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**Nutritional Status in Relation to Oral Health  
Condition and Treatment Needs among  
Kindergarten Children in Al-Basrah  
Governorate/Iraq**

A Thesis

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## **Abstract**

**Back ground:** Nutrition and diet can affect the development and integrity of the oral cavity as well as the progression of oral diseases. Oral health and nutrition share an interdependent relationship that good nutritional health promoting good oral health.

**Aim of the study:** This study was conducted to assess the occurrence and severity of dental caries, dental plaque, gingivitis, enamel anomalies in addition to dental treatment needs, and their relations to nutritional status among kindergarten children in Al-Basrah governorate/Iraq.

**Materials and Methods:** The assessment of nutritional status was performed using anthropometric measurements following Centers for Disease Control and Prevention growth chart (2000). Diagnosis and recording of dental caries and enamel anomalies were according to the criteria of WHO 1987, WHO 1997 respectively. Plaque index by Silness and Loe (1964) used for plaque assessment, gingival index by Loe and Silness (1963) was used for recording gingival health condition.

**Results:** The percentage of children with malnutrition according to Height for age (HFA) (stunting and severe stunting) indicator was found to be (1.1%), Weight for age (WFA) (underweight and severe underweight) indicator was found to be (3%) and Body mass index-for-age (BMI) (wasting and severe wasting) indicator was found to be (8.8%).

Result showed that 19.2% of the total sample was caries-free children. The dmfs mean rank value was higher among total boys compared to total girls with no statistically significant difference. The dmfs value increased with ages with statistically highly significant difference ( $P < 0.01$ ). When study the value of dmfs according to nutritional status indicators, it was found that the wasted children had higher dmfs value than well nourished children regarding body mass index with no statistically significant differences. The higher percentage of children was found to

be in need of one surface filling (71.6%) followed by those in need of preventive or fissure sealant (61.3%).

The mean rank value of plaque index for total boys was found to be higher than total girls with statistically significant difference, while the opposite finding was recorded concerning gingival index with no significant difference. Finding of this study demonstrated that 100% of the children had gingival inflammation. For the total sample, the moderate type of gingivitis was the most distributed type (76.5%). The plaque index was higher among stunted, underweighted and wasted children than well nourished children regarding all indicators, and the gingival index was higher among underweighted and wasted children than well nourished children regarding weight for age and body mass index, while it was higher among well nourished children regarding height for age than stunted children with no significant difference except for wasted who had significantly difference. Positive highly significant correlations were recorded between caries-experience, gingival and plaque indices.

In general the percentage of enamel anomalies was found to be 31.1%. The mean rank value of any type of enamel defect among boys were observed to be higher than girls children with no significant differences. The mean rank value of diffused opacities were found to be higher among stunted and underweighted children than well nourished children concerning height for age and weight for age, while opposite picture was found to be higher among well nourished children regarding body mass index than wasted children, these differences were statistically not significant. The most prevalent type of enamel defect was found to be diffused opacities followed by demarcated opacities and then hypoplasia. The percentage of children affected by one tooth with any type of defect enamel was found to be higher than children affected with two or three and more teeth demarcated opacities, diffused opacities and hypoplasia. A negative non significant correlations between caries-experience and enamel anomalies were found.

**Conclusion:** A higher percentage of children were found with dental caries and gingivitis. The plaque and gingival index was found to be higher among malnourished children. The higher percentage of children were recorded to be in need of one surface filling followed by those in need of preventive or fissure sealant. Therefore, it is necessary to formulate a preventive program for those children.