Quality of randomised controlled trials, systematic reviews and meta-analyses in paediatric surgery: a cross-sectional analysis

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Abstract

Background: There are few randomised controlled trials (RCTs) in paediatric surgery, and the risk of bias of these studies is unknown. There is also little known about the methodological or reporting quality of systematic reviews and meta-analyses in paediatric surgery. We aimed to determine the risk of bias and reporting quality of recent RCTs, systematic reviews and meta-analyses in paediatric surgery, and the associations with study characteristics. Methods: We searched MEDLINE, Embase, Cochrane Library, JBI EBP Database, Centre for Reviews and Dissemination, Web of Science and high-impact journals for all RCTs, systematic reviews and meta-analyses in paediatric surgery published in 2021. We assessed the risk of bias and reporting quality of RCTs using the RoB 2 and CONSORT tools, respectively. We assessed the same parameters for systematic reviews and meta-analyses using the ROBIS and PRISMA tools. Findings: We identified 82 RCTs and 289 systematic reviews or meta-analyses in paediatric surgery published in 2021. More than half (n=46, 56%) of RCTs and almost all (n=278, 96%) systematic reviews and meta-analyses were at high risk of bias. Only one (1%) RCT and 4 (1%) systematic reviews and meta-analyses were adequately reported. We found that lower risk of bias and higher reporting quality in RCTs, systematic reviews, and meta-analyses were associated with the presence of a published protocol. For systematic reviews and meta-analyses, a higher PRISMA score was associated with being a Cochrane review. Surprisingly, we found that more than half of systematic reviews and meta-analyses (n=162, 56.1%) had no risk of bias assessments. Conclusions: Recently published RCTs, systematic reviews, and meta-analyses in paediatric surgery are at high risk of bias and have poor reporting quality. We suggest strategies for how trialists, systematic reviewers and other stakeholders across the research lifecycle can design, conduct and report higher quality research in paediatric surgery.

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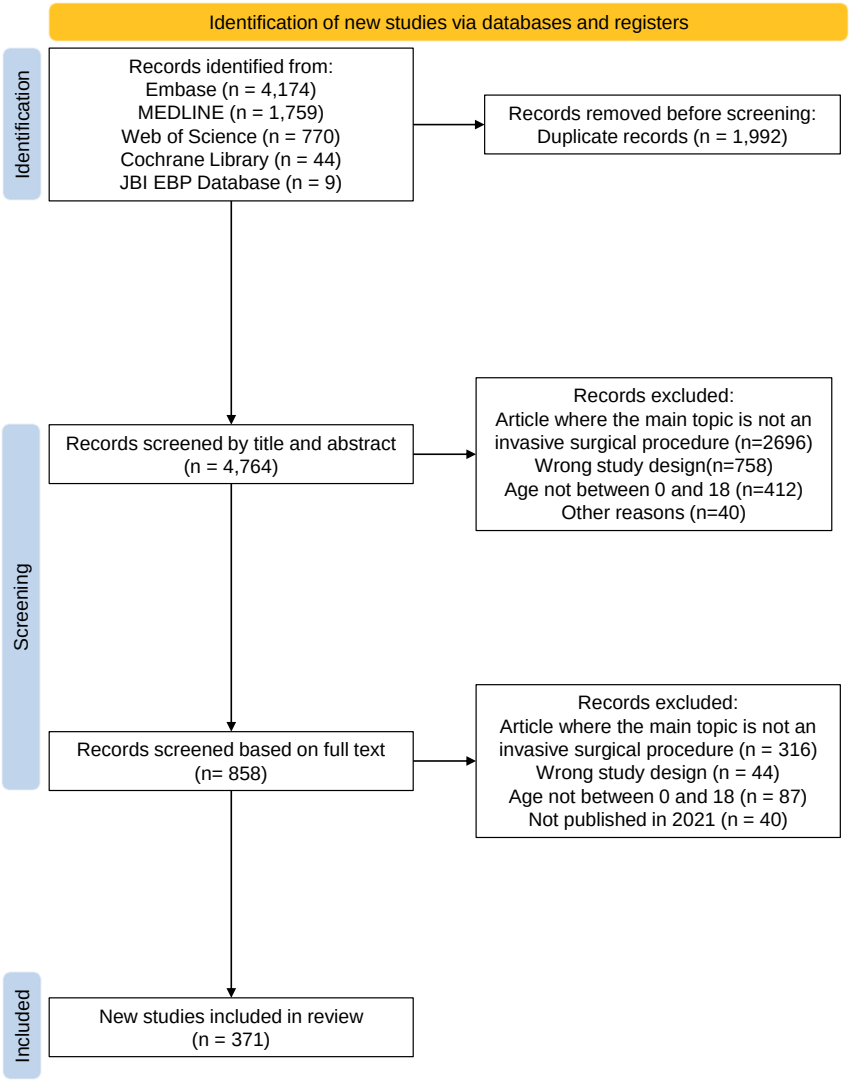

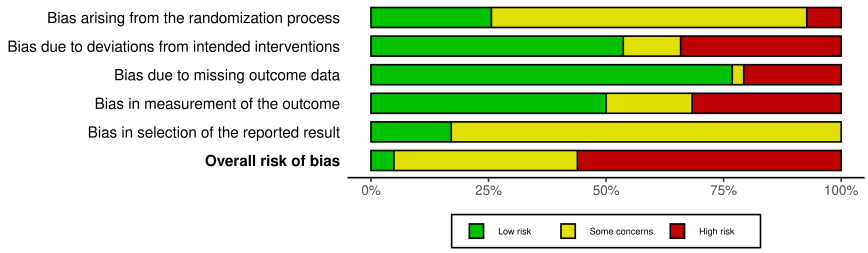

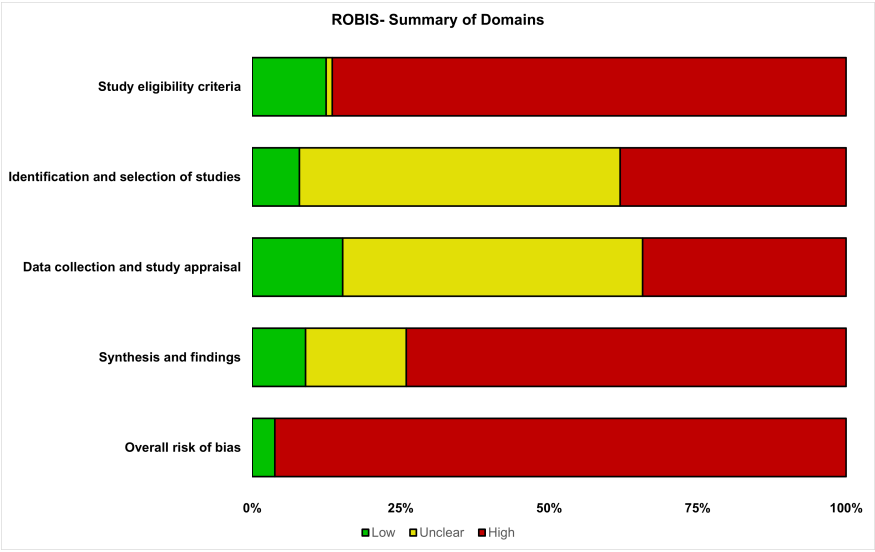

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Table 1- CONSORT & PRISMA Table.docx available at https://authorea.com/users/672717/articles/671673-quality-of-randomised-controlled-trials-systematic-reviews-and-meta-analyses-in-paediatric-surgery-a-cross-sectional-analysis