e - ISSN - 2349-0691



AMERICAN JOURNAL OF ADVANCES IN NURSING RESEARCH



Journal homepage: www.mcmed.us/journal/ajanr

EFFECTIVENESS OF ASSISTED FEEDING PRACTICES ON PREVENTION OF ASPIRATION IN CEREBRAL PALSY CHILDREN AMONG CAREGIVERS

Kannan Umasoundari¹*, O.Selvarajan², R.Pandiselvi², Sarumathi²

¹Theni school of nursing, Theni Government Medical College, Theni, Tamilnadu, India. ²Madurai Medical College, Madurai, Tamilnadu, India.

Article Info

Received 25/12/2020 Revised 15/02/2021 Accepted 17/03/2021

Key word: Feeding Practices, Aspiration, Cerebral Palsy Children Caregivers.

ABSTRACT

To assess the level of feeding practices among caregivers on prevention of aspiration in cerebral palsy children in pediatric ward, evaluate the effectiveness of assisted feeding practices among care givers on prevention of aspiration in cerebral palsy children in pediatric ward, and to associate the pretest post test level of feeding practices among caregivers on prevention of aspiration in cerebral palsy children with their selected socio demographic variables. Quantitative approach- pre experimental design one group pretest & post test design was used. The study was conducted at pediatric ward .The sample size was 40. Non Probability, consecutive sampling technique was used. The intervention applied in this study was assisted feeding technique for 30 minutes on 5 consecutive days, among caregivers of cerebral palsy children On the 6thh day post test was done. The level of feeding practice pretest and post test mean score is 4.175 and 9.725 respectively. Paired t test value is 27.42 much higher than the table value at p< 0.001 level of significance. The statistical evidence proved that the assisted feeding practices was effective in improving the level of feeding practices among caregivers of cerebral palsy children.

INTRODUCTION

Children with cerebral palsy have developmental disorders of movement and posture causing activity limitation. Such disturbances result in a developmental delay can also affect the development of oro facial organs providing inadequate performance the functions of sucking chewing, swallowing and respiratory changes. In children with CP the righting and balance reactions necessary to maintain posture and head control are incomplete. The functional performance of the CP is connected to the motor impairment and there may be involvement of the orofacial muscles.

Corresponding Author

Kannan Umasoundari Email:- uma.soundari@gmail.com They present with abnormal muscle tone and reflexes that compromise feeding. The resulting oral sensorimotor deficits interfere with the oral processing of food. Frequent aspiration, of course, is but a symptom of underlying pathophysiology. Oral-motor and lingual incoordination [1] poor coordination between breathing and swallowing and poor alignment of head, neck, and trunk may be underlying causes of aspiration in children with cerebral palsy. Due to their neurological impairments, a further and significant risk for children with CP during feeding, is the aspiration of food into the lungs due to an inadequately protected airway during swallowing (referred to as an incomplete swallow), coupled with a poor cough reflex. The usual causes of an incomplete swallow are a delayed or absent swallow reflex [2] decreased or poorly coordinated pharyngeal





80



motility and/or difficulties caused by poor stability of sitting position, head posture, jaw control, mouth posture, lip control, tongue control and slow oral transit times . Significant levels of aspiration during feeding have been reported in several studies of severely eating-impaired children with liquids aspirated more frequently than solids, and the frequency of aspiration increasing with the severity of the eating impairment Aspiration is often symptomised by coughing, however, using videofluoroscopic assessment, revealed that 68.2% of 22 patients with severe spastic CP (aged 7 months-19 years) demonstrated significant silent aspiration (ie. where a cough response was absent). Apart from causing distress from aspiration), aspiration is known to predispose children to the development of recurrent chest infections and chronic lung disease 31% of the children in the Oxford Feeding Study had suffered at least one chest infection in the previous six months, and a significant correlation was seen between the number of chest infections and the severity of the motor impairment [3]

Cerebral palsy as a group of permanent disorder of the development of movement and posture, causing activity limitation that are attributed to nonprogressive disturbances that occurred in the developing fetal or infant brain. Cerebral palsy is divided into four major classes according to different impairments and areas of brain that are damaged. These 4 classes are Spastic type (wong's essential pediatric Nursing (2009) -This is the most common type of cerebral palsy occurring 80% of all These children have hypertonia and cases. [4] neuromuscular mobility impairment, due to upper meuron motor lesion in the brain as well as corticospinal tract or motor coirtex. Ataxic cerebral palsy - caused by damage to cerebellum occurs in about 10% of cases. Hypotonia and tremors may be present. Wide based gait. Rapid repetitive movements performed poorly. Disintegration of movements of the upper extremities when the child reaches for objects. Atheoid / Dyskinetic type - Atheoid cerebral palsy involves mixed muscle tone both hypertonia and hypotonia are present along with constant involuntary writing motions. Dystonic slow twisting movements of the trunk or extremities abnormal posture. Involvement of the pharyngeal, laryngeal and oral muscle causing drooling and dysarthria)imperfect speech articulation) Mixed type combination of spastic cerebral palsy and dyskinetic when no specific motor pattern is dominanat. However this term is losing favour to more precise descriptions of motor function and affected area of brain involved . [5]

The present study planned to assess the level of feeding practices among the caregivers on prevention of aspiration in cerebral palsy children in pediatric ward ,to evaluate the effectiveness of assisted feeding practices among the caregivers on prevention of aspiration in cerebral palsy children in pediatric ward and also to associate the pretest post test level of feeding practices among the caregivers on prevention of aspiration in cerebral palsy children with their selected demographic variables. [6]

In this study it refers to Demonstration of the various assisted techniques such as positioning, jaw control support, perioral massage, ora stimulation, stroking the throat, lip closure, types of food, consistency of foods, care of the child after feeding that are taught to the caregivers of cerebral palsy children.In this study it refers to avoiding the risk of aspiration/regurgitation of food particles by following the assisted feeding practices such as therapeutic seating and oral control enhance postural alignment and improve oral functioning for safe intake of food and it will be assured by observation checklist. In this study it refers to those who are taking care of cerebral palsy child. In this study it refers to the those children who are having Neuro motor impairment associated with the .oromotor dysfunction in the age of 1 year to 6 years of children is considered for study.Pre experimental one group pre test post test design used for the study. There is a concept measured by a with out control and randomization. [7]

Caregivers of cerebral palsy children who fulfilled inclusion criteria, Sample size is 40. Sampling technique used in the study is consecutive sampling technique non-probability sampling method. 40 caregivers of cérébral palsy children are in the study who full filled the sampling criteria based on nonprobability sampling technique. [8].

Inclusion criteria:

- Care givers of Cerebral palsy children in pediatric ward.
- .care givers who are having.1year to 6 years of children.
- Cerebral palsy children. who are available at the time of data collection.
- ✤ caregivers who are not attending special school..

Exclusion criteria:

care givers who are not willing to participate in the study.

care givers who are having Atheoid type of cererbral palsy children

Section A

Demographic variable such as Age of the mother, age of the child, sex ,birth order, , Any other Family members affected by cerebral palsy . number of children in their family ,education of mother , occupation of father, family income, ,.type of family, place of residence., Nature of delivery, Type of cerebral palsy.



Section B: consist of observation checklist. Scoring procedure:

Observation checklist contains 12 questions. Each contains 1 mark. Total 12 marks.

Scoring Interpretation 0-4 poor feeding practices 5-8 Fair feeding practices 9-12 Good feeding practices.

Period of study was for 4-6 weeks. Total sample size 40 were selected by consecutive sampling method. After maintaining initial rapport the purpose of study was explained and written informed consent was obtained. Socio demographic data was collected, pretest was conducted using observation checklist and the level of feeding practices was assessed for caregivers of cerebral palsy children.

Then the demonstration of assisted feeding practices with adequate explanation and clarification of doubts regarding feeding technique was given to the caregivers for 5 consecutive days, then the post test was conducted on the level feeding practices regarding prevention of aspiration on 6th day by using same observation checklist to the caregivers of cerebral palsy children.

RESULTS AND DISCUSSION:

The data collected were organized under the following sections

Section I

Distribution of socio demographic characteristics among caregivers of cerebral palsy children. Shown in table 1

Section II

Description the level of feeding practices among caregivers on prevention of aspiration in cerebral palsy children among caregivers Shown in table 2 and 3. Section III

Effectiveness of assisted feeding practices among caregivers on prevention of aspiration in cerebral palsy children. Shown in table 4

Section IV

Association between the level feeding practices among caregivers on prevention of aspiration in cerebral palsy children with their selected socio demographic variables .

Above table reveals that demographic information of caregivers of cerebral palsy children those who participated in the following study on A study to assess the effectiveness of assisted feeding practices on prevention of aspiration in cerebral palsy children among caregivers, pediatric ward, GRH, Madurai. Considering the age wise distribution of mother (75%) 30 mothers were in 20-30 yrs of age, 10 (25%) 10 mothers were in 31-40 yrs of age. 0(0%) were in 41-50 yrs of age. 0 (0%) were in more than 50 yrs of age.

Regarding Age of the child 18(45%) were in 1-2 yrs of age, 13 (32.5%) were in 2-4 yrs of age, 9(22.5) were in 5-6 yrs of age.

Regarding sex of the child 23 (57.5%) were in male child, 17 (42.5%) were in Female child.

Regarding birth order of the child 28 (70%) were in I order of the child, 9 (22.5%) were in II order of the child, 2 (5.0%) III order of the child, ! (2.5%) IV th order of the child, 0 (0%) V th order of the child.

Regarding to the family members affected by cerebral palsy 2 (5%) were in siblings, 1 (2.5%) were in parents, 6 (15%) were in relatives, 31 (77.5%) were in none.

Related to Number of children 21 (52%) belongs to 1 children in the family. 13 (32.5%) were in 2 two children in the family. 6 (15%) 3 children in the family. remaining 0(0%) were in 4 children, 0 (0%) were in 5 children in the family.

Regarding the type of family 15 (37.5%) were in Nuclear family, 25 (62.5%) were in joint family,

Based on education of the mother 3 (7.5%) were in No formal education, 7 (17.5.%) were in primary education, 18 (45%) were in secondary education, 2 (5%) were in Higher secondary education, 10 (25%) were in graduates

Regarding occupation of father 17 (42.5) were in Labour, 16(40%) were in private, 5 (12.5%) were in own business, 2 (5%) were in Government.

Regarding the family income 10 (25%) 2000-4000 /month18 (45 %) were in 5000-7000/month, 12 (30%) were in 8000-10000/month.

Regarding the place of residence 15 (37.5%) were in urban area, 18 (45%) were in rural, 7 (17.5%) were in semi urban.

Regarding the nature of delivery 23 (57.5%) were in Normal delivery, 11 (27.5%) were in caesarian 6 (15%) were in forceps delivery.

Regarding the type of cerebral palsy 23(57.5%) were in spastic type, 17 (42.5%) were in ataxic type, 0(0%)





were in atheoid type, 0 (0%) were belongs to mixed type. The above table 2 depicts the comparison of mean, standard deviation and mean% between pretest and post test. The pretest mean score was 4.175 with the standard deviation 0.87 and mean % was 35. Whereas post test mean score was 9.725 with the standard deviation 0.99 and mean % was 81. The effectiveness in mean % was 46.

The above table shows that the level of feeding practices regarding pretest and post test mean score 4.175 and 9.725 respectively. Standard deviation score is 0.87 and 0.99 respectively. Mean difference between the pretest and post test 5.55. paired t test value 27.42 is much higher than the table value at p<0.001 level of significance. So the researcher observed that there is a highly significant Increased level of feeding practices among care givers of cerebral palsy children in pediatric

ward and also assisted feeding practices is very much effective.

The above table 5 shows the level of feeding practices among care givers of cerebral palsy children with their selected socio demographic variables. Chi square analysis was done. There is significant association between the post test level of feeding practices and selected socio demographic variable only on place of residesnce. And there is no other significant association between the post test level of feeding practices socio demographic variable such as Age of mother, Age of the child, ,sex of the child, birth order of the child, family members affected by cerebral palsy,, education of mother, number of children in the family, income Type of family, Nature of delivery, type of cerebral palsy.

Table.1 Frequency and percentage distribution of samples according to socio demographic variables.

Sl.No	Demographic data	n=40	%
	Age of the mother (in years):		
1.	20-30 years	30	75
	31-40 years	10	25
	41-50 year	0	0
	More than 50 years	0	0
	Age of the child :		
2.	1-2 years	18	45
	2-4 years	13	32.5
	5-6 years	9	22.5
	Sex of the child :		
3.	Male	23	57.5
	Female	17	42.5
	Birth order of the child :		
4.	Ι	28	70
	II	9	22.5
	III	2	5.0
	IV	1	2.5
	V	0	0
	.Family members affected by cerebral palsy:		
5.	Siblings	2	5
	Parents	1	2.5
	Relatives	6	15
	None	31	77.5
	Number of children in family:		
6.	1	21	52.5
	2	13	32.5
	3	6	15
	4	0	0
	5	0	0



	Type of family :		
7.	Nuclear	15	37.5
	Joint	25	62.5
	Education of mother:		
8.	No formal education	3	7.5
	Primary education	7	17.5
	Secondary education	18	45
	Higher secondary education	2	5
	Graduate	10	25
	Occupation of father :		
9.	Labour	17	42.5
	Private	16	40
	Own business	5	12.5
	Government	2	5
	Family income :		
10.	2000-4000/month	10	25
	5000-7000/months	18	45
	8000-10000/months	12	30
	Place of residence :		
11.	Urban	15	37.5
	Rural	18	45
	Semi Urban	7	17.5
	Nature of delivery :		
12.	Normal	23	57.5
	Caesarian	11	27.5
	Forceps	6	15
	Type of cerebral palsy :		
13.	Spastic	23	57.5
	Ataxic	17	42.5
	Atheoid	0	0
	Mixed	0	0

Table 2. Mean , SD and mean%scores of assisted feeding practices between pre and post test level of feedingpractices among caregivers on prevention of aspiration in cerebral palsy children

	Max		Pre tes	t		Post test	Effectiveness in mean %	
	score	Mean	SD	Mean %	Mean	SD	Mean%	
Level of feeding practices	12	4.175	0.87	35	9.725	0.99	81	46

Table 3 : Frequency and percentage wise distribution of assisted feeding practices in post test level of feeding practices among caregivers on prevention of aspiration in cerebral palsy children In pretest 27 (67.5%) were had poor feeding practices. 13(32.5%) were had fair feeding practices. Hence no one was scored in good feeding practices. In post test 4(10%) were had fair feeding practices, 36 (90%) were had good feeding practices.

Level of feeding practice	Pı	re test	Post test			
	F	%	F	%		
Poor	27	67.5	-	-		
Fair	13	32.5	4	10		
Good	-	-	36	90		
Total	40	100	40	100		

Table 4. Paired "t"-test to evaluate the effectiveness of assisted feeding practices on among caregivers on prevention of aspiration in cerebral palsy children cerebral palsy

Overall	Pre test		Post	test	Mean	't'-value	P-value
	Mean	SD	Mean	SD	difference		
Level of feeding	4.175	0.87	9.725	0.99	5.55	27.42	P<0.001***
practice							

*-P<0.05, significant and **-P<0.01 & ***-P<0.001, Highly significant

Table 5. Association between level of feeding practice in post test and selected demographic data.

S.No	Demographic variables	Po	or	Fa	air	G	ood		
		F	%	F	%	F	%	χ2	p-value
1.	Age of the mother (in years):								
	20-30 years	-	-	4	10	26	65	1.48	0.224
	31-40 years	-	-	0	0	10	25	(df=1)	NS
	41-50 year	-	-	0	0	0	0		
	More than 50 years	-	-	0	0	0	0		
2.	Age of the child :								
-	1-2 years	-	-	3	7.5	15	37.5	2.35	0.309
	2-4 years	-	-	0	0	13	32.5	(df=2)	NS
	5-6 years	-	-	1	2.5	8	20		
						_	_		
3.	Sex of the child :								
	Male	-	-	2	5	21	52.5	0.102	0.749
	Female	-	-	2	5	15	37.5	(df=1)	Ns
4.	Birth order of the child :								
	Ι	-	-	3	7.5	25	62.5		
	II	-	-	1	2.5	8	20	0.36	0.948
	III	-	-	0	0	2	5	(df=3)	NS
	IV	-	-	0	0	1	2.5		
	V	-	-	0	0	0	0		
5.	Family members affected by								
	cerebral palsy:								
	Siblings	-	-	0	0	2	5	1.29	0.731
	Parents	-	-	0	0	1	2.5	(df=3)	NS
	Relatives	-	-	0	0	6	15		
	None	-	-	4	10	27	67.5		
6.	Number of children in family:								
	1	-	-	2	5	19	47.5		
	2	-	-	1	2.5	12	30	0.378	0.828
	3	-	-	1	2.5	5	12.5	(df=2)	NS
	4	-	-	0	0	0	0		
	5	-	-	0	0	0	0		
7.	Type of family :								
	Nuclear	-	-	3	7.5	12	30	2.67	0.102
	Joint	-	-	1	2.5	24	60	(df=1)	NS
	Demographic variable	f	%	f	%	F	%	\mathbf{X}^2	P value

8	Education of mother:								
0.	No formal advantion			0	0	2	75		
	Driverne education	-	-	0	5	5	12.5	0.00	0.090
	Primary education	-	-	2	5) 17	12.5	8.08	0.089
	Secondary education	-	-	I	2.5	17	42.5	(df=4)	NS
	Higher secondary education	-	-	1	2.5	1	2.5		
	Graduate	-	-	0	0	10	25		
9.	Occupation of father :								
	Labour	-	-	3	7.5	14	35	2.13	0.545
	Private	-	-	1	2.5	15	37.5	(df=3)	NS
	Own business	-	-	0	0	5	12.5		
	Government	-	-	0	0	2	5		
10.	.Family income :								
	2000-4000/month	-	-	2	5	8	20	1.54	0.462
	5000-7000/months	-	-	1	2.5	17	42.5	(df=2)	NS
	8000-10000/months	-	-	1	2.5	11	27.5		
11.	.Place of residence :								
	Urban	-	-	1	2.5	14	35	1.85	0.396
	Rural	-	-	3	7.5	15	37.5	(df=2)	S
	Semi Urban	-	-	0	0	7	17.5		
12.	Nature of delivery :								
	Normal	-	-	1	2.5	22	55	1.93	0.381
	Caesarian	-	-	2	5	9	22.5	(df=2)	NS
	Forceps	-	-	1	2.5	5	12.5		
13.	Type of cerebral palsy :								
	Spastic	-	-	3	7.5	20	50	0.56	0.455
	Ataxic	-	-	1	2.5	16	40	(df=1)	NS
	Atheoid	-	-	0	0	0	0	. ,	
	Mixed	-	-	0	0	0	0		

*-P<0.05 , significant and **-P<0.01 & ***-P<0.001 , Highly significant

CONCLUSION

In pretest majority of then 27 (67.5%) of them were poor feeding practices, 13 (32.5%) of them were fair feeding practices, 0(0 %) of them were good feeding practices. Where as in the post test majority of them 4 (10%) of them were fair feeding practices, 36 (90 %) of them were good feeding practices. 0 (0%) none of them were poor feeding practices.

After Demonstrate the assisted feeding practices post test results shows that 4(10%) fair feeding practices, 36(90%) were in good feeding practices and 0 (0%) were in poor feeding practices.

In the respect of level of feeding practice regarding pretest and post test mean score in 4.175, 9.725, standard deviation score in 0.87, 0.99 respectively. Mean

difference between the pretest and post test is 5.55. paired "t" test value is 27.42. The calculated value is 27.42 is much higher than table value at p<0.001 level of significance. So the researcher observed that there is a highly significant regarding increase level of feeding practices among care givers of cerebral palsy children is very much effective.

This study is statistically proved that assisted feeding practices increased the level of feeding practices among care givers of cerebral palsy children .Assisted feeding practices were cost effective, non pharmacological and free from side effects. It can be used by the caregivers to prevent the risk of aspiration on cerebral palsy children.

REFERENCE

- 1. American Academy of Pediatrics, Section of Pediatric Dentistry. 2003. Oral health risk assessment timing and establishment of the dental home. Pediatrics 3(5):11131116.
- 2. Vargas CM, Crall JJ, Schneider DA. 1998. Sociodemographic distribution of pediatric dental caries: NHANES III, 1988-1994. Journal of the American Dental Association 129(9):1229-1238.
- 3. Drury TF, Horowitz AM, Ismail AI, Maertens MP, Rozier RG, Selwitz RH. 1999. Diagnosing and Reporting Early Childhood Caries for Research Purposes. Journal of Public Health Dentistry 59(3):1992-1997.

Research Article



- 4. Miranda-Rius J, Brunet-Llobet L, Lahor-Soler E, Farré M. Salivary Secretory Disorders, Inducing Drugs, and Clinical Management. Int J Med Sci 2015; 12(10):811-824. doi:10.7150/ijms.12912
- 5. Schechter N. 2000. The impact of acute and chronic dental pain on child development. Journal of the Southeastern Society of Pediatric Dentistry 6(2):16-17.
- 6. Gillam, J. L. & Gillam, D. G. (2006). The assessment and implementation of mouth care in palliative care: a review. *The Journal of the Royal Society for the Promotion of Health*, 126(1), 33-37
- 7. Huskinson, W. & Lloyd, H. (2009). Oral Health in hospitalized patients: assessment and hygiene. *Nursing Standard*, 23(36), 43-47.
- 8. Prendergast, V., Hallberg, I., Jahnke, H., Kleiman, C., Hagell, P. Oral health, ventilator acquired pneumonia, and intracranial pressure in intubated patients in a neuroscience intensive care unit. American Journal of Critical Care, 2009; 18(4):368-76.

87