

A Case Report on Non-speech Oral Motor Treatments to Evaluate Severe Drooling Behaviour

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Research Questions and Background

In the past, scholars have advocated that [exercise] can promote speech ability. Schoolfield (1937) suggested that exercise of the tongue and lips can strengthen speech mechanism. In the same year, Similarly et al. also proposed that exercise of the soft palate, chin, lips and tongue can enhance the control of speech mechanism. A few years later, Froeschels (1943) utilised oral motor to treat patients with dysarthria. [Non-speech oral motor treatments] mainly focus on the non-speech movement part of speech mechanism. These activities have been utilised by many clinical language therapists to treat patients with a diversity of speech problems such as: cleft lip and palate, dysarthria, autism, voice problems, phonological problems, swallowing difficulty, hearing loss etc. Lof & Watson (2008) conducted a survey aimed at members of the American Society of Auditory (ASHA). The results showed that when treating children with phonological disorder, 68% of speech therapists will utilise non-speech oral motor treatments as warm-up activities, 25% of therapists will particularly allocate time to do non-speech oral motor treatments and articulation treatments, and 7% of speech therapists will utilise non-speech oral motor treatments to replace target sound activities. The above information shows that up to 93% of therapists will utilise non-speech oral motor and target sound practice for conducting mixed-mode treatments.

Refer to Oral Motor Assessment and Treatment by Diane Chapman Bahr (2001) for description on non-speech oral motor training course. Additionally, in recent years in Japan, Akihiro Y et al. (2006) researched the use of Lip Trainer Patakara to train lip closing strength, which showed that it can promote the muscle strength of the orbicularis oris muscle, enhance lip muscle strength, breathing method, tongue position etc. and can activate the brain causing the increase of blood flow to the right r frontal lobe, thereby improving drooling caused by brain stroke, swallowing difficulty, unclear speech etc.

Since non-speech oral motor treatments can promote the speech and non-speech ability of children, then how is the application of effect on the condition of salivation of children? The focus here is to make further explanation from the improvement circumstance of after having applied non-speech motor oral

treatments. Non-speech oral motor treatments: it mainly focuses on the non-speech movement part of speech mechanism. It does not require uttering speech sounds when training such as: exercise, massage, blowing, positioning, absorbing, swallowing, drumming of cheek and other non-speech activities. The objective is to promote the improvement of oral motor skills. Drooling: the observation standard of this study uses every minute as spacing to do calculation and if the mouth is moist and there is dripping or flowing of saliva within one minute, then this will be recorded as drooling once.

Research Method

1. Case Information

Four years five month old boy with cerebral palsy and spasticity on the lower limbs was placed in a normal kindergarten. He also has developmental delay problems, cannot walk steady and will sway from side to side, cannot jump high and needs the assistance of both hands in order to jump, speaks slow, speaks with a lower clarity level, often have to guess the content of what he wants to express, often drools, created an impact on his interaction, and also reduced his motivation for participating in the activities of this case.

2. Assessment Information

(1) Oral exercise assessment

1. Lip: symmetrical when appearance is still, inadequate exercise scope when uttering speech sounds but passable lip sound clarity level, food such as biscuit, water etc. will fall out from his mouth when eating.
2. Chin: can open and close chin up and down, unable to move around, inadequate exercise scope, up and down moving of chin when biting food, had not yet done biting rotation.
3. Tongue: normal and symmetrical when appearance is still, unable to do separate movement with chin when doing exercise, unable to move tongue around, extend up and down outside the mouth up to touching the lips, poor overall exercise scope.
4. Biting: Normal

(2) Articulation assessment

Vowel has the case of omission, consonant is error type so substitutions are made the most, omission and distortion is second, poor overall speech clarity.

(3) Language assessment

1. Language understanding: original score 12 points, percentile rank 6 points.

2. Language deliverance: original score 4 points, percentile rank 2 points.

3. Total score: original score 16 points, percentile rank 2 points.

(4) Target behavior observation

In this case, the frequency of saliva dripping shows that the frequency during static activity (32%) and dynamic activity (68%) is different, and that the frequency of emergence during dynamic activity is evidently higher.

3. Application program and teaching

The application program of this case is to firstly observe the frequency of drooling to establish a baseline. ABAB method will be utilised to conduct this afterwards. The course content includes oral massage- 5 minutes, oral motor exercise- 10 minutes and Patakara facial training- 5 minutes, and observe the frequency of drooling for every minute after doing Patakara exercise. The observation recording time is 25 minutes. The application program is implemented during language course. Observation and recording of drooling behaviour during physical therapy course is to be conducted.

Findings and Recommendations

The application program was for two months, from a case of originally non-stop drooling to gradual emerging of swallowing saliva movement. The over-sensitivity of the oral cavity such as lightly touching 1/3 of the front of the tongue, wherein sickness reflex will emerge to being able to touch 1/2 of the tongue while abnormal reflex will not emerge. The state of saliva dripping had improved due to the application program. The frequency of saliva dripping during dynamic course is evidently higher than the frequency during static activity. After utilising oral motor training course plus the application of Patakara exercise, the frequency of saliva dripping reduced during dynamic course. This shows that when applying, the frequency of saliva dripping and moistening of the mouth had the tendency of reducing.

With regard to training of the oral muscle, this study has not yet measured the amount of increase in lip closing strength. This is mainly due to difficulty in movement control, as the time required for measuring once is 13 seconds. And there is difficulty in the maintaining of lip closing for a period of time. In regards to children with oral dysfunction, it is recommended that they can use oral motor application program for improving frequency of drooling.