Rehabilitation of Aphasia

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Stroke causes broad spectrum of functional problems, such as motor impairment, cognitive dysfunction and communication disorders (aphasia, apraxia of speech, dysarthria and cognitive communication disorder). Aphasia is characterized by an impairment of language modalities (speaking, listening, reading and writing). And it is not the result of a sensory or motor deficit, a general intellectual deficit, confusion, or a psychiatric disorder.(Hallowell, 2008) AOS and dysarthria are speech motor disorders caused by impaired motor planning and control and coordination of speech related structures, respectively.

Recently proposed International Classification of Functioning, Disability and Health (ICF) model provided new framework to describe health problems (i.e., aphasia); body structure and function, and activity and participation (Fig. 1). Traditionally language and speech impairments have been defined in terms of impairments of body function and structure (Simmons-Mackie & Kagan, 2007), such as difficulty in naming, producing correct and complex syntax, or difficulty in reading or writing single words in aphasia. However, people with aphasia have difficulties in general tasks and demand, self-care, domestic life, interpersonal interactions and relationships, and major life areas.(Simmons-Mackie & Kagan, 2007) Thus assessment and rehabilitation approaches of communication disorders not only include language and speech impairment (i.e., comprehensive aphasia test), but also limitation and restriction of daily activities and social participation due to communication problems.

Key Words: Stroke, Rehabilitation, Recovery, Aphasia

Rehabilitation strategies for communication disorders should consider two complementary approaches; restoration of impaired language and speech function, and maximizing quality of life (QOL) (Kagan et al., 2008). To facilitate recovery of impaired language and speech function, neurorehabilitation principles derived from animal and functional neuroimaging studies, such as early initiation, massed practice (intensive aphasia therapy such as constraint induced aphasia therapy (Puvermuller et al., 2001) and lengthy therapy, are also beneficial. Also, micro (i.e., neurotransmitter) and macro (i.e., bi-hemispheric network) environment change dynamically subsequent to brain injury, pharmacotherapy (i.e., cholinesterase inhibitors, memantine and SSRIs) and brain modulation techniques (i.e., rTMS and tDCS) combined with behavioral therapy may be promising option as an add-on approach. To improve activity and participation, it is important to collect information about the patient's daily communication skill and its use with others, physical activities, social contact, environmental factors (facilitator and barrier of communication) and emotional status (i.e., depression). Based on this information, communication rehabilitation should be tailored to an individual with communication disorder for maximizing QOL. (Fig. 2)

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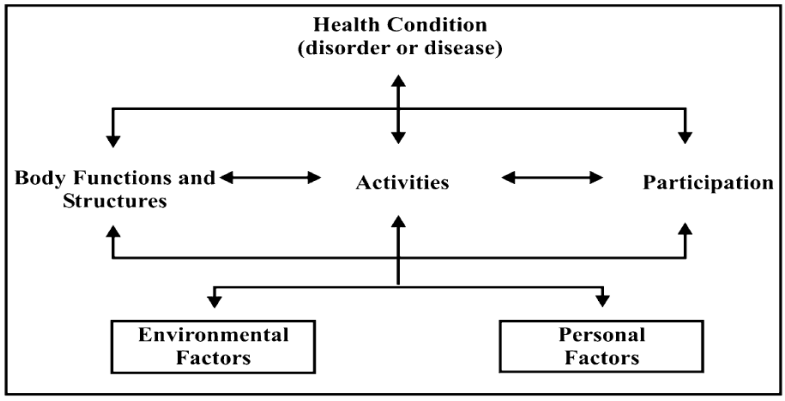

Figure 1. ICF schematic Reprinted with permission from: the International Classification of Functioning, Disability and Health (ICF), World Health Organization, 2001.

Figure 1. ICF (International Classification of Functioning, Disability and Health) model proposed by World Health Organization in 2001

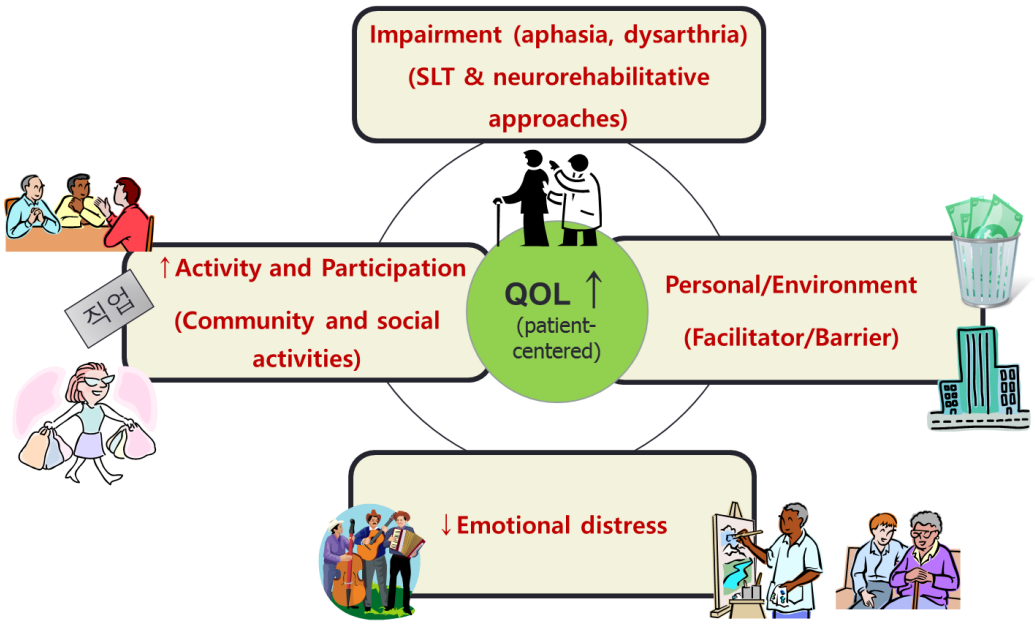

Figure 2. Comprehensive and integrative approaches for aphasia

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