

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

( اللهم لا سهل إلا ما جعلته سهلاً و أنت تجعل الحزن إذا شئت سهلاً )

(مَا أُوتِيتُمْ مِنَ الْعِلْمِ إِلَّا قَلِيلًا)

سورة الإسراء - الآية ( 85 )

## **DEDICATION**

**To** dear parents, who supported me along my lifetime and who told me never to give up or depress...

**To** each teacher who taught me a word or even a single letter...

**To** my friends who always motivate me...

**To** all those who stand beside me through all good and bad times.

**To** each single person who has hand in to make me reach this level of education...

**To** all staff of the Collage of Medical Radiological Science and technology of Sudan University...

**Accept my thankful and dedication of this research which has been done by the grace of GOD and then my works, to all of you as an obligation...**

## :Acknowledgements

**This** research would not be possible without the help of GOD and then the cooperation of my keen and competent supervisor Dr. Caroline Edward. We are very grateful to the magnificent guidance she offered to me.

**Also** my parent and friends who supported me during the whole trip of producing this research.

## **Abstract**

The oral health is an indicator for general individual health. The aims of this study were to assess the Oral Health by Using Orthopantomogram (OPG) as one of the radiological method .

This was a study of 100 panoramic radiographs taken from male patients ages range between 18-78 years old who presented to the Khartoum Teaching Dental Hospital, Almursi dental center at the period from September 2011 to May 2012 with.

The panoramic radiographs and dental records were reviewed in order to determine whether there were impacted or supernumerary teeth and loss teeth and caries, root infection as variables to evaluate the oral health.

The sample was classified in to old male age (31-60) years which at 58% of the sample and young male age (10-30) years act as 42%.

The results showed twice, third or all problem in the same time in normal cavity which the impacted teeth were (36%) is more common than supernumerary teeth (27%), appear loss teeth high score percentages (69%), also caries were (28%), and root infection was (25%).

This finding indicates that the oral health in Sudanese should be reviewed because it was not seen any remarkable improvement in the oral health in Sudan and the poor level of oral health services.

## ملخص الدراسة

صحة الفم هي المؤشر العام على صحة الفرد العامة، وكان الهدف من هذه الدراسة هو تقييم صحة الفم باستخدام أشعة الفك الكلية بإعتبارها واحدة من الطرق الإشعاعية و قد شملت الدراسة مائة صورة إشعاعية لذكور من مرضى مستشفى الأسنان التعليمي الخرطوم ومركز المرسى للأسنان والتي تتراوح أعمارهم بين (17-60) سنة والذين حضروا ل قسم الأشعة وذلك في الفترة من سبتمبر 2011 إلى مايو 2012 م .

ولقد تم تشخيص المرضى بناء على الصور الإشعاعية البانورامية ومراجعة ملفات المرضى لتحديد الأسنان المغمورة أو الزائدة وتسوس وفقدان الأسنان ، وكذلك شملت الدراسة ملاحظة بعض المشاكل الأخرى مثل التهاب الجذور. و قد صنفنا العينة الى ذكور كبار بعمر (31-60) بنسبة (58%) و ذكور يافعين بعمر (10-30) بنسبة (42%).

و قد أظهرت الدراسة أن بعضاً من المرضى لديهم حالتان أو ثلاثه أو يعانون من المشاكل جميعاً في أن واحد في تجويف الفم وأن أسنان العقل المغمورة لم تختلف بشكل ملحوظ بين الأعمار وأن النوع الأكثر شيوعاً من الأسنان المغمورة هو الانحشار الأوسط (36%) بينما الأسنان الزائدة كان الناب الأعلى (27%) وفقدان الأسنان كان واضحاً في الكثير من الحالات بنسبة (69%)، وايضا تسوس الأسنان كان بنسبة (28%) و التهاب الجذور بنسبة (25%).

تهدف النتيجة إلى أنه يجب النظر في صحة الفم بالسودان لعدم وجود  
رعاية تختص بصحة الفم والأسنان .

## List Of Tables

No	Title	page
1	Table (4.1) (old & young) distribution	48
2	Table (4.2) age distribution	49
3	Table (4.3) distribution of impacted wisdom teeth according to gender (old & young)	50
4	Table (4.3) distribution of impacted , loss , caries teeth	51
5	Table (4.4) distribution of impacted wisdom teeth according to (old & young)	52
6	Table (4.5) distribution of supernumerary teeth according to location and age	53
7	Figure (4.6) distribution of root infection	54

## List of Figures

N0	Title	page
1	Figure( 2.1) illustration demonstrating the age of eruption and shedding of baby teeth	8
2	Figure( 2.2) illustration demonstrating the age of eruption of old teeth	8
3	Figure (2.3) illustration of development of the teeth	9
4	Figure (2.4) Section of a human molar & premolar teeth	10
5	Figure (2.5) Histologic slide of tooth erupting into the mouth	12
6	Figure(2.6) illustration of directional terminology	15
7	Figure(2.7) illustration of upper teeth of the baby	16
8	Figure(2.8) illustration of lower teeth of the baby	16
9	Figure(2.9) illustration of upper teeth of the old	17
10	Figure(2.10) illustration of lower teeth of the old	17
11	Figure(2.11) innervations and blood supply of the Teeth	24
12	Figure(2.12) illustration of anatomic landmarks and surfaces of the teeth	25
13	Figure(2.13) mesial impaction	30
14	Figure(2.14) vertical impaction	30
15	Figure(2.15) horizontal impaction	31
16	Figure(2.16) distal impaction	31
17	Figure(2.17) soft-tissue impaction	31
18	Figure(2.18) bony impaction	32

19	Figure(2.19) Dental Caries (Cavities)	36
20	Figure (3.1) Pantos 16 xp panoramic Dental X-ray machine	46
21	Figure(4.1) (old & young) distribution	48
22	Figure (4.2) age distribution	49
23	Figure (4.3) distribution of impacted , loss , caries teeth	50
24	Figure (4.4) distribution of impacted wisdom teeth according to (old & young)	51
25	Figure (4.5) distribution of supernumerary teeth according to location and age	52

## Abbreviations

A	Abscess
CBCT	Cone Beam Computed Tomography
D	Distal
DTP	Dental Panoramic Tomogram
H	Horizontal
IOML	Intra-Orbito-Mental Line
LD	Lower Distomolar
LOS	Lack Of Space
LP	Lower Premolar
OPG	OrthoPantomoGrphy
M	Mesial
MD	Mesiodens
SPSS	Statistical Product and Service Solutions
T	Trauma
TMJ	Temporo-Mandibular Joint
UC	Upper Canine
UD	Upper Distomolar
UP	Upper Premolar
V	Vertical



## Contents

No	Topic	Page
	الافتتاحية	I
	Dedication	II
	Acknowledgement	III
	English Abstract	IV
	Arabic Abstract	V
	List of Tables	VI
	List of Figures	VII
	Abbreviation	VIII
<b>Chapter one – Introduction</b>		
1.1	Introduction	1
1.2	Orthopantomogram (OPG)	3
1.2.1	Principal advantage of panoramic images	4
1.3	Problem of the study	4
1.4	General Objectives	5
1.5	Important of the study	5
<b>Chapter two – Literature Review</b>		
2.1	Oral Health (W.H.O)	6
2.2	Dental anatomy	7
2.2.1	Primary teeth and Permanent teeth	9

2.2.2	The Development and Structure of teeth	11
2.2.3	Supporting and Structures surrounding the teeth	12
2.2.3.1	Periodontal ligaments	13
2.2.3.2	Alveolar bone	13
2.2.3.3	Gingiva	14
2.2.4	Directional terminology	16
2.2.5	Tooth names and positions	16
2.2.5.1	Baby Teeth	17
2.2.5.2	Permanent Teeth	18
2.2.6	Distinguishing characteristics of teeth	18
<b>2.2.6.1</b>	<b>Incisor</b>	19
<b>2.2.6.2</b>	<b>Canine</b>	20
2.2.6.3	Premolar	21
2.2.6.4	Molar	23
2.2.7	Innervations and Blood Supply of the Teeth	23
2.2.7.1	blood supply	23
2.2.7.2	Nerves	23
<b>2.2.8</b>	<b>Anatomic landmarks</b> and surfaces	24
2.3	Pathology of the teeth	26
2.3.1	Teeth conditions	26
<b>2.3.2</b>	<b>Abnormal teeth</b>	28
<b>2.3.2.1</b>	Number of teeth	28
2.3.2.2	Tooth Shape	28
2.3.2.3	Tooth Color	28
2.3.2.4	Physical structure	29
2.3.3	Impacted Wisdom tooth	30
2.3.3.1	Impaction classifications	30
2.3.3.2	Symptoms	32
2.3.3.3	Exams and Tests	33
2.3.3.4	Treatment	33

2.3.3.5	Complications	33
2.3.4	Supernumerary teeth	34
2.3.4.1	Supernumerary teeth classifications	34
2.3.4.2	problems associated with supernumerary teeth	35
2.3.4.3	Treatment	35
2.3.5	Dental Caries (Cavities)	36
2.3.5.1	Symptoms	37
2.3.5.2	Diagnosis	37
2.3.5.3	Expected Duration	37
2.3.5.4	Prevention	38
2.3.5.5	Treatment	38
2.3.5.6	Prognosis	39
2.3.6	Loss teeth	40
2.3.6.1	Causes	40
2.3.6.2	Prevention	40
2.3.6.3	Treatment	41
2.4	Dental radiographs	
2.4.1	Intraoral radiographic views	
2.4.2	Extraoral radiographic views	
2.4	Previous Study	41
<b>Chapter three – Materials and Methods</b>		
3.1	Materials	46
3.1.1	Patient	46
3.1.	Machine	46

2		
3. 2	Methods	47
3. 2. 1	Technique	47
3.2.2	Image interpretation	47
<b>Chapter four – Results</b>		
	Results Presentation	48
<b>Chapter five – Discussion and Conclusion</b>		
5. 1	Discussion	54
5.2	Conclusion	56
5.3	Recommendations	56
5.4	References	57
5.5	Appendix	60

