

CAN THE RESULTS OF RESEARCH BE USED CLINICALLY ? META-RESEARCH IN THE FIELD OF MEMORY

INTERVENTION IN CHILDREN

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INTRODUCTION

- **Working memory** (WM) is often impaired in multiple neurological conditions in children. WM is crucial for academic success
- The quality of interventional studies in this field has been called into question
- For an **Evidence-based-Practice Neuropsychology** (EBPN), clinicians need to find high-quality evidences (1)
- **RCT** are supposed to be a valuable source of information on the potential effectiveness of an intervention method (= "Gold standard »)
- BUT RCT must meet certain **quality criteria** (2)
- If the criteria are not met:
 - **unreliable** conclusions
 - lack of **reproductibility**
 - **Useless** for clinicians
- This would undermine the quality of EBPN (3)

OBJECTIVE

The aim of this study is to **assess the quality of RCTs** on the intervention of WM in children and to explore **what could be done** to make it more reliable, reproducible and useful for clinicians.

METHODS

- Selection and analyses:
 - two independent researchers
 - pooling
 - third-party researchers to settle disagreements
- Used grids:
 - Risk of bias (processes that lead to error in the results): **RoB2 tool**
 - Reporting quality: **CONSORT SPI guide**

RESULTS

- Sample: 31 RCT
- **High risk of methodological bias** in the majority of articles selected (83%)
- The most common problems: deviation from the intended intervention and measuring outcomes
- The **CONSORT SPI** grid appears to be little used or understood
 - **11 items out of 45** are reported correctly
- Most frequently reported sub-dimensions (in over 50% of articles): scientific background, demographics of subjects, limitations of the study, possible generalisability of results, limitations of the study and potential conflicts of interest
- **General lack of transparency:** inaccurate information on blinding, poor description of the intervention, incomplete definitions of outcomes, incomplete presentation of results

CONCLUSION

- To help clinicians choose methods for improving WM, research must produce high-quality interventional studies. Unfortunately, the data in this field are consistent with the **problems of quality** already observed in research in the human sciences (2)
- These quality problems are **in addition to other difficulties** already mentioned regarding the usability of data in WM intervention field (especially for computerised treatments 4)
- In this context, clinical neuropsychologists should have **excellent critical reading skills, which does not seem to be the case** (3).
- Future challenge for researchers: **to increase the number of good quality and clinically useful interventional studies**

RÉFÉRENCES

1. Agoristas, T. and al. (2015). Finding current best evidence. In *Users' guides to the medical literature: A manual for evidence-based clinical practice* (3rd ed). McGraw Hill.
2. Faulkner C., and al. (2008) The value of RCT evidence depends on the quality of statistical analysis. *Behaviour Research and Therapy*, 46(2):270-281. doi:10.1016/j.brat.2007.12.001
3. Blause S., and al. What Information Do Neuropsychologists Use to Guide their Clinical Decisions? A Survey on Knowledge and Application of Evidence-Based Practice in a French-Speaking Population. *Archives of Clinical Neuropsychology*. Published online August 7, 2023:acad057. doi:10.1093/arclin/acad057
4. Gathercole, S. and al. (2019). Working memory training involves learning new skills. *Journal of memory and language*. 15:19-42.

RoB2



CONSORT SPI

