

Episodic memory impairments associated with deficits in coherence of narrative production

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Introduction

Autobiographical memory (ABM) is composed of semantic memory (general knowledge) and episodic memory (memory of specific events) (1). Amnesic mild cognitive impairment (aMCI) is a condition in which there is greater than expected cognitive decline in comparison to healthy-aging, where episodic memory is specifically affected (2). Language deficits have also been observed in persons with MCI (3).

Objectives

- To compare discourse and memory patterns in this group of patients with healthy matched controls.
- To test patients' ability to produce linguistic elements of a narrative within a topic, i.e. maintenance of coherence of discourse.

Hypotheses

- We hypothesised that patients would show deficits in coherence of discourse;
- Coherence deficits would be more prominent when episodic information was produced.

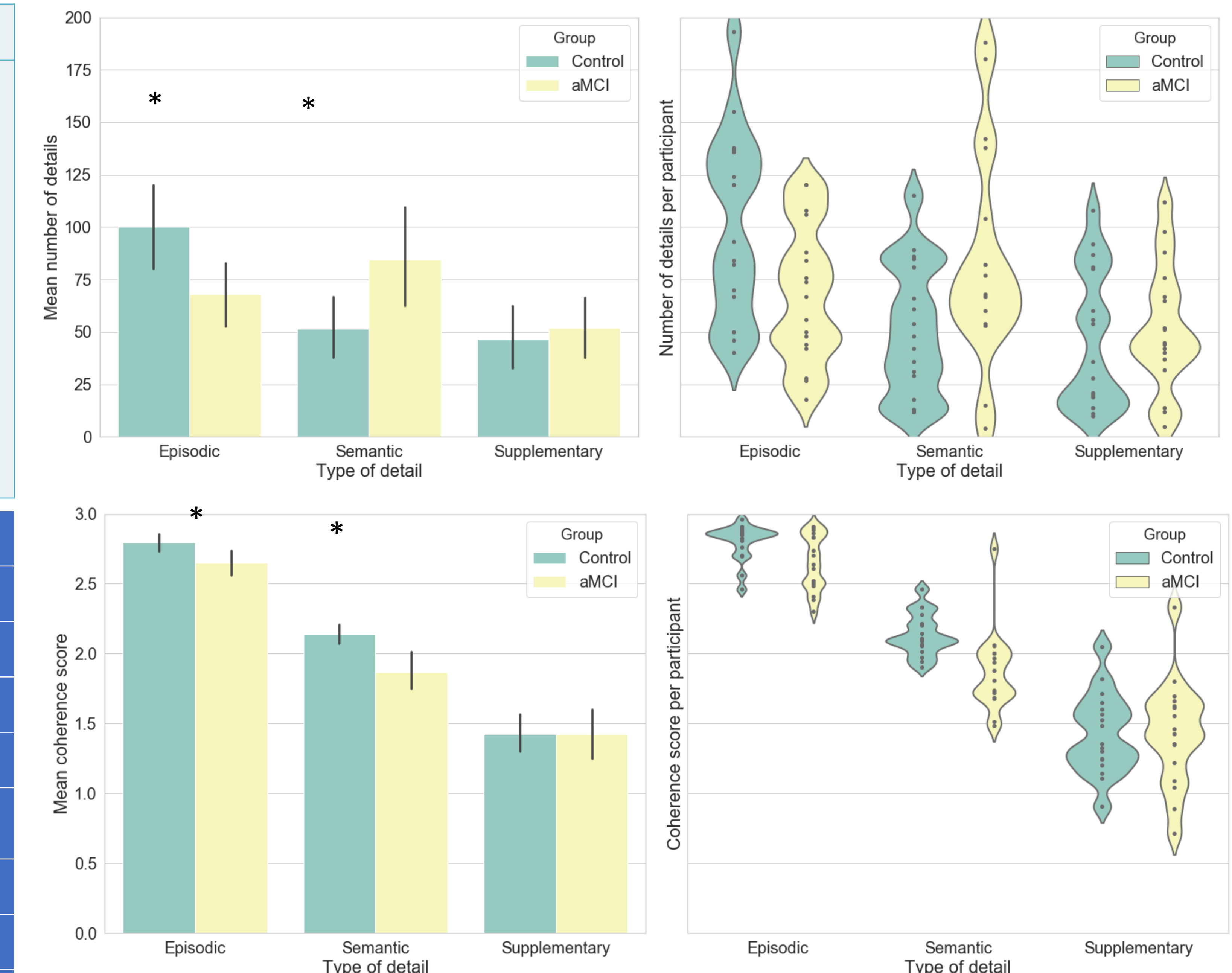
Methods

Participants	Task	Coding
17 aMCI patients 17 healthy matched controls	Participants reported 5 memories which generated extended stretches of discourse.	<ul style="list-style-type: none"> Answers were transcribed and segmented; The details were analysed with a coherence rating scale; Details were categorized as episodic, semantic, or supplementary

	Controls (n=17)	aMCI (n=17)
Age	74.17 (6.61)	77 (5.18)
Gender	F=8, M=9	F=12, M=5
Years of Education	13.7 (3.61)	14.94 (0.0)
Handedness	L=2	L=0
MMSE	28.28 (1.72)	27.25 (11.44)
Shipley Vocabulary	13.76 (2.81)	13.56 (2.44)
HVLT TOTAL	10.11 (2.14)*	7.06 (2.68)*
HVLT-Delayed recall	10.64 (1.62)*	4.43 (32.71)*

Coherence scores	"Who was the best man at your wedding?"
3 detail is an element of the semantic frame	"um the best man would have been a friend of mine"
2 detail is a relevant implication of the frame	"who I went to university with back in 1958 to 1964" "um who now lives in Vancouver"
1 detail is neither an element of the frame nor relevant to the topic	"actually lives up not in Vancouver but in..." "um where's where's the Olympics going to be this Winter?" "um that's where he lives"
0 detail is devoid of semantic content	"you know?", "yeah"

Results and Discussion



- The two groups produced a similar amount of details overall, however, aMCI patients produced fewer episodic details ($p=.02$; $\eta_p^2=.155$) and more semantic details than controls ($p=.03$; $\eta_p^2=.155$)
- The coherence analyses showed the aMCI group received lower coherence scores overall ($p=.03$, $\eta_p^2=.139$)
- Pairwise comparisons showed deficits in coherence in both episodic ($p=.01$, $\eta_p^2=.175$) and semantic sets of details ($p<.01$, $\eta_p^2=.266$)
- These results suggest that the difficulties experienced by aMCI patients may go beyond their known difficulty in recalling episodic information. Patients demonstrated difficulty selecting relevant episodic and semantic information which likely further impaired the informativeness of their narratives.

References

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