Reporting and detection bias are associated to specific funding sources in Chilean randomised clinical trials

Risk of bias assessment and comparison of Chilean randomised clinical trials: An analysis by funding source

Background: Randomised clinical trials (RCTs), the cornerstone of evidence-based intervention recommendations, are inherently susceptible to some degree of bias. RCTs conduction may be funded by governments, non-profit organisations, industry, or may have no funding source. However, it is ethically imperative for taxpayers' funded RCT to have a high quality, due to the societal implication.

To estimate the quality of research across funding sources, we compared RoB of Chilean RCTs conducted from 2017 to 2022 across funding source.

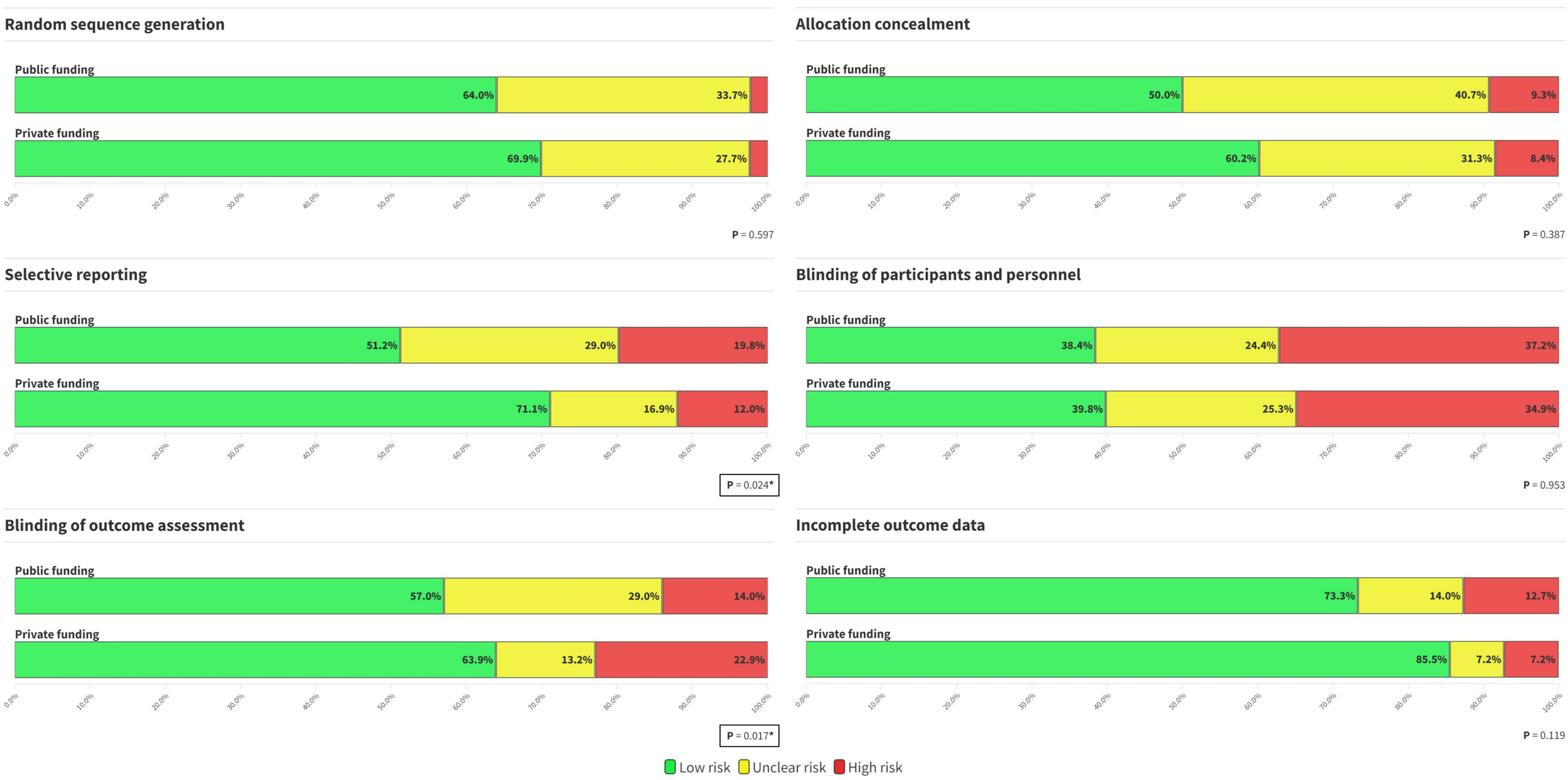
Methods

Cross-sectional | **Cochrane Collaboration Risk of Bias 1 tool**

We conducted a comprehensive search in six electronic databases and conducted complimentary hand searches, we identified **all RCTs published between 2017 and 2022** having **at least one author with a Chilean affiliation** or being **conducted in Chilean population**. Two independent reviewers assessed a random sample of RCTs stratified by year with the **RoB1 tool**. A second assessment was performed by another two reviewers and discrepancies were resolved by a third reviewer. Differences in "high", "low" or "unclear" RoB by funding source were analysed using Pearson's chi-squared test, applying Yates' continuity correction where appropriate. A p value lower than 0.05 was considered as statistically significant.

Results

181 RCTs | 37.6% Public funding | 35.9% Private funding | 9.9% Public & Private | 8.3% Unfunded | 8.3% Not reported



Conclusions

- **Public funding** was the **principal financial support** for Chilean RCTs published during the period 2017-2022.
- **Public funded** RCTs had **larger proportions** of **high RoB** on the majority of assessed domains of the tool and higher levels of **unclear RoB** than those privately-sponsored. In contrast, those receiving **private funding** had the highest proportions of **low risk** in all judged aspects.
- There are statistically significant associations between **publicly-funded trials** and **higher reporting bias**, as well as providing **insufficient information** concerning **reporting** and **outcome assessment**. Conversely, privately-sponsored trials seem to have **lower risk of reporting and detection bias**, but also a slightly higher risk of detection bias.

Chilean RCTs exhibit heterogeneous methodological quality, with predominance of low risk of bias nearly in all domains of RoB1, excepting for performance bias. There is a **need for improvement in the quality of local research**, which could be achieved by developing a minimum set of quality-related requirements, emphasizing **reporting**, **performance** and **detection bias**, especially when applying for public funding.

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