

A systematic review of signs and symptoms associated with radiologically isolated syndrome that are suggestive of a multiple sclerosis prodrome.

Wen Qin Qiu¹, Huah Shin Ng^{1,2}, Naila Makhani³, Helen Tremlett¹. wendyq12@student.ubc.ca

University of British Columbia, British Columbia, Canada¹. Flinders University, SA, Australia². Yale University School of Medicine, Connecticut, USA³.

Background

- Radiologically isolated syndrome (RIS) is typically identified when an MRI of the brain occurs for an indication unrelated to suspected demyelination, and lesions characteristic of MS are incidentally found^{1,2}.
- The reasons for obtaining the index MRI in RIS subjects may offer insights into the early signs and symptoms of demyelinating disease³.

Objective

- To conduct a systematic review to investigate the initial signs and symptoms prompting MRI investigation in RIS subjects.

Methods

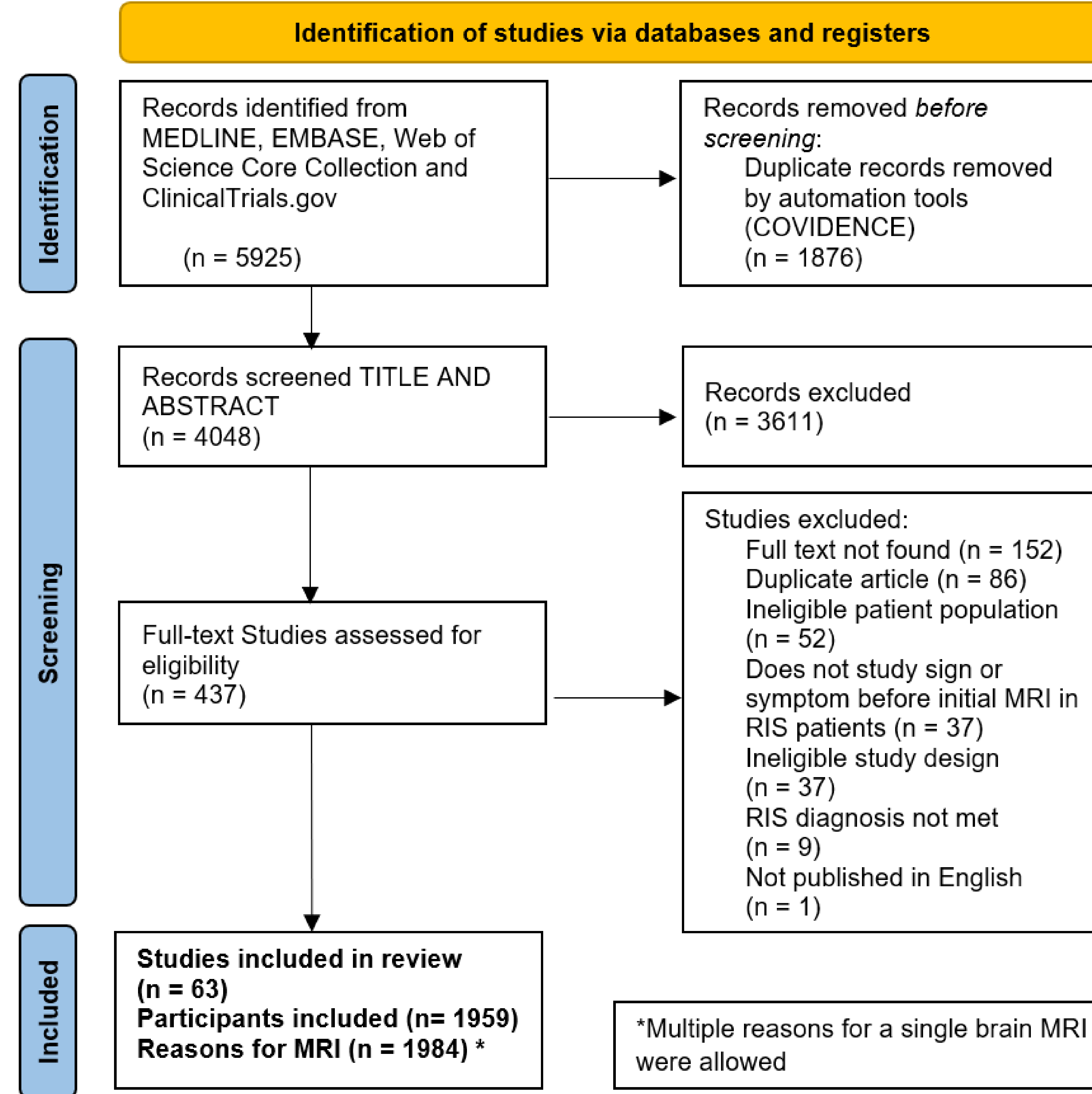
- MEDLINE, EMBASE, Web of Science Core Collection and ClinicalTrials.gov were searched between Jan/1997 to Jun/2021.
- Eligible studies had to: report any sign/symptom prompting an MRI in persons found to have RIS; be published in English; and include original data.
- RIS diagnosis must have met 2009 Okuda criteria⁴ or fulfill the MRI criteria for dissemination in space appropriate for the study time.
- Study designs could include case reports, case series, case-control, observational or randomized controlled trials.
- Study screening was conducted by independently by two reviewers

References

1. Hosseiny M, et al. *Am J Neuroradiol.* 2020;41(9):
2. Okuda DT, et al. *PLoS One.* 2014;9(3):e90509.
3. Tremlett H, et al. *Mult Scler J.* 2021;27(1):6-12.
4. Okuda DT, et al. *Neurology.* 2009;72(9):800-805.
5. Barkhof F, et al. *Brain.* 1997;120(11):2059-2069.
6. Thompson AJ, et al. *Lancet Neurol.* 2018;17(2):162-173.

This project was funded through a grant from the Foundation of the Consortium of Multiple Sclerosis Centers' MS Workforce of the Future program and through the summer studentship grant from the UBC MS Connect Education Program and The Christopher Foundation.

Figure 1: PRISMA flow diagram for study selection

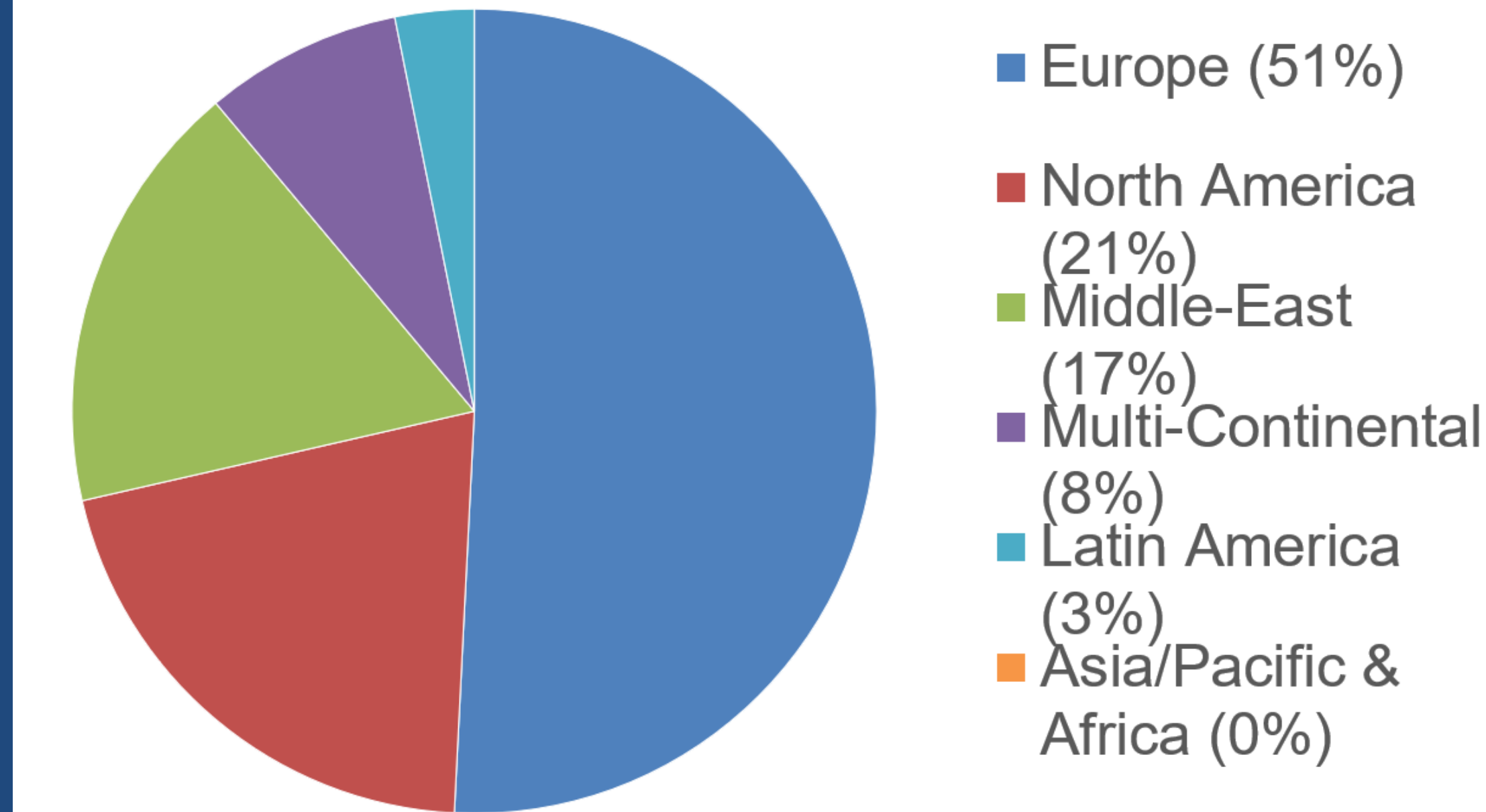


Conclusions

- This systematic review provides a comprehensive summary evaluating the range of signs and symptoms prompting the initial MRI in persons with RIS. Future work will evaluate whether these sign/symptoms differed between RIS patients who either were, or were not, subsequently diagnosed with MS.

Figure 2: Characteristics of Included Studies (n=63)

Number of Studies by Region



Types of Studies

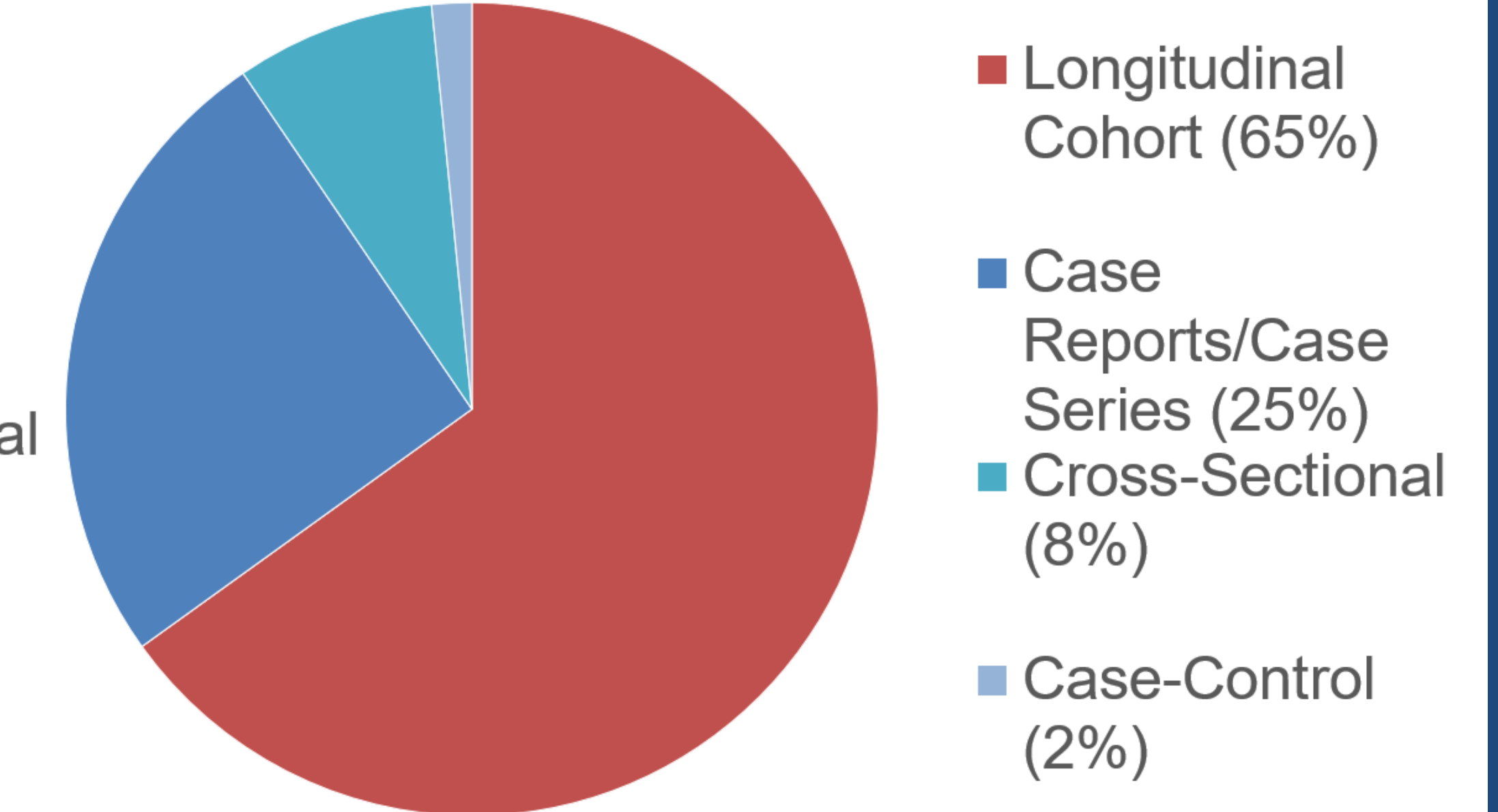


Figure 3: Main Findings of Included Studies

