

Exploration of hand dysfunction in patients following transradial access for percutaneous coronary procedures: a systematic scoping review

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Background

- The transradial approach (access via the radial artery) has increasingly been used for coronary interventions due to its low complication rate, same-day discharge, and less expense when compared with femoral access (figure 1).
- Despite these clinical advantages, studies investigating adverse outcomes have raised concern that patients undergoing coronary angioplasties via the radial artery may experience hand dysfunction following the procedure.
- This scoping review aimed to identify the available evidence and gaps on the incidence and prevalence of hand dysfunction following complications related to transradial coronary catheterization.

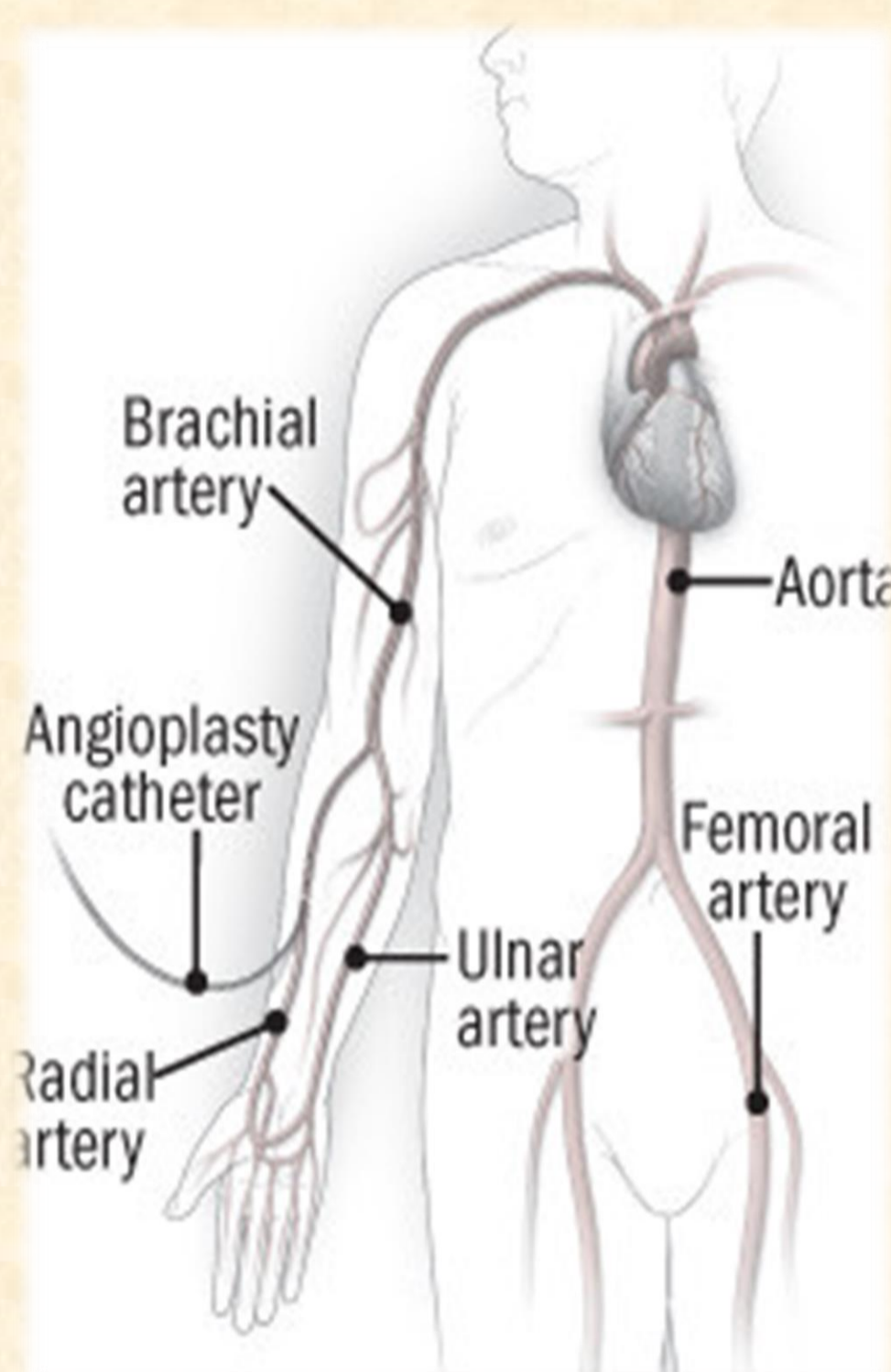


Figure 1 Access routes for coronary catheterization

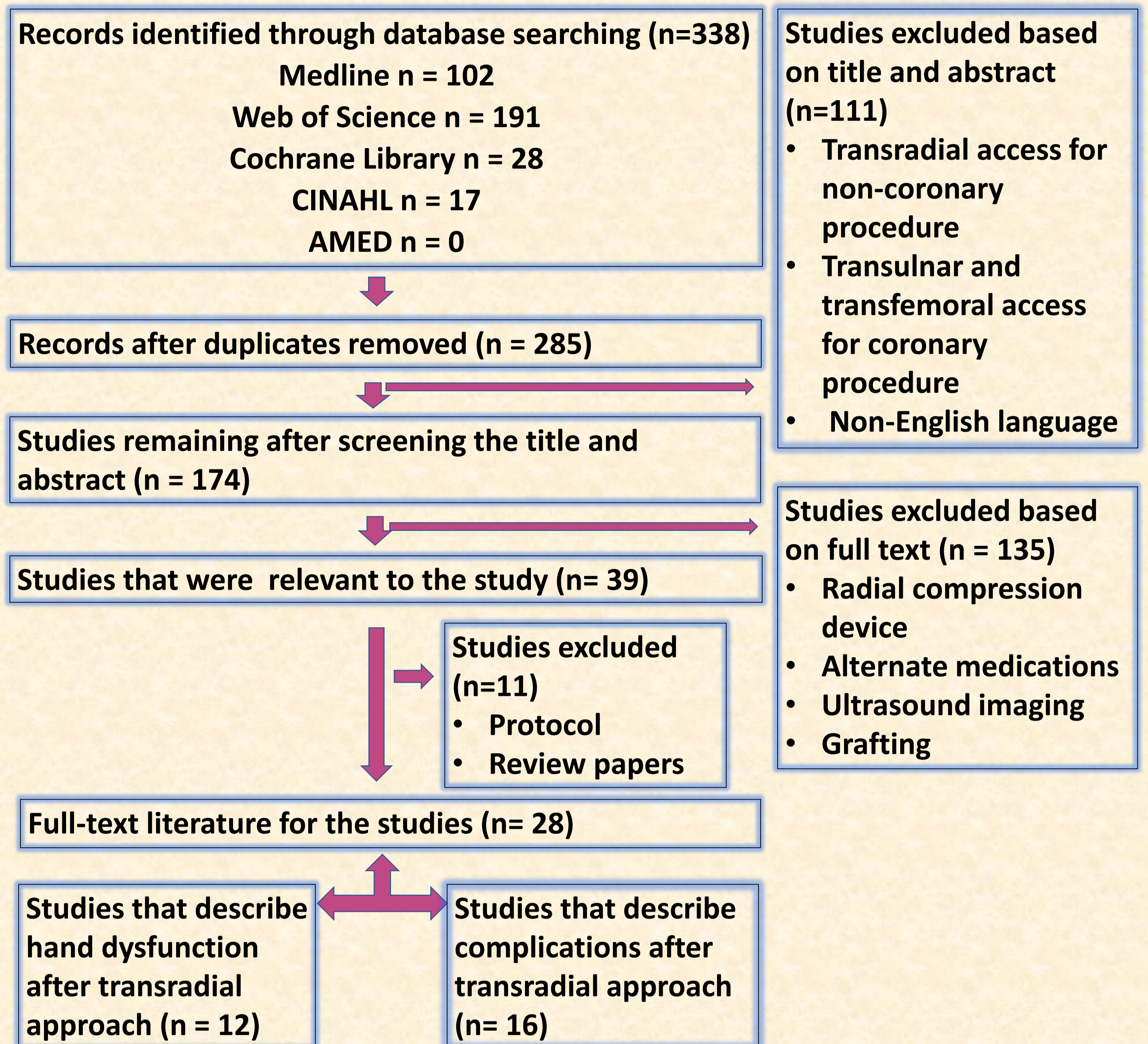


Figure 2 Flow diagram illustrating the study selection process.

Method

- A scoping review was conducted using the Aksey O Malley framework (2005).
- Databases were searched from inception to May 2020.

Five database
(2020)

• Medline, Web of Science, Cochrane Library, AMED, and CINAHL

Keywords

• Hand dysfunction, Percutaneous coronary intervention and Transradial approach

Inclusion criteria

• Hand dysfunction after transradial coronary angioplasty

Exclusion criteria

• Non-coronary catheterization procedure through the radial artery
 • Protocols
 • Narrative reviews
 • Non-English literature

- Titles and abstracts screened by two reviewers; conflicts resolved by discussion and consensus.
- Data from the included studies were extracted and significant variables recorded in the Microsoft Excel spreadsheet.
- Results were narratively synthesized with the calculation of pooled estimate.

Results

- The process of identification, including number of studies and screening can be seen on the flow chart (figure 2).
- From an identified 338 citations, 12 studies were included in this review (9 prospective studies and 3 systematic reviews).
- A pooled estimate showed that 486 out of 15,270 patients had hand dysfunction (0.62%).

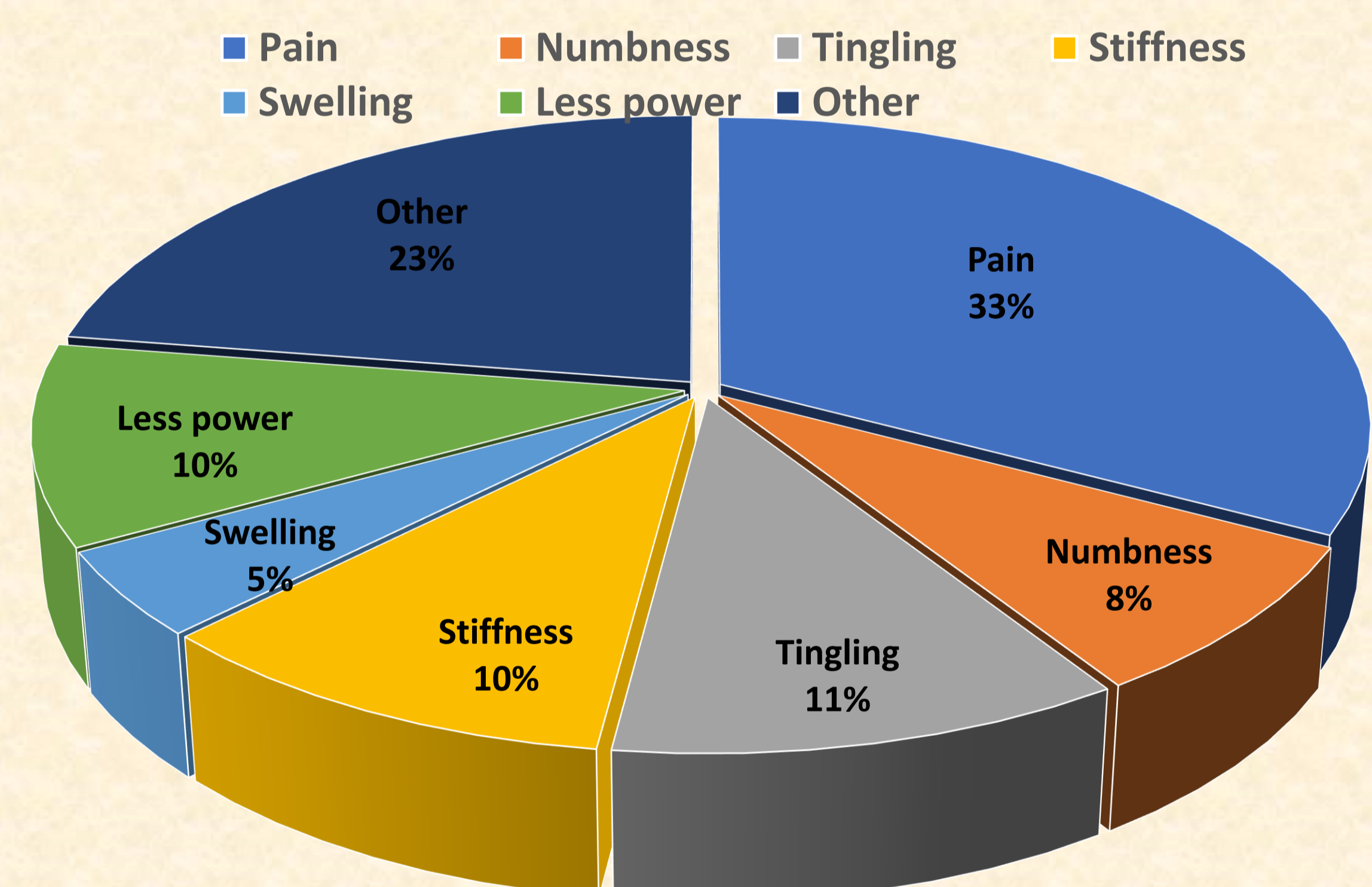


Figure 3 Proportion and types of hand function reported in the Included studies

Discussion & Conclusion

- Studies evaluating hand dysfunction are sparse.
- The studies reviewed did not measure hand sensory and motor function objectively or together
- Subjective methods are used to evaluate sensory problems.
- Close to the procedure site, the median nerve occupies a vital role in the innervation of fine precision and pinch functions of the hand, which have not been examined.
- Asymptomatic or minor conditions are not identified that can adversely affect daily activities or their profession in the future.
- Future studies should focus on the symptoms caused by the procedure, even if they are minor or asymptomatic conditions, detect hand dysfunction, and consider motor as well as sensory function when planning the research.

Reference

Arksey, H. & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, 8 (1): 19-32.

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