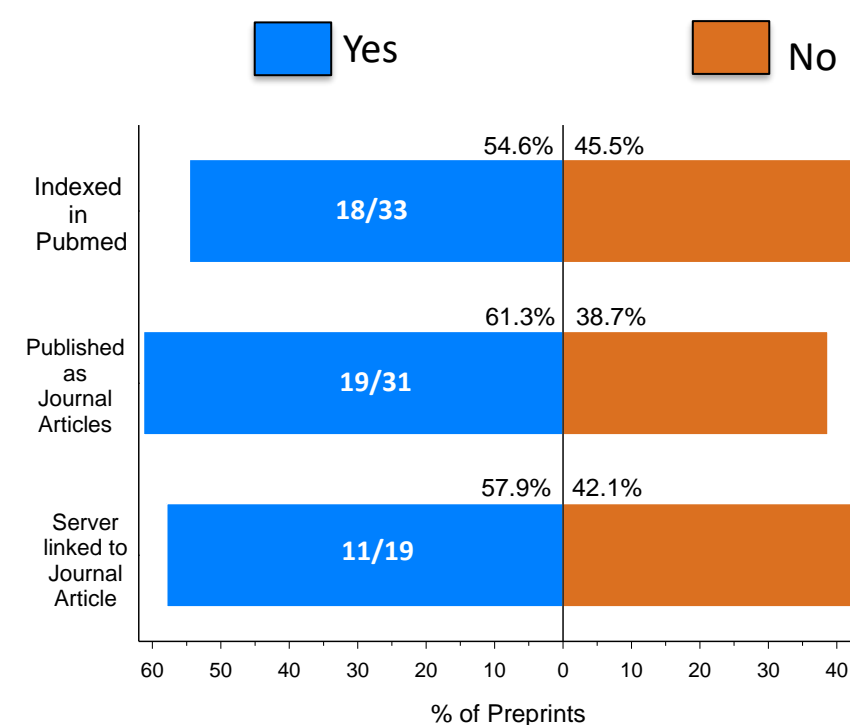


Fig 3. Time from Preprint to Journal Article

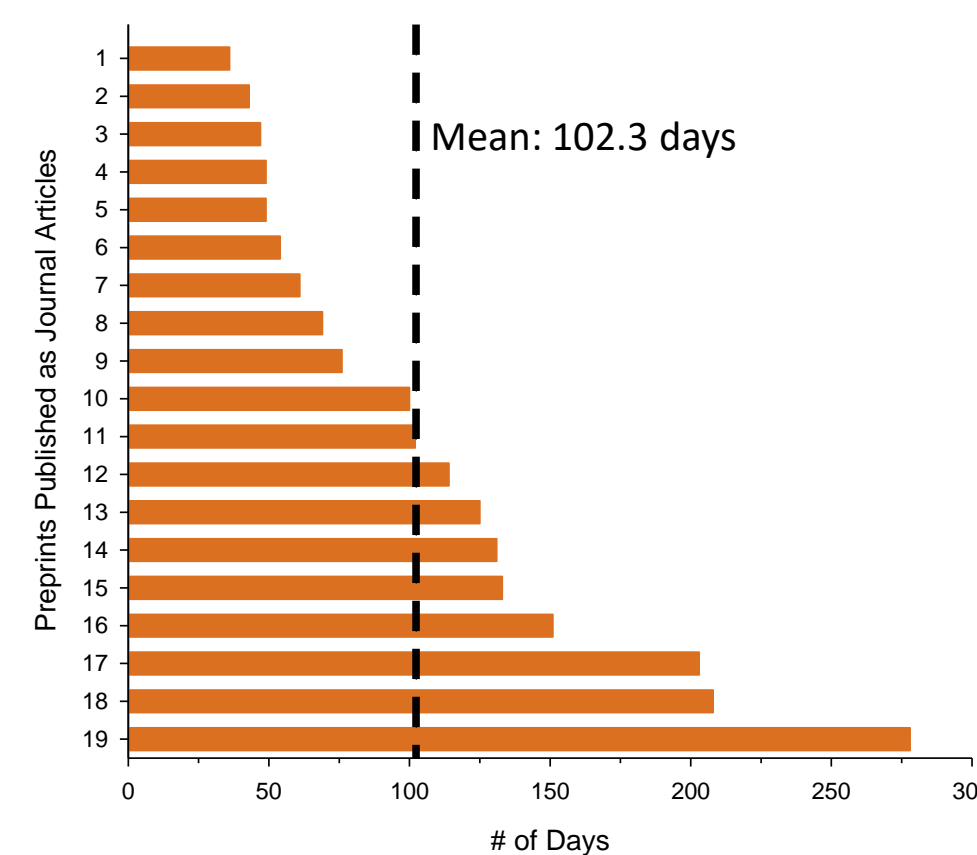


Fig 4. Citations to Preprints by PubMed Indexing

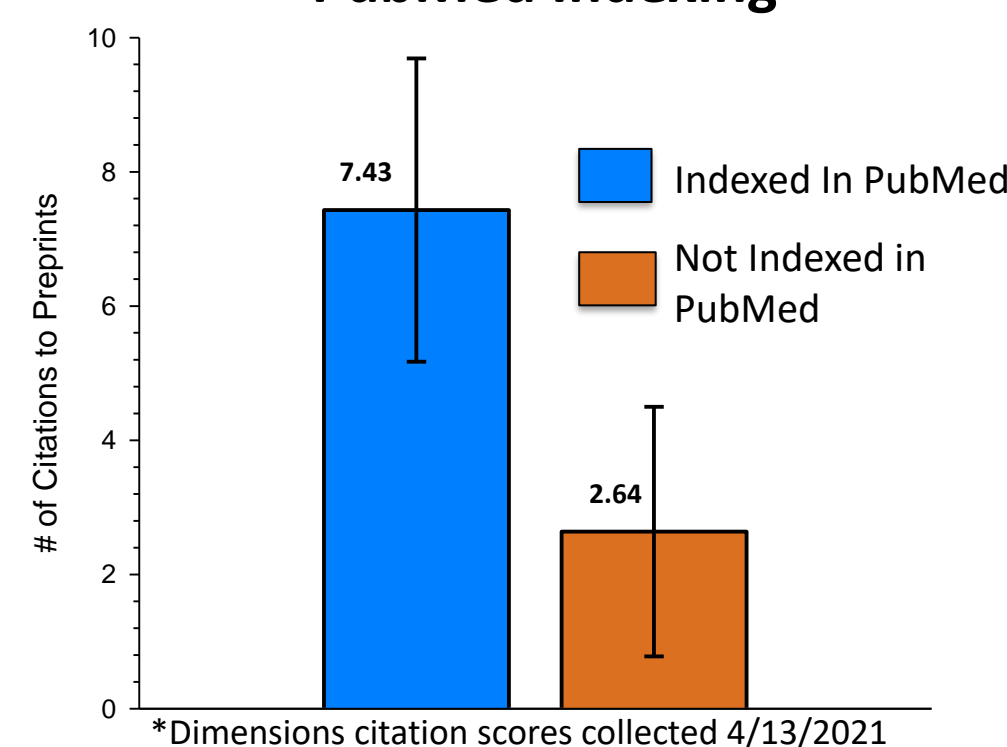
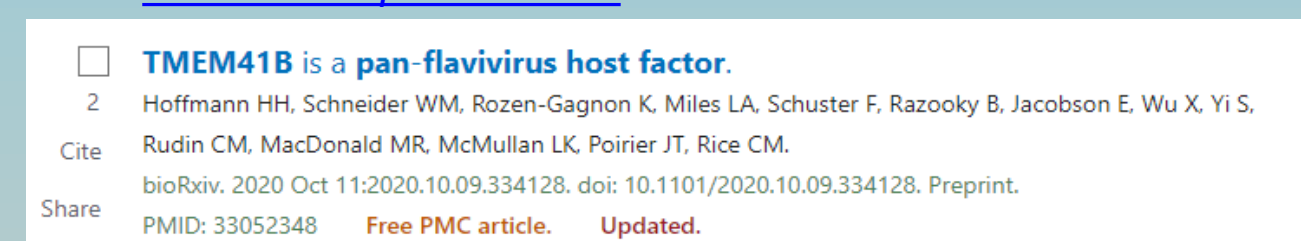


Fig 5. Links between Preprint & Journal Article

1. [Preprint record](#) links to Journal Article DOI



2. [PubMed Preprint record](#) links to both



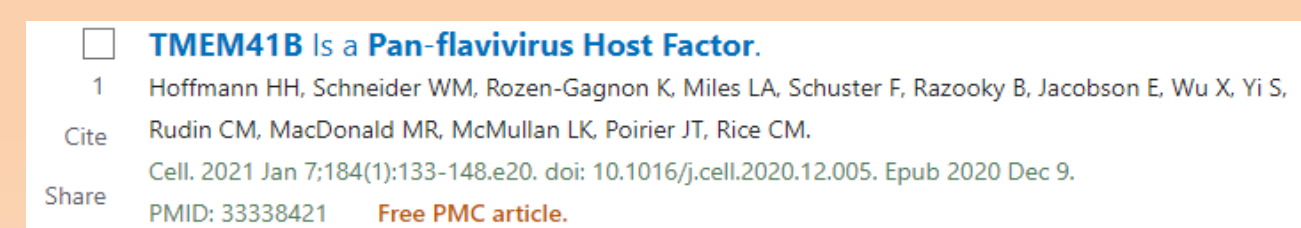
3. [PMC Preprint record](#) links to both



4. [PMC Article record](#) links to both



5. [PubMed Article record](#) links to both



6. [Journal Article](#) does not link to Preprint record



References

- [NIH Preprint Pilot Update.NIH Preprint Pilot Update](#). NLM Tech Bull. 2021 Mar-Apr;(439):e2.
- [New NIH Preprint Pilot Librarian Toolkit Available](#). NLM Tech Bull. 2020 Nov-Dec;(437):b6.
- [NLM Announces NIH Preprint Pilot to Provide Early Access to COVID-19 Research](#). NLM Tech Bull. 2020 May-June;(434):e3.