

Briefing paper

Inattention, working memory, and goal neglect in a community sample

Elisa, R.N., Balaguer-Ballester, E. and Parris, B.A., 2016. *Frontiers in psychology*, 7, 1428, 1 – 13.

Attention Deficit Hyperactivity Disorder (ADHD) is a childhood neurodevelopmental disorder. Around 6% of adults have the classic ADHD symptom of inattention and have difficulty concentrating, remembering things and organisation. This may be connected with goal neglect, where people do not finish tasks even though they know what to do. Inattention may be linked with problems in the brain system which co-ordinates Working Memory (WM) (Diamond 2005). WM allows you to hold information in your mind while either manipulating the information, or doing something else at the same time. It is essential to build a stable mental 'task model' to complete tasks at home, work or study.

Outline of research

Researchers wanted to test the effect of ADHD-related inattention in the general population and whether it is connected with WM through verbal / spatial skills,

95 adults completed an ADHD symptom questionnaire and an IQ test. They were also asked to complete tasks which engaged their WM, such as remembering word blocks backwards (simple verbal) or with maths problems (complex verbal) or the order of coloured blocks (spatial).

The researchers also wanted to see whether verbal material was the problem in goal neglect, or the fact that various components have to be integrated into the task model, at different levels of complexity.

A 'letter-monitoring' experiment asked 66 adults to watch letter / number pairs on a computer screen, but only to read the letters. Each pair came with a 'WATCH LEFT/RIGHT' instruction to make the task more complex.

Key findings and impact

- ADHD-related inattention might be more common than is realised – 1 in 3 people had above average inattention scores.
- Inattention scores affected verbal, but not spatial tasks, which reinforces the theory that inattention leads to difficulty with verbally-presented material
- Inattention uniquely predicted lower performance in the letter-monitoring task. This is the first study to link inattention with goal neglect.
- Goal neglect is not caused by a lack of knowledge, because all participants could repeat the rules. Inattention may interfere with the ability to integrate the task model while performing the task, leading to non-completion. The more verbal and complex the task, the greater the goal neglect

Conclusion

It is not yet known whether inattention undermines WM, or vice versa. This is only a part of the jigsaw to understanding WM, which is probably affected by other pathways, such as self-regulation to exclude irrelevant stimuli. However, verbal skills are most affected by inattention, rather than other ADHD symptoms such as hyperactivity or impulsivity. This research contributes to our understanding of the cognitive map which is crucial to learning and performance. It helps to understand how information is processed and integrated for study and work, as well as to help people who are challenged by ADHD-related inattention.

