Function & Disability Journal
2021, Volume 4

Research Paper:

Effects of Mime Therapy With Sensory Exercises on Facial Symmetry, Strength, Functional Abilities, and the Recovery Rate in Bell's Palsy Patients

Siddharth S Mishra[1*], Mahvish Sayed[1]

1. MGM College of Physiotherapy, Navi Mumbai, Affiliated to Maharashtra University of Health Sciences MUHS Nasik, Maharashtra, India.

Article info:
Received: 17 Apr 2021
Accepted: 03 June 2021
Available Online: 01 Sep 2021

Funding

The paper was extracted from a research project of the First author at the MGM College of Physiotherapy, Navi Mumbai, Affiliated to Maharashtra University of Health Sciences MUHS Nasik, Maharashtra, India.

Conflict of interest

The authors declared no conflict of interests.

ABSTRACT

Background and Objectives: Bell palsy is the sudden lower motor neuron paralysis of the facial nerve, characterized by acute unilateral peripheral facial muscle weakness. Physiotherapy has been proven to be beneficial in the rehabilitation of patients with Bell palsy and is important to prevent permanent contractures of the paralyzed facial muscles. A physiotherapy technique includes electrical stimulation and mime therapy to help in restoring lost muscle functions. Also, sensory exercises include varied normality solutions administered. This study aimed to find the effects of mime therapy with sensory exercises on facial symmetry and functional abilities among Bell palsy patients.

Methods: A total number of 30 participants were recruited for an interventional study and conveniently assigned into three groups (n=10), where group A received electrical stimulation with facial exercises, group B received electrical stimulation with mime therapy, and group C received a combination of electrical stimulation, mime therapy, and sensory exercises. Each group received 18 sessions; each session was for 60 minutes per day, six days per week, for three weeks. Then, all the participants were assessed using the Sunnybrook facial grading system and the facial disability index.

Results: Intragroup analysis showed a significant difference within all three groups ($P<0.05$). Besides, the intergroup comparison showed maximum recovery in group C followed by groups B and A.

Conclusion: A combination of mime therapy and electrical stimulation along with sensory exercises provides the most beneficial intervention to improve facial function and reduce facial synkinesis in Bell palsy individuals. Hence, sensory exercises are recommended as an adjunct to electrical stimulation and mime therapy for the line of treatment for individuals with Bell palsy.

Keywords: Bell's palsy, Electrical stimulation, Sensory exercises, Mime therapy

Use your device to scan and read the article online

Cite this article as Mishra SS, Sayed M. Effects of Mime Therapy With Sensory Exercises on Facial Symmetry, Strength, Functional Abilities, and the Recovery Rate in Bell's Palsy Patients. Function and Disability Journal. 2021; 4:E35. http://dx.doi.org/10.32598/fdj.4.35

http://dx.doi.org/10.32598/fdj.4.35

***Corresponding Author:**
Siddharth S Mishra, PhD.
Address: *MGM College of Physiotherapy, Navi Mumbai, Affiliated to Maharashtra University of Health Sciences MUHS Nasik, Maharashtra, India.*
Tel: *+91 (887) 9948943*
E-mail: *siddharth24789@gmail.com*

What is "already known" in this topic:

Bell's palsy results from a malfunction of the facial nerve that controls facial muscles that majorly results in the inability to generate any facial expression.

What this article adds:

Using Mime Therapy and sensory exercise significantly influenced and improved facial nerve motor function in patients with Bell's Palsy.

Introduction

Bell palsy is a sudden lower motor neuron paralysis of the facial nerve and results in an asymmetry in the corner of the mouth, inability to close the eye, disappearance of the nasolabial fold, and loss of the wrinkling of the skin of the forehead on the same side [1]. The annual incidence of Bell palsy is 15 to 30 per 100 000 population with no annual variation [2]. Seasonal differences in the incidence were noted with fewer cases during summer [3]. In 2016, the incidence rate of Bell palsy was 107 per 100 000 population. It was slightly but not significantly higher among women and rural communities. Besides, the highest age-specific rate was 40 to 49 years of age. Unilateral facial palsy accounts for 60% to 70% of all peripheral nerve damage cases [4, 5].

The patients develop unilateral facial weakness, numbness or pain around the ear, eyelid closure resulting in dry eyes, reduction in the taste, and hypersensitivity to sound within three days. Symptoms typically peak from 1 to 2 weeks and then gradually resolve over three weeks to three months or more [6-8]. A comparative study proved that electrical stimulation is more effective in improving functional facial exercises, compared with hot packs [9]. Electrotherapeutic modalities include electrical stimulation, electromyography feedback, ultrasound, laser, and shortwave diathermy [10, 11]. Besides, mime therapy was created to help patients who experience limited or restricted facial movement or the loss of facial muscle control [12]. Mime therapy is a combination of mime and physiotherapy and aims to promote the symmetry of the face at rest and control synkinesis during movement [13]. Studies showed that mime therapy improved facial symmetry and functions more than conventional therapy and home exercise programs, in people with acute Bell palsy [12-15].

Various sensory stimuli like warm liquids help in relaxing the oral musculature, whereas sweet or sour stimuli stimulate salivary glands. According to the Rood approach, the varied intensity of stimuli can gauge to facilitate the Central Nervous System (CNS) response through special senses [16-18]. Gustatory stimuli refer to a chemical capability of activating taste cells. Several references have shown that different sensory stimuli like salt, lemon, coffee, etc activate gustatory stimuli that help in improving facial blood circulation [19].

Different taste sensory stimuli with specific concentrations can also cause different facial expressions in an individual. Our study approach focuses on the comparison of effectiveness between conventional therapy, mime therapy, and sensory reeducation. Studies related to a particular topic of interest have been negligible in India. There is a need for literature that provides us with evidence for certain interventions that lead to improvement in the facial symmetry, expressions, and response to stimuli post-facial nerve palsy. A small number of studies have been performed on these domains, hence, this study aims to examine the effectiveness of mime therapy with sensory exercises and conventional therapy on facial symmetry and functional abilities in Bell palsy patients.

Materials and Methods

Ethical approval was obtained for the interventional study from the institutional ethical review board committee (N-EC/2019/SC/04/69). Also, each participant signed a written informed consent before the commencement of the comparative experimental study.

The sample size with 10 people in each group was calculated using the G×Power software, keeping the confidence level of 95% and error of 5%. Initially, 78 participants were screened for Bell palsy condition from three tertiary care health setups, and 36 participants met the inclusion and exclusion criteria. However, six participants were denied due to the unavailability of a transport facil-

ity. Thus, 30 participants with Bell palsy were recruited from the outpatient and inpatient departments of two tertiary health care setups in Navi Mumbai, India. Participants were assigned into three treatment groups (n=10) using the simple random lottery method. At the treatment phase, group A received electrical stimulation with conventional therapy, group B received electrical stimulation with mime therapy, and group C received electrical stimulation with mime therapy and sensory exercises.

The inclusion criteria were the diagnosed acute cases of unilateral Bell palsy, the age range of 18 to 59 years, all genders, and intact taste sensation. Whereas the chronic Bell palsy duration of more than three months, upper motor neuron lesion facial palsy, dental metal prosthesis, and uncooperative participants were excluded.

Intervention

All the participants were assessed on days 1 and 18, using the Sunnybrook facial grading system and the facial disability index by a principal investigator who was blinded to the participant treatment allocation curve. The facial disability index included a self-reported questionnaire, whereas the Sunnybrook facial grading system was assessed by the principal investigator. Each session was held for 60 minutes per day, six days per week, for three weeks. Procedures were explained before the protocol and delivered by the second investigator. All three groups received electrical stimulation in common.

Group A participants received electrical stimulation with conventional therapy.

Electrical stimulation: All protective and precautionary measures were taken care of before electrical stimulation. Before starting electrical stimulation as treatment, we plotted the strength-duration curve, which helped us to decide on the stimulation intensity of the interrupted galvanic current. The conductive carbon-impregnated silicon rubber type of electrode with spreadable conductive jelly was applied over the cervical area (C7). Pen-electrode was used to stimulate the different motor points of facial muscles. After treatment, the gel was washed off from the electrode so that it was used for the next time [20-24]. The interrupted galvanic current was used at 100 ms of pulses duration, and intensity was increased to evoke muscle contraction; three sets of 30 minimal contractions were given [25]. The following muscles motor points were stimulated; frontalis, corrugator supercilii, orbicularis oculi, nasalis, risorius, orbicularis oris, the depressors of the lower lip, and the elevators of the upper lip. Then, conventional facial exercises were performed in front of a mirror and included (1) passive raising an eyebrow; (2) passively eyebrows to be bought closer to each other; (3) passive opening and closing the eyes; (4) passive mouth blowing movement; and (5) passive smiling for 10 repetitions, three times a day [6].

Group B participants received electrical stimulation with mime therapy. The electrical stimulation protocol remained the same. Mime therapy exercises were performed in front of a mirror. To begin with, the effleurage and kneading massage technique was applied over the entire face and neck daily, followed by the passive stretching exercise of the affected side. The last exercises included varied forms of expressions like surprise, sad, happy, anger, etc, which was followed by eye and lip closure exercises, lip movements on vocal with variations in amplitude and speed [13].

Group C participants received electrical stimulation with mime therapy and sensory exercises. Electrical stimulation and mime therapy protocol remained the same. To start with the sensory exercise, patients were instructed about the exercise like administration of few drops of prepared solution, and participants were free to react to it. Later, they were rinsed with water after every administration of the 0-solution. Three strong solutions were prepared to outburst the taste buds, including bitter (coffee), sour (lemon), and salty (common salt). The solution was administered using a dropper of 1 ml over the protruded tongue of patients. Patients have to taste and swallow and respond openly according to the solution administered. These exercises were given after the completion of mime therapy. All three solutions were administered randomly, and facial responses were noted. All three groups received 18 sessions of therapy protocol. Moreover, every third session group C received sensory exercise (a total of six sessions). Each session included the administration of three solutions in random order.

Outcome measures

Sunnybrook Facial Grading System (SFGS): Facial symmetry was measured using the 13-item SFGS. The system includes three components: (1) resting symmetry, (2) the symmetry of voluntary movements, and (3) synkinesis [13, 14]. The SFGS has high reliability and repeatability which is good to excellent [20, 21]. The variability of SFGS composite scores was the greatest and predominately seen during the voluntary movement of eyebrow-raising and lip-puckering [22].

Facial Disability Index (FDI): The FDI helps to measure the difficulties of the face in activities of daily living,

such as eating, drinking, and communicating. It represents the relationship between impairments, disability, and psychosocial status and also focuses on the disability of individuals with disorders of the facial motor system [26].

Statistical analysis

The obtained data were analyzed using the SPSS v. 24. First, the normality of the data was computed using the Shapiro-Wilk test. For normally distributed data, the paired t test was carried out and for data that did not follow a normal distribution, the Wilcoxon signed-rank test was used for analysis. The significance level was considered as 0.05.

Results

There were 30 Bell palsy patients, including 11 males and 19 females who were enrolled in the study. Besides, 17 patients had left side affected and 13 had right side affected; all patients completed 18 therapy sessions (Table 1).

The intragroup pre-post comparison of electrical stimulation with conventional therapy showed statistically significant improvements in FDI physical component (Mean±SD diff: 23.55±2.5; t=-6.28; and P=0.001), SFGS resting symmetry (Mean±SD diff: 6±3.76; t=3.67; and P=0.001), SFGS voluntary movement (Mean±SD diff: 43.8±6.65; t=10.84; P=0.05), and SFGS somposite score (Mean±SD diff: 51±8.8; t=10.16; and P=0.001) (Table 2).

The intragroup pre-post comparison of electrical stimulation with mime therapy showed statistically significant improvements in FDI physical component (Mean±SD diff: 25.3±5.48; t=-6.14; and P=0.001), FDI social component (Mean±SD diff: 1.2±1; t= -1.15; and P=0.02), SFGS resting symmetry (Mean±SD diff: 11±0.23; t=8.82; and P=0.001), SFGS voluntary movement (Mean±SD diff: 50.4±15.14; t=8.20; and P=0.05), and SFGS composite score (Mean±SD diff: 61.4±16.24; t=9.19; and P=0.001) (Table 3).

The intragroup pre-post comparison of electrical stimulation with mime therapy and sensory exercise showed statistically significant improvements in FDI physical component (Mean±SD diff: 24.5±2.9; t= -2.39; and P=0.04), FDI social component (Mean±SD diff: 5.6±3.69; t= -2.94; and P=0.01), SFGS resting symmetry (Mean±SD diff: 6.5±0.38; t=2.51, and P=0.03), SFGS voluntary movement (Mean±SD diff: 44±5.35; t=3.74, and P=0.001), and SFGS composite score (Mean±SD diff: 50.5±5.7; t=3.57; P=0.001) (Table 4).

Intergroup analysis showed statistically significant improvements between groups in FDI physical component (x=10.408 and P=0.005), FDI social component (F=10.015 and P=0.001), SFGS resting symmetry (F=2.36 and P=0.051), SFGS voluntary movement (F=13.49 and P=0.0001), and composite score (F=11.70 and P=0.0001) (Table 5).

Furthermore, post hoc tests showed a statistical difference among all three groups: group A (electrical stimulation with conventional therapy), group B (electrical stimulation with mime therapy), and group C (electrical stimulation with mime therapy and sensory exercise). Compared with other groups, group B showed a significant difference in FDI physical component, whereas group C showed a significant difference in the FDI social

Table 1. Demographic data of the patients

Variables		Group A[a]	Group B[b]	Group C[c]
Age, years (Mean±SD)		39.2±8.21	32.5±9.21	34.5±10.99
Duration, days (Mean±SD)		26.5±3.59	27.9±3.24	27.9±3.81
Gender (No.)	Male (11)	4	4	3
	Female (19)	6	6	7
	Total (30)	10	10	10
Clinical attribute: Affected side (No.)	Left (17)	3	6	8
	Right (13)	7	4	2
Total session completed (No.)		18	18	18

SD: Standard deviation;
[a] Group A: Electrical stimulation with conventional therapy; [b] Group B: Electrical stimulation with mime therapy; [c] Group C: Electrical stimulation with mime therapy and sensory exercise.

Table 2. Intragroup comparison of FDI and SFGS scores of patients in group A

Group A	Pre[a]	Post[a]	Mean Diff±SD	T	P
FDI: Physical component	78.75±19.44	102.30±16.84	23.55±2.5	-6.28	0.0001
FDI: Social component	46.80±13.20	47.60±17.32	0.8±4.12	-0.09	0.92
SFGS: Resting symmetry	14.00±2.10	8.00±5.86	6±3.76	3.67	0.0001
SFGS: Symmetry of voluntary movement	27.60±9.32	71.20±15.97	43.8±6.65	-10.84	0.0001
SFGS: Composite score	13.60±10.49	65.20±19.29	51±8.8	-10.16	0.0001

[a]The values are reported as Mean±SD.

Table 3. Intragroup comparison of FDI and SFGS scores of patients in Group B

Group B	Pre[a]	Post[a]	Mean Diff±SD	T	P
FDI: Physical component	75.90±14.15	101.20±8.67	25.3±5.48	-6.14	0.0001
FDI: Social component	37.60±3.86	38.80±4.23	1.2±1.0	-1.15	0.02
SFGS: Resting symmetry	12.50±3.53	86.10±11.58	11±0.23	8.82	0.0001
SFGS: Symmetry of voluntary movement	37.20±25.01	87.60±9.87	50.4±15.14	-8.20	0.0001
SFGS: Composite score	37.60±3.86	86.10±11.58	61.4±16.24	-9.19	0.0001

[a]The values are reported as Mean±SD.

Table 4. Intragroup comparison of FDI and SFGS scores of patients in group C

Group C	Pre[a]	Post[a]	Mean Diff±SD	T	P
FDI: Physical component	78.65±23.91	103.00±23.62	24.5±2.9	-2.39	0.04
FDI: Social component	35.60±6.38	41.20±2.69	5.6±3.69	-2.94	0.01
SFGS: Resting symmetry	10.50±4.97	4.00±4.59	6.5±0.38	2.51	0.03
SFGS: Symmetry of voluntary movement	36.40±21.61	80.40±16.26	44±5.35	-3.74	0.0001
SFGS: Composite score	25.90±25.80	76.40±20.01	50.5±5.7	-3.57	0.0001

[a]The values are reported as Mean±SD.

Table 5. Intergroup analysis on FDI and SFGS using ANOVA and Kruskal-Wallis Tests between group A, group B, and group C

Outcome Variables	Mean±SD	X/F	P
Difference FDI: Physical component	24.43±5.38	10.408[#]	0.0001
Difference FDI: Social component	2.53±0.99	10.015	0.0001
Difference SFGS: Resting symmetry	7.83±0.73	13.490	0.0001
Difference SFGS: Symmetry of voluntary movement	46.06±0.81	2.362	0.05
Difference SFGS: Composite score	54.3±4.17	11.700	0.0001

[#] X value.

component and all three domains of SFGS, compared with groups B and A (Table 6).

Discussion

The present study aimed to evaluate the effectiveness of mime therapy with conventional therapy and sensory exercises on facial symmetry and functional abilities among Bell palsy patients. The improvement in group A participants who received electrical stimulation with conventional therapy could be because whenever external electrical stimulus excites the axon at a given point between the motor neuron and the muscle, a pair of action potentials are produced and travel in both the orthodromic and antidromic directions producing muscle contraction, thereby, decreasing muscle atrophy and improving muscle force [27, 28]. Electrical stimulation with appropriate parameters causes metabolic and mechanical changes in the motor units of the muscles [29] and gives rise to muscle contractions by the depolarization of nerve fibers that influence muscle activation, the prevention of atrophy, and retraining. When a pathology of facial muscles exists, electrically induced excitation of the sensory fibers of the trigeminal nerve afferent fiber facilitates adaptation of denervated facial nerve motor fibers. Reinnervation through both trigeminal nerve adap-

Table 6. Intergroup comparison of FDI and SFGS using Post Hoc Test between group A, group B, and group C

Outcome Variables	Groups		Mean±SD	P
Difference FDI: Physical component	Group A	Group B	-9.21±11.81	0.05
		Group C	15.46±11.81	0.03
	Group B	Group C	24.67±11.81	0.04
Difference FDI: Social component	Group A	Group B	-0.20±0.54	0.02
		Group C	2.00±0.54	0.0001
	Group B	Group C	2.20±0.54	0.0001
Difference SFGS: Resting symmetry	Group A	Group B	1.00±0.58	0.02
		Group C	3.00±0.58	0.0001
	Group B	Group C	2.00±0.58	0.0001
Difference SFGS: Symmetry of voluntary movement	Group A	Group B	0.30±0.42	0.05
		Group C	1.00±0.42	0.04
	Group B	Group C	0.70±0.42	0.05
Difference SFGS: Composite score	Group A	Group B	-17.49±5.67	0.01
		Group C	9.56±5.67	0.02
	Group B	Group C	27.05±5.67	0.0001

tation and facial nerve adaptation increases the potential of the patient to generate more volitional muscle force and shorten motor conduction latency. A similar result was obtained by Targan et al. where long-term electrical stimulation showed good motor recovery and the improvement of clinical residuals in patients with unresolved facial nerve palsy.

Facial conventional exercises like smiling, frowning, etc are the passive faciliatory type of exercises that helps in regaining and restoring lost muscle function by performing all facial activities of daily living multiple times. The voluntary activation of facial muscles with passive facilitation when performed in front of a mirror improves facial muscles' function by the principle of feedback knowledge of performance and result. Similar results were obtained by Bulstrode et al. who stated that conventional exercise helps in improving facial symmetry and muscle function in chronic Bell palsy patients [30].

The improvement in group B participants who received mime therapy along with electrical stimulation could be because that mime therapy involves facial massage, stretching, and mime exercises, which are based on expressions like happy, sad, angry, surprise, etc, which are a part of an individual's daily routine with regards to facial activities. These exercises help in facial rehabilitation that illustrates neural plasticity of the facial neuromotor system where new roles are adopted by diminishing abnormal movement patterns and reestablishing symmetrical muscle activity control for intended facial actions [31]. Few studies indicate that mime therapy reduces facial asymmetry both at rest and during voluntary movements, thereby, reducing synkinesis [32]. Also, mime exercises are associated with emotional control that is interlinked with the activation of the thalamus, globus pallidus, and reticular system. Whenever these exercises are performed, they activate the reticular system that adds to the muscle control, thereby, reduce synkinesis [33]. Performing these facial exercises causes a constant increase in muscle tension followed by bilateral relaxation that improves facial circulation [12, 19] and also coordination between the two halves of the face, which enables them to display facial movements and emotions in a symmetrical form [12].

The improvement in group C patients who received sensory exercise along with mime therapy and electrical stimulation could be because of the application of the gustatory chemical stimulus. The quality of the solution activates taste receptors that activate brainstem gustatory reflex that assesses the hedonics values and results in facial motor coordinated contraction response. Common motor coordinated contraction responses seen were as follows: salty solution led to the uplift of the eyebrow, slight closure of eye, pursue of lips, and budging of cheeks. The sour solution caused the frowning of the eyebrow, tight closure of the eye, tight jaw muscles, and smacking of lips. Whereas the bitter solution led to the popping of eyes, tugging of the chin, and after swallowing widening on oral musculature with flat and protruded out tongue. Studies have shown that varied taste stimuli causing an increase in facial blood flow was controlled by the adrenergic vasoconstrictor nerve; this goes in hand with our study as flushing response appreciated when solutions were applied [34]. For example, bitter tea causes vasoconstriction in the nose, the mechanism of which is explained in terms of the nose's high quantities of arteriovenous anastomoses controlled by adrenergic vasoconstrictor nerves. Previous studies have also noted sympathetic vasoconstrictor activity in the forehead and cheek [35]. Besides, sour and salty stimuli could increase skin blood flow via the parasympathetic vasodilator reflex.

At the time of intergroup analysis, there was a significant improvement in group C, followed by group B and group A. This could be because electrical stimulation and its therapeutic effects remain the same for the three groups. In addition, the other two groups received mime therapy, which helped in restoring facial function and facial activities of daily living as it is associated with the emotional center of the central nervous system. To add on, group C also received sensory exercise that activated brainstem gustatory reflex resulting in reflexive facial motor coordinated response, that enhanced symmetrical facial expressions. Also, these exercises as based on taste receptor which is more associated with the emotional center of the brain, thereby, maximize facial movements and coordination. Our study did not consider a pharmacological treatment, which is a limitation of the study.

Conclusion

The present study concluded that all three treatment protocols showed significant improvement in facial muscle function and recovery. However, a combination of mime therapy and electrical stimulation along with sensory exercises showed maximum benefit to improve facial function and reduce facial synkinesis in Bell palsy individuals. Hence, sensory exercises are recommended as an adjunct to electrical stimulation and mime therapy for the line of treatment for individuals with Bell palsy.

Ethical Considerations

Compliance with ethical guidelines

Ethical approval was obtained from the Institutional Ethical Review Board Committee (N-EC/2019/SC/04/69). Also, each participant signed a written informed consent before the commencement of the comparative experimental study.

Funding

The paper was extracted from a research project of First author at the MGM College of Physiotherapy, Navi Mumbai, Affiliated to Maharashtra University of Health Sciences MUHS Nasik, Maharashtra, India.

Authors' contributions

Conceptualization, supervision, methodology: Siddharth S Mishra; Data collection, investigation, writing- original draft, funding acquisition, resources: Both authors.

Conflict of interest

The authors declared no conflict of interests.

Acknowledgments

We want to thank the Hospital Management Students' Interns, faculty, and patients for their support and cooperation in completing the study.

References

[1] Chaurasia BD. BD chaurasia's human anatomy: Regional and applied dissection and clinical. New Delhi: CBS Publishers and Distributors Pvt Ltd; 2013. https://books.google.com/books?id=Dop-oAEACAAJ&dq

[2] Yanagihara N. Incidence of Bell's palsy. Ann Otol Rhinol Laryngol Suppl. 1998; 137:3-4. [DOI:10.1177/00034894880976s301] [PMID]

[3] Myers EN, De Diego JI, Prim MP, Madero R, Gavil$aan J. Seasonal patterns of idiopathic facial paralysis: A 16-year study. Otolaryngol Head Neck Surg. 1999; 120(2):269-71. [DOI:10.1016/S0194-5998(99)70418-3] [PMID]

[4] Khedr EM, Fawi G, Abbas MAA, El-Fetoh NA, Zaki AF, Gamea A. Prevalance of Bell's palsy in Qena Governorate, Egypt. Neurol Res. 2016; 38(8):663-8. [DOI:10.1080/01616412.2016.1190121] [PMID]

[5] Adour KK, Byl FM, Hilsinger Jr RL, Kahn ZM, Sheldon MI. The true nature of Bell's palsy: Analysis of 1,000 consecutive patients. Laryngoscope. 1978; 88(5):787-801. [DOI:10.1002/lary.1978.88.5.787] [PMID]

[6] Ahmed A. When is facial paralysis Bell palsy? Current diagnosis and treatment. Cleve Clin J Med. 2005; 72(5):398-401. [PMID]

[7] Linder TE, Abdelkafy W, Cavero-Vanek S. The management of peripheral facial nerve palsy: "paresis" versus "paralysis" and sources of ambiguity in study designs. Otol Neurotol. 2010; 31(2):319-27. [DOI:10.1097/MAO.0b013e3181cabd90] [PMID]

[8] Tiemstra JD, Khatkhate N. Bell's palsy: Diagnosis and management. Am Fam Physician. 2007; 76(7):997-1002. https://www.aafp.org/afp/2007/1001/p997.html

[9] Tuncay F, Borman P, Taşer B, Ünlü I, Samim E. Role of electrical stimulation added to conventional therapy in patients with idiopathic facial (Bell) palsy. Am J Phys Med Rehabil. 2015; 94(3):222-8. [DOI:10.1097/PHM.0000000000000171] [PMID]

[10] Quinn R, Cramp F. The efficacy of electrotherapy for Bell's palsy: A systemic review. Phys Ther Rev. 2003; 8(3):151-64. [DOI:10.1179/108331903225002470]

[11] Li P, Qiu T, Qin C. Efficacy of acupuncture for Bell's palsy: A systematic review and meta-analysis of randomized controlled trials. PLoS One. 2015; 10(5):e0121880. [DOI:10.1371/journal.pone.0121880] [PMID] [PMCID]

[12] Beurskens CHG, Devriese PP, Van Heiningen I, Oostendorp RAB. The use of mime therapy as a rehabilitation method for patients with facial nerve paresis. Int J Ther Rehabil. 2004; 11(5):206-10. [DOI:10.12968/ijtr.2004.11.5.13340]

[13] Beurskens CHG, Heymans PG. Mime therapy improves facial symmetry in people with long-term facial nerve paresis: A randomised controlled trial. Aust J Physiother. 2006; 52(3):177-83. [DOI:10.1016/S0004-9514(06)70026-5] [PMID]

[14] Gopi M, Megha S, Vyas N. Comparison of the effect of mime therapy versus convetional therapy on the sunnybrook facial grading system in patients with acute bell's palsy. Int J Med Res Health Sci. 2014; 3(1):133-6. [DOI:10.5958/j.2319-5886.3.1.026]

[15] Beurskens CHG, Heymans PG. Positive effects of mime therapy on sequelae of facial paralysis: Stiffness, lip mobility, and social and physical aspects of facial disability. Otol Neurotol. 2003; 24(4):677-81. [DOI:10.1097/00129492-200307000-00024] [PMID]

[16] Guyton AC. Structure and function of the nervous system. Philadelphia: Saunders; 1972. https://books.google.com/books?id=2tJqAAAAMAAJ&dq

[17] Rood MS. Neurophysiological reactions as a basis for physical therapy. Phys Ther Rev. 1954; 34(9):444-9. [DOI:10.1093/ptj/34.9.444] [PMID]

[18] Rood M. The use of sensory receptors to activate, facilitate and inhibit motor response, automatic and somatic, in developmental sequence. In: Sattely C, editor. Approaches to the Treatment of Patients with Neuromuscular Dysfunction. Dubuque: Wm. C. Brown; 1962. https://books.google.com/books?id=NElGPAAACAAJ&dq

[19] Kashima H, Hamada Y, Hayashi N. Palatability of tastes is associated with facial circulatory responses. Chem Senses. 2014; 39(3):243-8. [DOI:10.1093/chemse/bjt074] [PMID]

[20] Hu WL, Ross B, Nedzelski J. Reliability of the Sunnybrook Facial Grading System by novice users. J Otolaryngol. 2001; 30(4):208-11. [PMID]

[21] Kanerva M, Poussa T, Pitkäranta A. Sunnybrook and house-brackmann facial grading system: Intrarater repeatability and inter-rater agreement. Otolaryngol Head Neck Surg. 2006; 135(6):865-71. [DOI:10.1016/j.otohns.2006.05.748] [PMID]

[22] Neely JG, Cherian NG, Dickerson CB, Nedzelski JM. Sunnybrook facial grading system: Reliability and criteria for grading. Laryngoscope. 2010; 120(5):1038-45. [DOI:10.1002/lary.20868] [PMID]

[23] Vanswearingen JM, Brach JS. The Facial Disability Index: Reliability and validity of a disability assessment instrument for disorders of the facial neuromuscular system. Phys Ther. 1996; 76(12):1288-89. [DOI:10.1093/ptj/76.12.1288] [PMID]

[24] Robertson V, Low JA, Ward A, Reed A. Electrotherapy explained principles and practice. 4th ed. New Delhi: Elsevier, A Division of Reed Elsevier India Pvt. Limited; 2008. https://books.google.com/books?id=b5W3tQEACAAJ&dq

[25] Mosforth J, Taverner D. Physiotherapy for Bell's palsy. Br Med J. 1958; 2(5097):675-7. [DOI:10.1136/bmj.2.5097.675] [PMID] [PMCID]

[26] Alakram P, Puckree T. Effects of electrical stimulation on House-Brackmann scores in early Bell's palsy. Physiother Theory Pract. 2010; 26(3):160-6. [DOI:10.3109/09593980902886339] [PMID]

[27] Ahmad SJ , Rather AH. A prospective study of physical therapy in facial nerve paralysis: Experience at a multispeciality hospital of Kashmir. JMS SKIMS. 2012; 15(2):145-8. [DOI:10.33883/jms.v15i2.151]

[28] Shafshak TS. The treatment of facial palsy from the point of view of physcial and rehabilitation medicine. Eura Medicophys. 2006; 42(1):41-7. [PMID]

[29] Farragher D, Kidd GL, Tallis R. Eutrophic electrical stimulation for Bell's palsy. Clin Rehabil. 1987; 1(4):265-71. [DOI:10.1177/026921558700100402]

[30] Targan RS, Alon G, Kay SL. Effect of long-term electrical stimulation on motor recovery and improvement of clinical residuals in patients with unresolved facial nerve palsy. Otolaryngol Head Neck Surg. 2000; 122(2):246-52. [DOI:10.1016/S0194-5998(00)70248-8] [PMID]

[31] Bulstrode NW, Harrison DH. The phenomenon of the late recovered Bell's palsy: Treatment options to improve facial symmetry. Plast Reconstr Surg. 2005; 115(6):1466-71. [DOI:10.1097/01.PRS.0000160265.18780.1C] [PMID]

[32] Kumar SBP, Thomas A. Efficacy of mime therapy and conventional therapy versus conventional therapy in improving the facial functions of Bell's Palsy Patients. IJSRR. 2020; 7(1):427-41. https://www.researchgate.net/publication/340732058

[33] Pourmomeny AA, Asadi S. Management of synkinesis and asymmetry in facial nerve palsy: A review article. Iran J Otorhinolaryngol. 2014; 26(4):251-6. [DOI:10.22038/IJORL.2014.3216] [PMID] [PMCID]

[34] Devriese PP. Rehabilitation of facial expression ("mime therapy"). Eur Arch Otorhinolaryngol. 1994; S42-3. [DOI:10.1007/978-3-642-85090-5_10] [PMID]

[35] Steiner JE, Glaser D. Taste-induced facial expressions in apes and humans. Hum Evol. 1995; 10:97-105. [DOI:10.1007/BF02437533]

Function & Disability Journal
2021, Volume 4

مقاله پژوهشی

بررسی تاثیر مایم تراپی و تمرینات حسی بر بهبودی عملکردی بیماران دارای فلج بلز

*سیداترا میشرا[1]، مهوش سید[1]

۱. گروه فیزیوتراپی، دانشگاه علوم بهداشتی ماهاراشترا، ماهاراشترا، هندوستان.

تاریخ دریافت: ۲۸ فروردین ۱۴۰۰
تاریخ پذیرش: ۱۳ خرداد ۱۴۰۰
تاریخ انتشار: ۱۰ شهریور ۱۴۰۰

چکیده

مقدمه فلج بلز یکی از انواع اختلالات نورون محرکه تحتانی در اعصاب فاشیال است که با ضعف یک‌طرفه و حاد عضلات صورت نشان داده می شود. فیزیوتراپی می‌تواند در پیشگیری از محدودیت حرکتی دایمی عضلات می‌تواند مفید باشد. هدف از مطالعه حاضر بررسی تاثیر مایم تراپی و تمرینات حسی بر تقارن صورت و توانایی عملکردی بینایان دارای فلج بلز است.

مواد و روش‌ها تعداد ۳۰ شرکت‌کننده در مطالعه مداخله‌ای در سه گروه ۱۰ نفره حضور داشتند. گروه اول تحریک الکتریکی به همراه تمرینات صورت، گروه دوم تحریک الکتریکی و مایم تراپی و گروه سوم ترکیب هر دو روش استفاده شده در دو گروه قبلی را دریافت کردند. هر گروه در طی ۱۸ جلسه برای ۶۰ دقیقه، ۶ روز هفته به مدت سه هفته مداخله را دریافت کردند. از سیستم درجه‌بندی صورت سانی بروک برای ارزیابی ناتوانی صورت استفاده شد.

یافته‌ها تحلیل بین گروه‌ها نشان داد که اختلاف معناداری ($P<0/05$) بین گروه‌ها وجود دارد و بیشترین بهبودی به ترتیب در گروه سوم، دوم و نهایتاً اول بوجود آمده است.

نتیجه‌گیری ترکیب مایم تراپی و تحریک الکتریکی و تمرینات حسی موثرترین درمان برای بهبود عملکرد صورت می‌باشد. بنابراین تمرینات حسی به عنوان تکمیل کننده تحریک الکتریکی و مایم تراپی در درمان این دسته از بیماران قرار دارد.

کلیدواژه‌ها:
فلج بلز، مایم تراپی، تحریک الکتریکی، تمرینات حسی

Use your device to scan and read the article online

Cite this article as Mishra SS, Sayed M. Effects of Mime Therapy With Sensory Exercises on Facial Symmetry, Strength, Functional Abilities, and the Recovery Rate in Bell's Palsy Patients. Function and Disability Journal. 2021; 4:E35. http://dx.doi.org/10.32598/fdj.4.35

http://dx.doi.org/10.32598/fdj.4.35

* نویسنده مسئول:
سیداترا میشرا
نشانی: ماهاراشترا، دانشگاه علوم بهداشتی ماهاراشترا، گروه فیزیوتراپی.
تلفن: ۹۹۴۸۹۴۳ (۸۸۷) ۹۱+
رایانامه: siddharth24789@gmail.com