

The Quality of Randomized Controlled Trials in Hand, Wrist and Elbow Surgery: A Critical Analysis of Current Literature

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BACKGROUND

- High quality research is increasingly emphasized as hand surgeons strive to practice evidence-based medicine.
- Randomized controlled trials (RCTs) yield Level I evidence.
- A high level of evidence is not necessarily synonymous with high quality research.
- Previous work has found concerns with surgical RCTs.

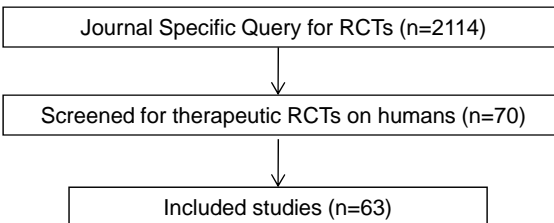
PURPOSE

To evaluate the quality of hand, wrist, and elbow RCTs.

MATERIALS AND METHODS

- RCTs from top 6 Orthopedic Journals (by impact factor)
- Two reviewers were blinded and randomly assigned
- Quality of study assessed by the Modified Coleman Methodology (MCM) score and JADAD scale
- Quality of reporting assessed using the Consolidated Standard for Reporting Trials (CONSORT) checklist.
- Primary outcome: Modified Coleman Methodology Score

STUDY SELECTION



RESULTS

Average MCM score was 54.9 out of 100

Categorical Score	Number of Studies
Excellent (85-100)	0
Good (70-84)	10
Fair (55-69)	22
Poor (0-54)	31

Table 1. Categorical distribution of RCTs according to MCM score.

Good and poor studies differed significantly (p<0.05) in terms of:

- Enrollment Rate
- Power Analysis
- Withdrawal and drop-out description
- Blinding
- Outcome assessment using valid instrument and independent assessor
- Randomization method, type, and implementation

Poor studies were cited as often as good ones

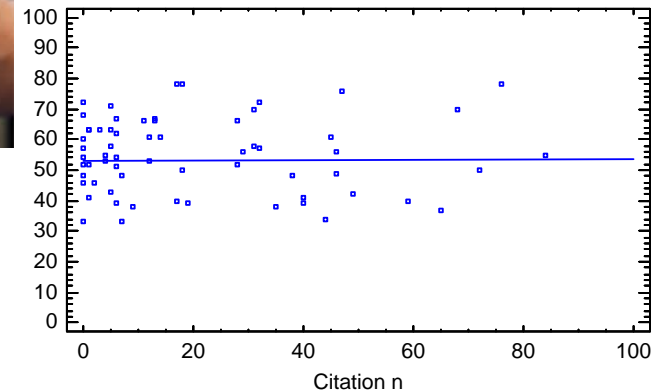


Figure 1. MCM score plotted against number of citations.

CONCLUSION

- Many hand, wrist, and elbow RCTs are of suboptimal quality.
- Despite their high level of evidence, RCTs should be critically assessed
- Common methodological deficiencies may impact the validity of results and conclusions drawn from RCTs.

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