Computational Modeling of Memory Processes in non-CNS Cancer Survivors

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Abstract

Non-CNS cancer and its treatment have been shown to affect memory in survivors, which is both objectively measurable and self-reported by patients.

However, the traditional memory sum score measurement grants little insight into which memory processes are specifically impaired.

The current research used a computerized visual-presentation version of the Auditory Verbal Learning Test, which is part of the Amsterdam Cognition Scan, to gather more detailed and precise data on test performance.

Participants of this study were cancer survivors who received treatment (n=187), and non-cancer controls (n=204).

We analyzed these data through various hierarchical Bayesian cognitive models, with the goal to disentangle general performance metrics into more theoretically meaningful concepts.

Results indicate that the memory processes in cancer patients are not generally impaired across all functions, but rather selectively impaired in 'memory retrieval' processes.

There seemed to be no significant issues with patients in 'learning' or 'storage' processes.

In M. Goldwater, F. K. Anggoro, B. K. Hayes, & D. C. Ong (Eds.), *Proceedings of the 45th Annual Conference of the Cognitive Science Society.*