

Table of Contents

TITLE PAGE.....	i
AUTHENTICITY STATEMENT	iii
ACKNOWLEDGEMENTS	v
Table of Contents	vi
List of Tables	ix
List of Figures.....	x
List of Equation	xi
List of Abbreviations	xii
CHAPTER I <u>I</u> NTRODUCTION	1
A. Background	1
B. Problem Statement	5
C. Research Questions	6
D. Research Objectives.....	6
E. Significance of Study	6
F. Originality of the Study	7
CHAPTER II <u>L</u> ITERATURE REVIEW	9
A. Basic of Radiation.....	9
1. Ionizing Radiation and Non Ionizing Radiation	9
2. Radiation Quantities.....	10
3. Radiation Protection.....	11
B. Radiation Interaction	13
1. Radiation Interaction with Matter	13
2. Interaction of Ionizing Radiation with Cells and with the DNA	15
3. Radiation Risk and Biological Effects	17
C. Radiation Nuclear Medicine	18
1. Radioactivity	20
2. Radiosensitivity.....	20

3. Radiopharmaceutical.....	21
4. Radioactive Decay	23
5. Thyroid Scan	24
6. Radiological Imaging	25
7. Thyroid Cancer Radiation Treatment.....	26
D. Radiation Protection for Worker.....	27
1. Occupational Dose	27
2. The IAEA Recommendation for Occupational Exposure Limit.....	27
3. Occupational Workers.....	28
4. Individual Monitoring	29
E. Theoretical Framework	35
F. Conceptual Framework.....	36
G. Hypothesis.....	37
CHAPTER III <u>MATERIALS AND METHODS</u>	38
A. Type of Research	38
B. Study Population and Sampling Method.....	38
1. Population	38
2. Sampling Method	38
D. Research Instruments	39
E. Research Variables	39
1. Dependent variable:	39
2. Independent variables:	39
D. Scheme of Work Plan	40
E. Research Procedure	41
F. Statistical analysis.....	41
CHAPTER IV <u>RESULT AND DISCUSSION</u>	42
A. Results.....	42
1. The data in Nuclear Medicine Department.....	47

2. The personal dosimeter Calibration	49
3. Others Issues	50
B. Discussion	51
Research Limitation	54
CHAPTER V <u>C</u> ONCLUSION AND RECOMMENDATION	55
A. Conclusion	55
B. Recommendations	56
References	57
Appendixes	60
Appendix I	60
Appendix II - Definitions.....	66