



TO COMPARE THE EFFECTS OF ORAL FACIAL FACILITATION AND ORAL MOTOR THERAPY IN DECREASING DROOLING IN CHILDREN WITH SPASTIC CEREBRAL PALSY

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ABSTRACT

The aim of the study was to reduce drooling difficulties. Sucking, swallowing and chewing difficulties in patients with spastic type of cerebral palsy using oral facial facilitation and oral motor therapy and to compare the effects of oral facial facilitation and oral motor therapy in decreasing drooling in children with spastic cerebral palsy. The study population consisted of 30 children were separated into 2 groups. Each group contains 15 children Group A Group B were identified as having severe drooling. Both the group A and B treated for the duration of 3 months. After the treatment session both groups were assessed with drooling quotient assessment (DQ). The results were analysed statistically. There was statically significant decrease in group B. The rate of salivary flow rate is past treatment period when comparing post and pre-treatment of group B than group A. p value 0.0719. However, there eas no significant decrease in group A, pre-treatment p value <0.0001 . Hence of results show that oral motor therapy is significant that oral facial facilitation children with cerebral palsy.

KEY WORDS

Oral facial facilitation, Motor therapy, spastic cerebral palsy

INTRODUCTION:

Cerebral palsy describes a group of chronic disorders of the development of movement and posture, causing activity limitation that attributed to non-progressive disturbances⁽¹⁾. It is the most common causes of severe physical disability in childhood with an estimated prevalence of 2.4 per 1000 children⁽¹⁾.

The motor disorders of cerebral palsy are often accompanied by disturbances of sensation, perception, cognition, communication and behavior by epilepsy and by secondary musculoskeletal problems⁽¹⁾.

Cerebral palsy is classified in relation to predominate motor characteristics such as spastic, hypotonic, athletic, dystonic and ataxic as well as topographical pattern of limb involvement. Such as monoplegia, diplegia, triplegia, hemiplegia or quadriplegia⁽²⁾.

The feeding problems caused by oral motor dysfunction lead, in turn to growth and development retardation, while drooling leads to physical problems and has a major effect on social development⁽³⁾.

SALIVARY PRODUCTION:

Saliva is the watery and usually frothy substance produced in and secreted from the three paired major salivary glands. There are, parotid, submandipular and sublingular glands⁽⁴⁾.

Approximately 65% to 75% of the saliva is produced by the submandipular glands 20% to 25% by the parotid glands, 5% by the sublingual glands and the remainder by the palate, buccal mucosa and tongue⁽⁵⁾. In the resting state, the rate of salivary secretion has been estimated to be 0.35 to 1ml.

The production of saliva may increase six-fold in a stimulated state, with approximate 70% of the total

saliva produced by the parotid glands. The parotid secretions are largely serous in consisting of the submandibular glands ⁽⁶⁾, which are both sexes and mucosy.

The secretory innervation of the salivary glands is primarily under the control of the parasympathetic nervous system. Parasympathetic stimulation of the salivary glands results in increased activity of the acinar and ductal cells leading to increased salivation.

Parasympathetic preganglionic fibers that arise from the superior salivatory nucleus emerge from the brainstem and travel with the facial nerve into its vertical position in the mastoid, where they subsequently separately run across the middle ear as the chorda tympani nerve ⁽⁷⁾.

After existing from the middle ear, the chorda tympani nerve joins the lingual nerve. The preganglionic fibers then synapse in the submandibular ganglion, where post ganglionic fibers leave to innervate the submandibular and sublingual glands ⁽⁸⁾.

Parasympathetic preganglion fibers arising from the inferior salivatory nucleus leave the brainstem with the glossopharyngeal nerve. The fibers then leave the glosso-pharyngeal nerve to ascend in the middle ear as the Jacobson nerve ⁽⁹⁾.

The salivary glands are also innervated by the sympathetic nervous system. Sympathetic fibers arise in the upper thoracic segments of the spinal cord and synapse in the superior cervical ganglion. Post ganglionic fibers leave the superior cervical ganglion, and innervate the acini, ducts and blood vessels. Thus, the sympathetic nervous system can influence the blood flow to the salivary glands and activate myoepithelial cells resulting in expulsion of saliva from the glands ⁽¹⁰⁾.

EFFECTS OF EXERCISES:

This technique will help to improve oral motor control, sensory awareness and frequency of swallowing improvement in drooling patients with the both hyper and hypo tonic muscles using this technique. This technique improves muscle tone and saliva control.

BRUSHING: The effect can be seen upto 20-30 minutes suggested to undertake before meals.

VIBRATION: Improves tone in high tone muscles.

MANIPULATION: Manipulation techniques such as tapping, stroking, firm pressure directly to muscles using fingertips known to improve oral awareness.

ORAL MOTOR SENSORY EXERCISE: Includes lip, tongue and swallowing exercise ⁽⁴⁾.

AIM OF THE STUDY:

Aim of the study is to reduce drooling difficulties, sucking, swallowing and chewing difficulties in patients with specific type of cerebral palsy using oral facial facilitation and oral motor therapy

NEED OF THE STUDY:

Most of the cerebral palsy children have saliva drooling problem. There is need of the exercises which help in reducing drooling of saliva for spastic cerebral palsy children's.

BACKGROUND OF THE STUDY:

Cerebral palsy is a neuromuscular dysfunction caused by non –progressive injury to the immature brain. It has been estimated that 10% to 38% of children s with cerebral palsy persist abnormal drooling. Salivary flow rate was measured in each session pre and post treatment using drooling quotient (DQ) assessment method.

In previous study PNF, Electrical stimulation and exercises were used to treat drooling difficult.

So, this study, is to compare the effects of oral facial facilitation and oral motor therapy in decreasing drooling in children with spastic cerebral palsy.

HYPOTHESIS:

NULL HYPOTHESIS:

There is no significant difference in to compare the effects of oral facial facilitation and oral motor therapy in decreasing drooling in children with spastic cerebral palsy.

ALTERNATE HYPOTHESIS:

There is significant difference in to compare the effects of oral facial facilitation and oral motor therapy in decreasing drooling in children with spastic cerebral palsy.

METHODOLOGY:

Study design : Experimental
Study type : Comparative
Sampling method : Convenient sampling
Sample size : 30 subjects
Study duration : 3 months
Study location : NIEPMD

INCLUSION CRITERIA:

- 1) Both male and female
- 2) Spastic Age group 8 to 10 years
- 3) Understand and follow the instruction

EXCLUSION CRITERIA:

- 1) Children with visual, auditory, vestibular or perceptual deficit.
- 2) Other neurological and cardio respiratory conditions like: Epilepsy, Mental disorder, tetralogy of fallot.
- 3) Other conditions like: Coldsore, gum bleeding, tooth abcess.

TOOLS USED:

1. PARTY BLOWER TARGET
2. VALCANO BUBBLES
3. BUBBLE BLOWING
4. CURLY STRAWS

OUTCOME MEASURE:

- 1) ROOLING QUOTIENT ASSESSMENT (Validity and Reliability)

DROOLING QUOTIENT ASSESSMENT (DQ):

- No drooling -1
- Infrequent drooling, small amount -2
- Occasional drooling, intermittent all day -3
- Frequent drooling, but not profuse -4
- Constant drooling, always wet -5

PROCEDURE

- Thirty spastic cerebral palsy children randomly distributed into two equal groups were participating in this study.
- Group A and Group B, each group consists of 15 samples. Oral facial facilitation was applied to

Group A and oral motor therapy was applied to Group B.

GROUP A: CONTROL GROUP (ORAL FACIAL FACILITATION)

- A group was given oral facial facilitation which included exercise for given,

- 1) Brushing
- 2) Vibration
- 3) Manipulation (stroking and tapping)
- 4) Oral motor sensory exercise (lip, tongue, swallowing exercises)

GROUP B: STUDY GROUP (ORAL MOTOR THERAPY)

- B group was given oral motor therapy which included exercise for given,

- 1) A volcano bubbles
- 2) Party blower target
- 3) Bubble blowing
- 4) Curly straws

DATA ANALYSIS AND INTERPRETATION:

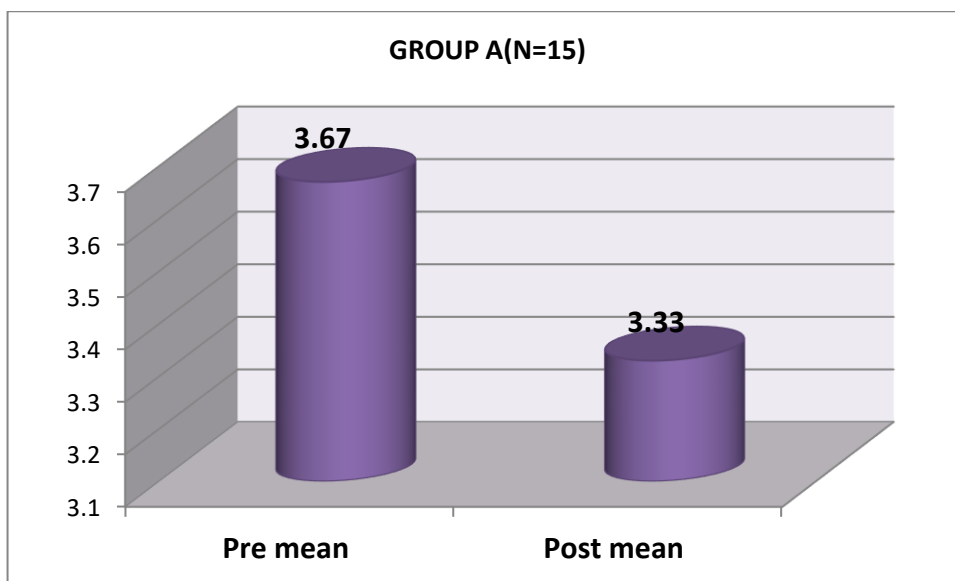
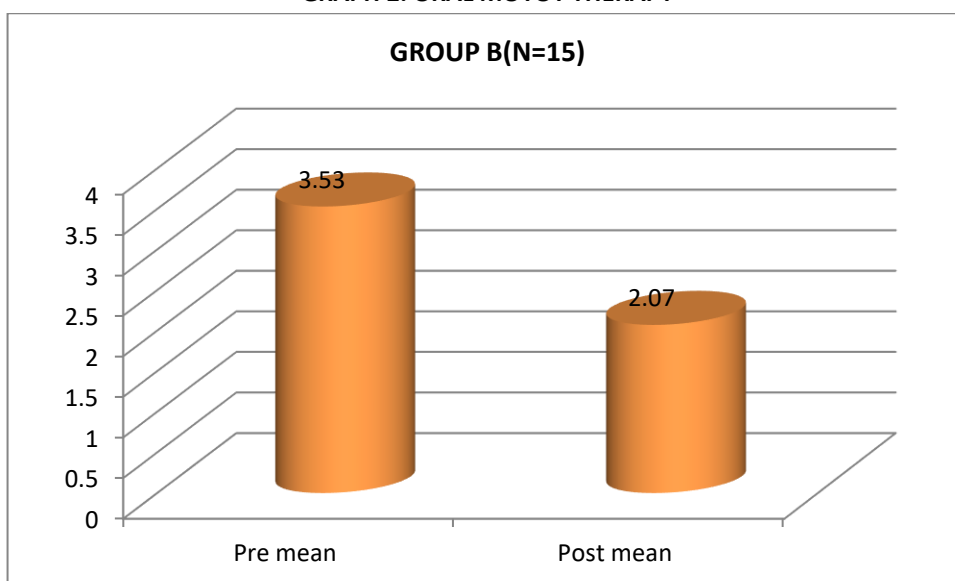
- All statistical analysis were performed on IBM compatible micro computer using Statistical Package For The Social Sciences (SPSS 17.0).
- The significance was set at $\alpha=0.005$ level Unpaired t Test was used to compare the pre and post values of oral facial facilitation and oral motor therapy.

TABLE 1: ORAL FACIAL FACILITATION

OUTCOME MEASURE	MEAN		STANDARD DEVIATION		t-VALUE	p-VALUE
	PRE MEAN	POST MEAN	PRE MEAN	POST MEAN		
ORAL FACIAL FACILITATION	3.67	3.33	0.49	0.49	1.8708	0.0719

TABLE 2: ORAL MOTOR THERAPY

OUTCOME MEASURE	MEAN		STANDARD DEVIATION		t-VALUE	p-VALUE
	PRE	POST	PRE	POST		
	VALUE	VALUE	VALUE	VALUE		
ORAL MOTOR THERAPY	3.53	2.07	0.52	0.80	5.9719	<0.0001

GRAPH 1: ORAL FACIAL FACILITATION

GRAPH 2: ORAL MOTOT THERAPY

RESULT:

The above pre-test and post-test mean value tables shows that both the group had a significant improvement. As a result, oral motor therapy (group B) was found effective than oral facial facilitation (group A). The p-value of oral motor therapy was (<0.0001) and the p-value of oral facial facilitation was (0.0719).

DISCUSSION:

This study is focused to control drooling in cerebral palsy children. Oral facial facilitation and oral motor therapy are given to the cerebral palsy children to control drooling. As a result of this study, oral motor therapy

was more effective than oral facial facilitation. Hence, oral motor treatment was combined with activities children performed activity. So oral motor therapy is significantly effective when compared to oral facial facilitation.

Drawback of the study is the cerebral palsy children's in group A cannot perform the exercises like: brushing, vibration, manipulation, lip, tongue and swallowing exercises (oral facial facilitation group A).

Statically results showed that drooling levels decreased in group B after therapeutic interventions oral motor therapy and P value was less than 0.0001 there was no significant change in drooling levels in group A

throughout the therapy session and of oral facial facilitation P value was 0.0719. Hence group B 'P' value shows that oral motor therapy is significantly effective. When compare to Group A 'P' value.

Further study may be done by modifying the age group from 3 to 6 years. Also, may include various treatments to control drooling like behavior modification, speech therapy and drug therapy.

CONCLUSION:

This study concluded that Oral motor therapy was found effective when compared to oral facial facilitation in decreasing drooling in children with cerebral palsy. Hence this study concluded that treatment combined with activities are more effective than treatment with exercises and facilitation technique, oral motor therapy significant decreases drooling in cerebral palsy.

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