Chapter 17
The First Attempt of Intensive Approaches in Cognitive Rehabilitation in Clients with Severe Traumatic Brain Injury

Masako Fujii
Nonprofit Organization TBI Rehabilitation Center, Japan

ABSTRACT
Cognitive rehabilitation (CR) was undertaken by two clients, A and B, using pen and paper method by an exclusive and intensive approach. Client A with very severe TBI showed improved attention and memory deficits and after undergoing a step-by-step trial, he finally landed a satisfactory job and maintained it, with the support of a large organization. Client B underwent CR with considerable effort by himself and attained a normal cognitive level but was still half way to the satisfactory social integration owing to an insufficient support system. Through the long process undergone by the two clients, it was suggested that environmental factors (support system) are extremely important for a satisfactory social life in severe TBI clients, together with the recovery of cognitive functions by CR.

INTRODUCTION
Traumatic brain injury (TBI) shows unique problems as consequences of neuropsychological and cognitive sequelae. The most common causes of TBI are traffic

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accidents, falls, or sports/recreational accidents. The cognitive, behavioral and emotional changes in TBI include deficits of attention, speed of information processing, memory, planning and problem-solving, abstract thinking, initiative, flexibility, and control and regulation of behavioral and thought processes, egocentricity, changes in affect, and lack of self-awareness (Ponsford, 1995 p.27).

In a preliminary report of a recent official five-year model project for supporting persons with higher brain dysfunction including TBI by The Japanese Government (Ministry of Health, Labour and Welfare) the consequences with the specific symptoms of the dysfunction were defined. These consequences were reported to be deficits of attention, memory, executive functions, and/or social behavioral disturbances in the post-acute phase. It is considered that the deficits are typically expressed after TBI. Of the four dysfunctions the former three deficits of attention, memory, and executive functions are the most common deficits in TBI and they were determined as the most important targets of our CR. The social behavioral disturbances are considered to arise sometimes from certain dysfunction of the executive functions and more related to emotional disturbances than to cognitive deficit. With the aim to restore the three cognitive functions, our CR was started and continued using workbooks and dictation tasks in a daily intensive training for creating brain reorganization, as demonstrated with the stroke model (Taub et al., 2002).

The most challenging and complex issues regarding TBI clients together with the restoration of cognitive functions are how to return to work or how to find and maintain a new suitable work for TBI clients with an altered personality and/or with decreased cognitive abilities. Recently, factors that allow TBI clients to return to work have been argued more than before, indicating many problems in post-acute phase of TBI. Such arguments were carried out in the broad domain, for example, in relation to early neuropsychological functioning and severity (Machamer et al., 2005), behavioral aspects (McCrimmon and Oddy, 2006), differences in Neurobehavioral Rating Scale (Franulic et al., 2004), interventions in behavior and disability (Winkler et al., 2006) or injury severity and self-awareness on TBI deficits (Shames et al. 2007). Problems on returning to work are being recently discussed in Japan, but CR as the basic remediation of brain function as a background factor for returning to work has been disregarded because CR requires several years, sometimes as a life-long CR. During CR client’s considerable efforts is essential for cognitive recovery and CR often requires great support from the environment in the broad sense, such as significant relations including the family or teachers. We have developed CR original programs simply on the basis of the concept that the more the brain is trained, the better it is activated, thus reorganizing previous and present cognitive functions in the prefrontal and lateral cortices, which are mainly affected by brunt head trauma caused by the traffic accidents or falls. Furthermore, it was also developed, taking into consideration that during CR, the contralateral
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