

TABLE OF CONTENTS

	Page
APPROVED PAGE	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF TABLES	x
LIST OF ILLUSTRATIONS	xii
CHAPTER I INTRODUCTION	1
1.1 Purposes of the study	1
1.2 Scope of the study	2
CHAPTER II LITERATURE REVIEW	3
CHAPTER III METHODOLOGY	9
3.1 Study population and sample	9
3.2 Methods	10
3.2.1 Facial measurements	10
3.2.2 Dental measurements	24
3.3 Statistical methods	32
3.4 Reliability of the measurements	32
CHAPTER IV RESULTS	34
4.1 Characteristics of subjects	35
4.2 Examinations and measurements of facial and dental variables in both subjects wearing brass neck-coils and subjects not wearing brass neck-coils by age group	37
4.2.1 Categorical data	37
4.2.2 Continuous data	40
4.3 The associations between neck-coil wearing and the categorical variables	46

4.4	Two-way analysis of variance of continuous variables between the subjects wearing brass neck-coils and the subjects not wearing brass neck-coils accounting for age group	48
4.4.1	Facial variables	48
4.4.1.1	Transverse relationship	48
4.4.1.2	Sagittal relationship	48
4.4.1.3	Vertical relationship	49
4.4.2	Dental variables	51
4.4.2.1	Transverse relationship	51
4.4.2.2	Sagittal relationship	51
4.4.2.3	Vertical relationship	52
4.5	Comparison of the incisor inclination and the palatal height between the subjects wearing brass neck-coils and the subjects not wearing brass neck-coils in age group 2	57
CHAPTER V	DISCUSSION	58
5.1	Methodological considerations	58
5.2	Facial variables	61
5.3	Dental variables	62
5.4	Clinical implications	64
5.5	Limitations	64
5.6	Suggestions	64
CHAPTER VI	CONCLUSION	65
BIBIOGRAPHY		67
APPENDIX		70
CURRICULUM VITAE		73

LIST OF TABLES

Table		Page
1	Number of the subjects, by neck-coil wearing and age group for the facial measurements	10
2	Number of the subjects, by neck-coil wearing and age group for the dental measurements	24
3	Number of the subjects, by neck-coil wearing and age group for measuring the incisor inclination and palatal height	31
4	Distribution of the subjects, by age group	35
5	Distribution of the subjects, by neck-coil wearing	35
6	Distribution of the subjects, by neck-coil wearing and age group	36
7	Means and standard deviations of height, weight and neck-coil length of the subjects by neck-coil wearing and age group	36
8	Distribution of type of occlusion between the subjects wearing brass neck-coils and the subjects not wearing brass neck-coils, by age group	37
9	Distribution of upper arch form between the subjects wearing brass neck-coils and the subjects not wearing brass neck-coils, by age group	38
10	Distribution of lower arch form between the subjects wearing brass neck-coils and the subjects not wearing brass neck-coils, by age group	39
11	Means and standard deviations of facial variables in the subjects wearing brass neck-coils and the subjects not wearing brass neck-coils, by age group	41

12	Means and standard deviations of dental variables in the subjects wearing brass neck-coils and the subjects not wearing brass neck-coils, by age group	44
13	The associations between neck-coil wearing and type of occlusion	47
14	The associations between neck-coil wearing and upper arch form	47
15	The associations between neck-coil wearing and lower arch form	47
16	Two-way ANOVA of the facial variables and their means and standard deviations by neck-coil wearing and age group	53
17	Two-way ANOVA of the dental variables and their means and standard deviations by neck-coil wearing and age group	55
18	One-way ANOVA and multiple comparisons for means of facial and dental variables among the groups categorized by neck-coil wearing and age group	56
19	The comparisons of the incisor inclination and the palatal height between the subjects wearing brass neck-coils and the subjects not wearing brass neck-coils in age group 2	57

LIST OF ILLUSTRATIONS

Figure		Page
1	The radiograph of a 43 years old Padaung women who have worn brass neck- coils for 38 years	4
2	Growth curves of the maxilla and mandible showed against the background of Scammon's curve	5
3	The Milwaukee brace	7
4	Facial photographs of patients with the Milwaukee brace	8
5	The position for frontal and lateral facial photographs	12
6	Frontal facial landmarks	15
7	Measurement of total face height and face widths	16
8	Lateral facial landmarks and a line	20
9	Measurement of vertical facial proportions in the lateral facial view	21
10	Measurement of upper and lower lips to Esthetic line and Sn-Pg' distance	22
11	Measurement of profile angle	23
12	Measurement of dental arch width	27
13	Measurement of dental arch length	28
14	The measuring instrument of the incisor inclination	29
15	Measurement of incisor inclination	30
16	Measurement of palatal height	30
17	The C-SA line	59
18	The Milwaukee brace (a) compares to the brass neck-coils (b)	60