

**Republic of Iraq
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Oral Health Condition In Relation To Nutritional Status among Children with Congenital Heart Disease

A Thesis

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Abstract

Background: Congenital heart disease (CHD) is one of the most common developmental anomalies in children. Those children need special care in dentistry, because of their susceptibility to infective endocarditis from oral infections and at high risk to develop oral diseases. Transient bacteremia occurs frequently during dental procedures with instrumentation or even after routine oral activities.

Aims of the study: The present study aims to identify the prevalence and severity of dental caries and treatment needs, gingival health condition and enamel anomalies in relation to nutritional status among children with congenital heart disease in comparison to control group in relation to age and gender.

Subjects, Materials and Methods: The sample-involved children with congenital heart disease (Cases) consisted of 399 males and females aged between (6-12) years, attending to Ibn Al-Bitar specialized center for cardiac surgery for diagnosis, treatment and follow up. A control group consisted of 485 child were examined from primary schools in Baghdad city. Diagnosis and recording of dental caries, treatment needs and enamel anomalies were according to the criteria of World health organization (WHO), (1997). Modified Gingival Index (MGI) of Lobene et al (1986) was used to assess gingival condition of participants. The assessment of nutritional status was performed using anthropometric measurements following Centers for Disease Control and Prevention growth chart (CDC), (2000). International Business Machines Statistical Package for Social Sciences (IBMSPSS) version 23 was used for data analysis.

Results: The percentage of children with acyanotic congenital heart disease (82.2%) was higher than the percentage of those with cyanotic (17.8%). Results demonstrated that percentage of caries free among cases was (1.5%), while the percentage was (33.4%) for control group with statistically highly significant difference ($p < 0.01$). The mean rank values of caries experience and its components for primary and permanent teeth were higher among cases than control group with high significant differences ($p < 0.01$). The mean rank value of caries experience for primary teeth

among cases was higher at age group 8-9 years than other age groups, while for permanent teeth mean rank value found to be higher at age group 12 years with high significant difference ($p < 0.01$). The higher mean rank of examined children with congenital heart disease were in need of one surface filling, followed by those in need of two or more surface filling. The present study revealed that 100% of the total sample were affected by gingival inflammation with higher mean rank value among congenital heart disease cases than control group with significant difference ($p < 0.01$). For the total sample, the mild type of gingivitis was the most distributed type, (65.7%) for cases and (99.2%) for control group. The percentage of enamel anomalies was higher among cases (4.0%) than control group (1.6%).

The percentage of children with malnutrition according to height for age (HFA) indicator was found to be 24.3% for cases and 1.2% for control group, and Body mass index-for-age (BMI) indicator was found to be 14.3% for cases and 2.2% for control group with high significant difference ($p < 0.01$).

Concerning congenital heart disease cases, the value of caries-experience of primary teeth according to height for age indicator was higher among not stunted children than stunted, while for permanent teeth showed opposite results with no statistical significant ($p > 0.05$). The caries experience for primary teeth was higher among wasted cases than not wasted with high statistical significant ($p < 0.01$), but for permanent teeth, the opposite results were found. The mean value of gingival index was higher among stunted and wasted cases than others. Enamel opacity was recorded in higher percentage among stunted than well-nourished cases, while the opposite picture found regarding body mass index.

Conclusion: The results of current study revealed that these children are at risk from oral diseases. Children with congenital heart disease had high levels of caries experience, gingivitis, dental anomalies and malnutrition. The higher percentage of children were recorded to be in need of one surface filling followed by those in need of two or more surface filling. Therefore, it is necessary to formulate of preventive program for those children in addition to develop strategies toward preventive dental care and informing their relatives is suggested.