Presence of temporomandibular joint discomfort related to pacifier use

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Summary

Aim: The goal of the present study was to analyze if the duration of pacifier use influenced the stomatognathic system in children that did not present any other parafunctional habits. **Study design:** Transversal cohort study. **Material and Method:** To collect data, a questionnaire was used and answered by the mothers of 90 children aged three to seven years old. **Results:** The children were divided into three groups: did not use pacifier; used pacifier until 2 years old; and used pacifier for more than 2 years. Greater prevalence of pain or discomfort in the stomatognathic system was observed among the children who had not used pacifier and the children who had used it for more than 2 years. The prevalence was smaller among the children who used pacifier until 2 years of age. **Conclusion:** Thus, it is concluded that pacifier is important to induce children to perform suction movements, preparing them to the introduction of solid foods. However, if used for a prolonged period of time, it may damage the joint and consequently the child's quality of life.

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INTRODUCTION

Temporomandibular joint (TMJ) is a mobile joint between the temporal bone and the mandible [1]. It is a synovial joint that is anatomically and kinesiologically interrelated with other close joints and the back [2].

Joint dysfunctions are resultant from abnormal functioning and may surge owing to different reasons, such as posture affections, disharmonic condyle position in relation to the disk, parafunctions, psychological factors, proprioceptive affections, resulting from occlusal imbalances, among others [3].

Temporomandibular joint dysfunctions (TMJD) are described by Siqueira & Ching [4] as a group of painful orofacial conditions with functional affections of mastication system. These dysfunctions may lead to different signs and symptoms and in many cases there are muscle pain in the masseter and temporalis, joint pain and earache, among others [5, 6].

These TMJD are more frequent in female patients; Correia[7] and Ramos [8] and Souza [9] showed that 97.9% of the affections occur in women and they are followed by characteristic signs and symptoms.

Problems in this joint are normally found in adult life, but they may start early in childhood and be related with the child's habits. Suction, considered a nourishing habit up to the age of 3 years and a bad habit after this age, has been quite frequently studied because it is a common habit and causes significant damage [10, 11].

Alamoudi et al. [12] showed that functional disorders of mastication system are common in children and adolescents and tend to increase in adult life. Thilander et al. [13] stated that temporomandibular dysfunctions in children also present a multifactorial etiology, creating parafunctional habits and occlusal affections that influence the natural function of mastication muscles.

Thus, parafunctional activities such as using a pacifier, normally more common in girls [14], may be a trigger of TMJD because they cause anterior open bite, mandible retrusion, maxilla protrusion, excessive overbite, buccal direction of upper incisors, posterior crossbite, high palate and angle deformities [15].

Martins et al. [16] carried out a study with children aged 2 to 6 years and concluded that the habit of pacifier suction might trigger dental occlusion anomalies.

Cavassani et al. [17] found joint disorders in 55.56% of the studied sample, which was formed by children aged 5 to 9 years, which presented suction oral bad habits.

Thus, we can see that oral habits, which are frequent in children, cause imbalance of stomatognathic system and it may surge as an etiological factor of TMJD. Therefore, the present study intended to analyze the time of pacifier use and how it influenced the stomatognathic system of children that did not have parafunctional habits.

MATERIAL AND METHOD

Before data collection, the project was submitted to the Ethics Committee, Universidade de Mogi das Cruzes. After its approval, we asked for authorization by two schools (one private and one public, both located in the city of São Paulo). We informed the mothers of 150 children about the objectives of the study and they signed the free informed consent term.

We included in the study all children whose mothers answered the questionnaire and that did not present other parafunctional habits in addition to pacifier suction, according to the questionnaire. We excluded children whose mothers did not completely answer the questionnaire or did not want to, and those that presented other parafunctional habits in addition to pacifier use, such as thumb suction, bruxism, nail biting or gum chewing.

Questionnaires were given to the mothers, together with a folder addressing temporomandibular joint disorders and a contact telephone in case of questions.

After analyzing the results, 60 children were excluded because they had other parafunctional habits. We included 90 children aged 3 to 7 years and there were 49 girls and 41 boys.

The questionnaire started with personal data and comprised the following questions:

1. Whether the child had TMJ pain;
2. Whether the child had headache;
3. Whether the child had earache;
4. Whether the child got tired when chewing food;
5. Whether the child presented difficulties to chew food;
6. Whether the child had used a pacifier and up to which age;
7. Whether the child had sucked his thumb;
8. Whether the child locked or made noise with the teeth;
9. Whether the child bit his nails;
10. Whether the child chewed gum.

To analyze the results, children were divided into three groups, according to the time they had used a pacifier:

- Children that had not used a pacifier (33 children);
- Children that had used a pacifier up to the age of 2 (14 children);
- Children that had used a pacifier after the age of 2 years (43 children).

Analysis of results

After the assessment, we calculated the grade of correlation between the collected variables and duration of pacifier use. To measure and assess the level of correlation between random variables we used Pearson Correlation Coefficient [18]. To calculate this coefficient, we used the following formula: