Chapter 18

Further Directions in Cognitive Rehabilitation in Community- and Home-based Daily Trainings in Clients with Severe Traumatic Brain Injury

Masako Fujii
Nonprofit Organization TBI Rehabilitation Center, Japan

ABSTRACT

Community- and home-based daily intense cognitive rehabilitation (CR) of traumatic brain injury (TBI) clients was initiated on the basis on knowledge mentioned in Chapter 17. In the CR, statistically significant changes were demonstrated in attention and reading abilities in sixteen severe TBI clients by one-year daily CR. Improvement of memory and executive functions required more training periods as shown later. The temporary minimum scores of four neuropsychological tests required for social reentry, namely, 50 in TEA, 15 in RBMT, 80 in BADS and 40 in JART, were determined as a goal of our CR. In addition to the drill (pen and paper) method mainly using workbooks, a more advanced program for CR, particularly in clients who reached the required level, was developed together with the clients.

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INTRODUCTION

The remediation of cognitive deficits caused by TBI is particularly important because TBI clients are often young people (men are approximately 3 times more than women), who have just reached their productive stage or their last educational level (high school or university). Therefore, it is indispensable for the clients to improve their impaired cognitive functions such as attention, memory, and executive functions for their work reentry. TBI clients desire a convenient center for a daily training CR program near the place of their residential area, which is particularly necessary because they are widely distributed in a community and TBI remediation takes much time, even if they practiced without missing their daily trainings. A center for CR will be therefore indispensable in every city or prefecture, but community-based intensive CR centers are currently lacking in Japan. Under such a condition, the need for an effective community-based CR model increases. With progress in motorization, more developmental approaches in community-based and cost-effective CR become indispensable for TBI clients (Rehabilitation of persons with TBI, 1999), generating positive effects that can supersede residential-, hospital- or comprehensive day-treatment-based rehabilitation.

Home-based daily CR is a practical idea in the local areas where a convenient CR center is not available as is the case in Japan. In general, the rehabilitation of clients with TBI has been discussed mainly in terms of behavioral aspects or family dynamics, and also cost effectiveness as compared with residential- and hospital-based rehabilitation (Wood et al., 1999). Although there is some effort in hospital-based comprehensive rehabilitation in Japan (Hashimoto et al., 2006), it does not relate to long-term CR, which results in brain reorganization. Generally, CR as a part of daily activities may be ideal. The future establishment of local- and community-based CR center will make it easy to provide permanent services to local population cost-effectively (Oddy and McMillan, 2001). This process in our center may be supported by continuation of self-transcending process of knowledge creation (Nonaka and Takeuchi, 1995) for a better quality of life (QOL) in TBI clients. In addition to the psychosocial aspect, the concept of our daily intensive CR also agrees closely with the recent paradigm shift in neurorehabilitation to form reorganized cortical system for a permanent remediation of cortical functions, as mentioned in chapter 17. According to the concept, our CR is aimed to create the reorganization in the prefrontal and lateral cortical association areas although the anatomical demonstration of the cortical reorganization may remain difficult.

The CR of TBI clients has already started in Europe and USA but its outcomes are not always consistent (Pace et al., 1999; Boman et al., 2004) due to different rehabilitation methodologies and concerns related to TBI remediation. We considered that the CR of TBI clients was most effective in the case of exclusive cognitive daily
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