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Relevance of Addressing Non-Verbal Cognition in Aphasia

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Abstract

Cognition and Language are interrelated domains. In fact, the relationship between these two domains has been researched by prominent researchers over the years. Aphasia is a language disorder with deficits in comprehension and expression and the severity of aphasia can vary across the variants and the cognitive deficits in persons with aphasia are found to be proportionate with the severity of aphasia and limited attention was devoted towards the addressing cognitive issues in Aphasia. The brief communication focusses on relating the verbal linguistic deficits and non-verbal cognitive deficits in Aphasia

Keywords: Cognition, Executive function, Inter-dependency, concurrence, intervention

Introduction

Aphasia is an acquired language disorder affecting comprehension and/or production of language. The different components of language ranging from sound system of language; phonology to syntax [1]. Aphasia manifests in different variants and severity levels. Dichotomously aphasia can be classified into fluent and non fluent variants. The hallmark feature of non-fluent aphasia is that the production would be affected to a greater extent while the reception of language is relatively intact, while comprehension is markedly affected in fluent aphasia. It is often believed that cognition is unaffected in persons with aphasia regardless of the type of aphasia. However, proponents addressing this issue claim that it is non-verbal cognition that is relatively spared and the aspects of cognition showing dependency on language (ex-reasoning can be affected).

In order to understand this issue in depth it becomes important to understand the fundamentals related to cognition. Bayles (2001) stated that “Cognition appears to be what we know and the processes that enables us to acquire and manipulate information”. Cognition refers to a multitude of domains such as attention, memory, thinking and reasoning. The term executive function refers to a range of activities involving

different aspects of cognition for example cognitive flexibility is an executive function which would require sustained attention, monitoring hence the cognitive domains can be exercised in combination for carrying out activities pertaining to executive functions

Cognition encompasses five main areas: attention, memory, executive functions, language, and visuo-spatial skills. Cognitive impairments can affect language processing, the ability to learn new verbal information, and overall communication effectiveness. Additionally, individuals with aphasia may experience attention issues, reduced capacity for focus, challenges in cognitive flexibility and self-regulation, difficulties with working memory, and various types of visuo-spatial impairments, which can range in severity and may include visual field cuts or inattention. [2].

The relation between the linguistic abilities and other cognitive domains of people with aphasia is not well understood. With changing time, Aphasia is considered as a 'Cognitive-Linguistic Disorder' upon the realization of importance of all cognitive domains in the assessment and intervention of the same. The severity of aphasia and the severity of cognitive impairments are found to be directly proportional. Going with this claim, persons with global aphasia are bound to have the greatest cognitive deficits [3]. The quantum of cognitive deficits can further vary in Non-fluent and Fluent Aphasia [4]. Individuals with aphasia experience damage to the white matter microstructures, which affects their spatial perception and motor skills. A study conducted by Seniów et al. (2009) [5]. aimed to investigate the relationship between post-stroke aphasia and deficits in visuo-spatial working memory and abstract reasoning, as well as the impact of these deficits on language recovery. The researchers found that improvements in naming and comprehension—key components of effective communication—were associated with the functioning of visuospatial working memory.

In the research conducted by Hachioui et al in 2014 [6], it was found that patients with ongoing aphasia had lower scores in cognitive areas, experienced poorer functional outcomes, and were more prone to depression than those who had recovered from aphasia. While they performed well on simple tasks like word-picture matching, they struggled with more complex associative picture-matching tasks [7].

Post-stroke rehabilitation for aphasia requires engaging all of the patient's cognitive, executive, and emotional abilities. Deficits in any of these areas can hinder not only the recovery of language skills but also the patient's ability to compensate for their disability and regain overall independence.[8]. It simplifies treatment planning for clinicians to maintain a connection between linguistic and non-linguistic cognitive abilities. Addressing non-verbal cognitive skills, such as attention and executive function, in individuals with aphasia—even those many years post-onset—can lead to significant improvements in these areas and enhance

the effectiveness of conversational communication. [9]

Persons with aphasia have a compromised quality of life may be greatly impacted by nonverbal cognitive deficiencies, which should not be disregarded as potentially relevant predictors [10]. The cognitive deficits is not assessed explicitly in persons with aphasia and is often extrapolated based on the severity of linguistic deficits, however this notion is changing over time and it becomes important to assess non-verbal cognition in aphasia for an effective intervention.

Conclusion

Standard non-linguistic cognitive examination is recommended in persons with aphasia. Brain damage leading to aphasia can also affect non-verbal cognitive functions, and these deficits in non-verbal cognition may play a role in the recovery from aphasia and the success of communication therapies. Hence it becomes important to address the cognitive deficits in persons with aphasia

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