**KAM COLLEGE OF HEALTH AND ALLIED SCIENCES.**

**DEPARTMENT OF PHARMACEUTICAL SCIENCE**

**DIPLOMA IN PHARMACEUTICAL SCIENCE**



**TITLE: EVALUATION OF FACTORS CONTRIBUTING TO ANTIBIOTIC RESISTANCE**

PREPARED BY: **ILHAM ABDULWAKIL HAJI**

SUPERVISOR: **Sir Salum Mkata**

NACTE NO**.NS1085/0011/2016**

**RESEACHER PROPASAL FOR PARTIAL FULFILLMENT OF ORDINARY DIPLOMA.**

**JULY 202**

**TABLE OF CONTENT**

ACKNOWLEGMENT……………………………………………………...1

DEFINITION OF TERMS……………………………………………….....2

ABREVIATIONS…………………………………………………………...3

**CHAPTER ONE**

Abstract…………………………………………………………………..…4

Introduction…………………………………………………………….…..5

**CHAPTER TWO**

Background of the study…………………………………………………...6

Statement of the Problem…………………………………………….…….6

## Rationale of the problem…………………………………………….……..6

Objectives of the study…………………………………………………......7

Research Hypothesis …………………………………………………..…...7

Research Variables…………………………………………………..…....7

**CHAPTER THREE**

Literature review………………………………………………………......8

Research methodology……………………………………………………9

Research design…………………………………………………………...9

Study area…………………………………………………………………9

Study population……………………………………………………….....9

Sample size…………………………………………………………….....9

Ethical consideration………………………………………………….....10

Dissemination of result…………………………………………………,.11

Study limitation…………………………………………………………..11

Type of data……………………………………………………………12

Source of data………………………………………………………….12

Questionnaire…………………………………………………………..13

Budget…………………………………………………………………14

WORK PLAN………………………………………………………....14

# References…………………………………………...............................15

# APPENDEX I: INFORMED CONCENT FORM (ENGLISH VERSION CONSENT FORM IN ENGLISH VERSION)…………………………………………..16

# APPENDEX II: INFORMED CONCENT FORM (CONSENT FORM IN SWAHILI VERSION)……………………………………………………………………16

QUESTIONNAIRE…………………………………………………………..17

English and Swahili…………………………………………………………18

**ABREVIATIONS**

Arbekacin (ABK)

Amikacin (AMK)

Amoxicillin (AMX)

Amoxicillin-clavulanic acid (AMC)

Ampicillin (AMP)

Ampicillin-sulbactam (SAM)

Bezlotoxumab (BEZ)

Carbenicillin (CAR)

Cefaclor (CEC)

Cefadroxil (CFR)

Cefamandole (FAM)

Cefazolin (CFZ)

Cefdinir (CDR)

Cefditoren (CDN)

**ACKNOWLEDGEMENT**

I would like to express my gratitude to my family who supported me financially and materially from the beginning of this study up to the end of this study. Am grateful to both my parents for their contribution to this research proposal they have been assisting and encouraging to work hard to achieve the aim of conducting this research.

Furthermore I would like to acknowledge with much appreciation the crucial role of the Head of Pharmacy department, Mr. Wilfred who gave the permission to use all the required equipments and necessary materials to complete this research proposal.

Last but not least, many thanks goes to all to all tutors of kam college of health training with my fellow students for their good cooperation ,direction and supervision,also special thanks to the Head of the research studies Mr. Salum and Sir Yoctan who they invented their full effort in guiding me to achieve the goals.

**DEFINITION OF TERMS**

**Anti-Biotic** - An antibiotic is a type of antimicrobial substance active against bacteria. It is the most important type of antibacterial agent for fighting bacterial infections, and antibiotic medications are widely used in the treatment and prevention of such infections.

**Resistance -**  is the ability of a microbe to resist the effects of medication that once could successfully treat the microbe. The term antibiotic resistance is a subset of AMR, as it applies only to bacteria becoming resistant to antibiotics.

**Anti-Biotic Resistance -** is the ability of a microbe to resist the effects of medication that once could successfully treat the microbe.

**Health** – is a state of physical, mental and social well-being in which disease and infirmity are absent.

**ABSTRACT**

Antibiotic resistance threatens the very core of modern medicine and the sustainability of an effective, global public health response to enduring threat from infectious disease. Effective antimicrobial drugs are prerequisites for both preventive and curative measures, protecting patients from potentially fatal diseases and ensuring that complex procedures, such as surgery and chemotherapy, can be provided at low risk.

**CHAPTER ONE**

**INTRODUCTION**

Antibiotics are among the antimicrobial agents or medicines used to fight organisms that cause infection.

They are prepared from other living organisms. However, not all antimicrobial are antibiotics because some of them are synthesized chemically and not obtained from living organism.

**Antibiotic resistance**

Means that the bacteria survive and continue to multiply after administration of the antibiotic.

Occurs when bacteria change in some way that reduces or eliminates the effectiveness of the agent used to cure or prevent the infection.

Can develop through bacterial mutation, bacteria acquiring genes that code for resistance, or other means.

The emergence of resistance to these drugs is a natural biological phenomenon.

**CHAPTER TWO**

**BACKGROUND OF RESEARCH**

The presence of antibiotic and antibiotic resistant microorganisms in aquatic environments has been extensively documented and studied (Guardabassi et al.1998; Goni-Urriza).

The discovery of a number of antibiotics in the last 40–50 years offered scope for the longer survival of critically ill patients, bringing gains in life expectancy and human health.

However, all these gains offered by the newly discovered disease-fighting agents have been threatened because of multidrug resistant organisms that have emerged over the last 20–30 years. It may become increasingly difficult to manage life-threatening infections caused by these organisms.

## **STATEMENT OF THE PROBLEM**

Anti-biotic Resistance is among the high cause of drug resistance at Buguruni District Hospital in Tanzania and worldwide in General.

## **RATIONALE OF THE PROBLEM**

Help to determine overall anti-biotic resistance at Buguruni Hospital district there for will enhance establishment to overcome resistance and reduce factors contributing o anti-biotic resistance.

**OBJECTIVES OF THE STUDY**

**GENERAL OBJECTIVES**

To determine of the factors that contributes to antibiotics resistance.

**SPECIFIC OBJECTIVES**

To improve awareness and understanding of antibiotics resistance through effective communication, education and training.

To list and analyze the ways in which to overcome antibiotic resistance

To reduce the incidence of infection through effective sanitation, hygiene and infection preventive measures.

## **RESEARCH HYPOTHESIS**

According to the above prevalence I think when there is strong intervention it can reduce the prevalence

**RESEARCH VARIABLES**

Dependent variables which are different patients from Buguruni kwamnyamani Hospital.

**CHAPTER THREE**

**LITERATURE REVIEW**

The antibiotic resistance is a serious threat to mankind. The first hint of resistance to mankind came in 1994s, when penicillin (soon after its discovery and its initial use on sick parents) was found to be not useful in some patients suffering from infections that caused abscesses all over body.

The problem has increased and today is a global issue .Many organisms, including those causing serious life threatening infections have proved resistant to a number of antibiotics, including the newly discovered agents. This is a worrisome situation.

The discovery of a number of antibiotics in the last 40-50 years offered scope for the longer survival of critically ill patients, bringing gains in life expectancy and human health.

However, all these gains oared by newly discovered diseases-fighting agents have been threatened because of multidrug resistant organisms that have emerged over 20-30 years. It may became increasingly difficult to manage life threatening infections caused by these organisms.

The present study (present situation), antibiotic resistance is present in every country. Patients with infections caused by drug resistant bacteria are at increased risk of worse clinical outcomes and death and consume more health-care resources than patients infected with non-resistant strains of the same bacteria.

**RESEARCH METHODOLOGY**

Is a way to systematically solve research problem .The research methodologies that will be used will include the research design ,study area , types of data ,sources of data , methods or techniques of data collection ,sampling population ,sample size ,sampling techniques and methods of data analysis.

**RESEARCH DESIGN**

This is a plan and structure of the investigation that is used to obtain answers for the research questions. Case study design as the way of gathering data will be used.

**STUDY AREA**

The case study (research) will be conducted at Buguruni kwamnyamani Hospital

**STUDY POPULATION**

The study population will be adults both outpatients and inpatients at Buguruni kwamnyamani Hospital who will be selected (PICKED) randomly so as to achieve the set general objective of the study.

**SAMPLE SIZE**

The sample size of the quantitative research study will be obtained by the use of sample calculation formula below.

Sample size= Z2 x δ2 Error 2

Z= 95% confidence interval, δ= Standard deviation (25.5), Error= 5

Then, Sample Size= 1.962 x 25.52 = 100 participants 52

**ETHICAL CONSIDERATION**

Before conducting research the ethical clearance will be obtained from the Head of pharmacy department at Buguruni mkwanyamani Hospital and all the ethical clearance will be maintained .All patients will be informed before so that they can participate fully on this study.

**DISSEMINATION OF RESULTS**

The research will be presented to the supervisors, research teach, staff members and student my college school. Also a copy of the complete research report will be made available to the supervisors and other copies will be submitted to the library studies.

**STUDY LIMITATION**

The permission of the study have been obtained from the principal and district medical officer.

**TYPE OF DATA**

In order to gather sufficient and convenient data, both primary and secondary data will be collected so as to achieve the objective of the research study.

**SOURCES OF DATA**

The primary data will be collected from the respondents.

And the secondary data will be obtained from other literature source.

**QUESTIONNAIRE**

These are the series of questions, each of them providing a number of alternative answer from which the respondent can choose.

**BUGDET**

The budget to achieve this research study is summarized in the table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Serial No | Item | Unit | Unit Cost | Total Cost |
| 1 | Transport Fare | 30 | 2000/= | 60000/= |
| 2 | Printing | 20 | 500/= | 10000/= |
| 3 | Photocopy | 100 | 50/= | 5000/= |
| 4 | Binding | 2 | 10000/= | 20000/= |
| 5 | Questionnaire Envelops | 100 | 150/= | 15000/= |
| 6 | Calculator | 1 | 25000/= | 25000/= |
| 7 | Stapler | 1 | 5000/= | 5000/= |
| 8 | Miscellaneous | 1 | 100000/= | 100000/= |
| **GRAND TOTAL** | |  |  | 240,000/= |

**WORK PLAN**

The table below shows the work plan of the research proposal.

|  |  |  |  |
| --- | --- | --- | --- |
| NO: | TASK | TIME:  FROM 1ST July-20TH July2020 | RESPONSIBLE PERSON |
| 1 | Finding research proposal title | 2nd July 2020 | Research |
| 2 | Writing research proposal | 17th July 2020 | Research |
| 3 | Data collection | 9th - 11th July 2020 | Research |
|  | Data analysis | 12th-15th July 2020 | Research |
| 5 | Research proposal submission | 20th July 2020 | Research |
| 6 | Report proposal submission | 20th July 2020 | Research |

**References**

1. Tripathi KD , Antimicrobial drugs-General Considerations, Essentials of Medical Pharmacology,7th edition, Jaypee, Chap 49,pg 688

2. Gumbo T, General Principles of antimicrobial therapy, Goodman and Gilman‟s The Pharmacological Basis of Therapeutics,12th edition, Mc Graw Hill, Chap 48,pg 1376.

3. Steinberg I. Clinical Choices of Antibiotics: Judging Judicious Use. *The American Journal of Managed Care*. Dec 2000; 6 (23): Sup. S1178-88.

4. Wester CW, Durairaj L, Evans AT, Schwartz DN, Husain S, Martinez E. Antibiotic Resistance - A Survey of Physician Perceptions. *Arch Intern Med*. 2002; 162:2210-16.

5. Eng JV *et al*. Consumer attitudes and use of antibiotics. Emerging Infectious Diseases. September. 2003; 9(9):1128-35.

6. Sintchenko V, Iredell JR, Gilbert GL, Coiera E. What do physicians think about evidence-based antibiotic use in critical care? A survey of Australian intensivists and infectious disease practitioners. *Internal Medicine Journal*. 2001; 31: 462–69.

7. Hsiao FY, Lee JA, Huang WF, Chen SM, Chen HY. Survey of medication knowledge and behaviors among college students in Taiwan. *American Journal of Pharmaceutical Education*. 2006; 70 (2): Article 30.

8. Centers for Disease Control and Prevention (CDC). Get Smart: Know When Antibiotics Work. Available at http://www.cdc.gov/getsmart/ resources/quiz.html. Accessed: May, 2011.

9. Chen C *et al*. Behaviour, attitudes and knowledge about antibiotic usage among residents of Changhua, Taiwan. *J Microbiol Immunol Infect.* 2005; 38:53-5.

10. Spellberg, B.; Guidos, R.; Gilbert, D.; Bradley, J.; Boucher, H.W.; Scheld, W.M.; Bartlett, J.G.; Edwards, J., Jr. The epidemic of antibiotic-resistant infections: A call to action for the medical community from the Infectious Diseases Society of America. *Clin. Infect. Dis*. 2008; 46:155-164.

# APPENDEX I: INFORMED CONCENT FORM (ENGLISH VERSION CONSENT FORM IN ENGLISH VERSION)

I have read and understood the information sheet in this consent form where necessary I have

an opportunity to ask question about my participation. I understand that I have understood and

take part in the study and I have understood that I have the right to withdraw from the study at

any stage without giving any reason.

Signature of the participant……………….……………Date……………………………….

Signature of the researcher………………………………Date……………………………….

Name of researcher ILHAM ABDULWAKIL HAJI

# 

# APPENDEX II: INFORMED CONCENT FORM (CONSENT FORM IN SWAHILI VERSION)

Nimesoma na kuelewa taarifa hizi nimekubali kwamba nimeelezwa bayana kuhusu ushiriki na matokeo ya utafiti huu. Kwa hiyo mimi na akili zangu timamu ninakubali kushiriki katika utafiti huu, nina fursa ya kuuliza maswali juu ya utafiti huu. Nina haki ya kujitoa katika utafiti huu wakati wowote bila kutoa sababu yoyote.

Sahihiyamzazi/mlezi …………………... Tarehe……………………….........

Sahihiyamtafiti: ………………….……Tarehe ……………………………

MtafitiMkuu: ILHAM ABDULWAKIL HAJI

**QUESTIONNAIRE**

**1.0Sex**

□ Female

□ Male

**1.1Age**

\_\_\_\_\_\_\_\_ Years old

**1.2 Education**. *Please tick the highest level of the education that you have begun.*

□ Primary and secondary school (or equivalent) □ Upper secondary school (or equivalent)

□ University (or equivalent)

**1.3 Country where you educated (for the most part).**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**1.4 Do you have a medical/healthcare-related education?** *Regardless of level.*

□ Yes. What education? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

□ No

**1.5 Antibiotic consumption**

*Antibiotics are medications which are sometimes used to treat infections. There are several different types of antibiotics; penicillin is the most common.*

**1.6 Please name some of the antibiotics you have heard of below.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**1.7 Which of the following medications are antibiotics?** *Please tick one or more options.*

□ Paracetamol □ Bricanyl

□ Seloken □ Selexid

□ Kåvepenin □ Alvedon

**1.8 Have you ever taken antibiotics?** *Please tick only one option.*

□ Yes

□ No *Proceed to 1.5*

□ don’t know *Proceed to 1.5*

**1.9 How many times have you consumed antibiotics during the past 12 months?** *Please tick only one option.*

□ Never

□ Once

□ 2-5 times

□ More than 5 times

**MASWALI**

1.0Jinsia

□ Mwanamke

□ Mwanaume

1.1Age

\_\_\_\_\_\_\_\_ mwenye umri wa miaka

1.2 Elimu. Tafadhali jibu kiwango cha juu cha elimu ambacho umeanza.

□ Shule ya Msingi na Sekondari (au sawa) □ Shule ya upili ya Sekondari (au sawa)

□ Chuo Kikuu (au sawa)

1.3 Nchi ambayo umeelimisha (kwa sehemu kubwa).

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.4 Je! Unayo elimu inayohusiana na matibabu / afya? Bila kujali kiwango.

□ Ndio. Je! Ni elimu gani? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

□ Hapana

1.5 Matumizi ya antibiotic

Antibiotic ni dawa ambazo wakati mwingine hutumiwa kutibu maambukizo. Kuna anuwai ya aina tofauti; penicillin ndio unajulikana zaidi.

1.6 Tafadhali taja baadhi ya viua vijasusi ambavyo umesikia hapo chini.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.7 Ni dawa ipi ifuatayo ni antibiotics? Tafadhali jibu chaguzi moja au zaidi.

□ Paracetamol □ Bricanyl

□ Imenukuliwa □ Selexid

□ Kåvepenin □ Alvedon

1.8 Je! Umewahi kuchukua dawa za kuua vijidudu? Tafadhali jibu chaguo moja tu.

□ Ndio

□ Hapana ro Endelea na 1.5

□ sijui  Fuata hadi 1.5

1.9 Je! Umetumia dawa ngapi za dawa wakati wa miezi 12 iliyopita? Tafadhali jibu chaguo moja tu.

□ Kamwe

□ Mara moja

□ Mara 2-5

□ Zaidi ya mara 5