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Keywords

Habits
Fingersucking/therapy
Pacifiers/utilization
Awareness
Recreation
Father-child relations
Play and playthings

Descritores

Hábitos
Sucção de dedo/terapia
Chupetas/utilização
Conscientização
Recreação
Relações pai-filho
Jogos e brinquedos

Recreational strategies for the elimination of pacifier and finger sucking habits

O lúdico na remoção de hábitos de sucção de dedo e chupeta

ABSTRACT

Purpose: To verify the efficacy of recreational strategies of awareness for spontaneous removal of finger sucking or pacifier habits in children. **Methods:** Fifteen children (nine female and six male), with ages ranging from 4 to 8 years (mean age of 5.6 years) participated in the study. Recreational strategies were developed for the removal of oral habits. The program consisted of ten one-hour weekly sessions. At the end of each session, parents were oriented, solved questions, and reported their child's behaviors during the past week. **Results:** Twelve children (80%) totally eliminated the suction habit after the program. No difference was found for the removal when data regarding finger and pacifier sucking were compared ($p=0.34$). **Conclusion:** The awareness strategies using recreational activities were effective to eliminate finger and pacifier sucking habits in children.

RESUMO

Objetivo: Verificar a eficiência de uma estratégia com atividades lúdicas de conscientização para remoção espontânea do hábito de sucção de dedo ou de chupeta em crianças. **Métodos:** Participaram 15 crianças, nove do gênero feminino e seis do masculino, com faixa etária entre 4 e 8 anos (média de 5,6 anos). Foram desenvolvidas estratégias para a remoção espontânea dos hábitos orais com atividades lúdicas, realizadas uma vez por semana, com uma hora de duração cada, totalizando dez sessões. Ao final de cada sessão, os pais receberam a orientação semanal, esclareceram as dúvidas e relataram os comportamentos dos filhos durante a semana. **Resultados:** Doze crianças (80%) eliminaram completamente o hábito de sucção. Não houve diferença quanto à remoção quando comparados os hábitos de sucção de dedo e de chupeta ($p=0,34$). **Conclusão:** A estratégia de conscientização por meio de atividades lúdicas foi eficaz na remoção de hábitos de sucção de dedo e de chupeta em crianças.

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Received: 7/5/2010

Accepted: 10/20/2010

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INTRODUCTION

Habits are developed because they provide pleasure and satisfaction to the individual⁽¹⁾. Oral habits are learned patterns of intra- and peri-oral muscle contraction that are considered etiological factors of malocclusion⁽²⁻⁴⁾.

The suction of fingers, pacifier or any other object, has been the object of studies because it is frequent and may cause important damages⁽⁴⁾. In this sense, knowledge of prevalence and factors associated with its onset and persistence, acquires a fundamental importance because suction can cause not only changes in occlusion, but is directly associated with the child's behavior⁽⁵⁾. Several studies^(2,4,6-8) have shown that oral suction habits may interfere with the facial bones' regular growth and development pattern of growth and development, with the balance of facial structures and with the stomatognathic system's functions, with major changes in the morphology of the hard palate.

The consequences of deleterious oral habits to the stomatognathic depend on variables such as their intensity, duration, frequency, relationship with the individual's growth pattern^(2,9,10), age (dental transition phase) and social environment⁽⁶⁾.

The development of malocclusions is associated with the presence of deleterious oral habits⁽¹¹⁾. In this context the etiological importance of genetic factors has been considered irrelevant since malocclusion has been related to non-nutritive sucking habits in early life⁽¹²⁾. In addition, prolonged sucking habits can also have a negative impact on dentition, speech, physical and emotional development^(13,14).

Another study⁽⁶⁾ has shown that of all the infantile habits, finger or pacifier sucking seems to be the most frequent and damaging to the occlusion and jaw development, being a major cause of unbalance to the stomatognathic system. Thus, sucking habits should be removed as early as possible so that the malocclusion can be corrected, mitigated or avoided, favoring a balanced development of the structures of the stomatognathic system⁽⁷⁾.

To get efficient results in the removal of a deleterious oral habit, it is necessary to know its cause, namely to investigate what makes the child do it, avoiding the simple replacement of one habit for another⁽⁶⁾. Children can be helped to eliminate the sucking habit, without coercion and with positive reinforcement^(13,15). It must be done effectively and early, demanding their comprehension and cooperation⁽⁸⁾. It is essential to identify the origin of the habit, because if the cause is not removed or controlled, the treatment will not be effective⁽¹⁶⁾.

It is necessary to know the cause and circumstances under which the habit was developed because. Besides interfering with the occlusion, it may represent a child's emotional state, which becomes evident in moments of anguish and anxiety, or affective needs, conveying a sense of security and comfort⁽⁶⁾.

Currently, professionals are seeking techniques to bring the child his/herself eliminate the habit. Clarification and awareness about the consequences of the habit are enough to the decision to abandon it, not requiring orthodontic treatment⁽¹⁷⁾. However, in general, the child's agreement and the parent's collaboration to the treatment is essential to its success, preventing or mini-

mizing the possible consequences^(16,17).

Therefore, the objective of this study was to verify the effectiveness of a awareness strategy with play activities on spontaneous removal of the habit of finger or pacifier or pacifier in children.

METHODS

This study was conducted with 15 children of both genders (six boys and nine girls) who had oral habits of finger or pacifier sucking, ages between 4 and 8 years (mean 5.6 years). The research was conducted in a kindergarten and elementary school located in northern of Parana (Brazil). Children were selected by the director and all had only the sucking habits. The material used was: CD, pictures, magazines, cardboard, puppets, music, radio, mirror, children's books and games.

Inclusion criterion was the observation of only the finger or pacifier sucking habits. Were excluded the children whose parents did not attend to the first meeting or who didn't commit to receive orientations at the end of each session. The study was approved by the Standing Committee on Ethics in Research involving human subjects at the home institution, No. 015/09.

Initially, a meeting was scheduled with the parents and they were invited to participate in the study. Those who agreed signed a consent form and answered a questionnaire involving issues related to the habit: frequency, duration, intensity, the child's agreement to stop the habit, parents' behavior toward the habit and knowledge of alterations determined by it. Soon after, an educational lecture was conducted, in order to clarify the necessity and importance of the immediate removal of the sucking habit, as well as the consequences of its maintenance.

After that the intervention for spontaneous removal of the sucking habit through recreational activities was performed in ten one-hour weekly sessions. The activities were conducted in a single group with all the children.

Parents were instructed to be present at the end of every session to clarify doubts and report children's behaviors during the previous week. They were instructed not to interfere in their child's decision, however, they should encourage them, when they performed the desired behavior with praise, smiles and hugs, depending on what was most reinforcing for each child.

The first three sessions focused on the awareness of the damage caused by sucking a pacifier or the thumb through pictures, pictures and mirrors, aiming to clarify and motivate the children to quit. The mirror was used for the child to see, with the help of the therapist, as were the teeth, explaining and showing a clear and simple opening between the front teeth. With the child's hand a little pressure was applied on the child's chest, trying to explain the force that the pacifier or thumb causes on the tooth during the sucking habit.

In the fourth session a story was told, about child oral habits, including issues such as bad breath and their consequences on functions of stomatognathic system. It was informed that pacifiers and fingers take "bugs" and microbes to the mouth, making it bad smelling, dirty and full of bacteria.

At the fifth session, with the child's awareness of the importance of quitting the habit, daily activities that took their

attention and helped to remember the damage caused by the habit were selected. With the use of construction paper, stickers and pens, each child constructed several reminders, which were distributed in different places of the house, with the assistance and participation of parents.

Using choreography and play at the sixth session, the children learned a song that explains, in simplified form, the changes and the consequences of sucking habits, and remind them what to do to avoid the habit.

At the seventh session, each child produced a calendar in which the days were divided into two periods (day and night). Every day, each child should mark with drawings the period he or she has managed to be without the habit.

At the eighth session, a memory game with pictures of dental changes (such as open bite, cross, deep, crowding, decay) and figures of beautiful teeth and arcs was used to show the correct comparison to the child, reinforcing the importance of removing the habit.

At the ninth meeting a puppet theater on the issues discussed in previous sessions, highlighting the importance and necessity of eliminating oral habits was presented. The children heard again the music of the sixth session and drew a picture on the subject.

In the last session a party was held with the children and parents. Each child spoke about what they learned and the ones that completely eliminated the habit received a certificate. The parents were again instructed to maintain the positive reinforcement every day for 30 more days. After this period a new contact was made with the parents to obtain new information about whether the child actually eliminated the habit.

Data were analyzed statistically using the Fisher exact test with a significance of 5%.

RESULTS

There was no statistical significance linking the variable elimination of habit among children with finger sucking and pacifier (Table 1).

The main results of the questionnaire administered to parents are detailed in Table 2.

Data from the questionnaire showed that 60% of the children included in the sample did not accept when parents suggested eliminating the habit. No difference was found when

Table 1. Sample distribution according to the presence of oral habits, pre and post intervention

	Sucking habits		
	Pacifier	Finger	Total
Pre	60% (n=9)	40% (n=6)	100% (n=15)
Post	6.67% (n=1)	13.33% (n=2)	20% (n=3)

these data were crossed with the variable habit elimination ($p=0.34$). Regarding the harm caused by the habits, 73.3% of the parents reported to know about possible dental alterations, yet no difference was found when this knowledge was compared to the encouragement provided by the parents for habit removal ($p=0.52$). However, it was observed that 100% of the parents agreed that their cooperation and encouragement are essential to the child to abandon the habit.

The percentage of children who have abandoned the habit developed in each activity is specified in Figure 1.

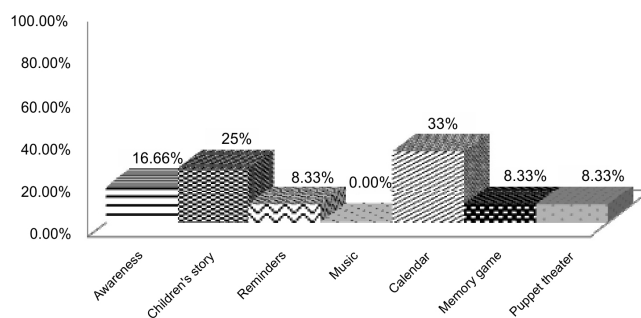


Figure 1. Percentage distribution of children that abandoned the habit at every stage of the intervention process

The contact with parents made 30 days after the last session confirmed that the results obtained during the study remained and the 12 children did not returned to the sucking habit.

DISCUSSION

The essential aspect of this strategy was the awareness of children and parents about the importance of eliminating the suction habit, showing, in a simple and appropriate way, the consequences and losses. This way their self-esteem was improved and by their own will, the harmful activity was eliminated.

Table 2. Association between the variables elimination of the sucking habit and parents' responses regarding the child's oral habits

Questions	Elimination of sucking		p-value
	Yes	No	
1. Does the child accept to talk about dropping the habit?	n	6	0.34
	%	40.0	
2. Does the parents encourage their child to eliminate the habit?	n	13	0.63
	%	86.7	
3. Do you know the alterations resulting from the habits?	n	11	0.36
	%	73.4	
4. Is the collaboration and support of parents essential to eliminate the habit?	n	15	1.00
	%	100.0	

Fisher test ($p \leq 0.05$)

Although the result was not statistically significant ($p=0,63$) when comparing parents' incentives with the elimination of the habit, it was observed that of the 12 children who have abandoned the habit, all received collaboration and constant involvement by the family. Their involvement was crucial to this result, constantly encouraging the child at home, prompting him or her with affection. Thus, with constant stimuli by the professional and positive reinforcement achieved in each stage, these children were able to completely abandon the sucking habit.

One of the children with finger sucking habit hadn't eliminated it proved to be aware of it and used to state that had stopped it while it wasn't observed even the reduction of its frequency or intensity. This child presented emotional issues that required psychological counseling. Thus, we suggest that it is necessary to identify the origin of the permanence of exaggerated sucking habit, since, if not removed or controlled the cause, treatment will not be effective in the long term⁽¹⁷⁾. The need to maintain the suction habits may be linked psycho-affective factors⁽¹⁸⁾. Thus, less dramatic procedures are currently recommended to avoid the risk of psychological trauma⁽¹⁵⁾.

The other children who continued with the habit (one with the pacifier and one with finger sucking) received no cooperation or support from parents at home because they did not follow the guidelines and did not believe that the child could quit, saying they had no time to stimulate the child home because of work.

Parents were instructed not to punish the child if the objectives were not achieved explaining that the treatment outcome was not imminent and could be extended over a longer period. However, it was explained to parents that the lack of cooperation and responsibility could lead to inefficient outcomes. The punitive measures or threats generally are not beneficial in attempts to motivate the child to eliminate the habit and therefore is must be attempted to raise child's awareness and family's collaboration.

Thus, this study was based on other authors⁽¹⁹⁾ who used the mirror to raise awareness of the child. Children and parents were informed about the existing facial and dental changes and of the risks of prolonged sucking habit, showing the child pictures of an occlusion satisfactory to idealize it and compare the results with his or her mouth.

According to studies^(6,13,16-17) about the removal of sucking habits, the comprehension by the child and the collaboration of parents or guardians are essential. Therefore, they must help with positive reinforcement, accepting provided instructions and avoiding interfere, punish the child or overestimate the problem. Parents should encourage and motivate children reinforcing the desired behavior with praise, smiles, hugs and awards⁽²⁰⁾. In another study⁽²¹⁾, mothers reported that counseling and awareness of the consequences of the practice of habit, were the most efficient method for the child to leave it.

The making of the calendar was the most successful activity among the children; four stopped the habit in this period and the parents stated that the fact of not wanting to draw a sad face and disappoint the professional was the primary factor. It is believed that if the professional-patient relationship is well structured, the link is strong and success will be achieved. This

type of activity aroused the interest of the child and made her feel motivated to perform the tasks as best as possible, avoiding disappointing his parents and the professional. In this sense, among the treatments that are recommended in the literature a study points out that it is essential that positive reinforcement is filled with incentives in the days that the child does not present the habit, becoming an effective alternative to eliminate it⁽¹⁰⁾.

The children's story had great influence on the elimination of habit because three children abandoned it after hearing the story. The activity was took into account the fantasies of every child, playing with imagination and showing the consequences of the suction habits. When the child was encouraged, he or she felt confident and willing to cooperate because he was motivated to do so.

One aspect that made the work difficult was the parents' anxiety. They initially accepted the proposal but did not trust her son or daughter could really give up the habit once they had tried several ways without result. However, other authors⁽¹⁶⁾ report that over the course of work and results being achieved, parents gain confidence to proceed.

There is no unanimity of views about the appropriate age to stop the habit. However all authors agree on the need to discontinue the habit early because the risks of severe facial disharmony will be smaller and with greater chances of self-correction of malocclusion⁽¹⁸⁾. The abrupt interruption of habits is not recommended because if they are due to psychological needs, they may function as an escape valve for tensions and as a means of obtaining comfort and relief, which may lead to the development of the worst habits such as teeth scraping and compulsion for food⁽³⁾.

One study⁽¹¹⁾ describes that prolonged sucking habits for more than two years produce higher risks of developing occlusion problems. The authors mention also the importance of clarifying the parents about the risks and the need to eliminate these habits, minimizing the dental changes. Other authors^(2,9,22) have shown that the malocclusion depends primarily on the intensity, strength and daily duration of the habit, position of the finger in the mouth, number of fingers and pacifiers involved in the act.

When the sucking habit continues beyond three years of age it is considered a sign of anxiety, instability or a desire to obtain attention, which may have repercussions on the child's social environment and organizational level, and can cause changes in mastication, speech and aesthetics⁽⁸⁾, because the abnormal pressures on the dental arcs that occur with the suction can cause deviations of the normal growth⁽¹⁰⁾.

In one study⁽²³⁾ conducted with parents of children with oral habits, abrupt cessation of the habit was the most widely used mechanism. But the most efficient mechanism to the elimination was the awareness and explanations provided by professionals who worked with the children. Thus, children aware of the consequences of the habit of sucking are more cooperative⁽¹⁸⁾. Using the method of explanation proposed by several authors^(7,19,20), seeking clarification and awareness of dental and craniofacial abnormalities caused by sucking, was effective in removing these results, a fact that can also be seen in the results of this study. For the child to become involved in

the treatment, the exercise of recreational activities and support and interaction with parents is very important⁽¹⁶⁾.

The strategy of talking to parents at the end of each session, answering questions and providing guidance was effective to motivate them and give them more security and confidence with the work.

CONCLUSION

The awareness strategy used was effective in eliminating oral habits of sucking pacifier or finger, in most children. The process helps children to understand the consequences of maintaining the habit and encouraging them to abandon it. The success of the work is associated to the children's awareness and the parents' collaboration and involvement.

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