

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



**TITLE: DETEMINING PREVALENCE OF ANAEMIA AMONG HUMAN IMMUNODEFICIENCY HIV INFECTED PEOPLE IN TANZANIA**.

**A CASE STUDY AT MNAZI MMOJA HOSPITAL**

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**NACTE NO.*NS0550/0089/2016***

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

**JULY 2020.**

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Finally, I would like to thanks the Ministry of Health and Social Welfare through I-TECH for introducing this module of Operation Research to all pharmaceutical students NTA Level 6.

**ABREVIATIONS**

ART: Antiretroviral treatment

AOR: Adjusted Odds Ratio

CI: Confidence interval

COR: Crude Odds Ratio

MDG: Millennium development goal

OPD: Outpatient department

WHO; World health organization

OPD; Out patient department

IPD; In patient department

CTC- Care and Treatment Clinic

KCOHAS-Kibaha College of health and allied science

HMIS- Health Management Information Systems

HIV- Human Immunodeficiency Virus

PLWHIV: People Livingwith Human Immunodeficiency Virus.

AZT.Zidovudine

HAAT.Highly Active Antiretroviral Therapy

**ABSTRACT**

The aim of this study is to determine prevalence of anaemia among human immunodeficiency virus (HIV)-infected patients on the highly active antiretroviral therapy (HAART) and those that are HAART naive. According to WHO criteria, anaemia was defined as a haemoglobin concentration below 12g/dl in women and below 13g/dl in men.

**CHAPTER ONE**

**INTRODUCTION AND BACKGROUND**

This chapter consists of background information, literature review, statement of the problem, and problem justification.

**Background**

**Back Ground Information**

The acquired immunodeficiency syndrome (AIDS) is a systemic viral disease caused by human immunodeficiency virus (HIV) with a asymptomatic period which ranges from a few months to as many as 17 years. It is a serious health problem throughout the world in general and in developing countries in particular. It has continued to spread steadily in the general population and it is commonest in the sexually active group of which is also the most economically group of adults.

HIV/AIDS was firstly recognized in the United States of America in 1981,

In Tanzania this disease was firstly reported at 1983, in Kagera region (UNAIDS 2001). World Health Organization WHO estimates that 8-10 million people were infected with the HIV virus in 1992, by the year 2000 an estimates of more than 60 million people were living with HIV/AIDS world wide, (DT Barton and Wolf stout, 1998).

Currently there is no cure or vaccine for HIV/AIDS; however the provision of ant retro viral drugs and positive prevention strategies.

Care and treatment clinic (CTC is a corner stone for successful implementation of care and support services among HIV positive individuals. CTC is also perceived to be an effective clinic in risk reduction of HIV transmission through health education that enhances behavior change.

Care and Treatment Clinic serves to provide prophylactic treatment of HIV, post exposure prophylactic treatment for HIV to eligible people, perform WHO clinical staging to HIV and AIDS patients, initiate ART to patients who are eligible, manage opportunistic infections.

Dar es Salaam region is one of the regions of Tanzania, due to population density, their people are forced to move to different parts of the country aimed to overcome their economic constraints. The movement believed to enhance extra marital sexual activities and so by doing hence the HIV/AIDS 8 transmission,

Once they come back to their partners they seed the HIV/AIDS virus resulting to high prevalence of HIV/AIDS infection in the region

Most of the people are involve in agriculture activities and business while Poverty is major problem facing the people living in Dar es salaam especially in interior area which make to dormant without participate in any activities. All of these seems to fueling spread of HIV/AIDS infection among the Dar es Salaam ,residents in particular economical potential young aged group and adults. This is due to the frequently contact, intercultural interactions and the exchange of different s ocial interest.

Tanzania is one of the most seriously HIV affected countries in East Africa. Anemia is a known predictor of disease progression and death among HIV infected patients. In this study, I am going to investigate the prevelance of anemia among HIV infected patients receiving HAART at Mnazi Mmoja hospital in Tanzania.

Complications of human immunodeficiency virus (HIV) infection include hematological abnormalities manifested by pancytopenia, anemia being the leading abnormality. Several factors including stage of HIV, age and sex are said to account for the variations in HIV prevalence. The causes of anemia have been reported to be multifactorial. Direct effects of HIV and its viral proteins as well as immune dysregulations during HIV infection were found to be responsible for bone marrow suppression. Moreover, opportunistic infections of the bone marrow with pathogens such as *Mycobacterium avium complex*, *Parvovirus B-19*, Cytomegaloviruses, *Cryptococcus neoformans* and *Histoplasmacapsulatum* were reported to cause abnormalities in blood cell counts Drugs used to treat HIV infection and its complications are also known to cause bone marrow suppression. It is widely known that AZT alone and AZT based highly active antiretroviral treatment (HAART) regimen is associated with significant reduction of hemoglobin (Hgb) level

Anemia is associated with impaired physical functioning, psychological distress and poor quality of life. Besides, independent of CD4 and viral load counts, anemia has been reported to predict HIV progression to acquired immune deficiency syndrome (AIDS) with poor survival; on the other hand, treatment of anemia was observed to be associated with reversal of increased risk of death. In addition, anemia was reported to be strongly and consistently associated with HIV disease progression and death despite HAART suggesting the need for routine screening and treatment of anemia in HIV patients on HAART. Besides, AZT-based HAART is one of the first line regimens recommended for treating HIV infected adults. This study will investigate the prevalence of anemia and among HIV infected patients Mnazi Mmoja Hospital.

**Problem of statement**

Anemia in HIV has often been associated with morbidity and deaths that occur despite several measures being undertaken especially in CTC clinics this might be due to inadequate information on Anemia in HIV in terms of causes, sources, prevelance, drug sensitivity and immune response. HIV patients are at a high risk of developing anemia due to drugs used to treat HIV infection and its complications are also known to cause bone marrow suppression. It is widely known that AZT alone and AZT based highly active antiretroviral treatment (HAART) regimen is associated with significant reduction of hemoglobin (Hgb) level.

The prevalence of HIV was 6.9%. The prevalence of anemia was significantly higher among HIV positive woman (56.5%, N=1153); OR 1.49(95% CI; 1.09-2.010). The HIV positive women also had significantly higher prevelance of both moderate and sever anemia. In multivaretanalysisi anemia was independently associated with malaria (P < 0.005) HIV (P=0.008), clinic of enrollment (P<0.001) a makers of low social – economic status. Delivery information was available for 85 %( 2256) of the 2654 enrolled women 86%(1080)for anemic women and 84%(11760for non anemic women.

**Rationale**

The reason I took this study was to uncover the prevelance of anemia in HIV patients, I Wanted to highlight and evaluate this in my setting here at Mnazi Mmoja hospital in order to see which age group and sexwill be more affected as HIV lowers immunity. In addition this study will show other medical conditions associated with anemia in HIV infected individuals. Also this study is part of my clinical officer.

**Objectives of the study.**

**Broad objective;**

To determine the prevalence of anemia in HIV patients attending Mnazi Mmoja Hospital

**Specific objectives;**

To identify the risk factors of anemia in HIV adult patients attending Mnazi Mmoja hospital.

To determine the rate of female and male patients with HIV and anemia attending Mnazi Mmoja hospital. .

To rule out the risks of ART in patients with HIV attending Mnazi Mmoja hospital.

**Research questions**

Why HIV cause anemia?

Why some ARTs drugs causes anemia?

Why some people with HIV do not develop anemia?

What is the prevalence of anemia among the HIV attending in Mnazi Mmoja Hospital?

What are the factors associated with anemia with HIV to the Patient attending in Mnazi Mmoja Hospital

To rule out the risks of ART in patients with HIV.

**Research variables.**

Dependent variable is HIV

Independent variable is anemia.

**CHAPTER TWO**

**LITERATURE REVIEW**

**Introduction**

A literature review provides helpful guidelines to a particular topic, it can be used as a foundation and as a support for a new insight that contribute.

In Kenya prevalence of anemia before and after ART initiation was 41.9 and 11.4 respectively. There are significance differences in CD4 +T cell count , RBC count, haemoglobin values and RBC indices in HIV patients before and after ART initiation (p-value<0.05). WHO clinical stagntes and CD4+T cell counts were found to be associated with the prevelance of anemia before ART initiation. Among the total number of anemic cases normocytic normochromic anemia was present in 71% of the cases before ART and 58.6% of the cases after ART (Belperioetal (2004)

Prevalence of anemia among HIV patients considerably depends on several factors, including the stage of HIV disease, sex, age, pregnancy status, and injection used. In general, as HIV disease progresses, the prevelance and severity of anemia increase. Anemia is also more prevalent in HIV –positive women, children, and injection- drug users.

In England among the 1948 patients, 75.8% were male. Median age was 40 years (range; 18-80 years). The overall prevalence of anemia among HIV infected patients was 51.9% (51.5% among men, 53.2 among women). The prevalences of mild, moderate and severe anemia were 32.4%, 187.0% and 2.5%, respectively.

The prevalence of anemia was higher among ethnic minority patients than among the Han patients (70.9% versus 45.9%) (De Benoist (1993)

The prevalence of anemia increased with increasing age (49.6%, 53.5% and 60.1% among patients who were 18-39, 40-59, and >60% years of age respectively) and with decreasing CD4 count (14.05, 22.4%, 50.75 and 74.6 among patients with CD4 count of>350, 200-349, 50-199,and 50 cells/mm respective.)

Our observations show that around 86% of HIV-positive patients are anemic in North India and the degree of the severity of anemia has a statistically significant positive correlation with CD4 cell counts. Nomocytic normochromic anemia is the most common morphological type of anemia found in these patients while microcytic and macrolyticanemias are less frequent Iron, vitaminB12, and folate deficiencies play a significant role in causing anemia in at least one third of the patients. (WHO 2001)

In Tanzania the findings related that 57% of the under five children are anemic in Tanzania at the time of study, under five children in Zanzibar are at higher risk compared to those in Mainland (unadjusted OR 1.857). At 95% CI female are less likely to be anemic compared to male children (unadjusted OR =0.843, OR adjusted OR=0.825).

Also the risk of anemia reduces as Childs age increases at 95% both in bivariate and multivariate analysis. Age of mother is significantly associated with anemia among under five children in bivirate analysis; as the age of mother increases, the likelihood of anemia among under five children decreases (OR 0.981) but it is insignificant in multivariate analysis. Consequently, the risk of anemia is higher among children whose mothers are not married compared to those whose mothers are unmarried (unadjusted OR 0.612, adjusted OR 0.710).

In Tanzania, total of 250 women (200 HIV positive women and 50 Negative) were included in the study. The anthropometric and biological characteristics of HIV positive and HIV negative women at enrolment. All women were greater than 18 years of age and age did not differ significantly lower among HIV positive than among HIV negative women. Fifety (25%) HIV positive women were receiving HAART. The mean haemoglobin concentration was significantly lower HIV positive women than in HIV negative women (12.5+\_2.9g/dl, respectively; P<0.001), and the prevalence of anemia among HIV positive than among HIV positive than among HIV negative men. (Ferede G etal (2013)

**CHAPTER THREE**

**RESEARCH METHODOLOGY**

**Introduction**

This chapter describes how the study will be done and the way the research findings will be presented. It explains about, study area, study type/design, study population, sampling techniques, sample size, data collection technique and tools, data processing and analysis and ethical consideration.

**Study type/design**

The design will be cohort study whereby it is the class of research methods which will involve collection of data from Health Management Information System (HMIS) at a specified time period.

**Study Area**

The study will be conducted in Internal Medicine Department and CTC clinic at Mnazi Mmoja Hospital in Tanzania.

**Study Population**

The study sample will be conducted to population of all patients diagnosed with HIV infection attending CTC at Mnazi Mmoja Hospital from November 2018 to February 2019.

**Study unit**

All patient who will be diagnosed with HIV infection attending CTC at Mnazi Mmoja Hospital.

**Sampling procedure**

Random sampling will be used to obtain the sample size for the study.

Sample size

This was calculated from the formular N=ZP {1-P}/e

Where; N= Sample size

Z=Standard normal deviation

P=Proportion of patient

E=Maximum error =10%

P=Prevalence

N=4×43(100-43) =98.04 98people.

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So the number of sample size will be98 people will be selected equally male and female.

**Data collection techniques and tools**

The data will be collected by the researcher, The study will employ the use of several techniques particularly interview, observation, questionnaire and documentation. The interviewees will be guided by the already prepared questionnaires designed for different types of respondents. Other data collection tools are pens, pencils, ruler and note book.

**Data processing and analysis**

Data will be collected and analyzed manually by using paper sheet, notebook aided with calculator, coded and entered into the computer by using Microsoft word office and Microsoft office excel spreadsheets.

**Ethical consideration**

All information obtained will be confidential. Patients’ names will not be used; just the codes will be required. After compilation, the proposal will be submitted to the principal of Kam college staffs and also at Mnazi Mmoja Hospital ethical committee for approval to conduct the research.

**Utilization and dissemination of result**

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 liminitation**

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

**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 |

**BUDGET**

The proposed budget for our research is **TSH 234,500**

|  |  |  |  |
| --- | --- | --- | --- |
| BUDGET CATEGORY | UNIT COST | MULTIPLYING FACTOR | TOTAL COST |
| Stationary/supplies material | Allowance |
| Duplicating paper | 11,000/= | 11,000/= 1 ream paper | 11,000/= |
| Note book | 5000/= | 5000/= 1 note book | 5000/= |
| Ball pen | 5000/= | 1box ball pen | 5,000/= |
| Pencil | 200/= | 5 pencil | 1000/= |
| Clear bag | 5000/= | 5000/= 2 clear bag | 10,000/= |
| Proposal printing | 500/= | 500/= 15pages | 7,500/= |
| Proposal binding | 5000/= | 5000/= | 5,000/= |
| Internet bundle | 5000/= |  | 5000/= |
| Food and accommodation | 5000/= | For 20 days | 100000/= |
| Transport | 3000/= | **20 days** | 60000/= |
| Emergency | 25000/= |  | 25000/= |
| **GRAND** TOTAL |  | | **234,500/=** |

**REFFERENCE**

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## 

## **Informed consent (English)**

**DETEMINING PREVALENCE OF ANAEMIA AMONG HUMAN IMMUNO DEFICIENCY HIV INFECTED PEOPLE IN TANZANIA**.

**A CASE STUDY AT MNAZI MMOJA HOSPITAL**

Kam Institute of Health Science in collaboration with Mnazi Mmoja hospital is performing a research on prevalence and incidence of diabetic mellitus cases reported in the hospital.

**What is the study about?**

The study you are about to participate is concerned with prevalence and incidence of anemia among HIV Patient. The study has been approved by the college research ethics committee for ethical standards and will not judge or test the participant’s personality. It involves a series of questionnaire which does not violate the rights of the participant in any way.

**What is expected from you, if you agree to participate?**

If you agree to participate in the study, you will be required to answer questions that you will be given so that to get some of information from you that will help in my study. Do not hesitate because in this interview there is no RIGHT or WRONG answers. What you think and you have experience you should write if you have asked.

**Confidentiality.**

The information that you will give out when answering the question will remain to be secret between me and you that is why there is no need of writing the name to the answer sheet that will be used. Therefore don’t worry to give out the information.

**Voluntary participation.**

A right to withdraw in this study is completely your choice. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits to which you are otherwise entitled.

**Benefits**

If you agree to take part in this study, you will benefit directly or indirectly. Indirectly, the information you will provide will help me to understand and know the magnitude of diabetic mellitus problem, the use of medication that the client is being given, the risk factors to the problem and what the complications that the client suffer. Directly you will receive more information on the problem or question(s) that you will have and also counseling on what to do or how to live healthy under the problem you have.

If you will need additional information or more clarification about the questions that you are provided never be afraid to contact the study personnel for more information or clarification.

Mr. Domician E. Baitani

Phone no: 0752478345. Email: dominicbaitani@gmail.com

Do you agree? YES NO

I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_have read/listened the contents in this form. My questions have been answered. I agree to participate in this study and I will give the correct information to what I know.

Signature of participant (literate person): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Right hand thumb print (Illiterate person): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of researcher person: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of signed consent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## 

## **Fomu ya ridhaa**

**UTAFITI UNAO HUSU UPUNGUFU WA DAMU KWA BAADHI YA WAGONJWA WANAOISHI NA MAAMBUKIZI YA VIRUSI VYA UKIMWI NCHINI TANZANIA**

**UTAFITI KATIKA HOSPITALI YA MNAZI MMOJA**

**Utafiti unahusu nini?**

Utafiti huu unaotegemea kushiriki unahusu kiwangona matukio ya ugonjwa wa kisukari. Utafiti huu umeidhinishwa Na kamati yamaadili ya utafiti WA vyuo vya kati Kwa ajili ya viwango vya maadili Na hauta hukumu wala kupima utu wako. Unahusisha mtiririko wamaswali ya dodoso ambao hautakiuka haki zako wewe mshiriki.

**Tunategemea nini kutoka kwako ikiwa utakubali kushiriki?**

Ukukubali kushiriki katika utafiti huu kwahiari, utatakiwa kukubali kujibu maswali Kama yalivyo katika dodoso la utafitihuu. Usisite kwasababu katika utafiti huu majibu yote Ni sawa. Andika kile unachofikiria au ulichowahi kukipitia kama umeulizwa.

**Usiri**

Taarifa ambazo utazitoa wakati wakujibu maswali itabaki kuwa siri kati yangu Mimi Na wewe, ndio maana hamna kuandika majina yako kwenye karatasi. Hivyo usiogope katika kutoa taarifa.

**Uhiari WA kushiriki**

Unayo haki yakujiondoa katika ushiriki huu hata Kama mwanzo ulikubali kushiriki. Kukataa kushiriki au kujibu swali lolote hakuna adhabu yoyote wala hauta poteza haki zako Kama mshiriki Na katika kupata huduma za afya stahiki.

**Faida**

Ukubali wako katika kushiriki utakupa faida za moja Kwa moja au faida ambazo sio za moja Kwa moja. Faida ambazo sio za moja Kwa moja kwako Ni Kama: taarifa zako zitasaidia kujua ukubwa watatizo, dawa ambazo unapewa, mazingira hatarishi Kwa tatizo hili Na nimadhara gani ambayo unayapata. Faida za moja Kwa moja kwako, utapata maelezo ya Zaidi kuhusu tatizo au maswali uliyonayo, pia utapata ushauri kuwa Ni kitu gani cha kufanya au Ni jinsi gani unaweza kuishi huku ukiwa Na tatizo Hilo.

Kama utahitaji taarifa za ziada au ufafanuzi juu ya maswali ambayo nimekupatia, usiogope kuniuliza kwaajili yakupat aufafanuzi.

Mr. Domician E. Baitani

Phone no: 0752478345. Email: dominicbaitani@gmail.com

Je unakubal ikushiriki NDIO HAPANA

Mimi \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_nimesoma/nimesomewa na kuyaelewa vema maelezo yaliyomo katika fomu hii. Maswali yangu yamejibiwa. Ninakubali kushiriki katika utafiti huu na nitatoa taarifa sahihi.

Sahihi ya mshiriki (Wanaojua kusoma na kuandika): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dole gumba cha mkono wa kulia (Wasiojua kusoma na kuandika): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sahihi ya msaidizi wa utafiti: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tarehe ya kusaini fomu ya ridhaa: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**APPENDICES**

**QUESTIONAIRES**

1. PATIENT INFORMATIONQuestionnaires number…………………………….Region name……………………………………….District name………………………………………

Village name………………………

2 PRESPATING FACTOR

a) Lack of enough food rich in iron

B) Duration of ant retro viral taken

c) Ant partum haemorrhage

D) Martial status

e) Monthly income

F) Education level

3 HOSPITAL MANAGEMENT OF THE DISEASEA) Folic acid

b) No managementc) Counselling on good nutrition

4 CLINICAL PRESENTATRION

A) DizzinessB) Shortness of breathc) Headache

5 SEVERITY OF ANAEMIA

A) Hb level 10-10.9 g/dlb) Hb level 7-9.9 g/dl

c) Hb level <7 g/dlKEY:

A-14-24 years \*--10-10.9g/dl (mild anemia)

B-25-35 years \*\*--7-9.9g/dl (moderate anemia)C->35 years \*\*\*--<7g/dl (severe anemia)