

Narrative Discourse Microparameters and Cognitive Performance in Brazilians with Mild Alzheimer's Disease: A Correlational and Factorial Analysis

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Take away: Discourse organization, rather than verbal output quantity, is a sensitive marker of early cognitive decline in mild AD.

INTRODUCTION

- Narrative discourse may reveal subtle language impairments before functional decline in Alzheimer's disease (AD).
- Microparameters (word count, information units, and scenes) reflect conceptual organization and lexical access.
- Their relationship with demographic and cognitive factors in mild AD remains underexplored.
- This study examined associations between narrative discourse microparameters, age, education, and cognition in Brazilians with mild AD.

METHODS

- Cross-sectional study with individuals >60 years with mild AD (NINCDS-ADRDA; CDR=1);
- Participants completed a socioeconomic questionnaire and ACE-R.
- Narrative discourse was assessed using the MTL-BR bank robbery picture description task.
- Data were analyzed using Spearman correlations, linear regression, and exploratory factor analysis.

RESULTS

Table 1 - Correlations between microparameters of narrative discourse and sociodemographic and clinical variables.

	Number of words		Interaction units		Scenes	
	r	p	r	p	r	p
Age	0.121	0.566	-0.205	0.325	-0.018	0.933
Education	-0.258	0.213	0.133	0.526	0.325	0.113
ACE-R	0.193	0.355	0.802	<0.001*	0.693	<0.001*

ACE-R = Addenbrooke's Cognitive Examination – Revised; r = Spearman's correlation coefficient; p = p-value; * = p ≤ 0,05; Spearman's correlation.

Table 2 - Linear regression analysis of narrative discourse metrics on cognitive performance (ACE-R).

	β	Standard error	t	p
Intercept	36.2845	7.392	4.908	<.001
Number of words	-0.0812	0.108	-0.752	0.461
Interaction units	5.9174	2.127	2.782	0.011*
Scenes	-0.4742	4.583	-0.103	0.919
Model Fit	R	0.771	R ²	0.595

Dependent variable: ACE-R = Addenbrooke's Cognitive Examination – Revised; β = Regression Coefficient; t = statistics t; p = p-value; * = p ≤ 0,05; Linear regression models.

Table 3: Results of the exploratory factor analysis for Factor 1.

	Factor 1	Uniqueness	MSA (KMO)
Global factor score			0.489
Number of words	0.0657	0.99568	0.196
Interaction units	0.9995	0.00105	0.494
Scenes	0.8705	0.24230	0.494
Eigenvalue	1.76	% of total variance	% cumulative variance
		58.7	58.7
Bartlett's Test of Sphericity	χ ² = 32.3		gl = 3 p = <0.001

ACE-R = Addenbrooke's Cognitive Examination – Revised; MSA = Measure of Sampling Adequacy; KMO = Kaiser-Meyer-Olkin test; Extraction was performed using the minimum residue method with oblimin rotation; Bartlett's Test of Sphericity. Factor loadings ≥ 0.30 are considered meaningful.

CONCLUSIONS

- The results indicate that microparameters of narrative discourse, especially information units, are associated with cognitive performance, while quantitative measures, such as word count, were not informative.
- These findings suggest that the organization and complexity of discourse reflect underlying cognitive processes more than its verbal length.
- Narrative disorganization may represent an early marker of cognitive decline in AD.