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Early identification of subtle cognitive-linguistic changes using discourse analysis scale: A pilot study in mild cognitive impairment

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Introduction: Indistinct changes in communicative abilities can be noticed before any evident signs in individuals with Mild Cognitive Impairment (MCI). These changes are portrayed in linguistic features linked with a gradual reduction in cognitive aspects.

Need for the study: Studies have been conducted to understand such changes, but only a handful is available to tap the subtle decline in cognitive-linguistic abilities. It is assumed that a decrease in discourse performance is a reflection of the decline in components of Executive Function (EF). However, the evidence is limited.

Aims: The purpose of the study was to investigate if Complex Discourse Production (CDP) can differentiate between MCI and neurotypical adults. The study also aimed to understand the association between CDP and EF.

Methods and Procedures: Five adults with MCI and five individuals with normal cognitive functioning were tested using Montreal Cognitive Assessment (MoCA) to confirm the diagnosis of MCI. The experimental task for all the participants was carried out in two phases: (1) CDP tasks involving conversation, narration and picture description; (2) verbal fluency tasks and design fluency tests using Delis-Kaplan Executive Functions Scale (D-KEFS). The discourse samples were assessed qualitatively using the Discourse Analysis Scale (DAS).

Outcomes and Results: Poor performance of the MCI group on all the genres of discourse confirmed that CDP can differentiate between MCI and neurotypical adults. The neurotypical individuals outperformed the MCI group on EF tasks as well, affirming the association between CDP and EF. CDP requires similar EF abilities, particularly cognitive flexibility and planning. Cognitive flexibility has been explicitly important

for divergent thinking that is essential to produce a rich quality discourse. Although these mechanisms are not directly related to the language system, any disturbance in EF will be reflected in the performance of linguistic tasks, including CDP.

Conclusions: CDP can be an effective tool to detect the early cognitive-linguistic changes in MCI. The simplicity of CDP tasks makes it an effortless tool to be used in everyday clinical situations. Identifying such changes can, in turn, aid in the early intervention of individuals who progress into probable Alzheimer's disease (AD). Also, the simplicity of CDP tasks makes it an effortless tool to be used in everyday clinical situations.

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Biography

Pooja Chandrashekar completed her Master's degree in Speech-language Pathology at the All India Institute of Speech and Hearing, India. She is currently pursuing her Doctoral Degree in Speech-language Pathology. Her research focuses on normal and abnormal aging, dementia and cognitive communication disorders.

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