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A Study Examining the Pragmatic Skills in Individuals with Subcortical Aphasia

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Introduction

The Pragmatics was brought in to the field of speech language pathology by Elizabeth Bates (1976), characterised as "the principles guiding the use of language in context". Pragmatics is the proper understanding of intentions through the right use of language in a range of social contexts [1]. It connects linguistic knowledge to communication abilities. According to Leech (1983), pragmatics differs from grammar in that it is evaluative and goal-directed. In other words, pragmatic language is dependent on unique context and implicit norms. As a result, pragmatic language issues are more difficult to discover [2]. Pragmatic impairment can be caused by inherited or acquired diseases. The most common acquired condition is caused by neurological causes with varying aetiologies, such as right cerebrovascular accidents, traumatic brain injury, brain tumour, dementia, neurodegeneration, Left Hemisphere damage (LHD), Right Hemisphere damage (RHD), Traumatic Brain Injury (TBI), schizophrenia, and neurodegenerative disorders such as Parkinson's disease, Motor Neuron disease, Multiple Sclerosis, and others [3].

Numerous researchers have sought to establish a link between brain lesions and pragmatic deficits. Chapman and colleagues conducted one of the first studies on adult pragmatics (1997). They examined people with fluent aphasics' grasp of proverbs in isolation as well as phrases. The findings revealed that aphasics could interpret the meaning of the proverb on their own [4]. They could not, however, choose an acceptable pronoun from a closed set if it was provided in phrases. Another research was conducted by Coelho and Flewellyn (2003), who concluded that despite improvements in microlinguistics, anomic aphasics' global and local coherence did not show significant gain [5]. According to Eviatar and Just (2006), tasks such as reasoning, idioms, metaphors, and sarcasm stimulated the left inferior frontal gyrus and bilateral inferior temporal cortex. Surprisingly, during sarcastic utterances, the right superior and middle temporal gyri were substantially active [6]. Similarly, Booth, Wood, DongLu, Houk, and TaliBitan (2007) used dynamic causal modelling to examine the fMRI data during a rhyming judgement task in adults. According to the photographs, the cerebellum has reciprocal connections with both the left inferior frontal gyrus and the left lateral temporal cortex, but the putamen has only unidirectional connections into the aforementioned brain areas [7]. Because pragmatics resides on a higher plane of mental activity, there is a strong relationship between pragmatics and cognition. Processing pragmatics necessitates not only fundamental cognitive skills such as attention, focus, perception, short term memory, and so on, but also the addition of metacognitive components such as judgement, reasoning, and analysis. As a result, it may be inferred that cognitive impairment might result in pragmatic dysfunction, so impeding communication, including voice, language, gestures, eye contact, hearing, and attention, which in turn implicates cognitive processing [8]. The vast majority of these investigations concentrated on brain involvement in pragmatic abilities. Nonetheless, it should be highlighted that subcortical participation in the identical setting has yet to be thoroughly investigated [9]. As a result, our research attempts to investigate the role of subcortical abilities in pragmatics in Malayalam. Malayalam is a complicated Dravidian language used in India's southernmost state, Kerala. It is considered one of India's classical languages. It is comparable to English in that it follows Grice's pragmatic principles (co-operative principle, politeness principle, and irony principle). Malayalam employs person, location, and temporal deixis, as well as emphatic and social deixis [10]. Subject, Purpose, Abstraction, and Visual/Gestural signals were the pragmatic components studied in this study. The term 'topic' referred to the introduction, maintenance, changing, and overall substance of a presented component. 'Purpose' duties included greeting, requesting, informing, verbal reasoning, and so on. Sarcasm, critiques, idioms, and other figurative language were utilised in Abstraction, whereas visual/Gestural signals referred to proper eye contact, gestures, and other nonverbal indications [11]. The research comprised thirty people with subcortical aphasia ranging in age from 30 to 70. General history information was used to make diagnoses. Medical records and neuro imaging data from each individual were checked to establish the presence of a subcortical lesion without any cortical involvement or atrophic alterations. The Western Aphasia Battery in Malayalam (Philip,1992) was used to confirm the presence of aphasia. Our research was carried out between six months and one year after the beginning of a stroke. Participants in the research were educated right handers (minimum of 10th grade) with normal/corrected eyesight and hearing who could read and write Malayalam and had no history of traumatic brain damage or previous psychiatric disorders. Raymond's Pragmatic Skills Survey was used to create the exam content. The current evaluation technique includes four subtests: Subject, Purpose, Abstraction, and Visual/Gestural clues. Three Speech Language Pathologists evaluated the appropriateness of content by selecting 15 items from each subtest. A three-point scale was utilised to assign ratings: extremely appropriate, appropriate, and inappropriate. Each subtest received ten very acceptable items (appendix II). For the visual description job, the standardised image The cookie theft was chosen, which displays several real-life scenarios (appendix I). The subject of free chat included family, employment, interests, and so on [12].

Discussion

The following factors may help to explain participant performance. The website's domain Abstraction necessitates the activation of metacognitive abilities, which are required for skills like as reasoning,

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idioms, metaphors, sarcasm, and so on. Working memory and executive processes are assumed to be controlled by the prefrontal cortex (O'Reilly and Frank, 2006). These functions are shared by the inferior frontal gyrus and the bilateral inferior temporal cortex. Subcortical systems such as the basal ganglia and amygdala have strong connections with the frontal and temporal lobes. The basal ganglia, thalamus, capsuloganglionic area, and corona radiate of the participants were all damaged. As a result, any disturbance to cortico subcortical networks might have an impact on the participants' pragmatic abilities. The qualities evaluated in the domain Purpose were greeting, requesting, informing, regulating, expressing, uncommon pauses, overlapping, verbal reasoning, demanding, and the existence of hesitations. All of these characteristics were shown to be impacted. This may be explained by the fact that cognitive processes are involved in qualities such as regulating, verbal reasoning, and demanding.

Conclusion

Post Hoc Bonferroni pairwise comparisons were used to assess pragmatic ability in people with subcortical aphasia. According to the findings, general pragmatic abilities were impacted. Abstraction was the most affected domain, followed by Purpose, Visual/Gestural cues, and Subject. To understand abstraction, one must actively employ the complete mechanisation of metacognitive-linguistic talents. It is commonly known that the prefrontal cortex is crucial in dealing with these talents. Nonetheless, the current investigation confirmed that the subcortex plays an active role in these areas because to the strong centrifugal connections between cortical and subcortical regions. The lower performance in the domains Purpose and Visual/Gestural cues in the current study might be attributed to vascular changes of subcortical regions, leading in disconnection of the fronto-striatal thalamo cortical loop. Better scores in the domain Theme may be related to less taxing cognitive abilities as compared to other domains. Another element that might be ascribed to this trait is a lack of verbal competence, which leads to a reluctance to communicate. Participants' deficits in structuration and organisation in the conceptual association influenced feature revision and theme organisation. As a result, the recent discovery sheds new light on the connection between pragmatics and cognition. Areas requiring higher cognitive capabilities exhibit significant impairment, whereas those requiring the least cognitive skills perform better.

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Conflict of Interests

Author declares no conflict of interest.

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