

List of Content

Abstract	I
ملخص الدراسة	II
Dedication	III
Acknowledgment	IV
Abbreviations	V
List of table	VI
List of figure	VII
CHAPTER ONE INTRODUCTION AND LITERATURE REVIEW	
1.0	Introduction 1
1.1	Hemoglobin 2
1.1.1	Types of normal hemoglobin 2
1.2.0	Sickle cell anemia 3
1.2.1	Causes 5
1.2.2	Symptoms of sickle cell 5
1.2.3	Screening and diagnosis 5
1.2.4	Prevalence of sickle cell anemia 6
1.2.5	Prevention 7
1.2.6	Genetics 7
1.2.7	Clinical features 9
1.2.8	Sickle crises 10
1.2.8.0	Other problems 11
1.2.9	Pathophysiology 13
1.2.9.1	Polymerization of HBs 13
1.2.9.2	Adhesion of sickle red cells to the endothelium 14
1.2.9.3	Red cell dehydration 14
1.3.0	The iron 15
1.3.1	Iron absorption, transport and storage 17
1.3.2	The body iron store 18
1.3.3	Iron absorption 18

1.3.4	Dietary iron	19
1.3.5	Iron requirement	20
1.3.6	Iron transport	20
1.3.7	Iron storage	21
1.3.8	Body iron content	21
1.3.9	The iron cycle	22
1.3.10	The iron indices	22
CHAPTER TWO RATIONALE & OBJECTIVES		
2.1	Objectives	24
2.2	Rationale	25
CHAPTER THREE MATERIAL AND METHODS		
3.0	Materials and methodology	26
3.1	Study design	26
3.2	Study area	26
3.3	Study population	26
3.4	Sample size	26
3.5	Inclusion criteria	26
3.6	Exclusion criteria	26
3.7	Plan of data collection	26
3.7.1	Data analysis	27
3.8	Ethical consideration	27
3.9	Laboratory procedures	27
3.9.1	Materials	27
3.9.1.1	Equipment	27
3.9.1.2	Reagents	28
3.9.2	Methodology	28
3.9.2.1	Collection of blood samples	28
3.9.2.2	Sample preparation	29
3.9.2.3	Complete haemogram	29
3.9.2.3.1	Principle of automated analyzer	29
3.9.2.3.2	Procedure	30
3.9.2.3.3	Preparation of blood film	31

3.9.2.4	Hb electrophoresis	32
3.9.2.4.1	Principle	32
3.9.2.4.2	Method	32
3.9.2.4.2.1	Preparation of haemolysate	32
3.9.2.4.2.2	Running and electrophoresis	33
3.9.2.4.2.3	Estimation of serum iron	34
3.9.2.4.2.4	Estimation of Ferritin	34
CHAPTER FOUR		
Result		
	Result	35
CHAPTER FIVE		
Discussion		
5	Discussion	41
6.1	Conclusion	42
6.2	Recommendation	43
References		44
Appendix		