Dedication

TO

The soul of my father....Abd alrahman

My mother...Fatima

My beloved wife... Mashair

My daughters Ayat...Aythar

My old brother...Mohammed

My other brothers

My sisters

.... All my family
Acknowledgements

My gratitude and sincere thanks are expressed to whom supported this study:

- My supervisor, Dr. Asma Ibrahim, for her knowledge, advice, assistance and excellent guidance during the whole process.

- Omdurman Central Military Hospital department of Ultra sound.

- My thanks are extended to Sudan University staff especially College of Radiology.
ABSTRACT
Goitre is a common endocrine disorder worldwide. It is endemic in certain populations. It is more common in women and presents mainly in 4th and 5th decades of life. The study aimed to assessment of goitre in patients admitted to Omdurman Central Military Hospital. Descriptive cross sectional design. A number of 36 patients with enlargement of thyroid gland, with more than one nodule palpable or enlarged thyroid gland with nodular surface even toxic and nontoxic goitres were included in the study. The duration of study is three month (September to December 2015). The patients were interviewed by qualified physician regarding necessary information pertaining to thyroid. Each patient history was noted on a Performa. It includes age, sex, thyroid age and signs and symptoms associated with thyroid dysfunction. Goitre size was graded according to WHO criteria; (grade 0: absent goitre, grade 1: goitre palpable but invisible with neck in a normal position, grade Π: goitre visible with neck in a normal position and grade Ω: large goitre perceptible at a distance). Data was analyzed using SPSS version 15.0. The mean age of patients was 43.5 years. The majority 33 (91.7%) of patients were females. The majority of patients were from out of Khartoum 23 (63.9%).
An association was found between gender and goitre, while no association was found with residence and patient’s age. We recommend that Active surveillance should be implemented out of Khartoum mainly Kordofan and Darfur States for goiters.

كان متوسط أعمار المرضى 43.5 عاما بالغالبية 33 (91.7%) من المرضى- إناث. (% وكانت الغالبية العظمى من المرضى من خارج الخرطوم 23 (63.9%.

كان تصنيف تضخم الغدة الدرقية من الدرجة الثانية 44.4% ومن الدرجة الثالثة 16%، تليهما الدرجة الأولى 11.2% وفقا لتصنيف منظمة الصحة العالمية. تم ايجاد ارتباط بين النوع وتضخم الغدة الدرقية، في حين ان لا يوجد أي ارتباط مع الإقامة وعمر المريض. إن تضخم الغدة الدرقية الأكثر انتشارا بين المرضى الذين يحضرون إلى المستشفى العسكري بأم درمان. توصي الدراسة بأن يكون هنالك تقصي نشط لتضخم الغدة الدرقية و يجب أن ينفذ خارج الخرطوم.
# Table of contents

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedication</td>
<td>I</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>II</td>
</tr>
<tr>
<td>Abstract</td>
<td>III</td>
</tr>
<tr>
<td>Arabic abstract</td>
<td>IV</td>
</tr>
<tr>
<td>Table of contents</td>
<td>V</td>
</tr>
<tr>
<td>Abbreviations</td>
<td>VI</td>
</tr>
<tr>
<td>List of tables</td>
<td>VII</td>
</tr>
<tr>
<td>List of figures</td>
<td>VIII</td>
</tr>
<tr>
<td><strong>Chapter One: Introduction</strong></td>
<td></td>
</tr>
<tr>
<td>Background</td>
<td>1</td>
</tr>
<tr>
<td>Problem statement</td>
<td>3</td>
</tr>
<tr>
<td>Rationale of the study</td>
<td>3</td>
</tr>
<tr>
<td>Objectives of the study</td>
<td>3-4</td>
</tr>
<tr>
<td>Significance of the study</td>
<td>5</td>
</tr>
<tr>
<td>Overview of the study</td>
<td>5</td>
</tr>
<tr>
<td><strong>Chapter Two: Literature Review</strong></td>
<td>6-18</td>
</tr>
<tr>
<td>Anatomy of thyroid</td>
<td>6</td>
</tr>
<tr>
<td>Physiology of thyroid</td>
<td>7</td>
</tr>
<tr>
<td>Pathology of thyroid</td>
<td>8</td>
</tr>
<tr>
<td>Ultrasonography</td>
<td>9</td>
</tr>
<tr>
<td>Ultrasound Technique</td>
<td>9-12</td>
</tr>
<tr>
<td>Describe U/S findings</td>
<td>13</td>
</tr>
<tr>
<td>Scintigraphy</td>
<td>13</td>
</tr>
<tr>
<td>Imaging Techniques</td>
<td>14</td>
</tr>
<tr>
<td>Previous studies</td>
<td>14-18</td>
</tr>
<tr>
<td><strong>Chapter Three: Research</strong></td>
<td>19-20</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td></td>
</tr>
<tr>
<td>Material and Method</td>
<td>19</td>
</tr>
<tr>
<td>Study area</td>
<td>19</td>
</tr>
<tr>
<td>Duration of the study</td>
<td>19</td>
</tr>
<tr>
<td>Sample size</td>
<td>19</td>
</tr>
<tr>
<td>Inclusion criteria</td>
<td>19</td>
</tr>
<tr>
<td>Exclusion criteria</td>
<td>19</td>
</tr>
<tr>
<td>Method of data collection</td>
<td>20</td>
</tr>
<tr>
<td>Clinical and laboratory diagnosis</td>
<td>20</td>
</tr>
<tr>
<td>Data analysis</td>
<td>20</td>
</tr>
<tr>
<td>Ethical consideration</td>
<td>20</td>
</tr>
<tr>
<td>Section</td>
<td>Pages</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Chapter Four: Results</td>
<td>21-31</td>
</tr>
<tr>
<td>Chapter Five: Discussion</td>
<td>32-34</td>
</tr>
<tr>
<td>Conclusion</td>
<td>35</td>
</tr>
<tr>
<td>Recommendations</td>
<td>36</td>
</tr>
<tr>
<td>References</td>
<td>37-42</td>
</tr>
<tr>
<td>Appendix</td>
<td>43-48</td>
</tr>
</tbody>
</table>
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multinodular Goitre</td>
<td>MNG</td>
</tr>
<tr>
<td>Cardiovascular System</td>
<td>CVS</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>UK</td>
</tr>
<tr>
<td>World Health Organization</td>
<td>WHO</td>
</tr>
<tr>
<td>Fine Needle Aspiration</td>
<td>FNA</td>
</tr>
<tr>
<td>Papillary Thyroid Cancer</td>
<td>PTC</td>
</tr>
<tr>
<td><strong>Ultrasound</strong></td>
<td><strong>U/S</strong></td>
</tr>
<tr>
<td>Position Emission Tomography</td>
<td>PET</td>
</tr>
</tbody>
</table>

## List of tables

<table>
<thead>
<tr>
<th>Page</th>
<th>Description</th>
<th>Table.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no.</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>One-Sample Statistics of patient’s age:</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Distribution of patients age group according to gender</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Association between MNG grades and patients residence</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Association between MNG grades and patients gender</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Association between MNG grades and patients age</td>
<td></td>
</tr>
</tbody>
</table>

- Page Description
- Fig. no.
21 Distribution of patients according to age group. 4.1
23 Distribution of patients according to residence. 4.2
24 Distribution of patients by gender. 4.3
25 Distribution symptoms among patients. 4.4
26 Distribution signs among patients. 4.5
27 Distribution of MNG among patients according to Ultrasound results. 4.6
28 Classification of MNG according to WHO. 4.7

List of figures