

Evaluation of Association between Different Early Feeding Practices and Incidence of Early Childhood Caries

Thesis

Submitted for Partial Fulfillment of the Masters Degree in
Pediatric Dentistry

Faculty of Dentistry

Ain Shams University

By:

Abla Ahmed Mohamed Aly

B.D.Sc. (Ain Shams University, 2007)

*Teaching Assistant of Pediatric Dentistry and Dental Public Health
Pediatric Dentistry and Dental Public Health Department*

Faculty of Dentistry

Future University in Egypt

Faculty of Dentistry

Ain Shams University

2015

Supervisors:

Dr. Amr Mahmoud Abd El-Aziz

*Professor and Head of Pediatric Dentistry and Dental Public Health
Department*

Pediatric Dentistry and Dental Public Health Department

Faculty of Dentistry

Ain Shams University

Dr. Reham Khaled Abo El-Fadl

Lecturer of Pediatric Dentistry and Dental Public Health

Pediatric Dentistry and Dental Public Health Department

Faculty of Dentistry

Ain Shams University

Dr. Dina Mohamed Erfan

Lecturer of Medical Microbiology and Immunology

Faculty of Medicine

Ain Shams University

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

“وَعَلَّمَكَ مَا لَمْ تَكُنْ تَعْلَمُ وَكَانَ فَضْلُ اللَّهِ عَلَيْكَ
عَظِيمًا”

صدق الله العظيم

سورة النساء

First thanks to Allah to whom I relate any success in achieving any work in my life.

I'd like to express my deepest thanks, gratitude and appreciation to Prof. Dr. Amr Mahmoud Abd El-Aziz, Professor and Head of Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Ain Shams University, for his kind guidance, valuable instructions and generous help.

Special thanks are due to Dr. Reham Khaled Abo El-Fadl, Lecturer of Pediatric Dentistry and Dental Public Health, Faculty of Dentistry, Ain Shams University, for her meticulous supervision, outstanding support, active participation and guidance.

I am deeply thankful to Dr. Dina Mohamed Erfan, Lecturer of Medical Microbiology and Immunology, Faculty of Medicine, Ain Shams University for her sincere efforts and great help.

My thanks are also extended to all my friends, colleagues and to the staff members at the Pediatric Dentistry Department in Future University for their support and help throughout this work.

*Dedicated to my parents for their endless
love and support, to all my family and
friends for the help and support they offered
me during this study*

List of Contents

Title	Page No.
List of Figures	i
List of Tables	iv
List of Abbreviations	vi
Introduction	1
Review of Literature	3
Aim of the Study	26
Subjects and Methods	27
Results	44
Discussion	61
Summary	71
Conclusions	74
References	76
Appendix	-
Arabic Summary	-

List of Figures

Figure No.	Title	Page No.
1	Knee to Knee position	29
2	Severe Early Childhood Caries	30
3	Breast Milk Samples	31
4	Formula Preparation	33
5	Mitis Salivarius Agar	34
6	Medium Preparation	34
7	Saliva Sample	36
8	Adding saliva to the medium	36
9	S.mutans Colonies	37
10	After incubation (breast milk)	38
11	After incubation (formula)	38
12	After incubation (distilled water)	38
13	pH meter	39
14	Color coding of teeth before and after insertion in milk	40
15	Labial surface of tooth examined using SEM-EDXA	40
16	Tooth immersed in breast milk	41

17	All sample teeth	42
18	EDXA Machine	43
19	Pie chart representing ECC prevalence	47
20	ECC prevalence according to gender	46
21	Comparison of maternal level of education and employment in two groups	47
22	Caries experience of mothers in the two groups	48
23	Feeding methods during the first 6 months in the two groups	49
24	Frequency of feeding during the night in the two groups	50
25	Sharing habits in the two groups	51
26	Weaning age in the two groups	52
27	Frequency of snacks in the two group	53
28	Oral hygiene measures in the two groups	55
29	Age of starting tooth brushing in the two groups	55
30	Mean number of CFU in the three groups	56

31	Mean pH before and after 72 hours within each group	57
32	Mean Ca weight % before and after immersion	58
33	Mean P weight % before and after immersion	59
34	Mean Ca/P ratio before and after immersion	60

List of Tables

Table No.	Title	Page No.
1	Composition of infant formula	32
2	Composition of Mitis Salivarius Agar	33
3	Demographic data and dmft of children included in the study.	45
4	Comparison between two groups in terms of maternal educational level and employment	47
5	Comparison between the two groups regarding caries experience of mothers	48
6	Comparison of feeding methods during the first 6 months between the two groups	49
7	Comparison between the two groups regarding frequency of feeding during the night	50
8	Comparison of sharing habits between the two groups	51
9	Comparison between the two groups regarding the weaning age	52
10	Comparison between the two groups regarding frequency of snacks	53
11	comparison between the two groups regarding oral hygiene measures	54

12	Comparison between the two groups regarding age of starting tooth brushing	55
13	Comparison between number of CFU in the three groups	56
14	Comparison between pH in the three groups	57
15	Comparison between Ca weight % in the two groups	58
16	Comparison between P weight % values before and after immersion	59
17	Comparison between Ca/P ratio values before and after immersion	60

List of Abbreviations

<i>Abb.</i>	<i>Full term</i>
ECC	Early Childhood Caries
AAPD	American Academy of Pediatric Dentistry
S-ECC	Severe Early Childhood Caries
S.mutans	Streptococcus mutans
S.sorbinus	Streptococcus sorbinus
WHO	World Health Organization
SIDS	Sudden Infant Death Syndrome
ART	Atraumatic Restorative Treatment
dmft	d= decayed primary tooth m= missing primary tooth f= filled primary tooth t= tooth

MSA	Mitis Salivarius Agar
CFU	Colony Forming Unit
SEM-EDXA	Scanning Electron Microscope – Energy Dispersive X-ray Analyzer
OR	Odds Ratio
CI	Confidence Interval
Ca	Calcium
P	Phosphorus