Dedication

This study is dedicated to my dear father, my great mother, my lovely family and to my friends.

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List of contents

Title **Pages**

Dedication…….……..……..... i

Acknowledgement……..……..... ii

List of contents……...……..... iii

List of tables…….....…..... vii

List of figures…….……..... viii

List of Abbreviation…….……...…… ix

Abstract in Arabic…….……..... x

Abstract in English…….……...……....…… xi

Chapter one: Introduction

1.1 Introduction……..……..... 1

1.2 Intraoral Radiographic Techniques…….…….…… 3

1.2.1 Criteria of image quality……...….……...…..... 3

1.2.2 Intraoral radiographic examinations……..……...… 3
1.3 Research objectives……...…...……....14
1.3.1 General objective……...14
1.3.2 Specific objective……...……...……..…..14
1.4 Problem of the study……...…….……..... 14
1.5 Importance of the study…….……..…. 14
1.6 Outline of the study…….…….....……15
1.7 The outcome of the study…….…...….15

Chapter two: Literature Review

2.1 Theoretical background……16
2.1.1 Quality Control……... ……...16
2.1.2 Quality Assurance Administration.....……..... 17
2.1.3 Quality control tests...……....……....17
2.1.4 Equipment……...18
2.2.5 Dental X-ray Machine…….....18
2.1.6 X-ray machine test……..18
2.2.7 Dental X-ray film……... 19
2.2.8 Screens and Cassettes…….. 20
2.2.9 Viewing Equipment……..... 21
2.2.10 Film Processing…….……. 21
2.2.11 Darkroom Lighting…… .21
2.2.12 Processing Equipment…….…..……...……..... 24
2.2.13 Processing Solutions……..……...……..... 24

2.1.14 Developer strength…….. 25
2.1.15 Fixer strength…….. …….. 27
2.1.16 Manual and automatic film processing…….. 27
2.2.17 Reject Analysis……..……...…..…. 29
2.2.18 Infection control……...…..……. 29
2.1.19 Infection control procedures…….. ……..29
2.1.20 Infection control barriers……30
2.1.21 Infection control procedures used prior to exposure……31
2.1.22 Preparation of the dental radiographer…… ……31
2.1.23 Infection control procedure used during exposure……..31
2.1.24 Infection control procedure used following exposure…… 32
2.1.25 Radiation protection…….……..…… 32
2.1.26 Patient protection…….. ……..32
2.1.27 Proper equipment…… ……33

2.1.28 Operator protection…….
…….33
2.1.29 ALARA concept…….
……34
2.2 Previous studies…….
……35

Chapter three: Methods and experiments

3.1 Materials……38
3.1.1 X-ray machine…….
….38
3.1.2 Digital meter……38
3.1.3 Fresh films……38
3.1.4 Viewbox……38
3.1.5 Coin…….
…39
3.2 Methods…….
….39
3.2.1 Sample size……39

3.2.2 Data collection……..…….39
3.2.3 Study duration……..40
3.2.4 Data analysis……40
3.2.5 Ethics……..
...40

Chapter four: Results

4.1 Results for quality control tests…….
…….41
4.2 Observed results for other tests…….
…….45
4.2.1 Results of testing darkroom integrity……45
4.2.2 Safe light test……45
4.3 Results for the questionnaire……...…….…….....……..… 46

Chapter five: Discussion, ….

5.1 Discussions…….…… 47
5.2 Conclusion……..…… 51
5.3 Recommendations…...……...…… 51

References……...53
Appendices……..55

List of tables

Title Page

Table 4.1: Reading of the digital meter……..……41

Table 4.2: Developing and fixing time.……..…41

Table 4.3: Reject Films analysis…..……..……42

Table 4.4: The percentage of rejects according to the examined regions. …..43

Table 4.5: The percentage of rejects according to the causes……..……...44

Table 4.6: The results of the questionnaire……46

List of figures

Title Page

Fig 1.1: Paralleling technique……..…….6

Fig 1.2: Bisecting technique……...……11

Fig 2.1: Coin-test……..…….23

Fig 2.2: Manual processing requirements……..……....28

Fig 2.3: Size of the controlled area…….……34

Fig 4.1: Number of rejected films……..….43

Fig 4.2: The percentage of rejects according to the region……44

Fig 4.3: The percentage of rejects according to the causes……45

List of Abbreviations

ALARA: As low as reasonably achievable

kV: kilovoltage

kVp: kilovoltage power

mA: milliamperage

PID: Position-indicating device

Q.A: Quality Assurance

SAEC: Sudanese Atomic Energy committee

Q.C: Quality Control

ملخص الأطروحة

إن الهدف من برنامج ضبط الجودة في مجال الأشعة هي التأكد من أن الصور التشخيصية التي تنتجها هذه الآلة هي ذات نوعية عالية الجودة بما فيه الكفاية بحيث توفر ما يكفي من المعلومات التشخيصية بأقل تكلفة ممكنة مع أقل قدر ممكن من تعريض المرضى للإشعاع، ولذا تعتبر تدابير ضبط الجودة في ممارسة طب الأسنان العام مهمة بنفس القدر كما هي في أقسام التصوير الإشعاعي المتخصصة.

تعتبر أهمية ضبط الجودة في التصوير الإشعاعي من المطلوبات الأساسية ضمن اللوائح المنظمة للتعامل مع الإشعاعات المؤينة.

تهدف هذه الدراسة إلى تقييم و مراقبة الجوده في قسم أشعة الأسنان في مستشفى النيلين الجامعي في الفترة من أكتوبر 2015م وحتى فبراير 2016م. وهي دراسة تجريبية تقوم على إختبار الوضع التشغيلي لجهاز أشعة الأسنان، و تقييم نظام الوقاية من

الإشعاع، و تدابير مكافحة العدوى، إضافة إلى جمع البيانات بإستخدام استبيان للحصول على معلومات حول ضبط الجودة في المستشفى تحت الدراسة.

توصلت الدراسة إلى أن هنالك إرتفاعا ملحوظاً في دقة الفولتية، كما أنه ليس هنالك تحليل منتظم لحالات الصور التالفة.

نتائج الإستبيان توضح أنه لا يوجد ضابط لضبط الجودة و أن القسم في حاجه إلى برنامج لضبط الجودة.

Abstract

The aim of radiographic quality control (QC) programme is to ensure that the diagnostic images produced by this machine are of sufficiently high quality

so that they provide adequate diagnostic information at the lowest possible cost and with the least possible exposure of the patient to radiation. Quality control measures are therefore as essential in a general dental practice, as they are in a specialized radiography department. This importance of quality is acknowledged in the ionizing radiations regulations which make quality assurance/ control in dental radiography a mandatory requirement.

This study aims to assess the quality control in dental x-ray department in Al Neelain university clinic. The study was experimental, done by testing the operational status of the dental x-ray machine, and assessing the radiation protection system, and the infection control measures, besides data collection using questionnaire to obtain information about quality control.

The experiments results showed that there was a noted increasing in the kVp accuracy, and there was no regular reject analysis system.

The results of the questionnaire showed that there was no quality control officer, and the department needs quality control programme.