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Motor Imagery in Facial Palsy Rehabilitation

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Commentray

Intentional facial expression of emotion named facial mimic is critical to healthy social interactions. Psychological and functional implications of the facial paralysis present a devastating management problem to patients afflicted because their face have an important challenge of facial muscles that are fundamental also for affective communication [1]. Therefore, as suggested in the manuscript by Paolucci T, et al. [2], regarding the recovery of the secondary forms of the facial palsy (FNP) as after surgery for acoustic neuroma, this aspect has to be taken into consideration within the rehabilitation process, making use of a neurocognitive rehabilitative approaches useful through the motor imagery (MI) and mirror therapy (MT) exercises [3,4]. The purpose of this research was to determine the effects of a neurocognitive rehabilitative approach through MT and MI, integrated into the traditional rehabilitative method with mime therapy and a myofascial approach.

Moreover, the psychological support is another fundamental aspect in the rehabilitation process respect to facial palsy that also improves the patient's compliance during the treatment discussed in the article: patients in both groups participate in 4-6 psychological counseling sessions during the rehabilitative intervention to aid in its emotional and communicative aspects. Using the MI in the rehabilitation of FNP the exercise becomes "*knowledge and perception*" for the patient with an "*emotional meaning*" and not simply an action. Furthermore, the MI allows that the rehabilitation exercise was carried out working on the anticipation of the movement and on the comparison after its execution in order to recover the "*damaged function*" not only in its entirety but also with respect to the fragmentation of the fine movement. Each motor gesture can be decomposed with respect to the characteristics of intensity and time of activation, speed of execution and meaning, containing in itself both quantitative and, above all, qualitative aspects. The fragmentation lets to program a variable and adaptable action with the context by the patient to re-enact a bridge between perception and movement considering the expectations and the emotional intentions. In fact, MI intervention depend on the cognitive processes that are activated (attention, perception, memory, imagery, language, learning skills) and how they become so and the association with MT helps to greatly refine the processes of assimilation and accommodation of the movement to be recovered: if the facial image is altered, our perception is altered and the its perception is conditioned by the image.

Then, MI could be an effective instrument against restoring the somesthesic channel suppressed for the palsy and thus re-establishing the coherency of afferences to the central level (CNS). The evocation of a correct MI would permit a greater coherence in the body self, for the Melzak theory [5,6].

An important aspect of this neurocognitive rehabilitative proposal on FNP through MI and MT was the complete absence of the development during and after rehabilitative program of dyskinesia and synkinesis in facial mimic which often requires facial plastic surgery or selective neurectomy [7].

The main points of this integrative rehabilitation treatment in the FNP take into account a progressive, individualized and non-intensive protocol with close medical checks over time. Furthermore, it is important, as soon as the patient is ready, to offer an homemade exercises through the use of an illustrated booklet, which is always explained and performed first with the physiotherapist. Finally, for the success of the

rehabilitation intervention, it is important that the physiotherapist must have a specific experience in neurocognitive rehabilitation respect to the FNP.

The integrative rehabilitative program with IM and MT together with myofascial maneuvers proved effective in improving facial physical function and they contained psycho-emotional distress and improved quality of life that is also linked to emotional and communicative aspects of mimic expressions. It is important to emphasize how, especially in the early stages of the treatment and during the first rehabilitative period, to avoid synkinesis, the exercise respect to the myofascial facial maneuvers is performed passively, and the patient is not required to recruit any muscles. Only later, and always preventing synkinesis, is the patient required to actively recruit the paretic muscles. It would be desirable in the future studies to consider these elements to investigate aspects of empathy and facial expression in patients with FNP because the ability of patients with unilateral facial paralysis to recognize and appropriately judge facial expressions and perceive the judgments of others remains underexplored field.

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