

Is There Life for Pre-Prints After COVID-19?

Poster SA59

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Background

- During the COVID-19 pandemic, pre-prints were widely used to accelerate data dissemination.
- Advantages of using such material in a crisis are compelling but should still be balanced against potential limitations, such as the following:
 - The lack of peer-review
 - Possible unexplained data discrepancies between pre-prints and corresponding journal publications.
- While pre-prints are a convenient and fast way to share research findings, whether they should be considered on a par with peer-reviewed scientific literature is an open question.
- Exploring this issue is particularly pertinent for research on non-COVID-19 topics, as the need for particularly rapid dissemination is generally less clear-cut outside of acute global health crises such as pandemics.

Objectives

We aimed to assess recently published pre-prints reporting randomised controlled trials (RCTs) on non-COVID-19 treatments, for insights into the utility of such material in the absence of related peer-reviewed publications.

Methods

- We conducted a systematic literature review (SLR) to identify and assess recent relevant publications:

Eligibility criteria

- Records of pre-prints with and without a subsequent corresponding peer-reviewed publication posted in 2021, reporting on RCTs of any pharmacological or surgical interventions for any non-COVID-19 indications.

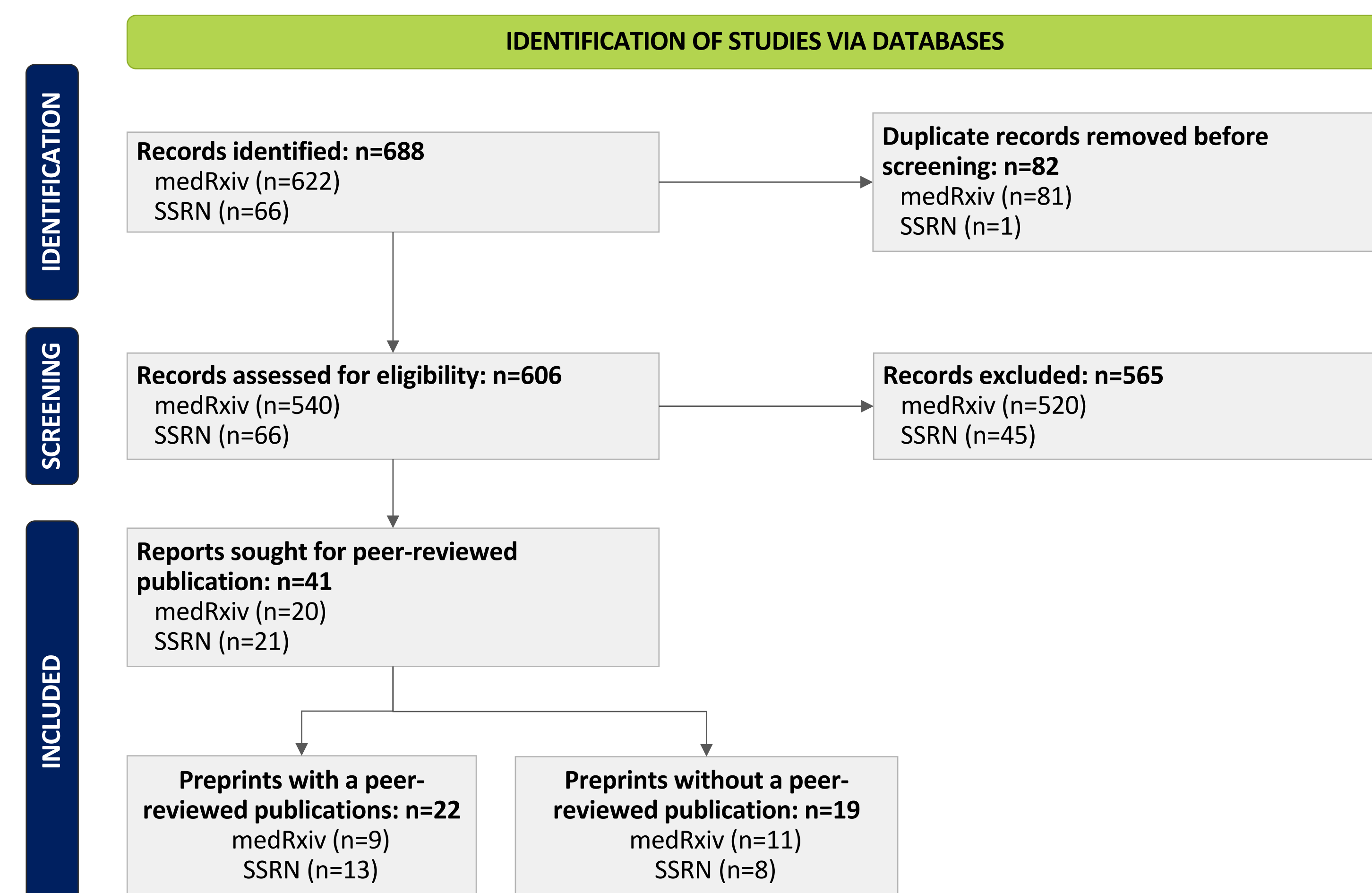
Data sources and time limits

- The pre-print databases SSRN and MedRxiv were searched for records posted in 2021.
- MEDLINE and Embase were searched for peer-reviewed articles corresponding to pre-print articles that met the eligibility criteria and had been published by May 2022.

Data extraction and analysis

- We extracted and analysed the following items from the included studies:
 - Posting date of pre-prints
 - Publication date of any corresponding peer-reviewed articles
 - Discrepancies in definition/reporting of primary outcomes between the pre-print and the corresponding peer-reviewed publication.

Figure 1. PRISMA diagram



Results

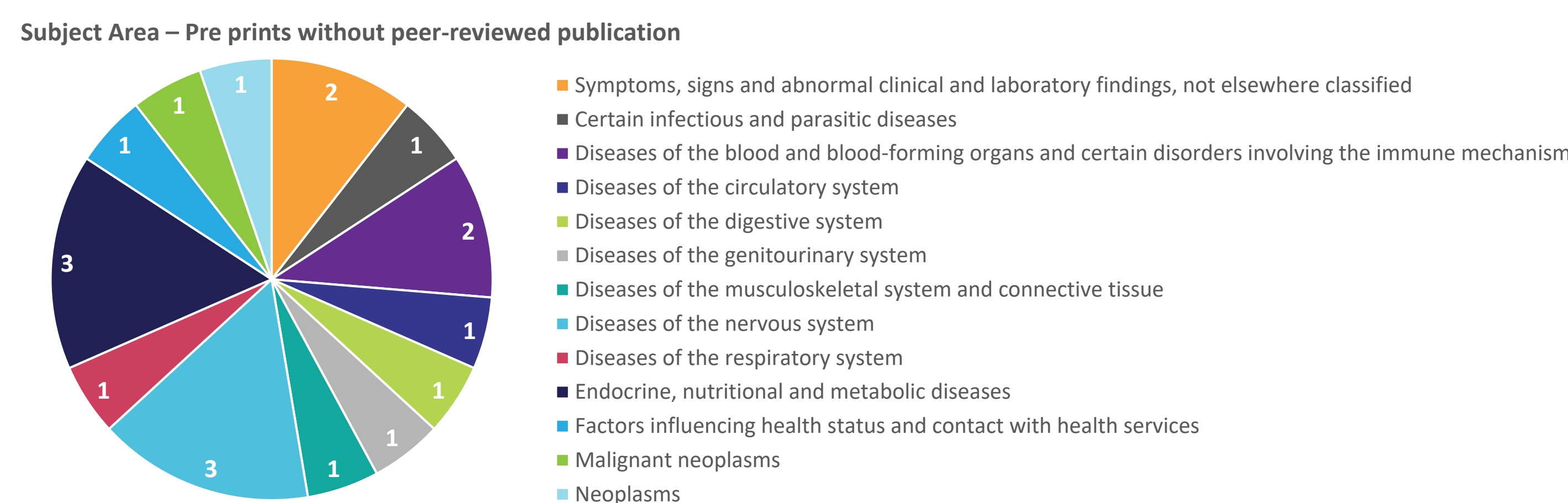
- Searches of the pre-print databases yielded 688 records. Following screening, **41 pre-prints were included in the SLR**.
- Of these 41 pre-prints, 22 had a corresponding peer-reviewed publication indexed in MEDLINE/Embase by the time of the database search in May 2022 (**Figure 2**).
 - For pre-prints with a peer-reviewed publication** (n=22), the median time from pre-print posting to the database search was 9.9 months (range: 1.8–15.5 months; interquartile range [IQR]: 8.7–11.6 months) (**Figure 3**).
 - The median time from pre-print posting to peer-reviewed publication was 4.35 months (range: 1–13.4 months; IQR: 3.4–6.85 months).
 - For pre-prints without a peer-reviewed publication** (n=19), the median time from pre-print posting to date of the database search was 7.4 months (range: 4.6–14.9 months; IQR: 6.2–10.1 months) (**Figure 4**).

References

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Results (cont'd)

Figure 2. Subject area of included studies:



Subject Area - Preprints with a peer reviewed publication

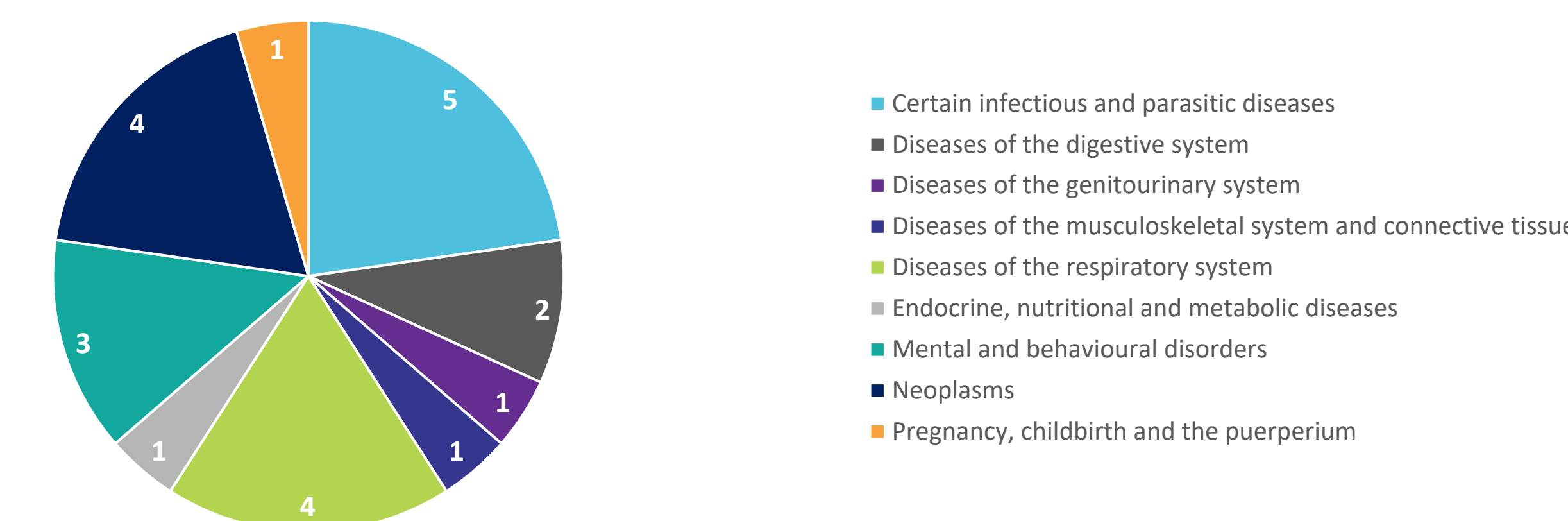


Figure 3. Time (months) from pre-print posting to peer-reviewed publication

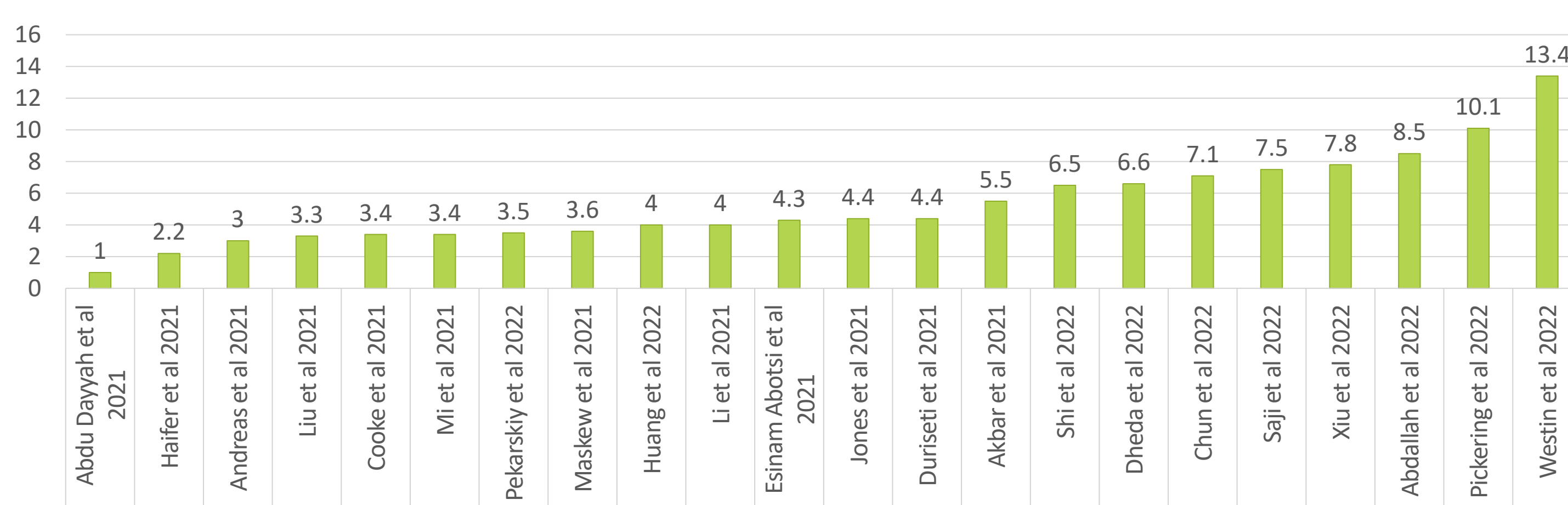
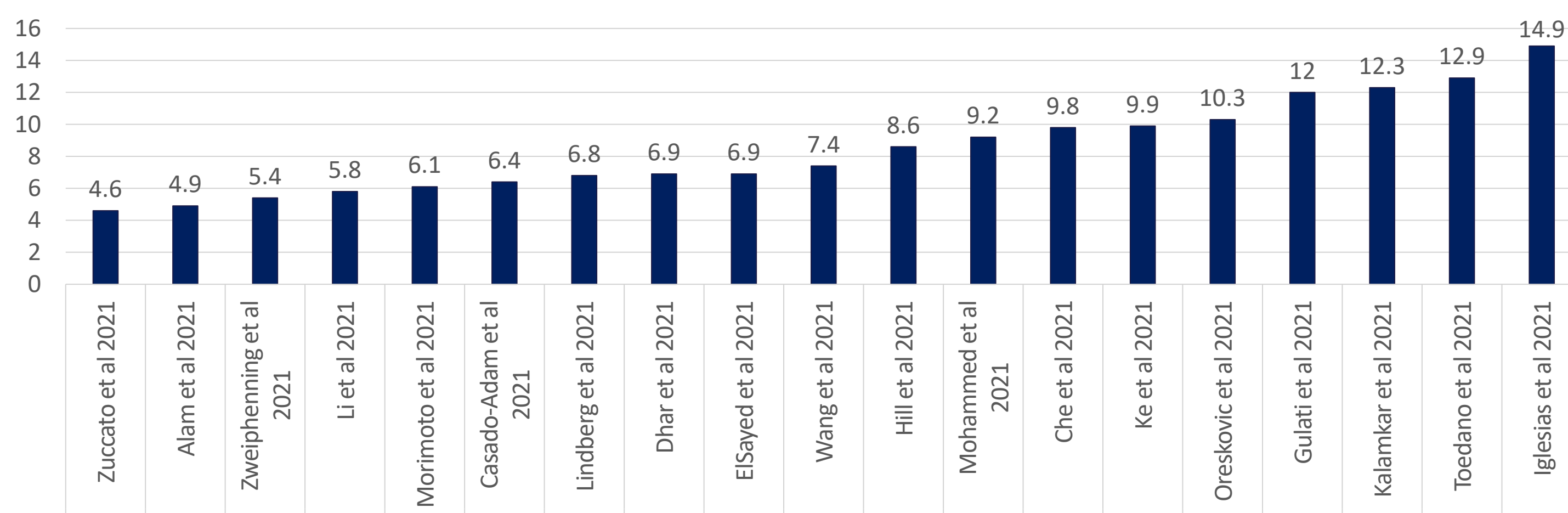


Figure 4. Time (months) from pre-print posting to database search for pre-prints without corresponding peer-reviewed publications



- There were no discrepancies in the reporting of primary outcomes in 21 out of the 22 pre-print/peer-reviewed publication dyads.
- In the remaining dyad (Zhu et al., 2022), the pre-print reported only the per-protocol results, while the peer-reviewed publication reported only the intention-to-treat analysis. Nevertheless, **the overall conclusions were similar in both publications**.

Discussion and Conclusions

- Around half of the pre-prints were found to have a peer-reviewed publication within the time limits of this SLR.
- Of these, only one had a slight discrepancy in terms of primary outcomes between pre-print and publication, which did not affect the overall conclusions.
- For some of the pre-prints, it is clearly possible that corresponding peer-reviewed articles have been published after the SLR searches. Equally, some might never be followed by peer-reviewed publications, potentially raising questions about the reliability of information in those pre-prints.
- Nevertheless, the probability and timeliness of the appearance of the peer-reviewed articles suggests that pre-prints can be a reliable early source of evidence, with minimal or no discrepancies in the reporting of primary outcomes compared with the corresponding later publications.
- While the findings need confirmation through further research, they invite questions about whether pre-prints should be considered routinely in settings where early availability of data may be crucial, such as reimbursement decision-making.