

Republic of Iraq  
Ministry of Higher Education  
and Scientific Research  
University of Baghdad  
College of Dentistry



**Oral Health conditions in relation to nutritional  
status among 10 years old primary school  
children in Al-Hillah city/Iraq**

A Thesis

Submitted to the Council of the College of Dentistry at  
University of Baghdad in Partial Fulfillment of the  
Requirement for the Degree of Master of Science in  
Pediatric Dentistry

By:

**Sarah Yousif Abbas**

B.D.S.

Supervised By:

Assist. Prof. Dr. **Nadia A. Al Rawi**

B.D.S, M.Sc., Ph.D.

Baghdad – Iraq

2019 A.D.

1441 A.H

## **Abstract**

**Background:** The most common oral health problem affecting children is dental caries, through the world especially in developing countries as in Iraq; however, it is not life threatening human disease. Another dental problem seen in children is enamel defect. All these diseases may be affected by nutritional status. Nutrition can affect the integrity and development of the oral cavity in addition to the development of the oral disease.

**Aim of the study:** To assess the of dental caries experience and gingival health condition in addition to enamel defect and their relations to the nutritional status among 10 years old primary school children in Al-Hillah city.

**Materials and Methods:** The total sample composed 891 children selected randomly from different school in urban and rural area in Al-Hillah city in Iraq. Oral examination of dental caries and enamel defect were done according to the criteria described by (WHO, 1987) (WHO, 1997) respectively. Plaque index was assessed according to Silness and Loe, (1964); gingival index according to Loe and Silness, (1963) was used for recording of gingival health condition. Nutritional status was assessed in accordance with body mass index (BMI) indicator by using anthropometric measurement (weight and height) then followed the criteria of Centers for Disease Control and Prevention growth chart (CDC, 2000).

**Results:** Results showed that 83.50% of total sample was affected with dental caries among 10 years old primary school children. there was no statistically significant relationship was observed between place of residence and dental caries. The mean of dmfs value was  $7.27 \pm 6.95$  and dmft was  $2.95 \pm 2.36$  for the total sample. As well as residency area, the result revealed that missing primary teeth (ms) were significantly higher in rural areas, while primary filling surface (fs) were significantly higher in urban areas .

In permanent dentition, the DMFT value was  $0.47 \pm 0.78$  and DMFS value was  $0.77 \pm 1.79$  of total children. Girls had higher mean value of DMFS/DMFT than boys with significant difference ( $P < 0.001$ ). The mean value of DMFT/DMFS, Ds, Fs were significantly higher in urban areas than rural areas ( $P < 0.001$ ).

The prevalence rate of gingivitis was 19.2% of total sample, 15.49% had mild, 3.48% moderate, 0.22% severe types of gingivitis. No statistically differences were recorded in the gingival index either gender, or residence.

Plaque index was significantly higher in rural areas compared to urban areas. Results was found to be statistically strong correlation between plaque index (PI) and gingival index (GI),

Regarding enamel defect, the prevalence rate was found to be 13.92% of total sample. The majority of those defects were demarcated opacities followed by diffuse opacity then enamel hypoplasia. There were higher percentage of enamel defect in girls than boys with significant difference ( $P < 0.001$ ).

The prevalence of underweight children was recorded by using Body Mass Index (BMI) 5.05%. girls was well-nutritiaed than boys with a significant difference. Children living in rural areas have shown well-nutritional status than the children lived in urban areas with significant difference. Underweight children have shown more affected with dental caries in primary dentition than permanent dentition with significant difference. No significant differences were recorded between PI, GI, enamel defects and nutritional status.

**Conclusion:** A high prevalence of dental caries was recorded among primary school students in Al-Hillah city; underweight children more affected with dental caries. It is necessary to enhance public and school preventive programs, achievement of oral hygiene education in schools and maintenance the importance of regular dental checkup to reduce oral health problem such as dental caries.