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Relationship between nutritional sucking habits, taste sensitivity, food consistency and body mass index in children: a multivariate analysis

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As feeding and sucking habits may be interrelated and also associated with taste and body composition, the objective of this study was to perform an exploratory analysis to identify groups of children in a way that the degree of association between intragroup subjects is maximal, providing an explanation and interpretation of the data collected. For this purpose, 354 prepubertal children were enrolled (197 girls; age range= 84-139 months), from whom the following variables were examined: time of breastfeeding, time of bottle-feeding, taste sensitivity (for sweet, salt, bitter and sour in four different concentrations), body mass index (BMI), and food consistency (using a proxy questionnaire). In addition, the salivary concentrations of amylase and total protein were determined. Data were submitted to exploratory analysis, normality test, cluster analysis (K-means), one-way ANOVA and correlation test. The analysis identified three reliable and meaningful clusters, which varied by nutritional sucking habits, taste sensitivity, BMI, food consistency, and age. A pattern of subjects with a longer breastfeeding and shorter bottle-feeding time, lower BMI and higher food consistency was observed, with significant differences ($p < 0.05$). In addition, a group of older children with higher taste sensitivity was identified. No correlation was found between salivary amylase and total protein concentrations, taste sensitivity and BMI, although taste sensitivity showed to be higher among girls. Identifying patterns of grouping of nutritional habits may help health professionals provide infant and young child feeding counseling.