Dedication

I dedicate this research to:

My supervisor Prof. Yousif Fadlalla

My mother

My father

My husband
Acknowledgments

First of all I would like to thank ALMIGTY ALLAH for giving me patience and help to complete this work.

It would not have been possible to write this thesis without the support of the kind people around me, to only some of whom it is impossible to give particular mention here.

Above all, I would like to gratefully and sincerely thank prof Yousif Fadlalla for his guidance, understanding, patience and encouragement throughout all the study.

Furthermore, I would like to thank my friends working in the laboratory in Hilalya Teaching hospital and laboratory research in Sudan University for their information, assistance during collection of samples and technical support.
Abstract

This cross-sectional, analytical study was conducted in Hilalya, Sudan, during the period from April to July 2017. Ninety blood samples were collected from ninety participants of different ages and sex to detect syphilis among population of Hilalya state.

All serum samples were examined by using two screening nonspecific serological tests ICT rapid test and Rapid Plasma Reagin test (RPR). All specimens were assayed further by using Enzyme Linked Immunosorbant assay (ELISA).

All samples gave negative result by using RPR test and ICT rapid test and 6(6.6%) of sample were positive by using ELISA technique (specific treponemal antibodies were detected).

No one of positive cases have genital ulcers or any syphilis symptom recently, but 5(83.3%) of them suffered of genital ulcer previously.

In this study 50% of the participants were males and the other 50% were females.

Positive cases were 2 males and 4 females. The positive cases were count in the age ranges 46-60 (1), 61-75 (2) and other 3 positive cases were in the age 67-90 years old.
ملخص الاطروحه

في هذه الدراسة تم جمع تسعين عينة دم من سكان منطقة الهلالية في اعمار مختلفة بغرض معرفة انتشار المرض الزهري في المنطقة.

المشاركون في هذه الدراسة 50% منهم من الذكور 50% من الإناث. تم هذا العمل في مستشفى الهلالية التعليمي وذلك في الفترة من مايو وحتى أغسطس 2017. جميع هذه العينات تم اختبارها بثلاثة اختبارات مختلفة، اولها الكشف عن الأجسام المضادة بطريقة الكشف المناعي السريع وثانياً باستخدام اختبار البلازما السريع وثالثاً باستخدام فحص الانزيم المناعي المرتبط.

كل العينات اعطت نتائج سالبة باستخدام الفحص المناعي السريع، واحراضاً كل العينات اعطت نتائج سالبة باستعمال اختبار البلازما السريع و6.6% من العينات اعطت نتائج موجبة باستخدام فحص الإنزيم المناعي المرتبط.

الحالات الإيجابية كانت من ضمن الفئة العمرية 46-60 و61-75 و76-90، وولا يوجد حالات من القرح التناسلي في الحالات الإيجابية.

اربعة من الحالات الإيجابية كانوا من الإناث واثنان من الذكور.
List of Contents

I Dedication
II Acknowledgment
IV Abstract (in English)
V Abstract (in Arabic)
VI List of contents
IX List of tables
X List of figures

CHAPTER ONE
INTRODUCTION

1.1 Introduction
1.1.1 Rationale
1.2 Objectives
1.2.1 General objective
1.2.2 Specific objectives

CHAPTER
LITERATURE REVIEW

2.1 History of syphilis
2.2 Causative organisms
2.2.1 Characteristics of Treponem pallidum
2.2.2 Cultural characteristics
2.2.3 Metabolism
2.2.4 Genome
2.2.5 Periplasmic flagella and motility
2.3 Transmission
2.4 Epidemiology of syphilis
2.5 Pathogenesis of syphilis
2.6 Classification of syphilis
2.6.1 Acquired syphilis
2.6.1.1 primary syphilis
2.6.1.2 Secondary syphilis
CHAPTER FOUR
RESULTS
4. Results

CHAPTER FIVE
DISCUSSION
5.1 Discussion
5.2 Conclusion
5.3 Recommendations
References

Appendices:
Appendix 1 (study questionnaire)
Appendix 2 (Equipments and other materials)
Appendix 3 (Syphilis Antibody Rapid Strip Test)
Appendix 4 (ELISA Image)
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The distribution of positive and negative cases using different techniques</td>
<td>22</td>
</tr>
<tr>
<td>Distribution of positive Cases among different age groups</td>
<td>22</td>
</tr>
</tbody>
</table>
## List of Figure

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Annual Number of New Cases of Syphilis among Adults.</td>
<td>7</td>
</tr>
<tr>
<td>Treponema pallidum in a Skin-Biopsy Specimen (Steiner Silver Stain).</td>
<td>11</td>
</tr>
</tbody>
</table>