

**“ANALYSIS OF OCCLUSAL FORCE, MANDIBULAR POSITION
AND CRANIOFACIAL MEASUREMENTS IN CHILDREN:
A CLINICAL STUDY”**

By

DR. SHAZNEEN FIRDOSH DARUWALLA

Dissertation Submitted to the
Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

In partial fulfillment
of the requirements for the degree of

MASTER OF DENTAL SURGERY (M.D.S.)

in

PEDIATRIC AND PREVENTIVE DENTISTRY

Under the guidance of

**DR. RAJESH T. ANEGUNDI
PROFESSOR**

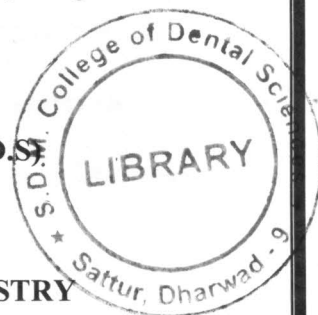
DEPARTMENT OF PEDIATRIC AND PREVENTIVE DENTISTRY
S.D.M. COLLEGE OF DENTAL SCIENCES & HOSPITAL, DHARWAD

and

**DR. KONARK PATIL
ASSISTANT PROFESSOR**

DEPARTMENT OF PROSTHODONTICS
S.D.M. COLLEGE OF DENTAL SCIENCES & HOSPITAL, DHARWAD

April 2017



ABSTRACT

Background:

Some of the oral parafunctional habits in children commonly go undiagnosed or unnoticed and those that persist may have profound effects on the oro-facial structures. They create problems in adulthood which are manifested as migraine, jaw tenderness, facial pain, preauricular pain, limitation in mouth opening, clicking sound on opening etc. thus leading to TMDs. SDB is increasingly being recognised as a cause of morbidity even in young children and results from having a structurally narrow airway combined with reduced neuromuscular tone and increased airway collapsibility. Craniofacial morphology, bite force and mandibular positions are altered in both TMDs and SDB. Occlusal analysis has evolved over the years from traditional methods to digital occlusal analysis. Computerised occlusal analysis evaluates the occlusion qualitatively and quantitatively and has gained importance in the diagnosis of TMDs. Since the pediatric dental literature in this area is scanty, an attempt has been made to use computerised occlusal analysis in children.

Therefore, the study aims to assess bite force and mandibular position through T-scan, skeletal discrepancies and craniofacial morphology through clinical examination and thus enable early diagnosis or association of these with TMDs and SDB in children.

Objectives:

- To assess the bite force and mandibular position using T-scan.
- To assess skeletal discrepancies and craniofacial morphology through clinical examination.
- To enable probable diagnosis and association of these with TMDs and SDB in children.

Materials and Methods:

Children from various schools in Hubli-Dharwad city were selected by cluster sampling methodology to participate in the study. Prior to the examination a brief history of the children and parents was taken. The children were clinically examined for craniofacial morphology and occlusal assessment was done using T-scan.

Results/Discussion:

The results were statistically analysed and the association of bite force, mandibular positions, skeletal discrepancies and craniofacial morphology with TMDs and SDB was determined. The results indicated that there were significant differences in cranial index, facial index, TMDs and SDB among different age groups. Among children showing symptoms of TMD, most of them had a hyperdolicocephalic cranial form. Among children showing symptoms of SDB, most of them had a convex profile, hyperleptoprosopic facial form and hyperdolicocephalic cranial form. No significant differences were noted in the bite force and mandibular positions in children with or without symptoms of TMDs and SDB.

Conclusion:

It was concluded that early diagnosis, though difficult, was very important to identify these conditions in their early stages and nip them in the bud to prevent them from further progression in adulthood.

Keywords:

TMDs, SDB, T-scan, occlusion, craniofacial morphology.