

# The Proliferation of Living Systematic Reviews (LSRs) - Dead on Arrival?

## A Review of LSR Methodology

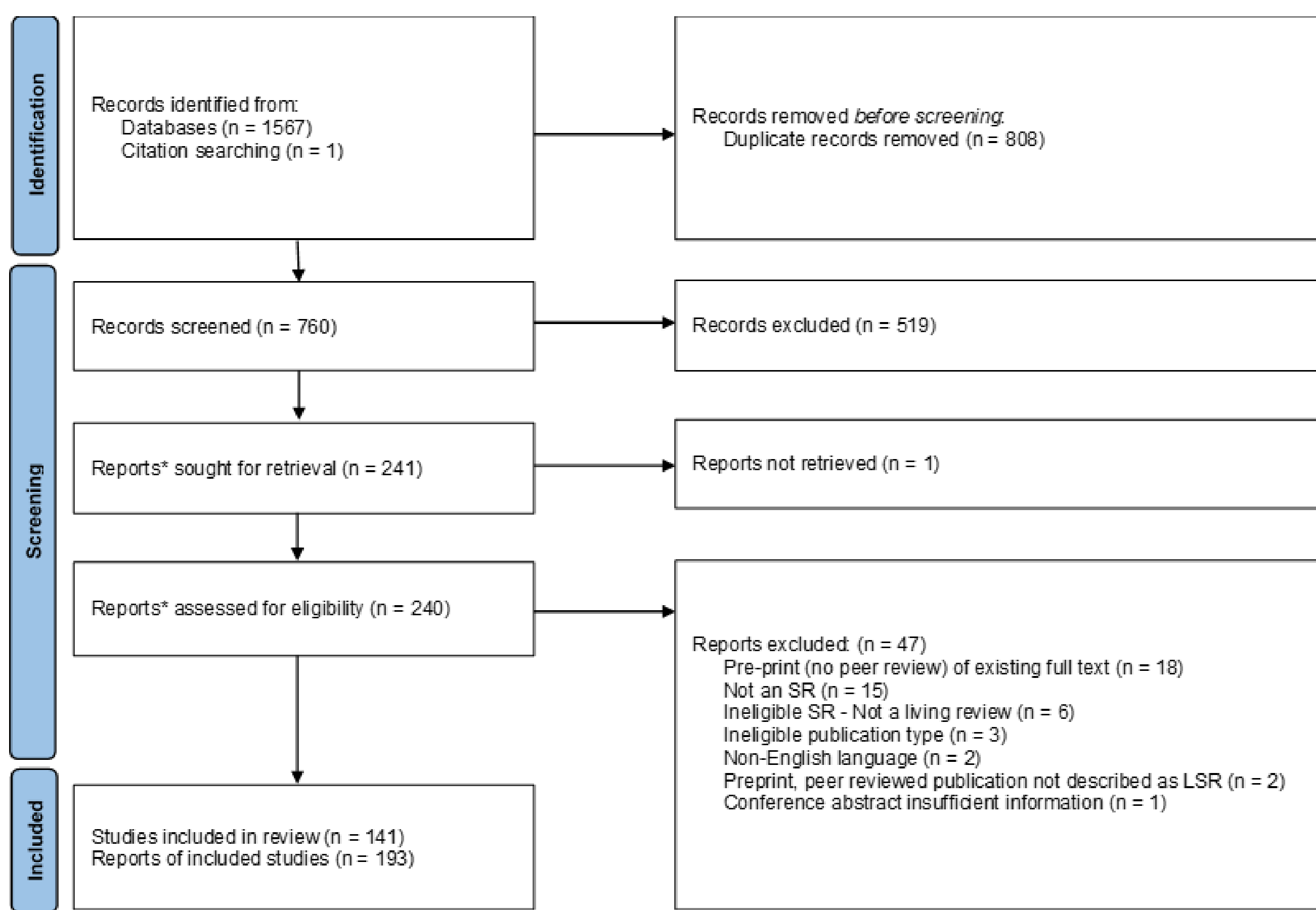
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### BACKGROUND AND OBJECTIVES

Living systematic reviews (LSRs) maintain the relevance of systematic reviews through regular, continuous updates, adapting the science of evidence synthesis to an environment in which the rate of research output is ever growing.<sup>1</sup> Uptake of this methodology was initially slow, until recently when the number of LSRs rapidly increased amidst the exigencies of the Covid-19 pandemic.<sup>2</sup> LSRs present unique methodological challenges. They require greater resources and pre-planning than standard systematic reviews – for example, there should be consideration of how often searches should be re-run, how often new results should be incorporated into meta-analyses, and how often and in what form updated syntheses should be published. Further, as LSRs should have clear justifications, thought must be given as to when these conditions no longer hold and, as such, the review might be terminated<sup>1</sup>. This research aimed to assess whether LSRs are being conducted according to these methodological standards and to identify areas of methodological confusion to provide clarity for those undertaking an LSR.

Figure 1: Study selection diagram



### METHODS

A scoping exercise was conducted, informed by pragmatic searches of MEDLINE, Embase and Epistemonikos, to identify records explicitly referring to LSRs. No date limits were applied. Study selection was conducted by double independent reviewers. Where a preprint LSR was superseded by a peer-reviewed publication, the preprint record was excluded. A single reviewer conducted brief data extraction. Various elements of LSR methodology were extracted, including:

- Protocol registration.
- Frequency of update searches. The optimal update frequency of LSRs has not been established; however, guidance has proposed they should incorporate relevant new information within six months of this becoming available.<sup>1</sup>
- Publishing format. Guidance has noted that regularly publishing LSR updates may be problematic because this would produce multiple bibliographic database listings for a single review, and that various dissemination options including published articles and dedicated websites are available.<sup>1</sup>
- How closely the LSRs adhered to their reported update schedule.

After data extraction, a narrative synthesis was conducted.

### REFERENCES

- Elliott JH, Synnot A, Turner T, Simmonds M, Akl EA, McDonald S, et al. Living systematic review: 1. Introduction - the why, what, when, and how. *Journal of Clinical Epidemiology* 2017;91:23-30.
- Kelly SE, Curran JA, Tricco AC. Managing unmanageable loads of evidence: are living reviews the answer? *JBIEvid Synth.* 2022;20(1):1-2. DOI: 10.11124/JBIES-21-00458.

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### RESULTS

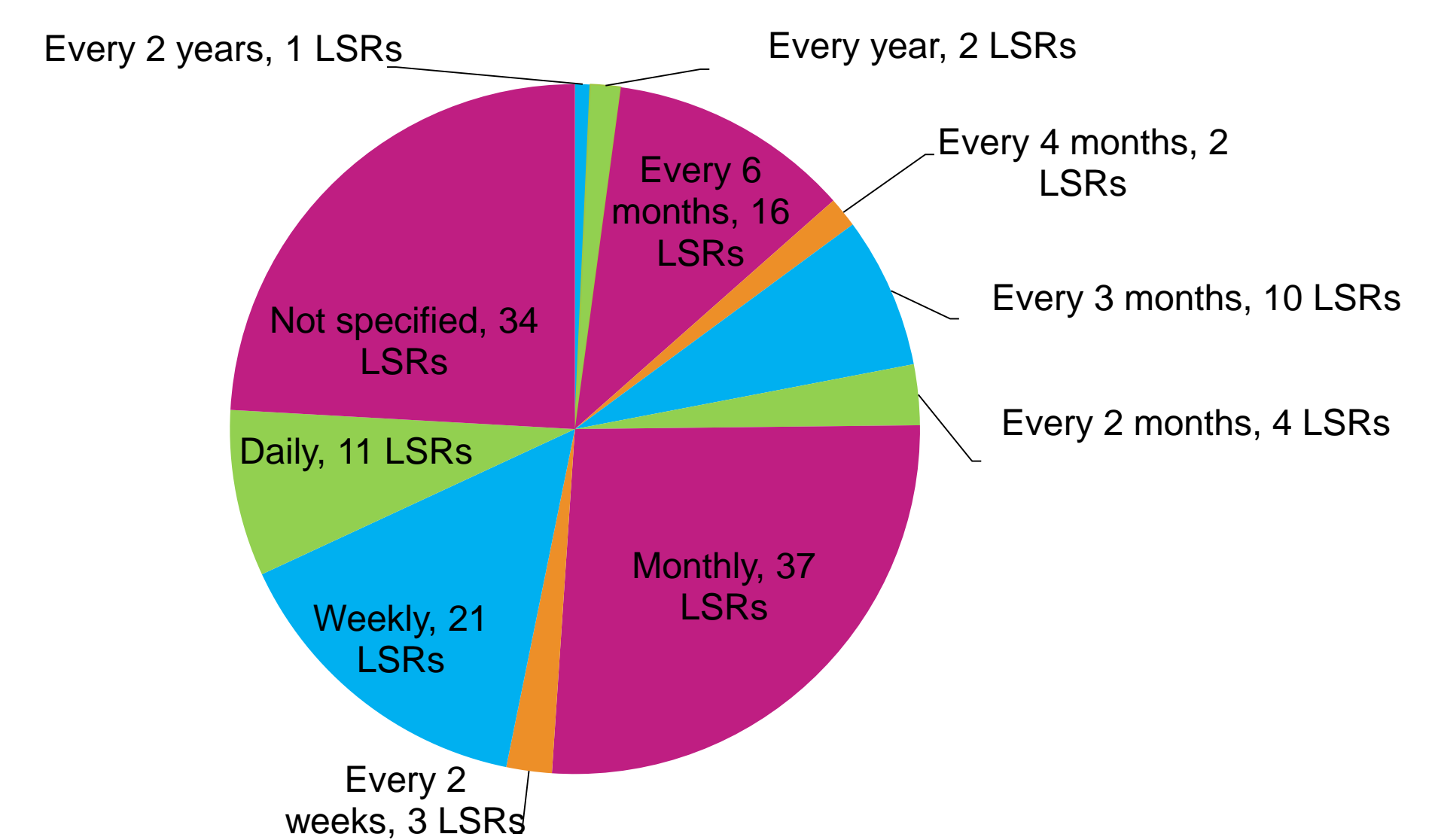
1,567 records were found through database searches and one through citation searching. After deduplication, 760 records were screened at title and abstract, and 240 were assessed for eligibility at full text. 141 LSRs (including protocols) in 193 documents were extracted and synthesised (full study selection process is described in Figure 1). 97 LSRs focussed on COVID-19, and 44 were non-COVID-19 related. 29 were Cochrane LSRs. Of the 112 non-Cochrane LSRs, 77 were registered on PROSPERO.

104 (73.8%) of the LSRs reported a search update frequency of 6 months or less. Of these, 16 reported that searches were run every 6 months, 37 reported that searches were run monthly, 21 reported that searches were run weekly, 11 reported that searches of at least some databases were run daily, and 19 reported that searches would be re-run at various intervals ranging from 2 weeks to 4 months. 24 reviews, despite describing themselves as living reviews in the title and abstract, did not report any schedule for search updates. 10 stated that updates would be performed when new evidence emerged, of which 7 were COVID LSRs using L-OVE, an Epistemonikos platform that automatically notifies authors of potentially relevant literature. Of the 32 LSRs that conducted search updates weekly or daily, 29 concerned the COVID-19 pandemic.

44 LSRs reported that updates would be disseminated in published articles, 20 reported that updates would be published in a website created for the LSR, and 10 reported that updates would be disseminated in additional comments or supplementary materials to the first published article. The remaining LSRs used mixed approaches, the most common (in 22 LSRs) being dissemination of minor updates in a website created for the LSR and major updates in a published article.

Reporting of LSR methodology is often unclear. As noted above, 24 reviews did not describe a clear schedule for search updates; these may more accurately be described as reviews whose authors anticipated that standard updates might be required. 32 reviews did not report updates at the specified schedule but also did not report that the review had been officially terminated. Thus, many “living” reviews are effectively dead on arrival. Very few authors reported under what circumstances the LSR would cease.

Figure 2: LSR update frequency



### CONCLUSIONS

LSRs can be valuable in maintaining currency of a review in topics where the evidence is rapidly growing. However, our work found that many reviews were described as LSRs but did not conduct updates according to a pre-defined schedule. Among those that did plan scheduled updates, many failed to publish results at the described schedule without giving notice of early termination of the LSR. It is possible that many such reviews were conceived due to enthusiasm for the advantages of LSRs, without due appreciation of the resource and commitment required to sustain them. Therefore, caution is advised regarding a possible interest in LSRs as a methodological bandwagon, without sufficient understanding of the methods and resources required.

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