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RESEARCH ARTICLE

Understanding the relationship between orofacial structures and feeding habits of preschoolers: A multivariate analysis

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Abstract

The understanding of the relationship between orofacial structures and feeding habits in preschoolers is helpful for health professionals and those dedicated to food science. The hypothesis tested was whether this relationship is already present even at a very young age. This cross-sectional study included 91 healthy caries-free children (50 girls/41 boys; 3.4–6.2 years; mean 4.1 years) and a comprehensive evaluation of the stomatognathic system was performed: dietary intake, facial and occlusal morphology, gustatory sensitivity, bite and lip forces, and orofacial myofunctional aspects (mastication

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and orofacial myofunctional aspects (mastication, swallowing and breathing functions). Principal component analysis summarized the variables related to the form and function of the orofacial aspects; further, K-means analysis identified two clusters of participants with similar aspects. Cluster 1 ("Low orofacial myofunctional functioning"; *n* = 51) was characterized by children who showed the worst performance of mastication, swallowing and breathing functions and whose parents reported the consumption of sweets, cookies, chocolate, but not fresh fruits the day before, in addition to the higher bottle-feeding and pacifier use duration. This cluster also showed higher sweet taste threshold. Cluster 2 ("High orofacial myofunctional functioning"; *n* = 40) showed lower bottle-feeding and pacifier use duration, higher gustatory sensitivity, greater maxillo-mandibular dimensions, and better orofacial function performance. The variables sex and BMI did not associate to clusters profile. The frequencies of open bite and current sucking habit (pacifier) also differed between clusters. The results showed that an association between form and function of the structures that comprise the stomatognathic system and dietary intake is already present in children with primary dentition.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to ethical restrictions.