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Parental Concern, Nutritional Status and Effective Intervention Modality for Chewing Dysfunction in Cerebral Palsy

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ABSTRACT:

Objective: The intent is to contrast the efficacy of FuCT to conventional therapy in improving chewing function in children with cerebral palsy and to assess any relationships between nutritional condition, parenting stress, and chewing dysfunction.

Goal: What is the correlation between nutritional status, maternal influence and chewing dysfunction along with comparison between FuCT and standard therapy procedure in children with cerebral palsy.

Method: We carried out a thorough analysis of studies. For the literature analysis, about 35 studies were chosen. The review was performed between August 2022 to 15 December 2022 and the following datasets were searched using Google Scholar

Result: Maintaining a child's nutritional condition while they have difficulty chewing causes mother's stress. Following the FuCT, there was a significant increase in oral motor function and feeding abilities, including mouth closure, lip closure on the utensil, lip closure during deglutition, control of food during swallowing, mastication, straw suction, and control of liquid during deglutition.

Discussion: Poor nutritional status, oral motor dysfunction, swallowing dysfunction, and poor dietary intake are fundamental factors that collectively negatively affect children with Cp's capacity to develop in all respects. Compared to moms of children without any chewing dysfunction, those whose children had it reported more issues. In order to enhance chewing performance, Functional Chewing Training (FuCT) combines postural alignment, sensory and motor training, as well as dietary and environmental modifications. On the other hand, conventional oral motor exercises may help with some lip and tongue motions but not overall.

Conclusion: Our research supported the efficacy of FuCT in enhancing chewing performance. It is a more successful strategy to lessen the intensity of drooling, tongue thrust, and chewing dysfunction in children with CP. Our findings might help to improve therapeutic management when suitable. Parents of children with cerebral palsy should be supported by resources provided by clinical professionals who should be worried about parental stress in such parents. Support from health professionals should be tailored to the individual, reasonable, and timely.

Keywords: Cerebral Palsy (CP), Mid-upper arm circumference (MUAC), Oro-motor dysfunction (OMD), Low- and middle-income countries (LMICs), United states (US), United Kingdom (UK), Gross motor function measure (GMFM-88), Oral facial facilitation technique (OMFT), Oral motor assessment scale (OMAS), Karaduman

chewing performance scale (KCPS), Functional chewing training Protocol (FuCt), Behavioral Pediatric feeding assessment scale (BPFAS)

I. Introduction

The term "cerebral palsy" (CP) refers to a group of movement and posture problems that are brought on by early-life injury to or malformation of the developing brain. It is the most frequent cause of significant motor impairment in children, and coexisting impairments may make things more challenging (Parkes, J. et al; 2010). One of the many eating and swallowing problems that CP infants encounter is chewing dysfunction. Parents may become concerned about their child's nutritional status, development, and quality of life as a result of these problems (Penagini, F. et al; 2015).

90% of infants with CP are malnourished, and between 30% and 90% of these patients have nutritional problems (Penagini, F. et al; 2015). Dietary issues in individuals with cerebral palsy (CP) may have a variety of reasons, including oral motor dysfunction, postural problems, the persistence of primitive responses, abnormal chewing patterns, drooling, and gastrointestinal problems. Drooling is among the most common problems kids with CP face. When someone drools, their oral fluid is expelled. On average, individuals with CP experience drooling to a greater or lesser extent (Walshe, M., Smith, M., & Pennington, L. et al; 2012). The community of kids with CP is heavily populated by people who have chewing dysfunction. By combining various food textures into a cohesive bolus that is ready to enter the pharynx, the oral function of chewing initiates the digestive process. According to parent accounts, about 26% of kids with cerebral palsy have trouble chewing solid food, and the prevalence of chewing issues in kids with quadriplegia was as high as 41%. (Serel Arslan, S. et al; 2018). The chewing function, which is a step in the feeding process, calls for a number of rhythmic mouth motor actions, including biting, lateral and rotational tongue movements, even elevation and retraction of the tongue, as well as swallowing, in order to comminute and soften solid food. Chewing dysfunction may make it more difficult for children to consume enough food and maintain a healthy nutritional state. Nutritional status has an effect on children's and their families' quality of life, growth, and general health (Goday, P. S., Huh, S. Y., et al; 2019). Stressful interactions between kids and their parents can result from chewing dysfunction, which can impact growth and general health. Management of feeding problems requires strong family support and motivation. For mothers, caring for a kid who has feeding and swallowing issues is particularly challenging and is frequently a hefty burden (Arslan, S. S., et al; 2022). While the wellbeing of parents was badly impacted in the UK, mothers of children with CP in Malaysia reported significantly higher levels of stress than mothers of healthy children. A sample of 270 mothers of CP infants in the USA had depressive symptoms to a degree of 30%. (Barlow, J. H., et al; 2006).

Oral motor exercises, sensory stimulation, and functional chewing practise are just a few of the treatment modalities that have been used to treat chewing dysfunction. However, the absence of evidence-based consensus guidelines has led us to consider the state of the science in clinical interventions for paediatric chewing dysfunction. Simione, M., Polley, L., et al., Wilson, E., et al., 2021).

The study's objectives include assessing the level of maternal psychological well-being, examining the impact of chewing dysfunction and oral deformities on children with cerebral palsy's nutritional status, and assessing the effectiveness of effective intervention strategies.

II. SCOPE AND BOUNDARIES

The purpose of this study is to shed light on the daily struggles and problems faced by caregivers in meeting the special demands of their CP child's nutrition, including those associated with mealtimes. The evaluation will make clear the gaps in our understanding and the paucity of data on nutrition interventions for children with CP. Further research on the experiences of caregivers of children with CP is warranted particularly for caregivers who lack the support of friends or family members and those who are physically isolated, solutions to support caregivers need to be devised, put into practise, and assessed. To address the

high proportion of undernourished children with CP and the limited resources available, existing therapies and services for children with CP should include a nutrition component. This scoping analysis assessed the volume and type of information supporting therapies for children with cerebral palsy who have trouble chewing. Most included kids with cerebral palsy and multi-component treatments along with other types of treatment (e.g., mealtime modifications, parental training etc.). It will be necessary to address the broad variations in the outcome measures assessed in the studies in the long run, when science produces the data that will guide our clinical practise. While the research discussed in this scoping review serves as a starting point, it is obvious that further work is required to evaluate and apply multi-modal treatment protocols to a large sample of CP patients in order to support the use of current therapeutic treatment strategies. In order to build on the empirical foundation of treatment techniques for chewing dysfunction, clinicians should continue to investigate evidence-based practise and be encouraged and supported in their attempts to communicate the findings of these strategies in partnership with researchers.

III. METHODOLOGY

Type of Study:

A randomized sampling, produced by a basic random number generator on a computer, will then be used to divide children 6 years of age or younger between the FuCT group and the control group. One group will receive FuCt and one group will receive traditional oral motor exercises.

Inclusion Criteria:

The following are typical inclusion criteria: (i) the study subjects were children with cerebral palsy and chewing dysfunction; (ii) the outcome measures included the association of chewing dysfunction to nutritional status and parental concerns; (iii) an effective intervention approach for children with cerebral palsy; (iv) mothers to be involved in the evaluation and intervention process; (v) descriptive information of age, height, and weight will be taken into account. (vi) all children with CP, regardless of sex, race, or ethnicity, must be 6 years old or younger.

Exclusion Criteria:

Exclusion criteria comprise characteristics (i) data about children with cerebral palsy that could not be differentiated and were reported along with children with other types of impairments; (ii) adults with cerebral palsy who have eating and drinking issues; (iii) no study was excluded based on language or publication date due to the lack of published systematic reviews on this topic; and (iv) children who used any medication and/or oral appliances that could affect chewing performance.

Procedures for Evaluation:

(a) Gross motor Function Measure-88: it aimed to measure changes in gross motor function. Its reliability and validity has been considered.

(b) BPFAS (Behavioral Pediatrics Feeding Assessment Scale) to assess children's feeding behaviors and associated parent behaviors.

(c) KCPS (Karaduman Chewing Performance Scale) which analyses every step of chewing function, to classify the level of chewing.

Procedures for Treatment:

(1) Control group will receive a designed oromotor exercises for 30 minutes. The treatment procedure will comprise of two sessions per week for three successive months. Designed Oro-motor exercises included perioral sensory stimulation, tapping, tongue pressure, jaw exercises, intraoral stimulation and training with different sizes of straws

(2) Randomized group received FuCt intervention will receive therapy for 3 successive months. 2 sessions per week. Functional chewing training protocol have 6 steps: positioning a child, positioning the food, sensory stimulation, chewing exercise, adjustment of food consistency.

DATA ANALYSIS:

The "study data extraction summary form" from Google Scholar was used by the author to gather data from each article. Studies that do not meet the criteria will first be evaluated solely on the basis of the title and abstract by the author, and then eliminated. Following this initial phase, the author will independently evaluate each subsequent study's entire text to determine whether or not it will be incorporated into the final study.

Both group and single-subject research study designs were compatible with the forms. The forms contained information about the participants, the interventions, the outcomes (for postural control, chewing function, and parental behaviour), the findings, and any negative impacts. The SLP will gather the information from the GMFM-88, BPFAS, and KCPS and perform a comprehensive analysis.

IV. DISCUSSION

One of the most significant feeding challenges experienced by children with cerebral palsy is chewing problems (Andrew, M. J., et al; 2012). It might make it impossible to consume any solid meal. Chewing is very important for general health and happiness, particularly in young children. Children with CP frequently have masticating problems, which can impair development, cause prolonged mealtimes, postpone the development of oral feeding skills, cause respiratory problems, and result in insufficient nutrient and fluid consumption (Andrew, M. J., et al; 2012). The most common reason for eating difficulties is oromotor dysfunction (OMD). Feeding problems are frequently caused by a lack of body control (Nur, F. T., Handryastuti, S., et al; 2019). Unstable jaw (mouth moves without control), depressed jaw (open mouth), lingual retraction (tongue tends to go back in mouth), lingual protrusion (tongue moves out of mouth), incoordination of tongue (tongue moves without control), and retraction of upper lip (upper lip is shortened) are all symptoms of poor oral function in CP, either actively or passively. Food falls out of the bottle as a consequence of these symptoms, and eating becomes difficult to chew (severe pneumonias) (Shabnam, S., et al; 2019).

Nutritional Status:

Children with CP had substantially lower height, skinfold thickness, and mid-upper arm circumference (MUAC) than children without the condition (Huysentruyt, K., et al; 2020). Similar results were also obtained from community-based cross-sectional polls conducted in the Philippines, Nigeria, Bangladesh, and India (Jahan, I., Sultana, R., et al; 2022). Poor nutritional status, oral motor dysfunction, swallowing dysfunction, and poor dietary intake are fundamental factors that collectively hinder this population's capacity to develop in all respects (Costa, A., Martin, A., et al; 2021). These include (a) malnutrition and feeding issues (for weight, height, body mass index (BMI), triceps or subscapular skinfold, and MUAC, children without eating problems have superior mean z-scores (Troughton KEV. et al; 2001). Additionally, babies who have one or no feeding issues are less likely to be undernourished than those who have multiple or no feeding issues (Speyer, R., Cordier, R., et al; 2019). (b) Quantitative Inadequacies in Diets (Poor growth is caused by quantitative "inadequacy" in food rather than qualitative "adequacy". The majority of kids with CP—nearly 80%—do not consume enough energy (Srishti Aggarwal, Ravinder Chadha, Renuka Pathak., et al; 2015). (c) Gender and Age (While no studies explicitly looked at the differences in male and female growth, survey research by Sjakti et al. and Stallings et al. showed that females had higher age-specific standard scores for upper arm length than did boys) (Srishti Aggarwal, Ravinder Chadha, Renuka Pathak., et al; 2015). (d) Socioeconomic Status and Access to Healthcare Facilities (Nearly 70% of the world's disabled people reside in developing countries, according to United Nations demographic data (De, P., & Chattopadhyay, N., et al; 2019). The increasing prevalence of disability in rural areas may be due to a number of factors, including inadequate nutrition, limited access to immunisation programmes, maternity care, filthy living conditions, and poor sanitation

(Ahmad, A., et al; 2022). In developed countries, these children can take advantage of a wide variety of additional services and resources, such as cutting-edge medical techniques like the development of alternative feeding methods, which greatly reduce the nutritional and feeding problems that young children face (Costa, A., Martin, A., et al., 2021). The persistent lack of qualified health workers, such as rehabilitation service providers and nutritionists, prevents the adoption and scaling up of different institution-based therapies for children with CP in low resource settings (Jahan, I., Al Imam, M. H., et al; 2022). In this scenario, community-based efforts are frequently recommended due to the dearth of information on nutrition interventions for children with CP (Zuurmond, M., et al; 2018). However, Bangladesh stated that it was very successful at improving the functional outcomes of CP children by using a community-based, parent-led intervention (Jahan, I., Sultana, R., et al; 2022).

Furthermore, cases of overweight and obesity have been reported, the bulk of which took place in industrialised nations. It was discovered that obesity incidence ranged from 2% in Nigeria to 16% in Norway. Spastic bilateral CP is more prone than spastic unilateral CP to have obesity and overweight. This may be due to the fact that kids with unilateral spastic CP are more active than kids with bilateral spastic CP and experience fewer feeding difficulties, which increases their chance of gaining weight (Srishti Aggarwal, Ravinder Chadha, Renuka Pathak., et al; 2015).

Even though it has been shown that limitations in oromotor and gross motor function are reliable indicators of malnutrition, the causes of malnutrition in children with cerebral palsy remain poorly known, particularly in low- and middle-income countries (LMICs). In order to improve the overall nutritional status of children, more emphasis should be put on reporting and documenting the effects of different nutrition treatments on growth and nutrition as well as creating standardised guidelines, strategies, and interventions that address both the immediate determinants (i.e., nutrition-specific interventions) and the underlying or root causes (i.e., nutrition-sensitive interventions) (Jahan, I., Sultana, R., et al; 2022).

Parental Stress:

Lack of communication has broad-ranging effects on a kid with CP and their family, including decreased participation in daily activities, a poorer quality of life in "relationships with parents," and difficulties adjusting psychologically (Milievi, M. et al., 2012). Mothers of CP patients who had difficulty chewing reported higher anxiety on all subscales of the Turkish Feeding Swallowing Impact Survey (daily tasks, worry, feeding challenges, and the overall score) (Serel Arslan., et al. 2022). Longer mealtimes, time restraints, feeling helpless to help their child, negative mealtime behaviours and their effects (choking, vomiting, crying), and being unable to fully participate in social interactions are a few possible explanations. Other factors include the need to prepare food with the proper texture for children with chewing dysfunction, longer mealtimes, time restraints in daily life, and feeling powerless to help their child (Serel Arslan., et al. 2022). Along with other research from Malaysia, the US, and the UK, a study on mothers of children with CP was conducted (Pimm, 1996; Ong et al., 1998; Manuel et al., 2003). The authors contend that immediate intervention is required to minimize maternal suffering considering the number of women who are at risk for clinically severe levels of anxiety and depression (Khoshvaght, N., et al; 2021). There were several crucial elements in children's functioning that were emphasized (i.e., eating, sleeping and mobility). It may be crucial to evaluate mothers' perceptions of their capacity to meet the physical and psychosocial requirements of the child in the setting of CP. Due to the fact that maternal psychological well-being scores were significantly higher than normative comparisons, more study is required to determine the most effective strategies for lowering parental stress and boosting self-efficacy (Barlow, J. H., et al; 2016).

Children with CP struggle to adapt to shifting social and physical circumstances and constantly need more physical care. Parents of children with CP felt more incompetent, unwell, and unable to handle parenting issues than parents of children with developmental norms, according to high scores on the competence, health, and depression parental subscales (Park, E. Y., et al; 2020). Relationship between the child's youngest age at which rehabilitation begins and the quantity of weekly rehabilitation interventions. This might be due to the earlier rehabilitation start time and more frequent intervention for children with more severe motor

impairments (Hui-Yi Wang., et al; 2004). (Taylor, C., et al; 2022), which provided information on the support and feeding techniques, parents complained that despite having a unique understanding of their child, health specialists ignored their suggestions and the demands of the child. Mothers expressed their disappointment, dejection, and rage at feeling "not listened to" by medical professionals. The needs of every caregiver would not be met by a single solution, such as support groups. Some caregivers who expressed emotions of helplessness and loneliness, who could relate to their situation, or who were going through something like this may find it beneficial to participate in support groups (Taylor, C., et al; 2022). Health professionals must actively listen to families in order to provide the proper support techniques. They ought to be informed about the services and help that are available for families. The need for immediate feedback on how they were managing feeding (home-based programmes) was raised by caregivers so they could incorporate advice and training from medical experts (Ferre et al., 2017; Kirkpatrick et al., 2016). Parents who reside far from specialized medical care may benefit from coaching through internet-based programmes (Meadan & Daczewitz, 2015). Clinical staff members must also encourage parental involvement in the creation of therapy goals for their patients. As a result, parents' pleasure with their child's growth may rise and their anxiety may decline (Hui-Yi Wang., et al; 2004).

Intervention Approaches:

When you are eating, it is important to pay attention to your posture because proper posture makes it simpler to chew and swallow food securely (Cichero, J. A., et al; (2020). According to the association between trunk postural control and chewing performance level, chewing problems increased worse as trunk postural control shrank (Weir., et al; 2013). On the other hand, the severity of the chewing problem diminished as trunk control level improved. This makes sense because managing the movements of the oral structures, which are required for chewing, is related to managing the head and trunk (Serel Arslan, S., et al; 2018). The prevalence of chewing disorders increases as gross motor ability diminishes. Postural control training may be integrated into a chewing training programme to maintain sufficient chin and lip closure, improve tongue movement, and deliver proper head and trunk control for more effective, safe chewing (Serel Arslan, S., et al; 2018). Stretching exercises, core stability exercises, muscle strengthening exercises, and functional activities are said to be the primary physiotherapy management methods used to improve or maintain function for CP, according to Gerasimos et al. (2017). Their results are supported by the improvement in the Gross Motor Function Measure (GMFM-88) in the present study.

Food acceptance issues can result from a variety of sensory difficulties, such as hypersensitivity or hyposensitivity. This is in line with studies by Scully et al. (2009), who discovered that oral motor exercises like jaw, lip, and tongue exercises will help to improve oral motor control, sensory awareness, and swallowing, which in turn will improve muscular tone. The results that electrical stimulation of the submental muscles in children with CP (mylohyoid, geniohyoid, and digastric muscles) increased muscular activity and seemed to minimise aspiration are consistent with the substantial improvement on the oral motor evaluation scale (OMAS). The foundations for enhancing mouth control and oral motor abilities include good posture and optimum head and trunk stability. In comparison to diplegic children without eating issues, the majority of those with oro-pharyngeal dysfunction (OPD) had lower average GMFM-88 scores (Benfer., et al. 2013). OMAS and GMFM-88 had a just statistically significant positive connection, according to the study (Ahmed, A. F., et al; 2022).

The oral motor facilitation technique (OMFT), which incorporates direct feeding, postural control, sensory adaptation, and respiratory control, is a new advancement in oral motor treatment (Min, K. C., et al; 2022). CP patients' mouth motor skills can be improved with the help of OMFT (Min, K. C., et al; 2021). There were noticeable variations in mouth closure, lip closure on the utensil, lip closure during deglutition, control of the meal during swallowing, mastication, straw suction, and control of liquids during deglutition between the treatment times. Mastication and straw suction improved the least because they needed high-level complex oral motor coordination, according to the average difference between baseline and 16 weeks of OMFT. Mouth closure, on the other hand, showed the greatest improvement (Min, K. C., et al; 2022). Gisel's study from 1994

found that straw drinking had not changed, and this study's treatment effect result (0.61) was twice as high as that from the earlier study (0.32) (Baghbadorani, M. K., et al., 2014), demonstrating that OMFT is more effective than conventional oral motor therapy in promoting straw sucking and drinking. The findings reveal that, although OMFT for 16 weeks is more advantageous, improving mouth motor function in CP patients necessitates OMFT for at least 8 weeks (Baghbadorani, M. K., et al; 2014).

There are a number of ways to chew that are listed. (Gisel., et al; 1996) studied the benefits of oral motor therapy, while (Shore., et al; 1999) used prompting, shaping, and reinforcing to increase chews per mouthful. The modelling method teaches youngsters how to chew by emulating it with an audible "crunch" (Butterfield, W. H., et al; 1973). However, there hasn't been agreement on how to enhance children' chewing abilities. The most popular techniques for improving chewing ability are standard oral motor exercises (Gisel., et al; 1996). Targeted passive and active lip and tongue muscle actions during these activities are intended to encourage mouth closure and tongue lateralization (Burkhead, L. M., et al; 2007). We aim to show the effect of the FuCT on chewing function by contrasting the FuCT (functional chewing training protocol) with conventional oral motor exercises, which are frequently used to improve chewing performance (Serel Arslan, S., et al; 2017). Children with CP who use FuCT have better chewing and eating skills. Many studies did not account for the lateralization of the tongue or the rotary jaw movement, only taking into consideration the up-and-down movement of the jaw during chewing. It's possible that the evaluation's findings and specific chewing performance are not truly reflective of their therapeutic effects. The Karaduman Chewing Performance Scale (KCPS), which assigns a score to each step of chewing function, was used to categorize the degree of chewing (Serel Arslan, S., Demir, N. U. M. A. N., et al; 2017). An efficient, quick, accurate, and therapeutically straightforward functional test for evaluating children's chewing function is the KCPS. There are two numbers on the instrument: "0" for correct chewing function and "4" for no biting or chewing. The FuCT group's chewing performance improved, whereas the overall oral motor exercise groups did not (Serel Arslan, S., et al; 2017). According to the FuCT, a holistic method, a function cannot be learned or improved by repeatedly performing a single action in isolation. The basic component of the FuCT is a decent head and body position that allows for easy tongue movement, smooth chin and lip closure, and more effective and secure chewing and swallowing. To stop abnormal reflexes and activate lateral and rotatory tongue motions during chewing function, food should always be placed in the molar area and rubbed from the front teeth to the molar region. While consuming solid food, this comprehensive strategy strives for both experience and a positive chewing experience because positive chewing experiences promote the gradual improvement of chewing efficiency (Serel Arslan, S., Demir, N. U. M. A. N., & Karaduman, A. A., et al; 2017).

The passive and active muscular movements of the lips and tongue are the only ones that are addressed in conventional oral motor exercises. This exercise programme might enhance some lip and tongue motions, but it fails to enhance chewing as a whole and has no effect on performance. Another obstacle that might have stopped the development of the chewing function in the standard oral motor exercise group is the challenge of teaching isolated movements to kids with neurological deficits (Arvedson, J., et al;2010). Thus, it makes reason why the FuCT is superior to other well-known oral motor tasks. FuCT is a helpful technique for reducing CP children's tongue thrust and drooling severity. Tongue push, which can cause orofacial problems and drooling in CP infants, is one of the most common problems (Inal, et al., 2017). 93.8% of CP children with wide mouths, 59.4% of children with high palates, and 37.5% of children with open bites also had CP (Arvedson, J. C., et al; 2019). Many techniques have been proposed in the literature to address tongue thrust problems, including changing one's posture during meals, tilting one's head back, applying pressure to the tongue, using a cheek support, making liquids thicker, and using an oral appliance (Yokochi, K., et al; 1996).

When concomitant factors related to drooling are taken into consideration, the effect of the FuCT on drooling severity is reasonable because the main emphasis is on the ideal posture for children to support their capacity to regulate their head and their oral sensorimotor functions, both of which are essential for controlling their drooling (Fairhurst, C. B. R., et al; 2011). On the other hand, massaging the gums provides children with sensory input that encourages them to swallow more frequently and become more conscious of their own saliva, which lessens the severity of their drooling (Inal,., et al; 2017).

Oral motor therapies aim to improve mouth function and control by demonstrating proper positioning to families and progressively thickening food textures. No studies, however, have looked at the improvement of oral dysfunction and the growth of oral skills. The advantages of FuCT on chewing, drooling, and tongue thrusting have also been investigated. The FuCT is a more efficient technique than conventional oral motor drills for decreasing CP children's drooling, tongue thrust, and chewing dysfunction (Voniati, L., et al; 2021).
In order to assess both parent and infant feeding behaviour, the BPFAS (Behavioral Pediatrics Feeding Assessment Scale) is used. Mealtimes can be challenging for both caretakers and children with chewing dysfunction because it can affect eating habits (Crist, W., et al; 2001). Therefore, we expected that chewing therapy would also assist children in behaving better during meals and would lessen parents' stress and level of concern about their children's eating habits. The BPFAS subscale values decreased in the group receiving FuCT. It proved that mealtime efficiency had improved and that the improved chewing function had reduced stress and anxiety in the kids and their families (Serel Arslan, S., et al; 2017). However, only four of the BPFAS's subscales showed a decline in the group that underwent regular oral motor training. While parents' stress and concern levels over their children' feeding patterns stayed the same, children's mealtime performance improved to some extent. This demonstrates that mealtime functionality improved for the typical oral motor exercise group as well, but the FuCT group continued to show greater improvement (Serel Arslan, S., et al; 2017). The FuCT is a potential all-encompassing strategy to enhance chewing function in kids with CP. In light of our findings, the FuCT should be used in clinical practice to treat chewing difficulties (Banzato, A., et al; 2022).

V. ETHICAL CONSIDERATION

There are several challenges involved in raising a child with cerebral palsy. Professionals ought to follow moral guidelines that safeguard patients' autonomy and advance distributive justice. The following summarizes the pertinent ethical issues: The involvement of parents in establishing therapy goals for their children should be encouraged by clinical staff members as this may increase parents' satisfaction with their child's progress and reduce their anxiety. Although most parents prefer to learn the facts gradually, other parents will want to know it right away. Many people will look for someone with better news. The need for a customized, developmental, and age-appropriate therapy approach should be taken into account. The choices made about therapy and treatment affect the resources that are available. Getting informed consent (or refusing) to treatment or intervention methods is not always followed. Parental stress may not lead therapy sessions to last longer than anticipated because challenges often persist over time. If there has been no improvement or goal achievement and it is determined that therapy is ineffective, it is ended or discontinued.

VI. CONCLUSION

The relevant literature indicates that children's gross motor abilities and oro-motor skills have a positive and substantial relationship. The degree of trunk control and gross motor function should be assessed during the chewing assessment to ensure the selection of the most appropriate intervention. It is possible to investigate how the FuCT affects chewing performance in kids with a variety of diagnoses who have chewing issues. FuCT is a method that is more effective than conventional oral motor intervention in reducing tongue thrust, drooling, and chewing severity in children with CP. When treating chewing dysfunctions in children with cerebral palsy, physicians should take into account the quality of life of these moms because lower chewing performance levels are linked to increased maternal worries about feeding and swallowing issues. It is necessary to create and implement caregiver support techniques both inside and outside of clinic settings.

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