



COMPARISON OF EFFECTIVENESS OF TWO DIFFERENT TREATMENT MODALITIES IN THUMB OR DIGIT SUCKING HABITS IN CHILDREN-A CLINICAL STUDY

Dr.T.V.Anupam kumar

MDS, Additional professor in Pedodontics Government Dental college Kozhikode 673008

Dr.Praveen Shantakumaran Nair

ABSTRACT

This study aims to 1.to compare the effectiveness of 2 different treatment modalities in boys & girls aged 6 to 7 years in thumb or Digit sucking habit, 2.to find out the ease with which the patients had taken treatment and 3.to find out the time taken to stop the habit in each treatment modalities. Materials-group 1 with 15 children undergoing treatment for finger sucking habits with counselling and reminder therapy and in group 2 with 15 children undergoing treatment with counselling and adjunctive therapy. Results-Group 1 responded fast and showed better results than patients in group 2.Time taken to stop the treatment were same in case of boys and girls. conclusion-to stop the finger or digit sucking habits, proper counselling and motivation is needed for parents and children, counselling with simple reminder therapy helped patients to stop the habit faster than using complicated mechanotherapy but counselling and motivation has to be continued for a longer time.

KEYWORDS :

Introduction-

Oral Habits in form of Digit or Thumb sucking are common phenomenon and part of child hood behaviour. About 2/3rd of such habits are ended by 5-7 years of age. They are normally associated with oral pleasure, hunger, anxiety and sometimes psychological disturbances. The Malocclusion caused by Non Nutritive sucking may be more of an individual response than a highly specific cause and effect relationship. The types of Dental changes that a digit or Thumb sucking habit may cause, vary, with the intensity, duration and frequency of habit. The most frequently reported dental signs of an active habit are increased prevalence of anterior open bite, reduced Overbite, Increased Over jet, Greater Maxillary arch depth and decreased maxillary arch width

The Early Elimination of digit or finger sucking habit is one of the most important therapeutic services because it provide the most benefit toward prevention and well being of the whole person. The key to successful elimination of Thumb or finger sucking is Motivation or counselling. The child and the parents must understand why the sucking must be stopped due to the damage it causes to Teeth and surrounding structures.

Habit breaking treatment should be undertaken between the ages 4 and 7 years. Delay until the early school years allows for spontaneous discontinuation of habit by many children. Different approaches to treatment have been advocated depending on the willingness of the child to stop the habit. Counselling is the simplest method, this approach is best aimed at older children who can conceptually group the issue and who may be feeling social pressure to stop the habit. Reminder therapy is appropriate for those who desire to stop the habit but need some help. Application of adhesive bands, thumb guards, use of full sleeve gowns in the night, painting of commercially available bitter substances on the thumb or finger that are sucked are used. These methods are aimed at reminding the child not to place the finger or digit in the mouth. If habit persists after reminder and the child truly wants to eliminate the habit, adjunctive therapy that include a method to physically interrupt the habit and remind the patient can be used. In this therapy, various removable or fixed habit breaking appliances that discourages the habit by making it difficult to suck the finger or digit is employed. The presence of an oral habit in a 3 to 7 year old child is an important finding during the clinical examination. Oral habit is not usually present in children near the end of this age group. If the habit that causes Dental changes are not eliminated before the eruption of permanent teeth, they too will be affected. If no dental changes have occurred, no treatment can be advocated on the grounds of Dental health, but some patients and parents may want treatment because Thumb or finger sucking habits become less socially acceptable as the child becomes older. Studies have shown

that school aged children consider thumb suckers significantly are less intelligent, less attractive, and less desirable as friends. Efforts to discourage the habit may involve as little as a conversation between the Dentist and the child or they involve more complex appliance therapy. The most important point to remember about any intervention is that the child must want to discontinue the habit for treatment to be successful. This clinic study compares the effectiveness of 2 different modalities in digit or finger sucking children aged 6 to 7 years reporting to the department of Pedodontics, Government Dental college. Kozhikode.

Methodology-

30 paediatric dental patients aged 6 to 7 years of age, with known history of thumb or digit sucking habits reporting to the department of Pedodontics, Govt.Dental college, Kozhikode, were selected. Parents were questioned regarding the intensity and frequency of habits in these children. Only patients who have the problem of sucking fingers for a longer period of more than 6 months to 1 year and who haven't stopped the habit, were considered. Medical histories of patients were taken and patients who were having systemic illness were excluded. 15 children were included in group 1 undergoing treatment with counselling and Reminder therapy and 15 children were included in group 2 undergoing treatment with counselling and Adjunctive therapy. First patient reporting was put in group 1 and second one was put in group 2. Pre treatment factors like proclination of teeth, mouth breathing habits, Gingival inflammation, lip incompetence, tongue thrusting were assessed in each case, parents were made aware of the treatment procedures and they were made sign the consent letter. In group 1, counselling with reminder therapy was considered, application of a bitter substance called femite was used in all the cases in group 1 undergoing Reminder therapy(RT) and in group 2, counselling and adjunctive therapy was considered, an Hawleys appliance with tongue rakes was considered in all cases undergoing Adjunctive therapy(AT). Study period extended for 8 months to one year after ethical committee clearance. Tables were prepared showing start of treatment, evaluation at 2 weeks, 1 month, 3 months and 6 months periods, These follow up were noted down and tabulated. End of the treatment time also were noted. In some cases, where the patient who had stopped the habits were again followed up for 6 months to find out the recurrence of the habit. Results were noted down, tabulated and statistically analysed using Pearson chi square tests.

Results-

factors like age, sex, pre treatment findings like proclination, mouth breathing, gingival inflammation, lip incompetence, Tongue thrusting were noted down and tabulated. Post treatment changes in proclination, mouth breathing, Gingival inflammation, lip

incompetence, Tongue thrusting were also noted down and tabulated, factors like the ease with which, boys and girls had taken treatment, treatment effectiveness, by which modality of treatment the habits were stopped were noted down separately. Results were tabulated and statistically analysed.

Table 1 shows the gender wise distribution of patients taking Reminder therapy (RT) and Adjunctive therapy(AT). Out of 30 patients, 15 were girl patients out of which 53.3 % took AT and 46.7 % took RT. Out of 15 boys, 46.7 % took AT and 53.3 % took RT. p value was calculated using chi square test and it came to .715, which showed similarity in distribution. **Table 2** shows the age wise distribution, out of 30 girls and boys, 60% of patients in age group 6 took AT and 40 % of patients in age group 7 took AT. In age group 6, 46.7 % took RT and in age group 7, 46.7 % took RT. p value came to .464, which also turned out to be similar in distribution. **Table 3** shows 26.7% of patients with digit sucking habit and 73.3% of patients with thumb sucking habit were given Reminder therapy, whereas 46.7 % patients with Digit sucking and 53.3 % with thumb sucking patients were given Adjunctive therapy. **Tables 4, 5, 6, 7 and 8** shows the percentage wise distribution of different dental problems like proclination of upper teeth, mouth breathing, Gingival inflammation, lip incompetence and tongue thrusting habits in patients taking RT or AT before the study period. In **table 4**, 26.7% patients who were taking RT did not have proclination and 73.3% patients who were taking RT was having proclination. 26.7 % of patients who were taking AT did not have proclination and 73.3% patients who took AT had proclination. In **table 5**, 13.3 % patients taking RT did not have mouth breathing whereas 86.7% had mouth breathing. 20 % taking AT did not have mouth breathing and 80 % had mouth breathing. In **table 6**, 20 % patient taking RT did not have gingival inflammation whereas 80 % had gingival inflammation, 26.7 % taking AT did not have gingival inflammation and 73.3 had gingival inflammation. In **table 7**, patients taking RT, 46.7 % did not have lip incompetence and 53.3 had lip incompetence, 33.3 % taking AT did not have lip incompetence and 66.7 % had lip incompetence. In **table 8**, in patients taking RT, 60 % did not have tongue thrusting, whereas 40 % had tongue thrusting habit and in patients taking AT, 60% did not have tongue thrusting but 40% had tongue thrusting. **Table 9 to 17**, evaluates the post treatment changes after the study period. **Table 9** shows the reduction in proclination after taking RT or AT. 54.5 % taking RT showed mild reduction in proclination after 6 months and 45.5% did not show any reduction, whereas in patients taking AT, only 18.2% showed only mild reduction when compared to 81.2 % who showed no reduction in proclination. P value after chi square test was .076 which is close to significant level, In **Table 10**, mouth breathing was reduced in 92.3% in patients taking RT and 75% in patients taking AT. Mouth breathing did not reduce in 25% and 7.7 % patients who were included in AT and RT respectively. **Table 11** shows a remarkable reduction in gingival inflammation of 100 % in patients taking RT. 90.9% taking AT also showed reduction in gingival inflammation, only a small % of 9.1% did not show any reduction in gingival inflammation. **Table 12** shows reduction in lip incompetence. it was less in patients in both groups. 80 % of patient in AT group and 62.5 % in RT group did not have reduction in lip incompetence, it got reduced in 37.5% patients in RT group and 20% patients in AT group. **Table 13** shows the percentage of Tongue thrusting habit. Like lip incompetence, tongue thrusting also didn't reduce much. 66.7 % in RT and 83.3% in AT did not show any reduction in tongue thrusting, it got reduced only in 33.3% in RT and 16.7 % in AT. Chi square value was .505 which was not significant. **Table 14** shows the percentage which shows how fast the habits got corrected separately in boys and girls, Boys in RT group responded fast. In 75 % boys, habit got easily corrected, percentage in boys who were in AT, it was only 25 %. 85.7% of boys in AT didn't have correction of habits fast, only a percentage of 14.3% got corrected easily. chi square test value was .019, which was significant. Boys' habit got corrected easily when RT was given. Same was applicable to girls also. 85.7% of girls who underwent RT, habits got corrected easily and 75% of girls who took AT didn't have habit correction. p

value was .019 which was significant. RT gave better results in girls also as the habits got corrected easily. **Tables 15** shows treatment effectiveness and Habit stopping time during the treatment period. patients who were taking RT, treatment turned effective in 80 % and was not effective in 20%. In patients undergoing AT, treatment was not effective in 80 %, only 20% showed treatment effectiveness. p value was .001 which was statistically significant. **Table 16** shows the habit stopping time. 80 % of patients responded to RT treatment and treatment got corrected and 20 % didn't respond and habit was not corrected. 80 % of patients who were given AT did not have any correction of habit and only 20 % of patients stopped the habit. p value was calculated using chi square test and value came to .001, which was statistically significant.

Discussion-

Oral habits in a 3 to 6 year old child is an important finding during the clinical examination. The key to successful elimination of habits like thumb or digit sucking is motivation or counselling. Reminder therapy is appropriate for those who desire to stop the habit but need some help. In our study, 30 patients were selected. Gender and age wise distribution were similar as almost equal boys and girls were included in each group. Some patients had thumb sucking and some others had digit sucking habits. In all patients, pre treatment dental findings like proclination of upper teeth, mouth breathing habit, any gingival inflammation due to mouth breathing, lip incompetence due to proclination or any tongue thrusting habits were noted down. These features were noted down to find out which treatment modality had reduced the above factors after 6 months study period. In group 1, counselling with reminder therapy was considered, application of a bitter substance called femite was used in all the cases and in group 2, counselling and adjunctive therapy was considered, an Hawleys appliance with tongue rakes was given. Study period extended for 8 months to one year after ethical committee clearance. Tables were prepared and dates at start of treatment, at 2 weeks, at 1 month, at 3 months and at 6 months were noted down. End of the treatment time, that's the time taken to stop the habit also were also noted. The patient who had stopped the habit very early, were again followed up for 6 months to find out any changes in the above mentioned parameters and also to find out whether there was any recurrence of the habit. Results were noted down, tabulated and statistically analysed using chi square tests. In our study, almost half of patients had stopped the habit within a month or two itself, they were followed up till the completion of our study to find out the changes which occurred due to stopping of habits. In patients who had stopped habit using reminder therapy, slight change in proclination in 54.5 % patients were noticed. Mouth breathing showed a reduction of 92.3% in Reminder therapy and 75% in Adjunctive therapy, also gingival inflammation reduced almost completely in patients who took Reminder therapy and about 90 % in patients who took Adjunctive therapy. Lip incompetence and tongue thrusting habit reduction were less in both treatment modalities. Ease with which both boys and girls who had taken counselling and Reminder therapy for stopping of the habit were same. Counselling with reminder therapy proved to be very effective and habits got stopped in both boys and girls easily when compared to counselling and adjunctive therapy. In our study, role of motivation and counselling of parents and patients played much importance as counselling with reminder therapy using Femite gave good results when compared to using Hawleys appliances. As the patients were young, most of the patients found it difficult to use the appliances, which would have been the reason why the desired effect was not met in patients who had taken Adjunctive therapy.

Conclusion-

oral habits in the form of digit or thumb sucking are common phenomenon and part of childhood behaviour. The harmful effects of this habits causes dental malocclusion in children, if prolonged, after a particular age. The early elimination of habit is most important as it gives most benefit to the concerned child. Parents must be made aware of the problem and different treatment

modalities has to be advocated to stop the habit. counselling plays a good role as it will make the child understand the importance of stopping the habit and child's willingness to take up any treatment to stop this habit would make the treatment part easy. instead of using habit breaking appliances, child's deep rooted problem, if any, are assessed and proper motivation is given. our study with minimum sample size has shown that counselling with reminder therapy has been useful to stop the habits but further studies with bigger sample size is needed to evaluate the long term effects of different treatment modalities for habit breaking in children.



Pic 1-showing the femite lotion used in reminder therapy



Pic 2-picture showing pre treatment Dental changes of child



Pic 3-post treatment dental correction after appliance therapy

TABLE – 1 Gender wise distribution of patient taking RT & AT

	Sex		Total
	Female	Male	
AT	8 (53.3%)	7 (46.7%)	100%
RT	7 (46.7%)	8 (53.3%)	100%
Chi –Square test			
	Value	Df	P value
Pearson Chi-square	.133	1	.715

TABLE – 11 Age wise distribution of patient taking RT & AT

	Age		Total
	Female	Male	
AT	9(60%)	6 (40%)	100
RT	7 (46.7%)	8 (53.3%)	100
Chi –Square test			
	Value	Df	P value
Pearson Chi-square	.536	1	.466

Distribution of patients taking RT/AT

	Frequency	%
AT	15	100
RT	15	100
Total	30	

Table – IV

Percentage wise distribution of patient having finger sucking or thumb sucking habits

	Digit suck	Thumb suck	Total
AT	7 (46.7%)	8 (53.3%)	100
RT	4 (26.7%)	11 (73.3%)	100
Chi –Square test			
	Value	Df	P value
Pearson Chi-square	.186	1	.666

Percentage wise distribution of pre treatment evaluation of dental findings in patients undergoing RT/AT

Table 5			Table 6		
A	ProcIntn	P	A	Mouth brth	P
4 (26.7%)	11 (73.3%)		3 (20%)	12 (80%)	
4 (26.7%)	11 (73.3%)		2 (13.3)	13 (86.7%)	
Pearson Chi-square	1.000		Pearson Chi-square	.624	
Table 7			Table 8		
A	Ginginflm	P	A	Lip incomp	P
4 (26.7%)	11 (73.3%)		5 (33.3%)	10 (66.7%)	
3 (20%)	12 (80%)		7 (46.7%)	8 (53.3%)	
Pearson Chi-square	.666		Pearson Chi-square	.456	
Table 9			Table 10		
A	Tong thrtst	P	A	Mouth brt	P
9 (60%)	6 (40%)		9 (75%)	3 (25%)	
9 (60%)	6 (40%)		12 (92.3%)	1 (7.7%)	
Pearson Chi-square	1.000		Pearson Chi-square	.238	

Percentage wise distribution of post treatment evaluation of changes in dental findings in patients undergoing RT/AT

Table 10			Table 11		
R	Proclntn	NR	R	Mouth brt	NR
2 (18.2%)	9 (81.8%)		9 (75%)	3 (25%)	
6 (54.5%)	5 (45.5%)		12 (92.3%)	1 (7.7%)	
Pearson Chi-square	.076		Pearson Chi-square	.238	
Table 12			Table 13		
R	Ging infm	NR	R	Lip inco	NR
10 (90.9%)	1 (9.1%)		2 (20%)	8 (80%)	
12 (100%)	0		3 (37.5%)	5 (62.5%)	
Pearson Chi-square	.286		Pearson Chi-square	.410	
Table 14			Table 15		
R	Tongue thrust	NR	R	Mouth brt	NR
1 (16.7%)	5 (83.3%)		9 (75%)	3 (25%)	
2 (33.3%)	4 (66.7%)		12 (92.3%)	1 (7.7%)	
Pearson Chi-square	.505		Pearson Chi-square	.238	

Percentage wise distribution of Boys and girls whose habits got corrected easily

Table 15		Table 16	
Easily corrected boys		Easily corrected girls	
Yes	no	Yes	no
1 (14.3%)	6 (85.7%)	2 (25%)	6 (75%)
6 (75%)	2 (25%)	6 (85.7%)	1 (14.3%)
Pearson Chi-square	.019	Pearson Chi-square	.019

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