

اطباق الأسنان الابتدائية عند عمر 3-4 سنوات لدى مجموعة من الأطفال المصريين

رسالة مقدمة وفقا لمتطلبات نيل درجة الماجستير
فى طب اسنان الأطفال و التقويم

قسم طب اسنان الأطفال و التقويم
كلية طب الأسنان
جامعة عين شمس

أميرة سعد بدران

بكالوريوس طب و جراحة الفم و الأسنان – جامعة القاهرة
معيد بقسم طب اسنان الأطفال و التقويم - كلية طب الأسنان
جامعة عين شمس

2007

لجنة الأشراف

الدكتورة / نادية عز الدين متولي

أستاذ مساعد بقسم طب اسنان الأطفال
كلية طب الفم والأسنان – جامعة عين شمس

الدكتور / أحمد كمال عمران

أستاذ مساعد بقسم طب اسنان الأطفال
كلية طب الفم والأسنان – جامعة عين شمس

Occlusion of primary dentition of 3 to 4 year old Egyptian children

THESIS

Submitted to the Faculty of Dentistry, Ain-shams University in
partial fulfillment of the requirements of the Master's Degree in
Orthodontic and Pediatric dentistry

By

Amira Saad Badran

B. D. Sc. Cairo University

**Orthodontics and Pediatric Dentistry Department
Faculty of Dentistry
Ain-Shams University**

2007

SUPERVISORS

Dr. Nadia Ezz El-Din Metwally

*Associate Professor, Pediatric Dentistry Department
Faculty of Dentistry
Ain Shams University*

Dr. Ahmed Kamal Omran

*Associate Professor, Pediatric Dentistry Department
Faculty of Dentistry
Ain Shams University*

This work is dedicated to ...

My father, to my mother my first words for their love and support, to my brother and sisters my first friends and to my husband for his encouragement and understanding.

*And last but not least my beloved daughters
Malak and Farida.*

Acknowledgement

*First and foremost thanks are due to **ALLAH** the most beneficent and most merciful.*

*I would like to express my deepest gratitude to **Dr. Nadia Metwally**, Associate Professor of Orthodontics and Pediatric Dentistry Department, Faculty of Dentistry, Ain Shams University, for her support, meticulous advice and valuable comments throughout this work, I benefited greatly from her experience and knowledge throughout the research work,*

*I would like to express my deep gratitude to **Dr. Ahmed Omran**, Associate Professor of Orthodontics and Pediatric Dentistry Department, Faculty of Dentistry, Ain Shams University, for his valuable stimulating guidance, cooperation and assistance during this study.*

Finally, I would like to thank all the staff members, colleagues and laboratory technicians for their help and encouragement during the course of this work,

Contents

	Page
List of tables	i
List of figures	iii
Introduction	1
Review of literature	2
Aim of the study	39
Materials and methods	40
Results	59
Discussion	89
Summary	95
Conclusions	97
Recommendations	99
References	100
Arabic summary	

List of tables

Table	Page
1. Comparison of the mean arch length of maxillary and mandibular arches for boys and girls.	59
2. Comparison of the mean intercanine width of maxillary and mandibular arches for boys and girls.	61
3. Comparison of the mean intermolar width of maxillary and mandibular arches for boys and girls.	63
4. Correlation between intermolar and intercanine widths.	64
5. Arch relationship in the transverse plane.	67
6. Comparison between maxillary and mandibular right and left sides in boys.	69
7. Comparison between maxillary and mandibular right and left sides in girls.	70
8. Comparison between maxillary deciduous teeth in boys and girls.	72
9. Comparison between mandibular deciduous teeth in boys and girls.	74
10. Anteroposterior molar relationship for boys and girls.	76
11. Anteroposterior canine relationship for boys and girls.	78
12. Distribution of overjet in boys and girls.	80
13. Distribution of overbite in boys and girls.	81

14.	Comparison of mean overbite and overjet for boys and girls.	82
15.	Correlation between overbite and overjet.	83
16.	The frequency of spacing and crowding in maxilla and mandible for boys and girls.	85
17.	Comparison of the mean primate spaces in maxilla and mandible for boys and girls.	86
18.	Frequency of primate spaces in boys and girls for both arches.	87

List of figures

Figure	Page
1. Brass wire used to measure arch length	46
2. Brass wire straightened and its length is measured with digital caliper determine arch length	46
3. Measuring of intercanine width with digital caliper	47
4. Measuring of intermolar width with digital caliper	48
5. Flush terminal plane.	49
6. Distal step.	50
7. Mesial step.	51
8. Measuring of overjet with digital caliper	52
9. Measuring overbite with digital caliper	54
10. Generalised spacing	55
11. Localized spacing	55
12. No spacing.	56
13. Crowding	56
14. Measuring of primate space with digital caliper	57

15.	Meanarch lengths of maxillary and mandibular arches in boys and girls.	60
16.	Mean intercanine width of maxillary and mandibular arches for boys and girls.	62
17.	Mean intermolar width of maxillary and mandibular arches for boys and girls.	64
18.	Correlation between intermolar and Intercanine widths in boys (Maxilla).	65
19.	Correlation between intermolar and Intercanine widths in girls (Maxilla).	65
20.	Correlation between intermolar and intercanine widths in boys (Mandible).	66
21.	Correlation between intermolar and intercanine widths in girls (Mandible).	66
22.	Arch relationships in the transverse plane.	68
23.	Comparison between tooth sizes in both sides (Boys).	70
24.	Comparison between tooth sizes in both sides (Girls).	71
25.	Mean tooth sizes of maxillary teeth in boys and girls.	73
26.	Mean tooth sizes of mandibular teeth in boys and girls.	75

27.	Anteroposterior molar relationships for boys and girls.	77
28.	Anteroposterior canine relationships for boys and girls.	79
29.	Distribution of overjet in boys and girls.	80
30.	Distribution of overbite in boys and girls.	81
31.	Mean overbite and overjet for boys and girls.	83
32.	Correlation between overjet and overbite in boys.	84
33.	Correlation between overjet and overbite in girls.	84
34.	Frequency of spacing and crowding in maxilla and mandible for boys and girls.	85
35.	Mean primate spaces in maxilla and mandible for boys and girls.	87
36.	Frequency of primate spaces in boys and girls for both arches.	88

Introduction

Occlusion of the teeth, that is tooth alignment and intercuspation, relates to a diversity of functional activities, the longevity of the dentition, and facial esthetics. However, occlusion cannot be taken for granted, for if we observe more carefully we will find many occlusal defects even in supposedly "good" occlusion. Some of these defects may mean little in the life cycle of occlusion, while others may affect the occlusion so as to require treatment.

Much could be done in preventive orthodontics if we were trained to recognize the onset of the minimal departures from a "good" occlusion, and applied simple measures to prevent their disturbing influence during the developmental stages. A difficult task facing pedodontists is to make a judgment as to whether or not orthodontic treatment is necessary. Therefore the pedodontists who wish to provide comprehensive dental health care for their young patients should follow general principles to evaluate occlusion of primary dentition in order to be able to distinguish normality from abnormality

Although several previous researches confirmed ethnic and gender differences among children with malocclusions, yet a limited information is available on preschool children especially in the Arab world.

Review of literature