CHRD 2022: Abstract & Poster Submission Form

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Presenter Status

○ Undergraduate Students

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Research Category

○ Basic Science

◉ Clinical

○ Community Health / Policy

Role in the project

☑ Design

☑ Perform Experiments

☑ Analyze Data

☑ Write Abstract

☐

Title

Avoidable Research Waste related to Inadequate Methods and Incomplete Reporting in Pediatric Randomized Controlled trials (RCTs) published in 2007, 2012 and 2017

Background

Inadequate methods and incomplete reporting of interventions in randomized controlled trials (RCTs) can prevent the transposition of research in practice which leads to research waste. Failure to document critical elements of RCTs can result in inaccurate assessments of findings and might lead to wrong clinical decision-making.

Objective

The primary objective was to evaluate the trend in the risk of bias (RoBs) assessment reporting in pediatric RCTs published in 2007, 2012 and 2017.

Methods

We performed a methodological review of a representative sample of randomly selected 900 child health RCTs, using three sets of studies previously identified by our team from the Cochrane Central Register of Controlled Trials. Each set consists of 300 trials published in that cohort. Two reviewers used the 2010 Cochrane RoB tool to assess the primary outcome of the seven RoB domains, with low risk scored as 1, unclear scored as 2, or high scored as 3. Cuzick's test was used to assess the trend across the ordered groups in the three cohorts.

Results

We found significant trend decreases in 5 out of 7 (71.4%) RoB domains (from relatively higher risk to relatively lower risk) in the selected RCTs published in the three studied cohorts (figure 1). Significant trend decreases were observed in random sequence generation (p<.001), allocation concealment (p<.001), selective reporting (p<.001), other bias (p<.001) and overall RoB (p<.001), and blinding of participants and personnel (p<.05) but those in the remaining two RoB domains (blinding of outcome assessors (p = .54) and incomplete outcome data (p=.92)) were not significant (table 1).

Conclusion

Though improvements with respect to most of the RoB domains were observed, the present study has clearly identified the key design elements that need further improvement. To conclude, optimizing the design, conduct, and reporting of pediatric trials may help reduce research waste.

Do you have a table/figure to upload?
⊙ Yes ○ No

Figure 1 and table 1.pdf

Authors

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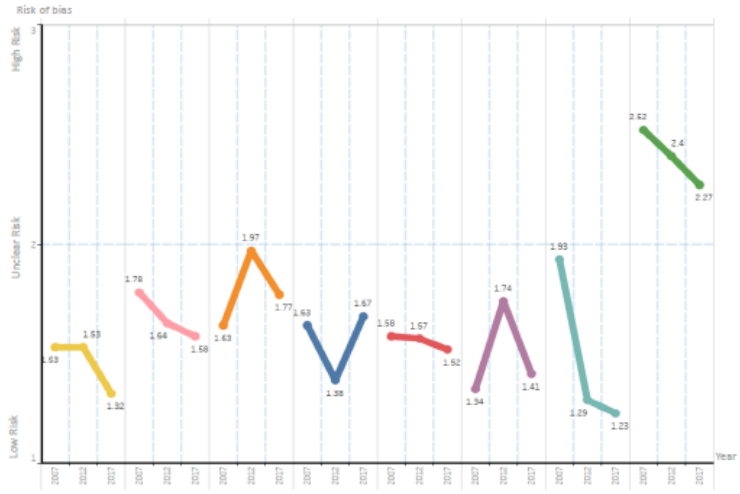
Figure 1. Trend Changes in the Risk of Bias (RoBs) in Child Health RCTs published in 2007, 2012 and 2017



	Random Sequence Generation	Allocation Concealment	Blinding of Participation and Personnel	Blinding of Outcome Assessors	Incomplete Outcome Data	Selective Reporting	Other Bias	Overall RoB
2007 (mean, sd)	1.53, .03	1.78, .03	1.63, .04	1.63, .04	1.58, .05	1.34, .04	1.93, .04	2.52, .04
2012 (mean, sd)	1.53, .03	1.64, .03	1.97, .05	1.37, .03	1.57, .04	1.75, .03	1.29, .03	2.41, .04
2017 (mean, sd)	1.33, .03	1.57, .03	1.77, .04	1.66, .04	1.52, .04	1.41, .03	1.23, .02	2.27, .03
Cuzick's trend test	p<.001	p<.001	p<.05	p=.54	p=.92	p<.001	p<.001	p<.001

Table 1. Descriptive statistics of each RoB domain in Child Health RCTs published in 2007, 2012 and 2017