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Analysis of Pragmatic Abilities in Subcortical Aphasia

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and temporal deixis as well as their emphatic and social counterparts [10].

Subcomponents of pragmatics taken up for our study were - Topic, Purpose, Abstraction and Visual/Gestural cues. 'Topic' was mainly concerned with introduction, maintenance, shi ing and overall content of a presented constituent. 'Purpose' included tasks like greeting, requesting, informing, verbal reasoning etc. 'Abstraction' used sarcasm, criticisms, indioms and other gurative language meanwhile visual/Gestural cues pertained appropriate eye contact, gestures and other nonverbal cues [11].

Aim

To analyze the involvement of faculties of cognition in pragmatics for individuals with subcortical aphasia.

Materials and methods

irty participants with subcortical aphasia, age ranges from 30-

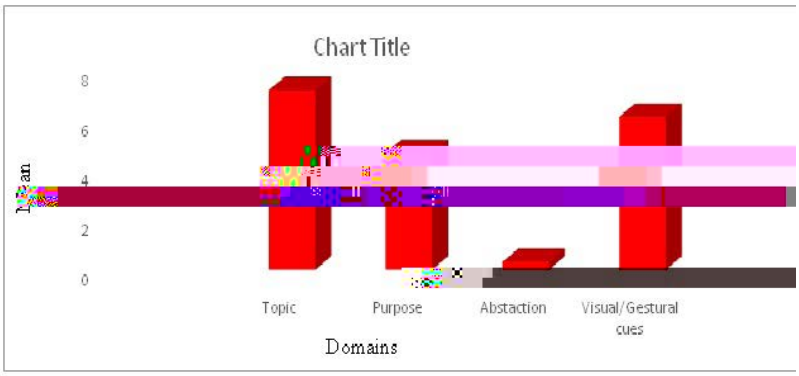

Figure 1: Graphical representation of comparison of Mean of each domain in subcortical aphasia.

e subcortical structures like basal ganglia, amygdala has robust connections with frontal lobe and temporal lobe. Participants had lesion in basal ganglia, thalamus, capsuloganglionic region and corona radiata. So any disruption to cortico subcortical pathways can a ect the pragmatic abilities of the participants.

In the domain Purpose, the features assessed were greeting, requesting, informing, regulating, expressing, unusual pauses, overlapping, verbal reasoning, demanding, presence of hesitations. All these features were found to be a ected. is can be explained by the fact that the features like regulating, verbal reasoning, demanding involves the cognitive processes. Vascular alterations of subcortical structures, resulting in disconnection of fronto-striatal-thalamocortical loop can cause de cit of behavioral regulation in sorting or planning tasks, maintenance in representation of working memory and impaired manipulation of internal representation of visuospatial stimuli and self-elaboration of internal strategies (Dubois & Pillon, 1996). Unusual pauses could be mainly due to their de cit in allocating attention and presence of hesitation could be due to overall limited linguistic abilities.

e participants demonstrated de cits in visual/gestural cues. It can be rationalized that in the current study it was found that emotion and appropriate association of gestures are interrelated phenomena. Emotion and facial expressions are regulated by multiple neural circuits including head of caudate nucleus and fronto striatal connections. So, damage to these circuits results in di culty in associating appropriate gestures and facial expressions. Apart from this, cognitive strategies are also essential component for using meaningful gestures and understanding symbolic messages.

Participants in the current study obtained better score in the domain Topic, could be due to the less taxing of cognitive abilities. is domain assessed the features like topic maintenance, cohesion, change of topic appropriately, content of topic, revision of messages, organization of themes and content. e participants were able to maintain the topic but unable to change topic appropriately. is inadequate shi ing of topic is a characteristic feature of right hemisphere dysfunction. In this study this feature could be possibly due to the strong bilateral connections of basal ganglia with contralateral frontal cortex through medial pathways of claustrum (Milardi et al, 2013). Another factor attributed to this feature could be limited linguistic abilities which lead to the reluctance for communication. e features revision and organization of themes were a ected because participants exhibited impairments in structuration and organization in the conceptual association. ese features require active participation of cognitive linguistic abilities which are a ected due to the impairment in fronto striatal circuit.

Conclusion

Pragmatic abilities in individuals with subcortical aphasia were analyzed using Post Hoc Bonferroni pair wise comparison. e ndings revealed that overall pragmatic abilities were a ected. Among all the domains, Abstraction was most a ected followed by Purpose, Visual/Gestural cues and Topic. To interpret abstraction, one would be required to actively exploit the full mechanization of metacognitive – linguistic abilities. It is widely accepted fact that prefrontal cortex plays the prime role in tackling these abilities. However, current study a rmed that subcortex has active participation in these areas through the robust centrifugal connections of cortical areas with subcortical regions.In the current study the decreased performance in the domains Purpose, Visual/Gestural cues could be due to vascular alterations of subcortical structures, resulting in disconnection of fronto-striatal-thalamocortical loop. Compared to other domains better scores in the domain Topic could be due to the less taxing of cognitive abilities. Another factor attributed to this feature could be a limited linguistic ability which leads to the reluctance for communication. e features revision and organization of themes were a ected because participants exhibited impairments in structuration and organization in the conceptual association. So this current nding provides a novel insight in to the interaction between pragmatics and cognition. e areas that require more cognitive skills show severe impairment and the areas that require least cognitive skills scores better

Ethical consideration

e study was approved by the Ethical counsel at Kerala University of Health sciences thereby ascertaining that all the subjects voluntarily participated in study and no harm were met by any of them whatsoever. Consent was obtained prior to conducting the study from each participant while ensuring full con dentiality and respectability of the thus obtained data.

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