



EFFECT OF OCCUPATIONAL THERAPY BASED INTERVENTION TO IMPROVE FACIAL FUNCTIONS, QUALITY OF LIFE AND REDUCE DEPRESSION IN A YOUNG MALE WITH BELL'S PALSY

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Abstract. Bell's palsy (BP) is a disorder that affects nerves and muscles of the face causing paralysis or the dropping of one side of the face. Bell's palsy is the side effect of peripheral nerve palsy which causes low function of face and quality of life. For 7% of individuals with Bell's palsy, facial impairment is permanent. Bell's palsy when not treated on time will afflict some people with continued functional facial distortion that leads to diminished quality of life. **Objective:** This study was conducted to assess the effect of Occupational therapy based intervention, on facial function, quality of life and depression. Goals were to revive facial sensory-motor functions, functional abilities, reduce depression and improve Quality of Life. **Methods:** The case study patient was a 24-year-old Male who was diagnosed with Bells Palsy. Facial paralysis was assessed by clinical observations, the Facial Disability Index, Beck Depression Index and SF 36 Questionnaire. Occupational therapy based interventions were used with an intensive home activity and exercise programme. The data was recorded before the intervention and 4 weeks (5 sessions per week) after it. **Results:** Result reveals that there was significant improvement in Facial Functions, quality of life and decrease in depression. **Conclusion:** The study showed that Occupational therapy based intervention was effective in improving facial functions, quality of life and reducing depression. It seems that increasing awareness of patient and training early movements have important role in improvement.

Index Terms: Bell's Palsy, Facial Function, Quality of Life, Depression, Occupational Therapy, etc.

INTRODUCTION

The facial nerve is the seventh cranial nerve which gives facial expressions. Bell's palsy (BP) is a fairly common disorder that affects nerves and muscles in the face causing paralysis or the dropping of one side of the face. The disease was first described by Nicolaus Friedrich in 1797 and named after Sir Charles Bell who explained the disease. Viral infections are the most common reason for the development of BP as opposed to tumors, immune disease or drugs. It is considered a devastating disease as it harms many aspects of an individual, both physical and psychological. The annual incidence of Bell's palsy globally is approximately 11 to 40 cases per 100 000 people per year with peak incidence usually between the ages of 15 and 50 years.

Facial Paralysis has psychosocial impact, especially in cases where the paralysis extends for long duration. In an Occupational therapy study, author stated, 'Facial paralysis has been primarily considered a cosmetic inconvenience; but a Bell's palsy chat website implies that only someone who has had similar experience can comprehend the depth of emotion and the way intensely the vanity of the individual can be affected by facial paralysis (Bell's Palsy Information Sites, 2008). Rumsey et al. (2004) reported psychosocial difficulties may include the perception of an altered body image, secondary to visible facial disfigurement, leading to perceived social embarrassment. Bull and Rumsey

(1988) confer manifestations of social discomfort, and awkwardness results in avoidance behaviors. Social situations bring challenges of distorted speaking and countenance, leading to altered self-image (Butler, 2000).

Occupational therapy has been effective in reducing facial paralysis and improving functional outcomes. Beals (1951) did two case reports of success with home programmes using poetry recited with muscles on stretch in various head positions, resistive activities with candy suckers and pantomime of emotions. Cronin (1998) described neuromuscular facial retraining. A researcher did a study focusing on occupational therapy treatment to a functional dynamic taping protocol. Results showed that the taping was more effective.

To look into the psychological effects of facial disfigurement and its impact, there is a strong need for occupational therapists (OTs) to further explore their unique role and contribution to treatment of Bell's palsy. Hence, OTs have their focus on balance, daily functioning, spirituality, lifestyle, physical activity, stress, depression and sleep, which are all aspects of one's life.

METHODOLOGY

The case study patient was a 24-year-old Male who had no recovery from paralysis 05 weeks after onset. He was employed in a full time job in a Restaurant. His duties included facing the Customers daily with a 'perfect smile'. It was a sudden attack due to exposure to cold water one early morning (facial paralysis on the right) as evidenced by the facial swelling on the right. The Occupational Therapist got the referral for evaluation and treatment, due to the patient's history of depression and unresolved facial paralysis. The patient presented with right side paralysis, swelling and markedly decreased sensation, otalgia and irritating dry eye. He had difficulty smiling, pursing lips, snarling and frowning, and was able to drink, eat and speak with normal movements. He could only partially close the right upper and lower eyelids. A positive Bell reflex in the right eye was found to be consistent with eye closure difficulty. Facial posture revealed severe asymmetry with a right-sided droop. Post-paralysis, He rarely left home and was emotionally devastated. The initial occupational therapy evaluation was conducted 05 weeks following the onset of symptoms of facial paralysis.

The study used pre- and post-outcome measures. To assess self-reported disability, three questionnaires were administered at admission and 4 weeks later upon restoration of muscle strength and functional skills.

OUTCOME MEASURES USED.

- a) **The Facial Disability Index.** A 10-item self-report questionnaire. It assesses the severity of the physical disability and therefore the relationship between the impairment and psychosocial status occurring with facial nerve disorders. The FDI consists of **physical function** (items 1–5) and **social well-being** (items 6–10) subscales. The range of scores is from 0 (complete paralysis) to 100 (normal facial function) which means from irritability and withdrawal (impaired function) to social comfort, calmness and peacefulness (social/well-being). The FDI is taken into account a reliable, valid instrument.
- b) **The Beck Depression Inventory (BDI)** is employed worldwide as an indicator of the severity of depression that was normed on psychiatric patients (Beck, 1972). The BDI contains 21 items which link attitude and symptoms to depression. The test-retest reliability was above 0.90, the Spearman-Brown correlation for reliability at 0.96, and therefore the internal consistency of test items being 0.86.
- c) Additionally, quality of life was evaluated by **SF-36 questionnaire** that's valid and reliable. It is a 36 item scale, which measures eight domains of health status: physical functioning (10 items); physical role limitations (four items); bodily pain (two items); general health perceptions (five items); energy/vitality (four items); social functioning (two items); emotional role limitations (three items) and mental Health (five items). A scoring algorithm is employed to convert the raw scores into the eight dimensions listed above. The scores are transformed to range from zero where the respondent has the worst possible health to 100 where the respondent is within the absolute best health.

OCCUPATIONAL THERAPY BASED INTERVENTION

Occupational therapy based interventions were used with an intensive home activity and exercise programme. The information was recorded before the intervention and 4 weeks (5 sessions per week for a duration of 45 minutes each day) post intervention. The aim of the home based activity programme was to facilitate active movements and to revive habitual abilities like blowing, smiling, sniffing, flaring nostrils and frowning. Movement occurred quickly with the stimulation after reduction of swelling and pain.

The first goal was to scale back swelling of the face, in order that motor function might be achieved. On the first day, sessions began with the Occupational Therapist applying quick ice, vibration and tapping. Using these techniques repetitively, six to eight times daily, patient's facial pain and swelling was abated by the third day. After the reduction of pain and swelling, the patient was ready to perform muscle contractions with contract and hold techniques, use of antagonist muscle co-contractions, and practice of pucker, smile, frown, snarl and surprise facial expressions ahead of a mirror. The patient was taught an inventory of activities that became enjoyable games for his delight, to facilitate actions and motions. Activities included elevating eyebrows after brushing forehead, also elevating corner of lips like saying "E" cheek after brushing of affected side of face, respectively, scowling, closing slowly eyes, closing only one of eyes alternately, wrinkling and opening wings of nose, opening mouth and saying "A", pursing lips like saying "O", saying alternately "E", "A", "O", smiling with and without showing teeth, wind-upping cheeks with closed lips, pressing lips, and finally reading and speaking aloud.

These occupation-based activities were enjoyable to the patient, as they strengthened his facial motions. By the second week, the patient was ready to whistle gleefully. Every improvement was celebrated and reinforced by relations, building his enthusiasm with every gain. The patient and his relations were cooperative during the 4 week intensive multisensory stimulation home based activity

programme until his full recovery. The patient recovery may need taken longer, had it not been his belief, that the Occupational Therapist could help restore his functional ability. The Occupational Therapist communicated with the family on day to day to review the schedule and functional improvements. Photographs were taken a day to point out progress. The patient had approximately 80% return of function by the third week. He continued together with his home based activity programme and exercises for few more days, until he had regained full motor function. Also, consistent with this study there was a rise within the quality of life. a bit like Beurskens et al. acknowledged that mime therapy can decrease disability and increase quality of life in these patients. Taking all the findings mentioned under consideration, a rise within the ability of movement can improve quality of life.

The patients initial score on the FDI revealed physical function subscale scores = 11/100; social/well-being subscale scores = 12/100 indicated moderate difficulties on both subscales. The BDI score of 31 indicated severe depression. The SF-36 score of 21. By comparison, post-test scores after four weeks of treatment revealed FDI physical function subscale = 100 or full functioning, and social/well-being = 90 indicated no difficulties. Finally the score on the Beck Depression Scale was 1 indicating normal mood. Quality of Life also improved indicating perfect equilibrium between the physical (50%) and the mental (50%) components.

CONCLUSION

In total, the patient received four weeks of intervention, after which he experienced 100% return of sensory and motor function. Final post-test scoring on the Beck Depression Scale indicated normal mood. Scores on the FDI indicated no facial disability and a way of social comfort and well-being with the absence of paralysis. Also SF-36 scores showed improved QOL. Facial symmetry was restored, as evidenced by photos for comparison. Hence, there's a robust role for Occupational therapy in early treatment of Bell's palsy due to the extreme psychosocial distress related to facial paralysis. As Occupational Therapists, we must broaden our skills by collaborating with other practitioners to advance our field. This study suggests the necessity for Occupational Therapists to broaden their horizons to seem for solutions to problems that enhance functioning.

Acknowledgements The authors would like to thank the participant and all personal helping us with the data collection.

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