ADHERENCE TO CURRENT GUIDELINES ON PRESCRIPTION OF ANTIMALARIALS AND ASSOCIATED FACTORS AMONG HEALTHCARE PROVIDERS IN LOKOJA LOCAL GOVERNMENT AREA, KOGI STATE, NIGERIA

BY

Sylvanus Chima WELLE
(MB;BS University of Port Hareourt)

MATRIC NO.: 166828

A DISSERTATION IN THE DEPARTMENT OF EPIDEMIOLOGY AND MEDICAL STATISTICS

SUBMITTED TO THE FACULTY OF PUBLIC HEALTH,
IN PARTIAL FULFILIMENT OF THE REQUIREMENTS FOR THE AWARD
OF DEGREE

OF MASTER OF PUBLIC HEALTH IN FIELD EPIDEMIOLOGY PRACTICE (MPH FEP)

OF THE

UNIVERSITY OF IBADAN, IBADAN, NIGERIA

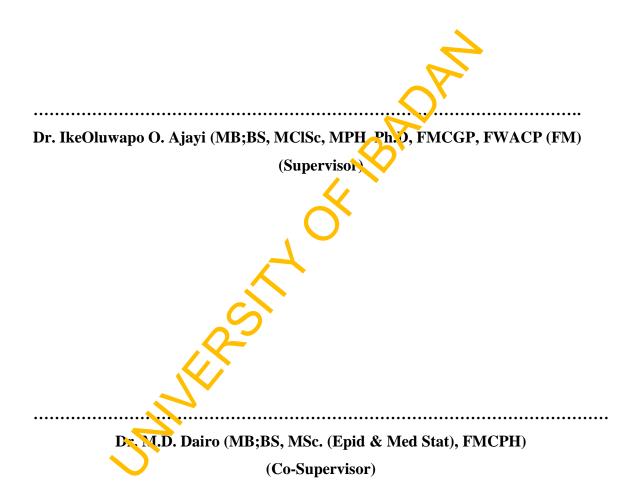
DEDICATION

This work is dedicated to the memories of all Nigerians who die daily from conditions that would have been prevented or treated if our health system were responsive and easily accessible.



CERTIFICATION

We certify that this work was carried out by **Sylvanus Chima WELLE** in the Department of Epidemiology and Medical Statistics (EMS) under our supervision.



ACKNOWLEDGEMENTS

I would like to acknowledge the Almighty God who is the source of knowledge, wisdom and understanding for this work.

My special gratitude to Dr. IkeOluwapo O. Ajayi and Dr. M.D. Dairo of the Department of Epidemiology and Medical Statistics who supervised the entire work from proposal stage to the final stage. I also thank my program supervisors Dr. Olufunmilayo I. Fawole and Dr Femi Ajumobi for successfully guiding me to complete the crogram deliverables. My special thanks to Prof. E.A Bamgboye, Dr A.F. Fagbantgbe, Dr. M. Akpa and Dr J.O. Akinyemi for helping us appreciates medical statistics as an inseparable companion of Epidemiology.

I thank Dr. Patrick Nguku of Nigeria Field Epidemiology and Laboratory Training Program for always being available, approacheole and ready to attend to administrative, technical and academic issues with which we meet him. I am inspired by your intelligence, diligence and humility. Lalso wish to express profound gratitude to Drs. Chima Ohuabunwo, Oladapo Biya and Saheed Gidado for finding time amidst their very busy schedules to facilitate our learning. Dr. Femi Ajumobi, you are a mentor per excellence.

I wish to thank my wife. Mrs. Happy Welle for keeping the home front while I was away and for showing much understanding. My children, Ezra, Abigail and Shekinah, I hope they will someday mature to see this work which would then answer the question "Daddy where are you going" which you always asked while I was undergoing this training and which I never really explained to your satisfaction.

I thank my friends, Dr. Obioma Obikeze, Lieutenant Chituru Amadi and Leutenant Onoja of Headquarters, 2 Division, Nigerian Army for providing a second home for me in Ibadan. I thank Peace Nwaerema for reminding me that pursing a higher degree was still worthwhile in Nigeria. I now agree with him that a higher degree is for a higher purpose and a higher calling!

Finally, I would like to appreciate the Federal Government, United States Centres for Disease Control and the Nigeria Field Epidemiology and Laboratory Training Program (NFELTP) for the opportunity given to me to participate in this program.



ABSTRACT

Adherence to current treatment guidelines on prescription of antimalarials by healthcare providers can promote better malarial treatment outcomes. However, adherence rate and factors influencing adherence to treatment guidelines have not been well explored. This study was carried out to assess adherence to current guidelines on prescription of antimalarials and associated factors among healthcare providers in Lokoja Local Government Area, Kogi State, Nigeria.

The study was cross-sectional in design. A total of 404 healthcare providers aged 18-65 years were selected through proportional allocation from public hearth facilities and patent medicine stores. Using a semi-structured, interviewer-administered questionnaire, data were collected on socio-demographic characteristics of respondents, knowledge and training on current guidelines and prescription practice. Adherence was defined as correct prescription of artemisinin-based combination therapy for uncomplicated malaria in a child and adult. Knowledge of current guidelines was assessed on a 5-point scale and scores ≥3 were categorised as good knowledge while scores < very categorised as poor. Data were analysed using descriptive statistics, Chi-square test and logistic regression with significance level set at 0.05.

Mean age of respondents was 36.9 years (SD = 9.2 years). Respondents comprised of nurses (36.6%), patent medicine vendors (30.0%), doctors (18.3%), community health extension workers (9.7%), pharmacists (3.2%) and community health officers (2.2%). Over half (53.0%) were males and about three-quarters (74.4%) were married. Half (50.0%) had good knowledge of the guidelines of which 34.2% were doctors and 4.0% each were community health officers and pharmacists. A total of 270 (66.8%) of respondents claimed they requested for confirmatory test before treatment of malaria. In all, 54.2% had been trained on the guidelines of which 36.1% were patent medicine vendors while only 1.4% was pharmacists. Overall adherence to guidelines on anti-malaria prescription was 39.6%. The adherence among doctors was 67.6%, community health officers (55.6%), pharmacists (19.8%). Respondents who were trained on the guidelines were twice more likely to adhere to guidelines. (AOR-2.28; CI=1.41-3.69) while respondents with good knowledge were four times more likely to adhere to guidelines compared to those with poor knowledge (AOR=3.99; CI=2.39-6.69).

Knowledge of and adherence to current guidelines on antimalarials prescription was generally low in Lokoja among community health officers, nurses, pharmacists and patent medicine vendors in the study. Government should train these categories of health care providers to improve their knowledge and adherence to the guidelines.

Keywords: Treatment guidelines, Antimalarial prescription, Health care providers,

Malaria confirmatory test.

Word count: 384

TABLE OF CONTENTS

		Page
Title page		i
Dedication		ii
Certification		iii
Acknowledgements		iv
Abstr	act	vi
Table	of content	vii
CHA	PTER ONE: INTRODUCTION	1
1.1	Background	1
1.2	Statement of the problem	6
1.3	Justification	8
1.4	Research questions	9
1.5	Objectives of the study	9
1.6	Significance of the study	10
1.7	Operational definition of terms	10
СНА	PTER TWO: LITER VIURE REVIEW	11
2.1	Burden of malari.	11
2.2	Risk factors for malaria	11
2.3	Geographical distribution of malaria	12
2.4	Impact of malaria	13
2.5	Life cycle of malaria parasite	13
2.6	Transmission of malaria	14
2.7	Diagnosis of malaria	15
2.7.1	Incubation period of malaria	15
2.7.2	Clinical manifestations and classification of malaria	16
2.7.3	Uncomplicated malaria	17
2.7.4	Severe malaria	17
2.7.5	Malaria Relapses	18
2.7.6	Other manifestations of malaria	18
2.8	Interventions for prevention and control of malaria	19

2.8.1	Personal protection	20
2.8.2	Early diagnosis and prompt treatment of malaria	20
2.8.2.1	Resistance to drugs and insecticides in malaria control	21
2.9	Historical development of guidelines for malaria diagnosis treatment	23
2.9.1	India guidelines for diagnosis and treatment of malaria	24
2.10	Treatment of uncomplicated Plasmodium Falciparum in pregnancy	
	in India	25
2.11	Ghana guidelines for diagnosis and treatment of malaria a pregnancy	26
2.12	Key recommendations of Nigeria guidelines for diagnor's and	
	treatment of malaria	27
2.13	Knowledge, attitude of healthcare providers and idherence to	
	guidelines on prescription of antimalarials	28
2.14	Adherence to guidelines on treatment of malaria in pregnancy	30
2.15	Adherence to guidelines on drug treatment for severe malaria	30
2.16	Adherence to guidelines on prescription of antimalarials	31
2.17	Adherence to guidelines on diagnosis of malaria	33
2.18	Adherence to guidelines on treatment of malaria in children	
	below 5 years of age	33
2.19	Adherence to guidelines on diagnosis and treatment of	
	uncomplicated manaria	34
~~~		
	TER THREE: METHODOLOGY	36
3.1	Study area	36
3.2	Study Design	38
3.3	Study Population	38
3.3.1	Inclusion Criteria	38
3.3.2	Exclusion Criteria	38
3.4	Sample Size	39
3.4.1.	Sampling Method	39
3.5.0	Data collection	41
3.5.1	Questionnaire development	41

3.5.2.	Administration of questionnaires	41
3.5.3	Quality control	41
3.6	Data analysis	42
3.6.1	Assessment and grading of knowledge of current guidelines	43
	For diagnosis and treatment of malaria	
3.7	Ethical consideration	44
CHAI	PTER FOUR: RESULTS	45
4.1	Socio-demographic characteristics of respondents	45
4.2	Distribution of healthcare providers trained on current guidelines	
	for diagnosis and treatment of malaria	47
4.3	Sponsors of training of healthcare providers or current guidelines	
	for diagnosis and treatment of malaria	49
4.4	Knowledge of contents of current guide (nes for diagnosis and	
	treatment of malaria	51
4.5	Proportion of cadres of healthcare providers with good	
	knowledge of current guidelines for diagnosis and treatment of malaria	53
4.6	Adherence to current gaidelines on prescription of antimalarials	
	by healthcare provider	55
4.7	Adherence to current guidelines on prescription of antimalarials	
	by cadre of healthcare providers	56
4.8	Correctness of antimalarials prescribed for adults	57
4.9	Corrections of antimalarials prescribed for children	58
4.10	Request for laboratory confirmation of suspected malaria by	
	healthcare providers	59
4.11	Reasons for not requesting laboratory test to confirm suspected	
	malaria	60
4.12	Adherence to guidelines on prescription of antimalarials	
	by socio-demographic characteristics of respondents	61
4.13	Patient -related factors associated with adherence to current	
	guidelines on prescription of antimalarials	63
4.14	Drug-related factors associated with adherence to current	
	guidelines on prescription of antimalarials	65

4.15	Other factors associated with adherence to current guidelines	
	on prescription of antimalarials	67
4.16	Factors associated with adherence to current guidelines on	
	prescription of antimalarials	69
СНА	PTER FIVE: DISCUSSION, CONCLUSION AND	71
	RECOMMENDATIONS	
5.1	Discussion	71
5.2	Limitations	74
5.3	Conclusion	74
5.4	Recommendations	75
Refer	rences	77
Appe	ndix I: Ethical approval	87
Appe	ndix II: Questionnaire	88

# LIST OF TABLES

<b>Tables</b>		Pages
Table 3.1	Proportional allocation of sample size to cadres	40
	of healthcare providers	
Table 3.2	Grading of knowledge of healthcare providers on current	44
	guidelines for diagnosis and treatment of malaria	
Table 4.1	Socio-demographic characteristics of respondents	46
Table 4.2	Knowledge of contents of current guidelines for diagnosis	52
	and treatment of malaria	
Table 4.3	Adherence to current guidelines on prescription of	62
	Antimalarials by socio-demographic characteristics of	
	respondents	
Table 4.4	Patient-related factors associated with adherence to	64
	Current guidelines on prescription of antimalarials	
Table 4.5	Drug-related factors issociated with adherence to current	66
	guidelines on prescription of antimalarials	
Table 4.6	Healthcare provider-related factors associated with	68
	Adherence to current guidelines on prescription of	
	antimalarian	
Table 4.7	Predictors of adherence to current guidelines on	70
	Prescription of antimalarials	
_		

# LIST OF FIGURES

Figures		Pages
Figure 4.1	Distribution of healthcare providers trained on current	48
	guidelines for diagnosis and treatment of malaria	
Figure 4.2	Sponsors of training on current guidelines for	50
	Diagnosis and treatment of malaria	
Figure 4.3	Proportions of different cadres of healthcare providers	54
	who had good knowledge of current guidelines for	
	diagnosis and treatment of malaria	
Figure 4.4	Proportion of healthcare providers who dhered to	55
	Current guidelines on prescriptor of antimalarials	
Figure 4.5	Adherence to current guidelines on prescription of	56
	antimalarials by cadre of healthcare providers	
Figure 4.6	Correctness of antipolarials prescribed for adults	57
Figure 4.7	Correctness of antimalarials prescribed for children	58
Figure 4.8	Request for laboratory confirmation of suspected	59
	Malaria by health care providers	
Figure 4.9	Reasons for not requesting laboratory test to confirm	60
	Suspected malaria	

#### LIST OF ACRONYMS

ACT Artemisinin-based Combination Therapy

ANC Antenatal Care

CHEWs Community Health Extension Workers

CHOs Community Health Officers
FMOH Federal Ministry of Health

IHVN Institute of Human Virology, Nigeria

IPTp Intermittent Preventive Treatment of malara in pregnancy

IRS Indoor Residual Spraying
ITN Insecticide Treated Net

LGAs Local Government Areas

LLINs Long Lasting Insecticidal Nets

MAPS Malaria Action Program for States

MC Malaria Consortium

MDGs Millennium Development Goals
MICS Malaria Indicator Cluster Survey
mRDT Malaria Papid Diagnostic Test

MTN Multimet

NAFDAC National Agency for Food and Drug Administration and Control

NANNM National Association of Nigeria Nurses and Midwives

NDHS Nigeria Demographic and Health Survey

NMCP National Malaria Control Program

NMEP National Malaria Elimination Program

NPC National Planning Commission

PMV Patent Medicine Vendor

RBM Roll Back Malaria
PHC Primary Health Care

PRINN-MNCH Partnership for Reviving Routing Immunization in Northern

Nigeria-Maternal Newborn and Child Health

SFH Society for Family Health

SON Standards Organization of Nigeria

SSH State Specialist Hospital