ASSESSMENT OF COPING STRATEGIES AMONG PEOPLE LIVING WITH HIV/AIDS IN BAUCHI STATE NIGERIA

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BY

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AUGUST, 2018

DECLARATION

I declare that the work in this dissertation entitled "Assessment of Coping Strategies among People Living with HIV/AIDS in Bauchi State Nigeria" has been carried out by me in the Department of Nursing Sciences, ABU, Zaria. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this dissertation was previously presented for another degree or diploma at this or any other institution.

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CERTIFICATION

This dissertation entitled "ASSESSMENT OF COPING STRATEGIES AMONG PEOPLE LIVING WITH HIV/ AIDS IN BAUCHI STATE NIGERIA" by Hafsat USMAN meets the regulations governing the award of the degree of Master ofScience in Nursing sciences of the Ahmadu Bello University, and is approved for its contribution to Knowledge and literary presentation.

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DEDICATION

This research work is dedicated to my children Abdullahi, Abdurrahman, Fatima and Aishatu (Siyama).

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ABSTRACT

Human Immunodeficiency Virus infection and Acquired Immune Deficiency Syndrome (HIV/AIDS) are characterized by a multitude of symptoms which still persist even with the advent of HAART and the goal of human existence is to be happy, free from pain and live a qualitative life. Hence, human beings employ different strategies to ensure the attainment of their goals. Coping is the name given to the strategies used to ensure that these goals are achieved. This study aims to assess the physical and psychosocial stressors related to HIV/AIDS as well as physical and psychosocial coping strategies adopted by People Living with HIV/AIDS (PLWHA) in Bauchi state. A cross sectional descriptive research design was used with a total sample of 384 PLWHA recruited through multistage sampling technique from eight ART centres in Bauchi state were interviewed using a questionnaire developed from the revised sign and symptoms checklist for HIV (SSC-HIVrev), HIV related social problem scale and Coping Strategies Inventory (CSI). The data collected was analysed using SPSS. Frequency tabulation, descriptive statistics of mean and standard deviation were used, Pearson correlation coefficient was used to test relationship between variables at p-value of 0.05 or less. The results revealed that most of the participants were females (75.3%) with a mean age of 35.8years. Participants wereaffected by physical stressors; the most common symptoms were fever (77.1%), headache (69.8%) and fatigue (65.4%) in the physical dimension, worry/fear (60.9%) in the psychological dimension and loss of someone (57.3%) in the social dimension.The most commonly utilised physical coping strategy were consulting medical professional (Mean=2.10), using safe drinking water (Mean=1.82) and sleeping under insecticide treated net (Mean=1.64). The most commonly utilised psychosocial coping strategies were those categorised under problem focused coping strategies (cognitive restructuring (Mean=2.33), expressing emotion (Mean=2.22) and social support (Mean=2.09)). Correlation was seen between various subset of the coping strategies and sociodemgraphic characteristics; physical coping correlated with sex, marital status, level of education and religion at 0.05 and less whereas the subsets of psychosocial coping correlated with some of the sociodemographic characteristics. However, both the physical and psychosocial coping were found to be utilised. Based on these findings it can be concluded that despite the increasing access to ART manageable symptoms still exist and the respondent are utilising good and adaptive coping strategies. The assessment of these symptoms is essential alongside other virological outcomes as well as the coping strategies adopted to self-manage the symptoms.

Key words; coping strategies, HIV/AIDS, people living with HIV/AIDS,

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ATBUTH	Abubakar Tafawa Balewa University Teaching Hospital
GH	General Hospital
HAART	Highly Active Antiretroviral Therapy
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
IDC	Infectious Disease Center
KS	Kaposis Sarcoma
MRS	Medical Reception Station
NNRTI	Non-Nucleoside Reverse Transcriptase Inhibitors
NRTI	Nucleoside Reverse Transcriptase Inhibitors
PI	Protease Inhibitors
PLWA	People Living with HIV/AIDS
PMTCT	Prevention of Mother to Child Transmission of HIV/AIDS
TB	Tuberculosis
UNAIDS	United Nation Agency for control of AIDS
UNGASS	United Nation General Assembly Special Session on Drugs
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

1. Coping Strategy: Ability to tackle stressful situation in a negative or positive way.
2. HIV (human immunodeficiency virus): is a virus that attacks the immune system, the body's natural defense system.
3. People living with *HIV/AIDS:* peoplewho have the human immunodeficiency virus HIV and are on highly active antiretroviral therapy.
4. Antiretroviral therapy (ART); Treatment consist of a combination of drugs (often called "Highly Active Antiretroviral Therapy" or (HAART)
5. Stressors: difficulties associated with HIV as a disease and those of medication.

CHAPTER ONE

1.1 Introduction

Human being is a biopsycho-social adaptive being in constant interaction with his environment which could be internal or external (Roy, 1970; Matt, 2014). He is made up of subsystems which include biological subsystem, psychological subsystem and social subsystem. The biological subsystems consist of respiratory, reproductive, endocrine, cardiovascular, and immunological, among others. several diseases can affect the subsystems of whichHuman Immunodeficiency Virus infection and Acquired Immune Deficiency Syndrome (HIV/AIDS) is one which affect the immunological, psychological and social subsystems.

Human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) is a spectrum of conditions caused by infection with the human immunodeficiency virus (Kramer, Kretzschmar and Krickeberg, 2010), and they further stated that AIDS was first clinically observed in 1981 in the United States. The initial cases were seen in a cluster of injecting drug users and homosexual men who showed symptoms of Pneumocystis carinii pneumonia (PCP), a rare opportunistic infection that was known to occur in people with compromised immune systems. HIV is a retrovirus that primarily infects components of the human immune system such as $CD4^+$ T cells, macrophages and dendritic cells. It directly and indirectly destroys $CD4^+$ T cells. (Alimonti, Ball and Fowke, 2003).Human Immunodeficiency Virus (HIV) is a member of the genusLentivirus, part of the family Retroviridae. Many species of mammals are infected by lentiviruses, which are characteristically responsible for long term illnesses with a longer incubation period.

Human Immunodeficiency Virus (HIV) has been discovered to betransmitted by three main routes: sexual contact, significant exposure to infected body fluids or tissues and from mother to

child during pregnancy, delivery, or breastfeeding (known as vertical transmission) (Teheri and Zarimoghadam, 2013; Mayor Foundation, 2016). HIV/AIDS is diagnosed using Rapid Test Kit (RTK), laboratory testing and then staged based on the presence of certain signs or symptoms. Most people infected with HIV develop specific antibodies within three to twelve weeks of the initial infection (AIDS.gov, 2016; World Health Organization, 2007).

Methods of prevention include safe sex, needle exchange programmes, treating those who are infected and male circumcision. Disease in a baby can often be prevented by giving both the mother and child medication. There is no cure or vaccine; however, antiretroviral treatment can slow the course of the disease and may lead to a near-normal life expectancy. Treatment is recommended as soon as the diagnosis is made. Without treatment, the average survival time after infection is 11 years (WHO, 2015). A 2011 trial has confirmed if an HIV-positive person adheres to an effective ART regimen, the risk of transmitting the virus to their uninfected sexual partner can be reduced by 96%) (WHO, 2016). The WHO recommendation to initiate ART in all people living with HIV will contribute significantly to reducing HIV transmission. A course of antiretrovirals administered within 48 to 72 hours after exposure to HIV-positive blood or genital secretions is referred to as post-exposure prophylaxis (PEP) (WHO, 2016).

In 2014 about 36.9 million people were living with HIV and it resulted in 1.2 million deaths (WHO, 2015). In Nigeria according to the latest data obtain the number of people living with HIV is 3.5million and it account for 9% of people living with HIV in the world (NACA, 2015). Between its discovery and 2014, AIDS has caused an estimated 39 million deaths worldwide (WHO, 2015).

Treatment consists of Highly Active Antiretroviral Therapy (HAART) which slows progression of the disease. As at 2010 more than 6.6 million people were taking them in low and middle

income countries (WHO, 2016). Treatment also includes preventive and active treatment of opportunistic infections (WHO, 2016).

Highly Active Antiretroviral Therapy (HAART) has produced a great deal of relief for the HIV patients by decreasing the morbidity and mortality from opportunistic infections. However, this positive impact of Antiretroviral Therapy (ART) also carries negative side effects, including metabolic abnormal changes termed lipodystrophy syndrome, cardiovascular diseases, nausea, vomiting, diarrhea and hepatotoxicity which impede the management of HIV-infected patients (Ngala, Opoku and Asare, 2015). As a result of which many of the patients undergo non adherence to drug regimen, switching from one drug to another and overall affecting their quality of life, thus the need for coping with some of the drugs side effects. Human beings are generally responsive to forces that threaten their existence. Threatening situations are often accompanied by unpleasant emotions called anxiety. These anxieties are caused by stressful situations which in turn lead to depression depending on their intensity or severity. The threats range from daily life stressors to those that threaten existence (Haruna and Ago, 2014). The goal of human existence is to be happy, free from pain and live a qualitative life. Anything that hinders the achievement of these goals is usually dealt with. To deal with such threat therefore, humans employ different strategies to ensure the attainment of their goals. Coping is the name given to the strategies used to ensure that these goals are achieved.

HIV/AIDS has had a great impact on society, both as an illness and as a source of discrimination. The disease also has large impacts. There are many misconceptions about HIV/AIDS such as the belief that it can be transmitted by casual non-sexual contact.It has attracted international medical and political attention as well as large-scale funding since it was identified in the 1980s (United Nation Programme on HIV/AIDS (UNAIDS), 2006). Kabbash, El-Gueneidy, Sharaf,

Hassan and Al-nawawy, (2008) stated that Psychological research with people living with HIV has reflected a conceptual shift towards perceiving HIV and AIDS as a chronic disease. Accordingly, health care providers are required to recognize and address the needs of the growing population of people living with HIV. Infected individuals suffer a number of concerns and fears related to future economic security, sexuality, disease transmission, infections, eventual ill health and death, hence, the need for coping with such event.

Coping is expending conscious effort to solve personal and interpersonal problems, and seeking to master, minimize or tolerate stress. The effectiveness of the coping efforts depends on the type of stress, the particular individual, and the circumstances (Weiten and Lloyd, 2008). Coping mechanisms are commonly termed coping strategies or coping skills.Therefore, the term coping generally refers to adaptive or constructive coping strategies, i.e. the strategies that reduce stress levels. However, some coping strategies can be considered maladaptive, i.e. stress levels increase. Maladaptive coping can thus be described as ineffective coping. Furthermore, the term coping generally refers to reactive coping, i.e. the coping response that follows the stressor. This contrasts with proactive coping, in which a coping response aims to head off a future stressor (Carver and Smith, 2010). Coping responses are partly controlled by personality (habitual traits), but also partly by the social environment, particularly the nature of the stressful environment. This study seeks to identify stressors attached to HIV as a disease and those of the medication side effects as well as coping strategies adopted by PLWHA towards the stressors.

1.2 Statement of Problem

The AIDS pandemic continue to be an escalating health problem throughout the world. Studies have pointed out that psychiatric distress/disorders may be reported in a high percentage of people living with HIV and that several variables facilitate the onset of emotional disturbances

secondary to HIV infection (Kabbash *et al*, 2008). HIV infection is a common viral infection that affects humans and is one of the main causes of premature death, with a tremendous growth, particularly in Africa and developing Countries, individuals' psychological traits and inability to cope with stressful situations are among the factors accelerating death in people with the disease (Teheri and Zarimogham, 2013).In Bauchi State, the prevalence of HIV/AIDS among adult has declined from 6.8 in 2008 to 0.6 in 2016 (BACATMA, 2016), paucity of information does not allow the understanding of coping strategies among the PLWHA and it is well established that persons with an HIV infection have high rates of stressful life events in dealing with their disease and its treatment.These challenges might overwhelm their coping resources and impair their physical and psychological adjustment to the ongoing demands of managing this stigmatized, chronic disease (Bouhnik *et al*., 2005; in Rodkjaer, Sodemann, Ostergaard, and Lomborg, 2011). Coping strategies used in response to HIV-related stressors may affect patients' quality of life (Norciniand Steca, 2015).

Health care professionals are placing many patients on a potent ART, with limited attentionbeen given to side effects which have been reported with the use of all antiretroviral drugs and are among the most common reason affecting patient willingness to initiate medication, switching or discontinuing medication or non-adherence (Peters, Uwakwe and Monago, 2014) Patient self-report of symptoms was significantly higher than symptoms recorded by the health practitioners during follow-up (Brand, 2015).

It was observed by the researcher that opportunistic infections and anxiety can affect clients' health status and compliance to treatment as well as clients' quality of life despite the social and financial support provided by various groups to PLWHA in Bauchi state Thus, the need for coping with such physical and psychosocial morbidity represents a field of specific interest in

HIV and AIDS literature. Worried by the above mentioned situation, this research aims at identifying distress/burden affecting people living with HIV and coping strategies adopted by them on the disease andits treatment in Bauchi state Nigeria.

1.3 Justification of the Study

The findings of this study will provide people living with HIV/AIDS with knowledge on different ways of coping adopted by other people living with HIV in different parts of the study area and its implication on their survival. The findings will also suggest ways of coping with the stressors of the disease and side effects of the drugs used in treating the disease for good adherence and survival.

Findings of the study will also provide health care professionals caring for people living with HIV with knowledge on how to assist them in developing their autonomy and stable identity by discussing the impact of the disease and it treatment on their everyday life and as well educating them on positive coping strategies. It will also provide information on counseling services needed to change high risk behavior and maintain low risk activities; it will also reveal the prevalence of opportunistic infections in PLWHA in era of HAART in order to define priorities of prophylaxis and treatment of HIV related co-morbidities.

To education, the study would provide a body of knowledge concerning coping strategies adopted by people living with HIV/AIDS for other researchers to build on and investigate further.

The study will reveal percentage of people living with HIV/AIDS with positive coping strategies and also number of them with negative coping strategies; it will also provide information on illness perception of the disease and side effect of its treatment.

1.4.0 Research Aim and Specific Objectives

1.4.1 Aim

The aim of the study is to assess the stressors and coping strategies among people living with HIV/AIDS in Bauchi state.

1.4.2 Specific Objectives

1. To identify the physical stressors affecting people living with HIV/AIDS in Bauchi state.
2. To identify the psychosocial stressors affecting people living with HIV/AIDS in Bauchi state.
3. To assess the physical stress coping strategies adopted by people living with HIV/AIDS in Bauchi state.
4. To determine the psychosocial stress coping strategies adopted by people living with HIV/AIDS in Bauchi state.
5. To determine the relationship between coping and socio-demographic characteristics of people living with HIV/AIDS in Bauchi state.

1.5 Research Questions

1. What are the physical stressors affecting people living with HIV/AIDS?
2. What are the psychosocial stressors affecting people living with HIV/AIDS?
3. What physical stress coping strategies do people living with HIV/AIDS adopt?
4. What psychosocial stress coping strategies do people living with HIV/AIDS adopt?
5. What is the relationship between coping pattern and socio-demographic factors among people living with HIV/AIDS?

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The focus of this study is to ascertain the coping strategies among people living with Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) as a tool for improving survival, thus This chapter comprises of review of related literatures which will look into concept of HIV/AIDS, signs and symptoms, history and epidemiology, prevention, treatment etc. it will also look into concept of coping in HIV, types of coping strategies HIV patients, gender differences and coping in HIV, physiologic basis of coping, ways of coping in HIV and Nurses role in as an agent of coping enhancement.

2.1.1 Concepts of HIV/AIDS

The Human Immunodeficiency Virus (HIV) targets the immune system and weakens people's defense systems against infections and some types of cancer. As the virus destroys and impairs the function of immune cells, infected individuals gradually become immunodeficient (WHO, 2016).

According to WHO (2016), the most advanced stage of HIV infection is Acquired Immunodeficiency Syndrome (AIDS), which can take from 2 to 15 years to develop depending on the individual. AIDS is defined by the development of certain cancers, infections, or other severe clinical manifestations.

2.1.2 History and Epidemiology of HIV/AIDS

AIDS was first clinically identified and described in 1981 in patients presenting with symptoms of severe immunosuppression in the United States. While the clinical presentations varied

amongthese initial cases, they shared enough features to justify their being treated as part of a syndromicdisease caused by a single pathogen. This syndrome was characterized by immune abnormalitiesresulting from infection and destruction of CD4+ T-lymphocytes, which immunologically compromisedthe infected person. The term “acquired immune deficiency syndrome” (AIDS) was coined todescribe the disease, since the causative agent was not yet known (Nasidi and Muhammad, 2006).

The first two cases of HIV and AIDS in Nigeria were identified in 1985 and were reported at an international AIDS conference in 1986 (Webby, 2011). In 1987 the Nigerian health sector established the National AIDS Advisory Committee, which was shortly followed by the establishment of the National Expert Advisory Committee on AIDS (NACA) (Webby, 2011).

HIV infection is a common viral infection that affects humans and is one of the main causes of premature death, with a tremendous growth, particularly in Africa and developing countries and among young populations (Emamipoor, *et al*, (2008) in Teheri *et al*, 2013).

In Nigeria according to the latest data obtain the number of people living with HIV is 3.5million and it account for 9% of people living with HIV in the world (NACA, 2015). As of 2014 in Nigeria, the HIV prevalence rate among adults ages 15-49 was 3.17 percent. HIV prevalence is much lower in Nigeria than in other African countries such as South Africa and Zambia, Nigeria has the second-largest number of people living with HIV(NACA, 2015). The HIV epidemic in Nigeria is complex and varies widely by region. In some states, the epidemic is more concentrated and driven by high-risk behaviors, while other states have more generalized epidemics that are sustained primarily by multiple sexual partnerships in the general population.

The first case of HIV infection took place in the late 1986 in Bauchi state, 34902 people are living with HIV and it accounted for 1.1% of national figure (Bauchi state agency for control of leprosy, tuberculosis, malaria, HIV/AIDS, BACATMA, 2015). It has now spread into all LGAs

2.1.3 Sign and symptoms of HIV/AIDS

The symptoms of HIV vary depending on the stage of infection. Though people living with HIV tend to be most infectious in the first few months, many are unaware of their status until later stages. The first few weeks after initial infection, individuals may experience no symptoms or an influenza-like illness including fever, headache, rash or sore throat (WHO, 2016).

As the infection progressively weakens the immune system, an individual can develop other signs and symptoms, such as swollen lymph nodes, weight loss, fever, diarrhoea and cough. Without treatment, they could also develop severe illnesses such as tuberculosis, cryptococcal meningitis, and cancers such as lymphomas and Kaposi's sarcoma, among others.

Table 2.1 World Health Organization AIDS case definition

Major Signs	Minor Signs
Weight loss > 10%body weigh	Persistent cough> 1month
	Pruritic rash
Chronic diarrhoea > 1 month duration	Recurrent herpes zoster Oropharyngeal candidiaisis
Prolonged fever > 1 month duration	Chronic progressive herpes simplex infection Generalized lymphadenopathy

Retrieved from Nasidi and Muhammad 2006 AIDS in Nigeria

Any two major signs, or one major plus two minor signs, constitute an AIDS diagnosis.

2.1.4 Transmission of HIV/AIDS

HIV is transmitted by three main routes: sexual contact, significant exposure to infected body fluids or tissues and from mother to child during pregnancy, delivery, or breastfeeding (known as vertical transmission) (WHO, 2016). Children under 5year and adolescent mostly acquire HIV through vertical transmission (NACA, 2012 in Ibrahim, Muhammad and Umar, 2016) There is no risk of acquiring HIV if exposed to faeces, nasal secretions, saliva, sputum, sweat, tears, urine, or vomit unless these are contaminated with blood. It is possible to be co-infected by more than one strain of HIV a condition known as HIV superinfection (National health institute, 2016). Nigeria recorded the first case of AIDS in 1986 (FMH, 2005). Heterosexual intercourse remains the primary mode of transmission for HIV and accounts for 80-95 percent of HIV infection in Nigeria (Adeyi and Kanki, 2006).

Transmission of HIV/AIDS according to UNAIDS(2010) is higher among men who have sex with men (MSM), injecting drug users (IDU), commercial sex workers, other ways are contaminated blood transfusion, unsafe medical injection (<1%). Transport workers, police and armed forces (army, navy, and air force) were also stated by Federal Ministry of Health (2010) during its integrated Biological and Behavior Surveillance Survey. The United Nations (UN) General Assembly held a Special Session (UNGASS) in April 2016 on the world drug problem, and it was stated that People who inject drugs represent one of the key populations most at risk for HIV and hepatitis infection. Among the 15.9 million (11 million-21.2 million) PWIDs globally, about 3 million (0.8 million-6.6 million) live with HIV (Tinasti, Ravishankar and Zuniga, 2015).

2.1.5 Diagnosis/ classification of HIV/AIDS

Serological tests, such as RDTs or enzyme immunoassays (EIAs), detect the presence or absence of antibodies to HIV-1/2 and/or HIV p24 antigen. When such tests are used within a testing strategy according to a validated testing algorithm, HIV infection can be detected with great accuracy. It is important to note that serological tests detect antibodies produced by an individual as part of their immune system to fight off foreign pathogens, rather than direct detection of HIV itself (WHO, 2016). Most individuals develop antibodies to HIV-1/2 within 28 days and therefore antibodies may not be detectable early after infection, the so-called window period. This early period of infection represents the time of greatest infectivity; however, HIV transmission can occur during all stages of the infection. U.S. Centers for Disease Control and Prevention (CDC).

Table 2.2 Modified CDC classification of HIV Disease

Clinical Stage I	Asymptomatic disease: Asymptomatic/acute HIV infection, persistent generalized lymphadenopathy
Clinical Stage II	Early (mild) disease: Weight loss ≥ 10% of body weight; minor mucocutaneous manifestations (seborrhoeic dermatitis, prurigo, fungal nail infection, recurrent oral ulceration, and angular cheilitis); recurrent respiratory tract infections, such as bacterial sinusitis
Clinical Stage III	Intermediate (moderate) disease: Weight loss ≥ 10% of body weight; chronic unexplained diarrhoea ≥ one month; oral candidiasis (thrush); oral hairy leukoplakia; pulmonary tuberculosis within the past year; severe bacterial infection, such as pneumonia and pyomyositis
Clinical Stage IV	Late (severe) disease AIDS: HIV-wasting syndrome as defined by the CDC; Pneumocystis carinii pneumonia; toxoplasmosis of the brain; cryptosporidiosis with diarrhea ≥ one month; extrapulmonary cryptosporidiosis; cytomegalovirus disease other than in liver, spleen, or lymph nodes; herpes simplex virus infection; mucocutaneous ≥ one month or visdermal of any duration; progressive multifocal leukoencephalopathy; disseminated endemic mycosis, such as histoplasmosis and coccidioidomycosis; candidiasis of the esophagus, trachea, bronchi, or lungs; atypical mycobacteriosis; disseminated, nontyphoidal salmonella septicemia; extrapulmonary tuberculosis; lymphoma, Kaposi's sarcoma; HIV encephalopathy as defined by the CDC.

Source: Nasidi and Muhammad (2006) AIDS in Nigeria

2.1.6 Prevention of HIV/AIDS

The prevention intervention is concern with strategies to prevent people from contracting HIV, such as encouraging people to wear condoms to abstain and to remain with one sexual partner. According to National Institute of Health (2016) Post-exposure prophylaxis (PEP) is the use of HIV medicines to reduce the risk of HIV infection soon after a possible exposure to HIV. PEP may be used, after a person has sex without a condom with a person who is infected with HIV or after a health care worker is accidentally exposed to HIV in the workplace.

Prevention of mother to Child HIV transmission (PMTCT) is still the most effective intervention in combating new HIV infections (Ibrahim, Umar and Muhammad, 2016). Pregnant HIV-infected women can take HIV medicines during pregnancy and childbirth to reduce the risk of passing HIV to their babies.

2.2 Concept of coping with HIV/AIDS

Immunodeficiency results in increased susceptibility to a wide range of infections and diseases that people with healthy immune systems can fight off, Thus the need for people living with HIV to cope with the disease condition so as to improve their quality of life (Rani and Batra, 2015), they further stated that Each disease brings with it lot of additionally associated problems that the patient requires to cope with this additional burden and stress. Therefore, every patient has to cope with both the disease and the accompanying stresses in the form of biological, psychological and social problems. HIV/AIDS is also a disorder with high incidence and prevalence.

It is well established that persons with an HIV infection have high rates of stressful life events. In particular, HIV presents individuals with multiple challenges that might overwhelm their coping

resources and impair their psychological adjustment to the ongoing demands of managing this stigmatized, chronic disease (Haruna and Ago, 2014).

Coping, according to Folkman and Lazarus (1991) in Berman, Kozier, Synerder, Erbs (2008) is the cognitive and behavioral effort to manage specific internal and external demands that are appraised as taxing or exceeding the resources of the person. When talking about the burden that influence their psychological adjustment and their ability to cope with the disease, it is worth mentioning that from the early detection of the disease, the patients fear it so greatly that they turn to uncharted ways to get medical care (Teheri *et al.,* 2013).

Many of the people living with HIV struggle with numerous social problems such as stigma, poverty, depression, substance abuse and cultural beliefs which can affect the quality of life not only from the physical health aspect but also from social and mental point of views (Basavaraj, Navya and Rashimi, 2010). Assessing health related quality of life is useful for documenting the patient perceived burden in HIV, tracking changes in health over time, assessing the effect of treatment and quantifying the return on health care investments will be useful in planning health care delivery.

Although overt expressions of HIV-related stigma have declined during the past decade, good number of people is still fearful of having direct contact with an HIV-positive person; some HIV-positive persons have told two or fewer people that they are infected; while others are still afraid that their HIV status will become known in their social circle (Rodkjaer, *et al,* 2011).

Stress arises when individuals perceive a discrepancy between the physical or psychological demands of a situation and the resources of his or her biological, psychological or social systems

(Sarafino, 2012). There are many ways of coping with stress. Their effectiveness depends on the type of stressor, the particular individual, and the circumstances.

2.2.1 Classification of coping strategies

Lazarus and Folkman (1984) suggested there are two types of coping responses emotion focused and problem focused:

Emotion-focused coping involves trying to reduce the negative emotional responses associated with stress such as embarrassment, fear, anxiety, depression, excitement and frustration. This may be the only realistic option when the source of stress is outside the person's control. Drug therapy can be seen as emotion focused coping as it focuses on the arousal caused by stress not the problem. Other emotion focused coping techniques include: Distraction, e.g. keeping self-busy to take mind off the issue, emotional disclosure which involves expressing strong emotions by talking or writing about negative events which precipitated those emotions (Pennebaker, 1995). Others are praying for guidance and strength, meditation, e.g. mindfulness, eating more comfort food, drinking alcohol, using drugs, journaling, e.g. writing a gratitude diary (Cheng, Tsui, and Lam, 2015).

Problem-focused coping targets the causes of stress in practical ways which tackles the problem or stressful situation that is causing stress, consequently directly reducing the stress (Lazarus and Alfert, 1964). Problem focused strategies aim to remove or reduce the cause of the stressor, including: Problem-solving, time-management, obtaining instrumental social support.

Coping strategies could be classified as normative or functional. Normative coping refers to the coping behavior that is learned and shared by a reference group while Functional coping

however involves problem solving functions such as modification of the meaning of the condition in such a way that threat is reduced or modification of situations that aggravate stressful problems and the creative management of symptoms (Haruna and Ago, 2014).

From practical perspective, coping strategies could be categorized as; Behavioral- Coping strategy which involves participating in recreational activities like social functions, reading, attending parties, games etc. to undone the effect of the stress or as a deviational therapy or cognitive Appraisal which involves changing the meaning of the stressful situation in order to remain emotionally calm or maintain psychological stamina (Haruna and Ago, 2014).

Berman *et al* (2008) further subdivided coping into; Long term coping strategy and Short term coping strategy. Another subdivision is; effective and ineffective coping which result in adaptation and maladaptation respectively. Coping in HIV/AIDS patient was broadly categorized into problem focused and emotion focused strategies (Rani and Batra, 2015) A meta-analysis revealed emotion-focused strategies are often less effective than using problem-focused methods in relation to health outcomes (Penley, Tomaka, and Weibe, 2012). In general, people who used emotion-focused strategies such as eating, drinking and taking drugs reported poorer health outcomes. Such strategies are ineffective as they ignore the root cause of the stress. The type of stressor and whether the impact was on physical or psychological health explained the strategies between coping strategies and health outcomes.

The purpose of study is to assess the coping strategies with respect to the burden associated with HIV as a chronic disease and those of medication side effects in people living with HIV receiving antiretrovirals in Bauchi State Nigeria, and as well find out how they are coping with the stressors.

2.2.2 Physiological Basis of Coping

Hormones also play a part in stress management. Cortisol, a stress hormone, was found to be elevated in males during stressful situations. In females, however, cortisol levels were decreased in stressful situations, and instead, an increase in limbic activity was discovered. Many researchers believe that these results underlie the reasons why men administer a fight-or-flight reaction to stress; whereas, females have a tend-and-befriend reaction. The "fight-or-flight" response activates the sympathetic nervous system in the form of increased focus levels, adrenaline, and epinephrine. (Smeltzer, Bare, Hinkle and Cheever, 2008). Conversely, the "tend-and-befriend" reaction refers to the tendency of women to protect their offspring and relatives. Although these two reactions support a genetic basis to differences in behavior, one should not assume that in general females cannot implement "fight-or-flight" behavior or that males cannot implement "tend-and-befriend" behavior.

2.2.3 Coping Enhancement: Nurses Intervention

Each individual suffering from HIV/AIDS adopts a different style and strategy to cope with the disease. However, these patients can be enabled to cope with the disease related stress and worries by training them on appropriate ways of coping (Rani and Batra, 2015)

McCloskey and Bulechek (1999) identified “coping enhancement “as a nursing intervention and defined it as “assisting a patient to adapt to perceived stressors, changes, or threats that Interfere with meeting life demands and roles” the nurse can build on the patient’s existing coping strategies, as identified in the health appraisal, or teach new strategies for coping if necessary. The five predominant ways of coping with illness identified in a review of 57 nursing research studies were as follows (Jalowiec, 1993 in Smeltzer, *et al* 2008): Trying to be optimistic about

the outcome, using social support, using spiritual resources, trying to maintain control either over the situation or over feelings, trying to accept the situation.

Other ways of coping included seeking information, reprioritizing needs and roles, lowering expectations, making compromises, comparing oneself to others, planning activities to conserve energy, taking things one step at a time, listening to one's body, and using self-talk for encouragement. The nurse can implement the coping enhancement interventions and explore methods for improving the patient's coping.

2.3 Stressors affecting people living with HIV/AIDS

HIV/AIDS is a disease with high prevalence and incidence, it negative impact on the individual and the society is at alarming stage (Rani and Batra, 2015). Long term complications of the disease are multifactorial and can be related to the virus itself or to adverse effect of antiretroviral treatment (Reust, 2011) the impact of the disease can be sub divided into; physiological (physical) and psychosocial stressors.

2.3.1 Physical Stressors

People living with HIV/AIDS can face serious health threats from what are known as "*opportunistic" infections* (OIs). These infections are called "opportunistic" because they take advantage of the weakened immune system, and can cause devastating illnesses (United state Department of Health and Human Services, 2016; Entonu and Agwale, 2007), they further stated that The Centre for Disease Control developed a list of more than 20 OIs that are considered *AIDS-defining conditions* if HIV and one or more of these OIs occur an AIDS diagnosis is made, no matter what CD4 count happens to be, these OIs include; *Candidiasis* of bronchi, trachea, mouth, esophagus and lungs, *Invasive cervical cancer* (vaginal bleeding*), Coccidioidomycosis*

(fever, headache, sore throat, fatigue and cough), *Cryptococcosis* (cough, fever and shortness of breath), *Cryptosporidiosis* (diarrhea), chronic intestinal *Cytomegalovirus* disease, *Encephalopathy*, HIV-related, *Herpes simplex*: chronic ulcer(s) or bronchitis, pneumonitis, or esophagitis, *Histoplasmosis*, *Isosporiasis*, *Kaposi's sarcoma* (skin), *Lymphoma*, *Mycobacterium avium complex*, *Tuberculosis* (cogh), *Pneumocystis carinii pneumonia*, *Progressive multifocal leukoencephalopathy*, *Salmonella septicemia*, recurrent, *Toxoplasmosis* of brain and *Wasting syndrome* due to HIV (University of California, San Francisco Medical Centre, 2011). Tuberculosis (TB) killed 390 000 people living with HIV in 2014, it is the number one cause of death among HIV-infected people in Africa, and a leading cause of death in HIV population worldwide (WHO, 2016) In developed regions such as North America, Europe, and Australia, *Pneumocystis carinii pneumonia* (PCP), Kaposi's sarcoma (KS), oesophageal candidiasis, cytomegalovirus (CMV)-related disease and disseminated *Mycobacterium avium* complex (MAC) infection were the prevalent OIs in PLWHA and in developing regions such as Sub Saharan Africa and South East Asia, where an estimated 90% of PLWHA reside, the predominant HIV-associated OIs in the ART era were tuberculosis (TB), candidiasis, infective diarrhea, meningitis, dermatitis and recurrent *Herpes simplex* infection (Michael, Euginia and Brian, 2013) The overall of prevalence of OIs among HIV/AIDS patients on ART in Ethiopia was 48%. The highest prevalent rates of OIs observed were tuberculosis (TB) (21.23%), followed by Herpes zoster (11.2%) and oral candidiasis (9.5%) (Habtamu, Fitsum, and Zelalem, 2015).

Similarly, the use of ART before a decline in CD4 count to <200 cells/μL was estimated to have averted 857 828 OI cases in 2013, 599 711 cases in sub-Saharan Africa, 195 312 in Asia, and 38 198 in Latin America (Andrea, Georgios Natasha, Marie-Renee, Olivier, John, Lulu, and

Philippa, 2016). The most common OIs, are oral candidiasis (366 661) and tuberculosis (182 017), accounted for the greatest number of OIs averted (Andrea*et al,*2016). However, many people with HIV still develop OIs because they may not know of their HIV infection, they may not be on treatment, or their treatment may not be keeping their HIV levels low enough for their immune system to fight off infections (Centre for Disease Control and prevention, 2016). Increasing evidence suggests a high symptom burden in HIV that persists in the presence of treatment. HIV infection is associated with increased susceptibility to TB and worse TB treatment outcomes because of weakened immune defenses and drug-drug interactions complicating co-treatment of HIV and TB (National Institute of Allergy and Infectious Diseases, 2015) As a result of prolonged survival, greater numbers of HIV-infected people are exhibiting the long-term complications of HCV infection (Entonu and Agwale, 2007). Treating hepatitis B in HIV patients is complicated by the dual activity of some nucleoside analogues and emergence of HIV or HBV resistance. The leading conditions were candidiasis (8.6%), tuberculosis (7.7%), dermatitis (5.6%), chronic diarrhea (1.5%) and sepsis (1.5%) in low resource setting of Nigeria (Michael, Eugenia and Brian, 2013).Furthermore, an evidence-based assessment of the prevalent OIs in PLWHA in the era of HAART is necessary in order to define local priorities in HIV care and expenditure on prophylaxis and treatment of HIV-related co-morbidities e.g. Hypertension, depression, gastroesophageal reflux, diabetes, Anaemia and loss of appetite (Hand, Philips and Dudgieon, 2006).

Since the onset of the HIV epidemic, the United States Centers for Disease Control and Prevention (CDC) has classified cervical cancer, Kaposi sarcoma and non-Hodgkin's lymphoma as AIDS-defining cancers because of their close association with HIV infection (Ononogu, Almujtaba, Modibbo, Lawal, Affiong, Olaniyin, Adebamowo, *et,al.,* 2013). Prevalence of

cervical squamous intraepithelial lesion was 8.5%, with a higher prevalence of 14.3% in HIV positive compared to 3.3% in HIV negative women. Not using antiretroviral drugs was found to be associated with an increased risk of cervical squamous intraepithelial lesion (Ezechi, Pettersson, Okolo, Ujah, and Ostergren, 2014). Kaposis Sarcoma were diagnosed, accounting for 1.2% of all patients managed for HIV/AIDS Lagos university teaching hospital and 2.99% of solid malignant tumours. Most cases (90%) had purely mucocutaneous involvement with the lower limb being the commonest site (65.8%) (Akinde, Obadofin, Adeyemo, Omoseebi, Ikeri, Okonkwo, and Afolayan, 2016) A research conducted using HIV related symptoms severity scale among patient on HAART reveals the percentages of symptoms such as Numbness/tingling in hands/feet (61.04%) Feeling nervous (40.52%) Lack of energy (40.26%) Sweats (38.96%) Weight loss (38.96%) and Pain (51.17%) (Farrat, Gwyther, Dinat, Ntombi and Harding, 2012). A studies shows that there was no association between use of HAART and physical or psychological symptoms burden of HIV were pain was the most common symptom in the physical dimension with 82.6% prevalence and worry in the psychological dimension with 74.5% prevalence (Harding, Selman, Agupia, Dinat, Downing, Gwyther…Higginson *et al.*, 2012).

Fatigue can be one of the most debilitating experienced by PLWHA fortunately there are several measures that people experiencing fatigue can take to improve their energy level and overall quality of life (Highleyman, 2001), fatigue can be physical or psychological in nature, physical fatigue is associated with muscles weakness, limb heaviness or soreness. The prevalence of fatigue increases as HIV disease progresses as it's highly associated with OIS and nutritional insufficiency.

2.3.2 Psychological stressors

HIV/AIDS is one of the most devastating illnesses that humans have ever faced (Bhatia and munjal, 2014). Living with HIV and the side effect of its treatment can cause significant stress which can continue to weaken the immune system (Rodriguez, 2016). Clinicians who treat patients with HIV disease have long accepted the notion that stress affects immune function. Indeed, this belief is nearly as old as the epidemic itself: counseling patients to reduce the number of stressors in their life has been standard advice since the days when the acquired immunodeficiency syndrome was known (Leiphart, 2015). Patients with the constellation of presenting symptoms that came to be known as AIDS-related complex-lymphadenopathy, candidiasis, herpes outbreaks, KS lesions, night sweats, fulminant fevers, unexplained weight loss, and a profoundly compromised immune system-were routinely instructed to avoid stress and strong sunlight, because both were believed to inhibit immune function.

Individuals differ with regard to rate of progression through the successive phases of HIV infection. Some remain asymptomatic for extended periods and respond well to medical treatment, whereas others progress rapidly to AIDS onset and develop numerous complications and opportunistic infections (Sheldom, Denise and Gregory 2007). Stress may account for some of this variability in HIV progression.

A research conducted among South Africans shows that psychological symptoms were among the first 10 most prevalent having the following percentages; Feeling sad (64.68%) Feeling irritable (62.08%)Worrying (61.04%) and sexual interest/activity problems (51.95%) (Farrat *et al.,* 2012). Similarly, a high symptom burden was reported among PLWHA in Uganda, with the most prevalent being worry (94%), feeling sad (92%), hunger (82%), feeling nervous (75%), and

feeling drowsy/tired (62%) (Namisango, powell, Atuhaire, katabira, Mwangi and Harding, 2014).

The psychological or internal challenges a person with HIV/AIDS faces vary from individual to Individual not everyone will experience all of the emotional responses or stages of the emotional responses. Anxiety is a common symptom in HIV-infected patients. When anxiety symptoms are severe or persistent, patients may have an anxiety disorder. These disorders include panic disorder, generalized anxiety disorder, obsessive-compulsive disorder, and post-traumatic stress disorder (PTSD) (HIV clinical resource, 2006). Each HIV/AIDS situation is as unique as the people involved. There are individuals who might face catastrophic changes not only in their personal and job relationships, but in their physical bodies and in their self-images and self-esteem. Among HIV-infected patients receiving medical care, 20.3% have been found to have an anxiety disorder, with 12.3% meeting the criteria for panic disorder, 10.4% for PTSD, and 2.8% having generalized anxiety disorder (Vitiello, Burnam and Bing, 2003 in HIV clinical resource, 2006) Considerable evidence suggests that people with HIV disease are significantly more distressed than the general population, yet psychiatric disorders are commonly under-detected in HIV care settings (Israelski, Prentiss, Lubega, Balmas, Garcia, Muhammad, Cummings and Koopman, 2007). Depression has significant effects on morbidity and mortality in people living with HIV (PLWH) (Su, Lau, Cheng and Mak, 2013). Since prolonged stress can depress the immune system, stress is of particular importance for individuals living with HIV/AIDS. Studies have shown that chronic stress, traumatic events, and depression can all lead to an increased viral load and decreased CD4 counts, and therefore, accelerate HIV disease progression (Toronto people with aids foundation, 2010). The prevalence of depression in patients with HIV under ART was 58.75%, the prevalence of depression increased with the severity of symptoms (Bhatia

and Munjal, 2014). They further stated that unemployed, uneducated, unmarried, belonging to joint families, having no or low family income, migrants, having indifferent or poor relationship with spouse, poor social support and had visited commercial sex workers had a greater prevalence of depression. Detecting depression early and treating it goes a long way in improving the compliance to treatment, as well as quality of life (Mak *et al.,* 2013) the prevalence of mild to severe depression is 71.9%. The relationship between the perceived discrimination and depression is fully mediated by perceived stress.

Patients may experience a wide range of psychological disturbances such as mild pathologic Apathy, guilt, helplessness and despair to extreme conditions of anxiety disorders, depression and suicidal thoughts. Mitchel (2004) reported that a significant and negative relationship between depression and problem focused coping in person who experience changeable stressors and utilize more problem focused coping strategies relative to those who utilized emotion focused coping and lower level of depression in individuals whose greatest stressors was unchangeable and who use more emotion focused coping relative to those who use more problem focused coping.

When the epidemic emerged in 1981, AIDS was perceived as a deadly disease that was transmissible from person to person, as well as closely associated with historically disenfranchised groups and culturally and historically taboo issues such as sexual orientation, drug use, and commercial sex work. The combination of these factors led to societal hostility as well as slow response by state, federal, and country governments (Tomaszewski, 2012).

UNAIDS, (2006) states that AIDS stigma exists around the world in a variety of ways, including ostracism, rejection, discrimination and avoidance of HIV infected people; compulsory HIV

testing without prior consent or protection of confidentiality; violence against HIV infected individuals or people who are perceived to be infected with HIV; and the quarantine of HIV infected individuals. Stigma related violence or the fear of violence prevents many people from seeking HIV testing, returning for their results, or securing treatment, possibly turning what could be a manageable chronic illness into a death sentence and perpetuating the spread of HIV. Stigma is often associated with discrimination, Valle, Trevino, Zambrano, Urriolla, Sanchez and Elizondo, 2015 reported high level of stigma among 68% of Spanish research participants using HIV stigma scale. HIV/AIDS affects the economics of both individuals and countries due to the lack of human capital, improper nutrition, lack of health care and medicine resulted in large number of death from AIDS-related complications. It is estimated that as of 2007 there were 12 million AIDS orphans many are cared for by elderly grandparent.

Adedigba, Naidoo, Abegunde, Olagundoye, Adejuyigbe and Fakande, (2009) state that there is significant sharp drop in household income as a result of care for HIV related illnesses from the time of knowing one's HIV status to the time of illness. Sambo, Idris, Gobir and Gana (2012) state that the average monthly expenditure of people living with HIV/AIDS is transportation, feeding, substitute labour and prescription drugs/food supplements are N913.41, 125.33, N161.18 and N1368 respectively and significant number of the respondent (36.5%) cannot afford monthly visit to the hospital.

Returning to work after beginning treatment for HIV/AIDS is difficult, and affected people often work less than the average worker. Unemployment in people with HIV/AIDS also is associated with suicidal ideation, memory problems, and social isolation; employment increases self-esteem, sense of dignity, confidence, and quality of life. A 2015 Cochrane review found low-

quality evidence that antiretroviral treatment helps people with HIV/AIDS work more, and increases the chance that a person with HIV/AIDS will be employed.

Substance abuse has a major impact on individual, families and communities. The effect of substance use is cumulative, significantly contributing to costly physical, social, mental and public health problem. Drug abuse and addiction have been inextricably linked with HIV/AIDS since the beginning of the epidemic. The link has to do with heightened risk-both of contracting and transmitting HIV and of worsening its consequences (National institute of Drug abuse, 2012). Substance use and abuse are common among HIV positive individuals, with nearly 50% of persons living with HIV/AIDS reporting current or past histories of drug or alcohol disorders (Bing, Burnam, Longshore, 2001 in Durvasula and Miller, 2014) HIV infection can be a consequence of behaviors associated with or resulting from substance use. Studies have shown that injecting drug use play a role in 20% new cases of HIV. Hassan and Afolaranmi (2014) mention the most commonly used substances among PLWHA as alcohol, marijuana and cigarettes, they further mention reasons behind the use of the substances as; feeling of euphoria, stress due to the illness, frustration and increase work performance. Their findings showed significant relationship between gender, coping strategy, marital status and level of education with substance use.

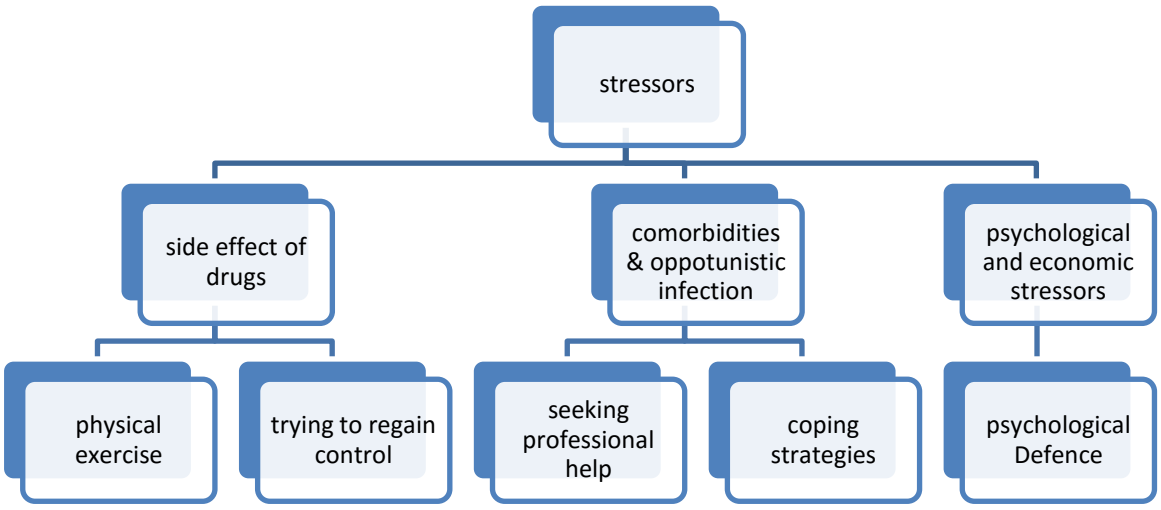


Figure 2.1: Relationship between stressors and coping strategies in people living with HIV/AIDS Adapted and modified from Snobohm and Heiwe, 2013.

2.4 HIV/AIDS Treatment

HIV-infected patients usually are placed on anti-retroviral therapy. There are six classes of anti-retroviral drugs aimed at preventing replication of HIV at various points of the life cycle: nucleoside reverse transcriptase inhibitors (NTRIs); non-nucleoside reverse transcriptase inhibitors (NNRTIs); nucleotide reverse transcriptase inhibitors (NtRTIs); protease inhibitors; entry inhibitors, including fusion inhibitors; and integrase inhibitors (Bailey *et,al* 2008 in Gonzales, Smith; Galvan and Mabry, 2016). The World Health Organization and United States recommends antiretrovirals in people of all ages including begun it is recommended that it is continued without breaks. Many people are diagnosed only after treatment ideally should have begun, the desired outcome of treatment is a long term plasma HIV-RNA count below 50 copies/mL. Mortality rates for those infected with human immuno-deficiency virus (HIV)

have decreased substantially in recent years as a result of improved medical effectiveness. Although highly active antiretroviral therapy (HAART) has transformed HIV from a terminal to a chronic disease, this transformation has not changed the way the public views the disease, the fact that HIV remains a highly stigmatized disease throughout the world (Rodkjaer, *et al.*, 2011). The current treatment guidelines as recommended by WHO is use of combination of two or more drugs from two or more classes, called Highly Active Antiretroviral Therapy (HAART) (WHO, 2016) Nigeria has adopted the use of lamivudine, nevirapine and stavudine as first line drugs, and they have been showed to be very effective (Entonu and Agwale, 2007).

Table 2.3: Example of ART combination therapy

Brand Name	Drug Names	Company
Combivir	lamivudine + zidovudine	GlaxoSmithKline
Kaletra	Lopinavir + ritonavir	Abbott Laboratories
Trizivir	abacavir + lamivudine + zidovudine	GlaxoSmithKline
Epzicom (in USA)	abacavir + lamivudine	GlaxoSmithkline
Genvoya	elvitegravir + cobicistat + emtricitabine + tenofovir alafenamide fumarate	Gilead Sciences

Source: Young and Mountain (2012)

2.4.1 Antiretroviral medications and their side effects

The overall benefits of viral suppression and improved immune function as a result of effective antiretroviral therapy (ART) far outweigh the risks associated with the adverse effects of some antiretroviral (ARV) drugs. However, adverse effects have been reported with the use of all antiretroviral (ARV) drugs and, in the earlier era of combination ART, were among the most common reasons for switching or discontinuing therapy and for medication nonadherence

(O'Brian, 2003). However, a commonly cited cause of poor adherence to highly active antiretroviral therapy (HAART) is adverse drug reactions (Max and Sherer, 2000).

Antiretroviral toxicity is an increasingly important issue in the management of HIV-infected patients (Bindu and Anusha, 2011). Mullira, Ayabare and Kyaija (2010) stated that the most common adverse effects reported by HIV patients taking ART were tiredness, nightmares, mood swings, nausea, poor appetite, insomnia, vomiting and dizziness. The main strategies the patients used for coping with the side effects were those categorized under information-seeking, social-support seeking and positive-emotion-focused coping. However, Bindu and Anusha 2011 opined that each class of drug has its side effects; nucleoside/nucleotide reverse transcriptase inhibitors are associated with lactic acidosis, lipodystrophy, and hyperlipidemia; non-nucleoside reverse transcriptase inhibitors are associated with neuropsychiatric symptoms, rash, liver toxicity, and lipid abnormalities; and protease inhibitors are associated with gastrointestinal intolerance and glucose and lipid abnormalities. Treatment of HIV/AIDS patients with arved (a brand of ARV) may likely result to liver damage possibly cholestatic liver injury at prolonged treatment (Peters *et al*, 2014).

Treatment for HIV may have headaches, an upset stomach, fatigue, or aches, stress, dizziness, diarrhea and pains as short term while Lipodystrophy (fat redistribution), Insulin Resistance, Lipid abnormalities, Increases in cholesterol or triglycerides, Decrease in bone density, Lactic acidosis as long term side effects (Urison, 2014).

Most recent figures have identified that, although with improved access to HAART, deaths due to AIDS and AIDS-related malignancies continue to decline (Foster and Fiddler, 2010), moreover, there is an increase in non-AIDS-related mortality in children and adults with

increasing attention turned towards the long-term impact of HIV itself and the side effects of antiretroviral therapy.

In Nigeria, Antiretroviral therapy (ART) has significantly reduced rates of morbidity and mortality in HIV-infected persons. Nevertheless, patients also experience the adverse effects of antiretroviral drugs. ART regimens involve combination of at least three drugs and this implies combined toxicities from the individual drugs (Agu, Opara and Ochei, 2012), 65.8% knew that all medicines cause some kind of adverse effects; 55.1% knew the adverse effects of their medicines; 60.8% knew what to do when they suspect ADRs and it included mainly reporting to the healthcare provider (88.1%). However, only 31.9% had experienced ADRs previously. In a study by Petres, *et al* (2014) with a brand of ARV (arved) revealed that mean serum aspartate amino transferase (AST) activity significantly increase in the highest dose for arved treatment when compared to the mean value for the control. Alanine amino transferase (ALT) activity also increased significantly in all the treatment groups when compared to the control value.

Table 2.4a ART Drugs and their side effect

DRUG	SIDE EFFCT
Abacavir	Hypersensitivity syndrome (fever, myalgia, malaise, nausea, vomiting, symptoms suggestive of upper respiratory tract infection, anorexia); symptoms progressively worsen with each subsequent dose; rash occurs in about half of cases Rash Headache, nausea, vomiting, diarrhea
Didanosine	Pancreatitis Peripheral neuropathy Nausea, diarrhea
Emtricitabine	Headache, nausea, insomnia Hyperpigmentation of palms and soles (occurs most frequently in dark-skinned people)
Lamivudine	Headache, dry mouth
Stavudine	Peripheral neuropathy Pancreatitis Dyslipidemia Diarrhea
Tenofovir	Flatulence, nausea, diarrhea, abdominal discomfort Asthenia Acute renal insufficiency, Fanconi syndrome Chronic renal insufficiency
Zidovudine	Anemia, neutropenia Fatigue, malaise, headache Nausea, vomiting Myalgia, myopathy Hyperpigmentation of skin and nails

Source: Montassori, V., Press, N., Harris, M. and Montaner, S.G (2004)

Table 2.4a Nonnucleoside Reverse Transcriptase Inhibitors

Delavirdine	Fatigue Elevations in liver function tests, hepatitis Nausea, diarrhea
Efavirenz	Abnormal dreams, drowsiness, dizziness, confusion Mood changes Elevations in liver function tests Hyperlipidemia
Etravirine	Elevations in liver function tests
Nevirapine	Elevations in liver function tests, hepatitis, liver failure
Rilpivirine	Insomnia Depression Elevations in liver function tests Elevations in serum creatinine

Source: Federal Ministry of Health (2010)

Table 2.4b Protease Inhibitors

Atazanavir	Hyperbilirubinemia, jaundice Elevations in liver function tests PR interval prolongation
Darunavir	Rash Elevations in liver function tests
Fosamprenavir .	Diarrhea, nausea, vomiting Elevations in liver function tests Rash Hyperlipidemia
Indinavir	Nephrolithiasis, flank pain Hyperbilirubinemia Elevations in liver function tests Alopecia, dry skin, ingrown nails Insomnia Taste perversion
Lopinavir/ ritonavir	Diarrhea, nausea, vomiting Dyslipidemia Elevations in liver function tests Taste perversion
Nelfinavir	Diarrhea Nausea, vomiting Elevations in liver function tests Fatigue
Ritonavir	Nausea, vomiting, diarrhea, abdominal pain Elevations in liver function tests Fatigue Circumoral or peripheral numbness Taste perversion Hyperuricemia
Saquinavir	Nausea, vomiting, diarrhea Elevations in liver function tests Headache Oral ulcerations
Tipranavir	Nausea, vomiting, diarrhea Elevations in liver function tests Increased total cholesterol and triglycerides Rash Intracranial haemorrhage

Source: Federal Ministry of Health (2010)

Table 2.4c Fusion Inhibitors

Enfuvirtide	Injection site reactions; erythema, cysts, and nodules at injection sites Neutropenia Possible increased frequency of pneumonia

Source: Montassori, V., Press, N., Harris, M. and Montaner, S.G (2004)

Table 2.4d Chemokine Coreceptor Antagonists

Maraviroc	Diarrhea, nausea Elevations in liver function tests, hepatitis Upper respiratory tract infections, cough Fatigue, dizziness, headache Joint pain, muscle pain

Source: Federal Ministry of Health (2010)

Table 2.4e Integrase Inhibitors

Raltegravir	Nausea, diarrhea, flatulence Elevations in amylase and liver function tests Headache Dizziness, abnormal dreams Pruritus, rash Fatigue, muscle pain
Elvitegravir/cobicistat	Insomnia, abnormal dreams Rash

Source: McNichole(2012) Adverse effect of ART ; HIV Insight, University of California san Francisco

Table 2.4f Pharmacokinetic Enhancers

Cobicistat	Increased serum creatinine, proteinuria Nausea, diarrhea Headache

Source: McNichole (2012) Adverse effect of ART; HIV Insight, University of California san Francisco

2.5 Empirical Studies (Ways of Coping in HIV/AIDS Patient)

Rani and Batra (2015) conducted a study which aimed at assessing the patterns of emotion focused and problem focused ways of coping among HIV and AIDS patients. 500 patients with HIV/AIDS having the age from 25 to 50 years (mean age 37.5 years). To assess and compare the coping styles adopted by HIV/AIDS patients, the selected subjects were tested with the ways of coping questionnaire by Folkman and Lazarus (1988). Frequencies of individual high on one type of coping (quartile based) and the mean of coping scores were calculated and analyzed. The Chi-square and 't' values reveal that most of the HIV/AIDS patients were going more with emotion focused coping than with problem focused coping.

Norcini and Steca (2015) conducted a research on Illness perceptions can influence the coping strategies used in response to HIV-related stressors, and ultimately patients' clinical status. Data about illness perceptions, HIV-related coping strategies and HIV-progression biomarkers (CD4+ and viral load) were collected from 248 Italian HIV-positive patients. Three latent classes ("high," "moderate" and "low" influence perception) that differed on consequences, emotional representation, personal control and identity were identified. A greater perception of illness influence was associated with dysfunctional coping strategies (e.g., passive coping and alcohol use), and greater viral load was observed among patients with high and moderate influence perception. They concluded that patients with detectable or high viral load may show a greater perception of illness influence which is associated with dysfunctional coping strategies in response to HIV-related stressors.

Rodkjaer, Sodemann, Ostergaard and Lomborg, (2011) study was to investigate how Danish HIV-positive persons live with their disease, focusing on HIV-related stressors. Decisions about

disclosure appeared to be a major concern and a determining factor for HIV-related stress. Disclosure was a continuum; none of the three strategies automatically relieved HIV-related stress. The theory describes the main determinants and consequences of each strategy. The study demonstrates the importance of recurrent individual considerations about disclosure choices and plans, and offers a theoretical basis for interventions designed to assist persons living with HIV to make the best possible individual decisions regarding disclosure, and thereby reduce HIV-related stress.

Michauda, Surisa, Thomasa, Gnehmb and Cheseauxc, (2010) had a qualitative study to describe patient perceptions and experiences with HIV disease itself and with therapeutic adherence. While younger adolescents most often thought of their disease as fate, older adolescents usually knew that they had received it through vertical transmission, although the topic appeared to be particularly difficult to discuss for those living with their HIV-positive mothers. Based on their attending physician's assessment, 18 subjects were judged highly adherent, 4 fairly and 7 poorly adherent. High adherence appeared linked with adequate psychological adjustment and effective coping mechanisms, as well as with the discussion and adoption of explicit medication-taking strategies. The setting and organization of health care teams should allow for ongoing discussions with HIV-positive adolescents that focus on their perceptions of their disease, how they cope with it and with the treatment, and how they could improve their adherence.

Sekoni, Obidike and Balogun (2012) stated that People living with HIV and AIDS (PLWHA) experience some form of stigma which could lead to poor medication adherence. And their study assessed the various domains of stigma experienced by PLWHAs attending an HIV clinic at General Hospital, Lagos Island, their medication adherence patterns and their coping mechanisms for ensuring adherence to antiretroviral therapy. Overall, stigma was experienced by

35% of the respondents. Within this group, 6.6%, 37.1%, 43.1% and 98.0% of the respondents reported experiencing negative self-image stigma, personalised stigma, disclosure stigma and public attitude stigma respectively. Almost 90% of the respondents were adherent. The FGD revealed that disclosure was usually confined to family members and the coping mechanism for achieving adherence was to put antiretroviral (ARVs) in unlabelled pill boxes. This study found that stigma was low and that the most common domain of stigma experienced was public attitude stigma. Medication adherence of respondents was good as a result of the coping mechanism, which involves putting ARVs in unlabelled pill boxes.

Ogbuji and Oke (2010) carried out a study which focused on socio-psychological investigation of the quality of life of PLWHAs in Ibadan, Nigeria. The ages of the participants ranged from 15 -60 years with a mean of 34.8 (S.D 8.2). Sex distribution shows female preponderance with male: female ratio of 1:2. The data revealed poor quality of life among PLWHAs. There is no significant relationship between age and quality of life ($P > 0.05$). Almost equal proportion of participants aged 15 - 34 years (50.3%) and 35 -60 years (49.7%) showed similar quality of life as indicated by emotional status, life satisfaction and level of coping with the infection. Majority (70.0%) considered their poor financial condition a barrier to treatment. Qualitative data showed stigmatization and discrimination against PLWHAs by family and community members regardless of age and gender. This stimulated a deep feeling of sadness, dejection, hopelessness, anxiety and fear thereby affecting negatively their quality of life. However, majority of the participants (67.3%) coped with the infection through life style adjustment (dedicating more time to religious activities and resorting to spiritual help, self-coping mechanism of trying not to think about the problem) and psychosocial support from nongovernmental organization support groups and faith-based organizations. Poor financial status of majority of PLWHA in Ibadan restricted

their access to treatment and other care and services. Discrimination towards them by family, friends and the community affected negatively their quality of life.

Kyatja, Muliira and Ayebare (2010) stated that the side effects of antiretroviral (ARV) medications negatively impact patients' quality of life and adherence to treatment. Their study describes the burden of side effects from ARV treatment as experienced by a sample of HIV/AIDS patients and identifies the personal strategies they used to cope with the side effects. Most of the participants (76%) were females and the mean age of the sample was 38 years. Although the participants had taken ARV medications for an average period of nine months, a large proportion (76%) could not name the medications they were taking. The mean side-effects burden for the participants was five side effects. The most common adverse effects reported were tiredness, nightmares, mood swings, nausea, poor appetite, insomnia, vomiting and dizziness. The main strategies the patients used for coping with the side effects were those categorized under information-seeking, social-support seeking and positive-emotion-focused coping. However, 27% of the participants reported non-adherence to their ARV medications as a strategy to cope with the side effects. The findings show a significant relationship between the side-effects burden and a patient's age ($r = 0.530$, $p \leq 0.01$) and level of education ($r = 0.394$, $p \leq 0.01$). The findings indicate that in the short term after initiating ARV treatment most patients are able to cope with the high burden of side effects through appropriate strategies, but a sizable portion will fail to cope appropriately and thus resort to non-adherence.

Adedigba, Ojo, Ogunbodede and Naidoo (2008) carried out a study to determine the coping ability of people living with HIV/AIDS (PLWHA) across demographic variations of gender, duration of living with HIV infection, marital status and living arrangements either with the

family or alone. Marital status, living arrangements and gender do not significantly influence coping ability of the PLWHAs ($p>0.05$); however, duration of living with the infection had significant influence on the coping ability of PLWHAs ($p<0.05$). The length of period of living with HIV/AIDS had a significant effect on the coping abilities of PLWHA ($p< 0.05$). The results also showed no significant difference in the coping ability of PLWHA by gender, marital status and living arrangements ($p=0.05$). Developing adaptive coping skills to deal with stress of living with HIV/AIDS may be a particularly effective strategy for improving overall health among the study population and not just on the medical needs.

Haruna and Ago (2014) carried out study to investigate the role of gender in the choice of coping strategies for HIV/AIDS. It was proposed that more male would use problem focused coping than their female counterparts, while more of the females would use emotion focused coping than the males. The results did not support the study question for the males' problem coping, but it support the gender differences for the emotion focused coping for the females. The implication of this finding is that clinicians have to be dynamic and proactive in their attempts to help the HIV/AIDS patients develop healthy coping strategies.

2.6 Theoretical Framework

The study will be guided by Roy adaptation model (RAM). RAM is one of the most frequently used conceptual framework to guide nursing research, education and practice.

2.6.1 Overview of the Model

In 1976, Sister Callista Roy developed the Adaptation Model of Nursing, a prominent nursing theory. Nursing theories frame, explain or define the practice of nursing. Roy's model sees the individual as a set of interrelated systems (biological, psychological and social). The individual

strives to maintain a balance between these systems and the outside world, but there is no absolute level of balance. Individuals strive to live within a unique band in which he or she can cope adequately.

Roy's model sees the *person* as "a biopsychosocial being in constant interaction with a changing environment". The person is an open, adaptive system who uses coping skills to deal with stressors. Roy sees the *environment* as "all conditions, circumstances and influences that surround and affect the development and behaviour of the person". Roy describes stressors as stimuli and uses the terms focal, contextual and *residual stimuli* to describe those stressors immediately confronting, having direct effect and whose influence on the person is not clear, respectively. She states that health is the process of being and becoming an integrated and whole person. Roy's goal for nursing is "the promotion of adaptation in each of the four modes, thereby contributing to the person's health, quality of life and dying with dignity". These four modes are physiological, self-concept, role function and interdependence.

The human being's goal through this interaction is adaptation. "The person has two major internal processing subsystems, the regulator and the cognator." These subsystems are the mechanisms used by human beings to cope with stimuli from the internal and external environment. The regulator mechanism works primarily through the autonomic nervous system and includes endocrine, neural, and perception pathways. This mechanism prepares the individual for coping with environmental stimuli. The cognator mechanism includes emotions, perceptual/information processing, learning, and judgment. The process of perception bridges the two mechanisms.

2.6.1.1 Explicitassumptions

1. The person is a bio-psycho-social being.
2. The person is in constant interaction with a changing environment.
3. To cope with a changing world, person uses both innate and acquired mechanisms which are biological, psychological and social in origin.
4. Health and illness are inevitable dimensions of the person's life.
5. To respond positively to environmental changes, the person must adapt.
6. The person's adaptation is a function of the stimulus he is exposed to and his adaptation level
7. The person's adaptation level is such that it comprises a zone indicating the range of stimulation that will lead to a positive response.
8. The person has 4 modes of adaptation: physiologic needs, self- concept, role function and inter-dependence.
9. "Nursing accepts the humanistic approach of valuing other persons' opinions, and viewpoints" Interpersonal relations are an integral part of nursing
10. There is a dynamic objective for existence with ultimate goal of achieving dignity and integrity.

2.6.1.2 Implicit assumptions

1. A person can be reduced to parts for study and care.
2. Nursing is based on causality.
3. Patient's values and opinions are to be considered and respected.
4. A state of adaptation frees an individual's energy to respond to other stimuli.

2.6.2 Application of theory to the study

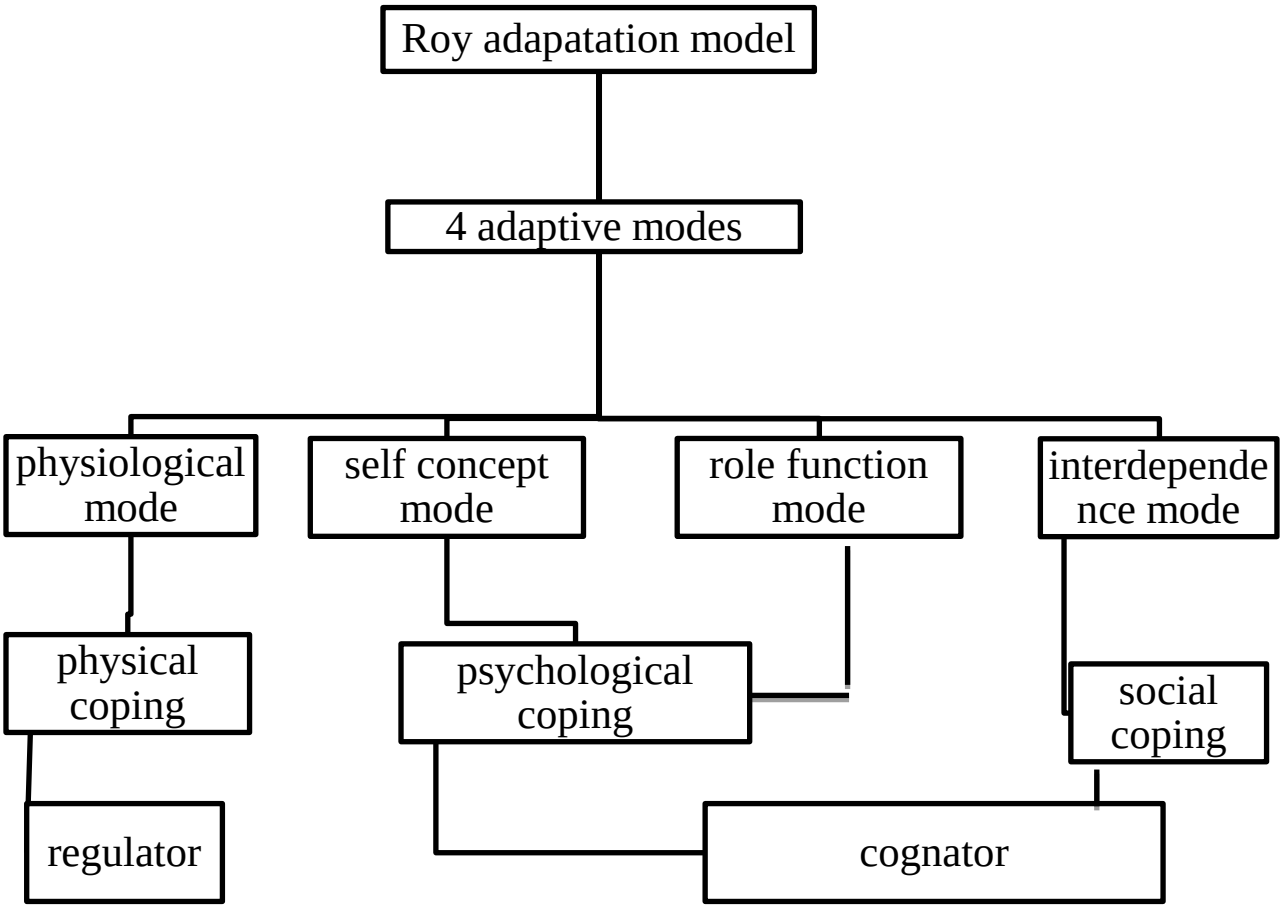


Fig 2.2: Concept map showing the application of Roy adaptation model to coping with HIV/AIDS

Source; developed by the researcher

Roy's four modes of adaptation are;the physiological mode of adaptation incorporates individual biological behaviours, within which there is physical mode of adaptation (physical coping) which focused on persons' basic resources needed to function. The self-concept mode of adaptation incorporates individual feeling about their bodies and personal selves (psychological coping). The role function mode is based on individuals' performance of activities associated

with roles they enact in the society, and interdependence mode emphasizes interpersonal relationship and the giving and receiving social support (social coping).

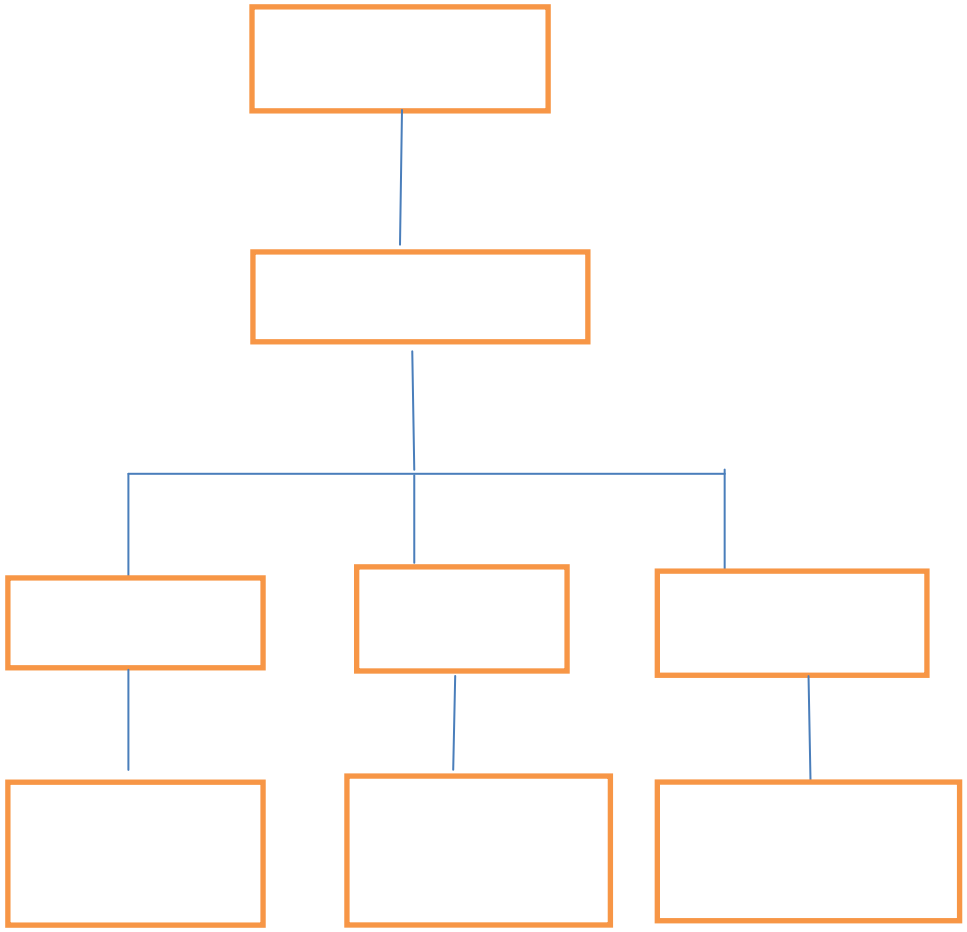


Fig 2.3: Concept map showing the application of Roy adaptation model to stressors affecting people living with HIV/AIDS

Source; developed by the researcher

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This study assessed coping strategies among PLWHA in Bauchi state. This chapter discussed the methods used in collecting the data under the following sub-headings: Study Design, Study Area or setting, Target population, Sample size, Sampling Technique, Data Collection Instrument, and Validation of the Instrument, Data Collection Procedure, and Data Analysis.

3.2 Study Design

A cross-sectional descriptive study design was adopted for the study. The cross-sectional survey design was appropriate for the study because data was obtained at once without manipulating the study environment or subjects.

3.3 Study Area

Bauchi state is one of the nineteen northern states of Nigeria with Bauchi as its capital. According to the 2006 census, the state has a population of 4,653,066 (projected population according to National Demographic Health survey 5% increment per year is 4,884,599). Bauchi State occupies a total land area of 49,119 km² representing about 5.3% of Nigeria's total land mass and is located between latitudes 9° 3' and 12° 3' north and longitudes 8° 50' and 11° east.

The state is bordered by seven states, Kano and Jigawa to the north, Taraba and Plateau to the south, Gombe and Yobe to the east and Kaduna to the west. It has a total of 55 tribal groups in which Hausa, Fulani, Gerawa, Sayawa, Jarawa, Kirfawa, Turawa Bolewa, Karekare, Kanuri, Fa'awa, Butawa, Warjawa, Zulawa, and Badawa are the main tribes. The state is an agricultural state with vast fertile soil, irrigation farming is practiced and supported by dams, cattle and other

livestock are also reared in the state. The main religions in the state are Islam, Christianity and traditional African religion.

Bauchi state has 3 senatorial district which include Bauchi north, Bauchi south and Bauchi central. It has 20 Local Government Areas (LGA), each local government has a General Hospital (GH) and each GH has an Antiretroviral (ART) Centre in it. Other centres are those in Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH), Federal Medical Centre (FMC) Azare, Infectious Disease centre (IDC) Bayara, Medical Reception Station (MRS) amour barrack and private hospitals. There are currently 13,131 people receiving treatment in the centres, of which 1,002 are below 15years and 11,581 are 15years and older, the remaining 548 among those that lost to follow up and those that died during the reporting year.

3.4 Study Population

The population of the study comprised of people living with HIV/AIDS who were enrolled on ART in various health facilities in the state. There are 11,581 people living with HIV/AIDS who are 15years and older enrolled into the 23 ART centers at Bauchi state, out (BACATMA, 2016). The 15years old are included though not adult because they receive ART from the same centres with the adult and receive same counselling session.

3.4.1 Inclusion Criteria

All PLWHA ofage 15years and older receiving ART in any of the 23 Centres in Bauchi State who had been enrolled for the treatment at least 6 months were included in the study.

3.4.2 Exclusion Criteria

All PLWHA who are below 15years of age, mentally ill or who had been enrolled into ART for less than 6 months and those who decline consent to participate were excluded from the study.

3.5 Sample Size

A sample size of 384 PLWHA was derived using Cochrane formula

$$n = \frac{z^2 pq}{d^2}$$

Where n- sample size

z- standard normal deviate at 95%, corresponding to1.96

p- proportion or prevalence of factor of interest from a previous study

q- complementary probability of p = 1-p

d- degree of precision required = 5%

There is no any study that shows the exact prevalence of coping among PLWHA therefore 50% prevalence was utilized.

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2}$$

$$n = \frac{3.8416 \times 0.5 \times 0.5}{0.0025}$$

n = 384 PLWHA

3.6 Sampling Technique

A multistage sampling technique was used for the study;

Stage 1 Selection of LGAs

Selection of LGAs from senatorial district of Bauchi state through simple random sampling of 40% of the LGAs from each of the senatorial district (Nwana, 1981) through assigning numbers to each of the LGA in senatorial district and writing the number on a piece of paper where by 40% were be selected after vigorous shaking in a small container, the LGA that correspond to the picked numbers were selected. The procedure was applied to all the LGAs in each of the district, which result into 2.8, 2.4 and 2.8 for Bauchi north, central and south, respectively and were

approximated to 3, 2 and 3. The LGA selected for Bauchi north were Jama'are, Katagum and Itas LGAs while those of Baucchi central were Ningi and Misau LGAs and that of Bauchi south were Bauchi, Alkaleri and Dass LGAs as shown in the table below.

Table 3.1: Selection of LGAs from senatorial districts

SN	Senatorial Districts	Local Governments Areas	Sample
1	Bauchi North	Zaki, Gamawa, Jama'are, Itas/gadau, Shira, Giade, Katagum	Jama'are Katagum Itas
2	Bauchi Central	Ningi, Warji, Darazo, Misau, Dambam, Ganjuwa	Ningi Misau
3	Bauchi South	Bauchi, Alkaleri, Kirfi, Tafawa Balewa, Bogoro, Dass, Toro	Bauchi Alkaleri Dass

Stage 2 Selection of ART centres from the LGAs

Selection of ART centres from the LGAs: each of the selected LGA has a general hospital and an ART centre in it, except Bauchi and katagum which has additional ART centres apart from the general hospital and are Federal Medical Centre azare in katagum and ATBUTH, Bauchi urban maternity, MRS shadawanka, MRS school of amour and private hospitals in Bauchi LGA. Therefore, all the general hospitals in the selected LGAs with only one centre were utilized and simple random selection of 1 centre from the LGAs with additional centres was applied. The centres selected were GH azare for katagum and IDC bayara for Bauchi.

Stage 3 Selection of respondents

Selection of participant from each of the centres using proportionate allocation in accordance with the number of enrolees, the procedure involves dividing the number of enrolees in one centre by the sum total of the number in all the centres and multiplying it by the sample size. Example for jama'are 117/2376 × 384= 18.90 samples were approximated pending on the number after the decimal point; if 5 and above were approximated to one and if less than 5 were ignored. A systematic sampling technique was used to select respondent from the centres using the clinic Register as a sampling frame, using the formula; kth term = N/n = number of enrolee/sample

Table 3.2: Number of Enrolment in ART centres in Bauchi state.

SN	ART Centre	Number of enrolees	Sample
1	GH Jama'are,	117	18.90
2	GH Katagum	741	119.76
3	GH Itas	372	60.12
4	GH Ningi	180	29.09
5	GH Misau	185	29.90
6	GH Alkaleri	75	12.12
7	IDC Bayara	637	102.95
8	GH Dass	69	11.15
	TOTAL	2376	384

Source: BACATMA, 2016

3.7 Data Collection Instruments

Data was collected using structured interviewer administered questionnaire with close ended questions. The questionnaire consists of five sections: section A- socio-demographic data, section B- physical stressors related to HIV/AIDS, section C- psychosocial stressors related to HIV/AIDS, section D- physical coping strategies, section E- psychosocial coping strategies. The

instrument for physical and psychological stressors was adapted from Sign and Symptoms checklist for HIV (SSC-HIV) by Holzemer and Bakken (1999), which is a 3-point scale (mild, moderate and severe) while those of social stressors related to HIV/AIDS was adapted from Sikkema, *et.al.* (2000) which is also a 3-point scale (not a problem, problem, most serious problem). An instrument for assessing psychosocial coping strategies was adopted from Coping Strategies Inventory (CSI) by Tobin (2001) which is a 4-point scale (0- I don't it- 3-I always do it) and that of physical coping strategies was adopted from Calister Roy (physiological adaptive mode) which has 9 items according to Ursavas, Karayurt and Iseri (2004), 7 items would be utilized for the purpose of this study while others were adapted from WHO HIV self-symptoms management (WHO, 2006).

3.7.1 Validity of Data Collection Instruments

Content and face validity of the research instrument was done by five (5) Professionals (juries). Their corrections were incorporated into the final draft of the questionnaire.

3.8 Method of Data Collection

Questionnaire guided interview was used to collect information from the respondent in the ART Centres. Three (3) trained Research assistants were used.

Each participantwas interviewed based on the parameters on the stressors scales. After completing the stressors scales,the participant was asked to identify stressor (one from each scale) that caused them the greatest distress and the coping scales was filled based on the self-identified stressor.

3.9 Data Analysis

Data analysis was computer aided using SPSS Software (version 23.0). Descriptive statistics such as frequency distribution and tabulation, simple percentages, measures of central tendency

(mean), measures of dispersion (standard deviation) were used. Pearson Correlation coefficient was also utilized a p- value of 0.05 or less was considered significant. The psychosocial coping scale was made into 2 supra scales the problem focused coping strategies (problem solving, cognitive restructuring, expressing emotion and social support) and emotion focused coping strategies (problem avoidance, wishful thinking, self-criticism and social withdrawal).

3.10 Ethical Consideration

Introductory letters were collected from the Head of Department Nursing sciences Ahmadu Bello University, Zaria to the sampled centres in the study area (see Appendix iii). Ethical clearance for the study was obtained from Bauchi State Ministry of Health research ethics committee (see Appendix ii). Informed consent was obtained from the respondents; anonymity and confidentiality were assured and maintained (see Appendix i).

CHAPTER FOUR

4.0 RESULTS

4.1 BACKGROUND TO THE CHAPTER

The key aim of the study is to assess stressors related to HIV as a disease and ways of coping with the stressors among people living with the disease (HIV/AIDS)

The total number of People Living with HIV/AIDS (PLWHA) interviewed was 384. The questionnaires were filled with the aid of field assistants to assess the stressors as well as coping strategies among people living with HIV/AIDs in Bauchi State Nigeria**.** However, all the 384 questionnaires were retrieved and found to be valid for analysis. This figure represents 100% response rate. In this chapter the results of analysis of data are presented.

Table 4.1Sociodemographic characteristics of Respondents (n = 384)

Variables		Frequency	Percentage (%)
Age (years)	15-30	104	27.1
	31-45	187	48.7
	46-55	58	15.1
	56-Above	35	9.1
Sex	Male	95	24.7
	Female	289	75.3
Marital status	Single	45	11.7
	Married	243	63.3
	Divorced	65	16.9
	Widow	31	8.1
Educational qualification	No formal education	135	35.2
	Primary	79	20.6
	Secondary	114	29.7
	Tertiary	56	14.6
Occupation	Civil servant	43	11.2
	Unemployed	94	24.5
	Farmer	15	3.9
	Private employee	32	8.3
	Self-employed	174	45.3
	Students	21	5.5
	Others	5	1.3
Religion	Islam	321	83.6
	Christianity	63	16.4

Table 4.1, shows that the largest number of respondents was in the age group of 31-45 years which accounted for 187 respondents representing 48.7%; these were closely followed by those in 15-30 years with a frequency of 104 representing 27.1%. The least in the age category are

those with age group 46-55 years with the frequency of 58 respondent representing 15.1% and 56- Above years who have a frequency of 35 respondents each representing 9.1%, this implied that the majority of the respondents in the area of study are between the ages 15-30yrs. It also shows that the sex distribution of the respondents with female having the highest frequency of 289 representing 75.3%, the Male respondents had a frequency of 95 representing 24.7%, this indicates that the majority of the respondents are Female. Marital Status of the respondents, shows that 243 out of 384(63.3%) are married, 65 (16.9%) are divorced, 45(11.70%) are Single, the least in the Marital Status are widows with the frequency of 31(8.1%), this shows that the majority of the respondents in the area of the study are Married. 135 out of 384 respondents (35.2%) had No formal education, 114 (29.7%) attained secondary, 79 (20.6%) attained primary level of education, the least in the level of education had tertiary level of education with the frequency of 56 (14.6%). This indicated that the majority of the respondents in the area of the study had no formal education. The occupation distribution of the respondents shows that, the majority of the respondents were self-employed as they account for 174 (45.3%), followed by unemployed with a frequency of 94 (24.5%), civil servant had the frequency of 43 (11.2%), Student had the frequency of 21 representing 5.5% and the least number of respondents were those who are Farmers with a frequency of 15 representing 3.9%. This indicates that the majority of the respondents are Self-employed. Religious distributions of the respondents indicated the major religion is Islam having the highest frequency of 321 representing 83.6%, Christianity accounted for 16.4% (63 respondents). This indicates that the majority of the respondents are of Islamic religion.

4.1.1 Research Question 1:

What are the physical stressors affecting people living with HIV/AIDS?

Table 4.2 Physical stressors severity, frequency and percentage affecting People Living with HIV/AIDS (PLWHA) in Bauchi state, 2017.

Physical stressors	Mild	Moderate	Severe	Total	Mean	SD
Fatigue	127 (33.1%)	86 (22.4%)	38 (9.9%)	251(65.4)	1.08	0.98
Fever	157 (41.0%)	106 (27.7%)	32 (8.4%)	295(77.1)	1.21	0.89
Diarrhoea	96 (25.0%)	30 (7.8%)	10 (2.6%)	136(35.4)	0.48	0.75
Abdominal pain	124 (32.3%)	26 (6.8%)	8 (2.1%)	158(41.2)	0.52	0.72
Nausea	96 (25.1%)	54 (14.1%)	24 (6.3%)	174(45.5)	0.72	0.93
Vomiting	108 (28.1%)	34 (8.9%)	10 (2.6%)	152(39.6)	0.54	0.76
Shortness of breath	120 (31.3%)	62 (16.1%)	6 (1.6%)	188(49.0)	0.68	0.80
Sore throat	146 (38.2%)	28 (7.3%)	14 (3.7%)	188(49.2)	0.64	0.77
Mouth ulcer	122(31.8%)	32 (8.3%)	10 (2.6%)	164(43.7)	0.56	0.76
Numbness	126(32.8)	76(19.8)	4 (1.0)	206(53.6)	0.76	0.80
Headache	110(28.6)	130(33.9)	28(7.3)	268(69.8)	1.18	0.95
Dizziness	102(26.6)	62 (16.1)	42 (12.2)	206(54.9)	0.95	1.05
Chest pain	124(32.3)	50(13.0)	6(1.6)	180(46.9)	0.63	0.77
Coughing	86 (22.4)	100(26.0)	24 (6.3)	210(54.7)	0.93	0.98
Lack of appetite	114(29.7)	88 (22.9)	16(4.2)	218(56.8)	0.88	0.90
Constipation	114 (29.7)	48 (12.5)	18 (4.7)	180(46.9)	0.69	0.87
Weight loss	154 (40.0)	48(12.5)	4(1.0)	206(53.5)	0.68	0.73
Skin rash	120(31.3)	42 (10.9)	24(6.3)	186(48.5)	0.72	0.89
Blurred vision	130 (33.9)	54(14.1)	8(2.1)	192(50.1)	0.68	0.79
Gynaecological	111(28.9)	12(3.1)	10 (2.6)	133(34.6)	0.43	0.68

The physical stressors as presented in table 4.7 above shows that fever has the highest frequency of 295(77.1%) followed by headache with 268(69.8%), other symptoms reported with high frequency include fatigue with 61.4% (251), lack of appetite 218(56.8%), cough 210(54.7%), numbness 206 (53.6%), weight loss 206 (53.5%), dizziness 206(53.6%), blurred vision 192(50.1%). The two most prevalent severe symptoms are dizziness 42 (12.2%) and fatigue 38 (9.2%). However only 11.2% of the respondents were symptom free, eight respondents reported amenorrhea as their major physical problem while six reported infertilities as their burdensome physical stressor.

4.1.2 Research Question 2

What are the psychosocial stressors affecting people living with HIV/AIDS?

Table 4.3 Psychological stressors affecting people living with HIV/AIDS affecting PLWHA in Bauchi state, 2017.

Psychological stressors	Mild Freq. (%)	Moderate Freq. (%)	Severe Freq. (%)	Total	Mean	SD
Difficulty concentrating	128 (35.9)	72 (20.3)	----	200 (56.2%)	0.71	0.76
Memory loss	138 (35.9)	78 (20.0)	16 (4.2)	232 (60.1%)	0.89	0.86
Fear/worries	146 (38.0)	48(12.5)	40(10.4)	234 (60.9%)	0.94	0.97

Table 4.3 shows that the psychological symptoms are the most prevalent but not severe in nature and most prevalent being fear with 234 (60.9%) and memory loss with 232 (60.1%).

Table 4.4 social problems affecting people living HIV/AIDSaffecting PLWHA in Bauchi state, 2017.

Social problems	Problem	Most serious problem	Total	Mean	SD
	Freq. (%)	Freq. (%)	Freq. (%)		
Marital problem	70(18.4)	24(6.3)	94(24.7)	0.31	0.58
Family problem	68(17.7)	39(10.2)	107(27.9)	0.38	0.67
Discrimination due to HIV	92(24.0)	41(10.7)	133(24.7)	0.45	0.68
Good information about HIV	142(37.0)	40(10.4)	182(47.4)	0.58	0.67
Loss/ death of someone due to HIV	152(39.6)	68(17.7)	220(57.3)	0.77	0.75

Table 4.4 shows that loss/death of someone due to HIV was the most common social problem encountered by people living with the disease with the frequency of 220 (57.3%) and in terms of severity 17.7% (n= 152)

4.1.3 Research Question 3

What physical stressor coping strategies do people living with HIV/AIDS adopt?

Table 4.5 Physical coping strategies adopted by PLWHA in Bauchi state, 2017.

Physical coping strategies	Mean	Standard deviation
I takeadequate diet	1.49	1.23
I ensure sufficient activity (exercise)	1.12	1.29
I do take deep breath	0.78	1.14
I tackled environmental changes affecting sleep	1.04	1.26
I ensure intact skin and healing period (personal hygiene)	1.30	1.27
I consulted medical professionals	2.10	1.19
I used over the counter drugs	1.75	1.29
I used safe drinking water always	1.82	1.38
I avoid contact with people who have other infections	1.55	1.36
I sleep under insecticide treated net	1.64	1.41

Table 4.5 shows that consulting medical professionals has the highest mean obtained with the score of 2.10 followed by using safe drinking water with the mean score of 1.82, sleeping under insecticide net with 1.64 and avoiding contact with people who are infected people with 1.55.

4.1.4 Research Question 4

What psychosocial stressor coping strategies do people living with HIV adopt?

Table 4.6 Psychosocial coping strategies adopted by PLWHA in Bauchi state, 2017.

Psychosocial coping strategies	Mean	Standard deviation
Problem Solving	1.75	1.25
Cognitive Restructuring/Religious coping	2.33	0.90
Express Emotion	2.22	1.06
Social Support	2.09	1.11
Problem Avoidance	1.99	1.22
Wishful Thinking	1.78	1.25
Self-Criticism	1.02	1.13
Social Withdrawal	1.40	1.28

Table 4.6 shows that cognitive restructuring obtained a mean of 2.33, expressing emotion 2.22 social support 2.09, problem avoidance 1.99, wishful thinking 1.78 and problem solving 1.75.

4.1.5 Research Question 5:

What is the relationship between socio-demographic characteristics coping pattern among people living with HIV/AIDs?

Table 4.7 Intercorrelation between sociodemographic characteristics and coping strategies among PLWHA in Bauchi state, 2017

	Problem solving	Cognitive Restructuring/ Religious coping	Express Emotion	Social Support	Problem Avoidance	Wishful Thinking	Self-Criticism	Social Withdrawal	Physical coping
Age in years	0.031	0.020	0.102*	0.031	0.046	0.006	-0.009	0.008	0.07
Sex	-0.173**	-0.039	-0.067	0.081	-0.226**	-0.218**	-0.019	-0.409**	-0.232**
Marital Status	-0.051	0.046	0.117*	0.173**	0.001	-0.065	0.011	-0.069	-0.153**
Level of Education	0.161**	0.094	0.147**	0.120*	0.155**	0.162**	0.091	0.170*	0.205**
Occupation	0.008	0.005	-0.057	-0.132**	-0.086	-0.033	0.071	-0.028	0.52
Religions	0.195**	0.003	0.086	0.039	0.135**	0.225**	0.200**	0.177**	0.247**

Table 4.7 shows the Inter-correlations between all the six subsets of socio-demographic characteristics and the eight subsets of psychosocial coping strategies and physical coping strategy.Correlation matrix coefficient for the constructs reveals that the items of the variables are correlated and significant at 0.01 and 0.05 coefficients. Constructs correlation was computed using Pearson correlation in order to examine the relationship between the variables.

As for the first subset which was related to the personal information of participants, Age was found to be significantly correlated with only one coping strategy i.e. Expressing emotion in positive direction (r=0.102, p= 0.05).Sex, was the second variable and the results revealed that sex correlated significantly with the physical coping strategy andfour psychosocial coping strategies,negatively with problem solving (r=-0.173, p=0.01), Wishful thinking (r= -0.218, p<0.01), Problem avoidance (r= -0.226, p<0.01), social withdrawal (r= -0.409, p<0.01) and physical coping (r=-0.232, p< 0.05).

As far as marital status was concerned, significant correlations were established with physical coping (r=-0.153, p< 0.05) and two psychosocial coping strategies namely Expressing emotion (r= 0.117, p<0.01) and Social support (r= 0.173, p<0.01). It is apparent from Table 4.12 that Level of educational significantly correlated with physical coping (r=0.205, p< 0.05) and six coping strategies. It was significantly and positively correlated with problem solving (r=0.161, p< 0.01), Express emotion (r=0.147, p<0.01), Social support (r= 0.120, p= 0.01), Problem avoidance (r= 0.155, p<0.01), Wishful thinking (r= 0.162, p< 0.01), Social withdrawal (r= 0.170, p< 0.01), while Occupation correlated with only social support (r= -0.132, p<0.01).

Similarly, six correlations were found to be significant between Religion and coping strategies. Positive correlations were obtained with problem solving (r= 0.195, p< 0.01), Problem avoidance (r= 0.135, p< 0.01), Wishful thinking (r= 0.225, p< 0.01), Self-criticism (r=0.200, p<0.01), and

Social withdrawal ($r= 0.177$, $p< 0.01$) in psychosocial dimension and also positively with the physical coping strategies.

CHAPTER FIVE

5.0 DISCUSSION

The study was aimed at identifying the physical, psychological stressors affecting people living with HIV/AIDS as well as coping strategies adopted by them. In this chapter the results are discussed following the headings used in the literature review; physical stressors affecting people living with HIV/AIDS, psychosocial stressors affecting people living with HIV/AIDS, physical coping strategies adopted by people living with HIV/AIDS, psychosocial coping strategies adopted by people living with HIV/AIDS as well as relationship between coping and socio-demographic characteristics of PLWHA.

The findings of the study show that most of the respondents were within the age group of 31 - 45years (48.7%) with the mean of 35.8 (SD 10) this fall within the sexually active age group, this is in accordance with Sambo *et al.,* (2012)in their studies among HIV/AIDS patients receiving free antiretroviral therapy (ART) in a tertiary health facility in North-Western Nigeria. The findings also showed that56years and abovehas the lowest distribution with 9.1%.

Females are the majority 75.3% of the respondents. This is in line with the global statistics of female majority (out of the total of 33.4 million people living with HIV in 2008, 15.7 million are female. This has been described as feminization of the epidemic and it is because women in the study area are more vulnerable to HIV infection due to low condom use, gender inequality and economic disadvantage of women in the region (FMoH, 2010).

Married respondents have the highest number (63.3%) this is in agreement with kyaija *et al* 2010 in his study Personal coping strategies for managing the side effects of antiretroviral therapy among patients at an HIV/AIDS clinic in Uganda. Similarly, the findings tallied with the work of Harding *et al.*,(2012) in some countries of sub- Saharan Africa. This could be due to awareness

campaign done in the area on protective effect of marriage in other to restrict multiple sexual partners.

Of all the participants a huge proportion had no formal education 35.2%, which is similar to findings in a study by Nair, 2007conducted at India among PLWHIV; only 2.4% of his respondents had tertiary education. This may give an impression that HIV/AIDS is more among uneducated members of the community.

Majority of the respondents were self-employed(45.3%) which could be due to the fact that huge number of the respondent are females and have no formal education.

Islamic religion was the dominant with 83.6%which could be due the nature of the study area where majority of the population are of Islamic religion.

The findings of the study revealed thatpeople living with HIV/AIDS in Bauchi state were faced with a trajectory of physical and psychological stressors despite being on HAART. The most common symptoms were fever, headache and fatigue in the physical dimension which is in agreement with a study by Peltzer and Mafuya, (2008) on the symptoms experience of people living with HIV and AIDS in Eastern Cape, South Africa who stated that the mostcommon symptom experienced by his participant was pain in form of headache (79%), painful joints (65%), muscle aches (59%), abdominal pain (55%), chest pain (46%), and breast pain (28%), it is also in consistence with an international multicentre study conducted at sub Saharan Africa on Prevalence, Burden, and Correlates of Physical and Psychological Symptoms Among HIV Palliative Care Patients which show that 82.6% of the participants have some form of pain (which was not categorized) Harding *et al.*, (2012).Similarly, the findings tallied with the work of Brand, 2016 on prevalence and associated burden of symptoms in HIV patients in

Swakopmund, Namibia that most prevalent physical symptom among the respondents were pain, cough and peripheral neuropathy. However, Farrant *et al*, (2012) on the prevalence and burden of pain and other symptoms among South Africans attending HAART clinics indicated that "I don't look like myself" was themost common physical symptom. Again Kyaija *et al*,(2010)on Personal coping strategies for managing the side effects of antiretroviral therapy among patients at an HIV/AIDS clinic in Uganda shows that the most common adverse effects reported were tiredness, nightmares, mood swings, nausea, poor appetite, insomnia, vomiting and dizziness. Similarly, Highleyman, (2001) stated that fatigue is one of the most debilitating experiences by PLWHA which can be physical or psychological in nature.

The findings of the study showed that fear/worries, memory loss and difficulty concentrating were most common psychological symptoms faced by the study participants this is in line with Farrant *et al*., (2012) who stated in his study among South Africans that the four psychological symptoms in the memory symptoms assessment scale short form (MSAS-SF) were themost prevalent and of high burden (sad, irritable, worrying and feeling nervous). The findings were also in agreement with Brand, (2016) who stated that the most common symptoms indicated by his study participants were psychological in nature (worrying, felling sad and difficulty concentrating). Similarly, Peltzer and Mafuya, (2008) reported that fear and worries was among the top ten symptoms reported by PLWHA in their study conducted in Eastern Cape, South Africa. So also, Harding, (2012) conducted a multicenter studies and result shows that feeling sad and worrying were among the five most prevalent symptoms among HIV palliative care patient in sub-Saharan Africa. The current study also shows that the psychological stressors were the most prevalent but not the most burdensome. However, in contrary to this study, Bhatia and Munjal, (2014) reported that the prevalence of depression in patients with HIV under ART was

58.75%, the prevalence of depression increased with the severity of symptoms, they further stated that unemployed, uneducated, unmarried, belonging to joint families, having no or low family income, migrants, having indifferent or poor relationship with spouse, poor social support and had visited commercial sex workers had a greater prevalence of depression.

The findings on social problems affecting PLWHA showed thatloss of a partner or relative to HIV, getting good information about the disease and discrimination due to HIV were the most common social problem faced by PLWHA in the study area,this is in contrary to the study by Dana, (2005) in her studies on sources of life stress and ways of coping in rural persons living with HIV infection in America which shows that the most serious problems faced by PLWHA are finances, difficulty maintaining one's life and relationship difficulties. The findings were also not in line with Harding *et al.*, (2012) were result shows that 71% of respondent reported hunger as their major social problem(among HIV palliative care patient in sub-Saharan Africa). Similarly, Sambo *et al,* (2012) in study on expenditure incurred by HIV/AIDS patients receiving free antiretroviral therapy (ART) in a tertiary health facility in North-Western Nigeria reported that despite free ART given to PLWHA they still incur signicant out of pocket expenses while receiving treatment.Substance use and abuse are common among HIV positive individuals, with nearly 50% of persons living with HIV/AIDS reporting current or past histories of drug or alcohol disorders (Bing, Burnam, Longshore, 2001 in Durvasula and Miller, 2014) which is also in contrary to the study findings. Hassan and Afolaranmi (2014) mention the most commonly used substances among PLWHA as alcohol, marijuana and cigarettes, and reasons behind the use of the substances as; feeling of euphoria, stress due to the illness, frustration and increase work performance. Similarly, Valle, Trevino, Zambrano, Urriolla, Sanchez and Elizondo,

(2015)reported high level of stigma among 68% of Spanish research participants using HIV stigma scale which they consider as a life problem and it is in line with the current study.

The result of the study revealed that the study participant were utilizing physical stressors coping strategies, of which consulting medical professionals, using safe drinking water and sleeping under insecticide treated net were the major physical coping strategies used by the study participants this is in accordance with Kyaija *et al*, (2010) on personal coping strategies for managing the side effect of ART among patient at HIV clinic in Uganda who reported that the main strategies the patients used for coping with the side effects were those categorised under information-seeking therefore, these information seeking could be from health professional and other knowledgeable persons around. The findings were also in contrary to the same authors who mention social-support seeking, positive-emotion-focused coping and also stated that 27% of the participants reported non-adherence to their ARV medications as a strategy to cope with the side effects and disease symptoms during HAART therapy. Similarly, Peltzer, (2013)in his longitudinal study among South Africans stated that the participants reported medications as the most frequently occurring management strategy, with the second being spiritual, and the third complementary or traditional treatments.

As stated within the context of Roy adaptation theory that individuals are regarded as adaptive system whose behaviour is a response to environmental stimuli, HIV patients are also not left out. Thus, PLWHA who suffer from frequent physical and psychological stressors as their contextual stimuli on a background of HIV/AIDS diagnosis as their focal stimuli make their lives more stressful than those with less or no stress experience.

Coping taxonomies have been broadly characterized into problem focused coping and emotion focused coping. However, interest of researcher was to focus on the coping strategies used by

people infected with HIV. The coping strategies inventory (CSI) provided information regarding both problems focused and emotion focused coping strategies. Further, under the problem focused coping strategies, four coping strategies have been included namely problem solving, cognitive restructuring, expressing emotions and social support. Whereas the emotion focus coping scale included problem avoidance, wishful thinking, self-criticism and social withdrawal. Cognitive restructuring/Religious coping, expressing emotion and social support were the most utilized coping strategies used by PLWHA which all belong to problem focused coping strategy and self-criticism an emotion focused coping strategy is the least commonly used. The finding is in agreement with the work of Nair, (2015) on coping strategies among people living with HIV in India using Brief cope scale which show that problem focused coping strategies (acceptance) were the most utilized than the emotion focused coping (humor) this shows that PLWHA were becoming more aware in utilizing adaptive coping strategies. the findings of this study was not in line with Kabbash *et al*,(2008) in their study on need assessment and coping strategies among HIV infected persons in Egypt shows the mean coping scores of PLWHA. The mean percentage of the total score of the emotion-focused ways of coping (avoidance, escaping, distancing, blaming oneself) was higher than the problem-focused ones: 60.3% (SD 9.4%) and 51.4% (SD 13.3%) respectively, reasons mentioned by them were psychological problems; feeling of fear, stigmatization, loneliness and depression. Similarly, Rani and Batra, (2015) reported in their study among 500 PLWHA in Haryana that the findings reveal that most of the HIV/AIDS patients were going more with emotion focused coping than with problem focused coping.

After assessing the dominant coping strategies among HIV positives, attempt was made to study these in relation to the socio-demographic characteristics of the sample and the findings of the study revealed that significant relationship exist between age and expressing emotion in positive

direction which means that the older PLWHA express emotion when confronted with stress more than the younger patientsthis is contrary to Nair, (2015) who reported that age was found to be correlated with self-blame, going with the present findings it could be said that tendency of expressing emotion as they aged also increases.

Regarding the correlation of sex variable (male/female) with coping,the findings shows negative correlation with problem solving (problem focused coping), wishful thinking (emotion focused coping), problem avoidance (emotion focused coping) and social withdrawal which is also an emotion focused coping.The conventional wisdom has it that men are taught to emphasize instrumental, analytical, problem solving skills, and that the women are socialized to be more emotionally sensitive, expressive and dependent than men (Nair, 2015). The study findings were in contrary to the above saying as men are expected to use more emotion focused coping and women more of problem focused coping, since the variable was coded as 0 for male and 1 for female.

Therefore, the findings were in accordance with Haruna and Ago, (2014) in their on HIV/AIDS, Choice of Coping Strategies: Implications for Gender Role Differenceswhich shows that gender difference does not exist for problem – focused coping and that that gender difference exist for emotion focused coping, and on the neutral side Adedigba, *et al*, (2008) stated in their work on Demographic variations in the coping ability of people living with HIV/AIDS in Nigeria: implications for counselling that their results showed no significant difference in the coping ability of PLWHA by gender, marital status and living arrangements.

Further, marital status was found to be correlated positively with expressing emotion and social support seeking, which were all problem focused coping strategies meaning the singled and the married respondents used problem focused coping than the divorced and the widowed.

The findings also show significant and positive correlation between level of education and six coping strategies, which were with problem solving, express emotion, Social support, Problem avoidance, Wishful thinking and Social withdrawal. Hence, it can be concluded that there was an emergence of a cluster of coping strategies morecommonly used by the sample through various educational levels. The general impression is that there is increase in awareness with the increase in education. However, surprisingly it was observed that rise in educational qualification promoted the use of various coping strategies from emotion focused and problem focused coping. The past researches suggest that when the situations are controllable, problem focused or active coping strategies predominate and when situations seem less controllable, alternative strategies predominate (Folkman and Lazarus, 1980 in Adedigba, *et al*, (2008)). Hence, it was presumed that being infected with HIV is highly stressful and uncontrollable situation which may lead to initial emotional outburst to the HIV diagnosis. Hence, people having HIV will experience helplessness and become passive in their coping efforts using emotion focused coping more frequently than the problem focused coping. The results suggested that people living with HIV use full range of coping strategies that include both problem focused coping strategies and emotion focused coping that target sources of stress. The importance of having at least some control over one's emotions while trying to manage or alter a troubling situation is one reason why it has been found that problem focused coping was accomplished by emotion focused coping in this very stressful situation.

Occupation correlated negatively with social support. The relation between occupation and coping is complex and there is no clear answer as to whether persons cope better or worse as their occupation vary. However, going by present findings it can only be said that the civil servant and unemployed group tend to use social support more than the other groups.

Further, five correlations were found to be significant between Religion and coping strategies. Positive correlations were obtained with problem solving, Problem avoidance, Wishful thinking, and Self-criticism and Social withdrawal.In nut shell religion correlated with emotion focused coping more than problem focused coping.

Based on the theoretical framework it can be seen that PLWHA are utilizing all the four (4) modes of adaptation as identified by the theory. The behavioral responses in form of Physical coping which result in physiological modifications are well utilized by PLWHA in the study area of which consulting medical professionals for advices and prescribtion of pharmacological substances which results in modification of physiological sub systems is the most frequently utilized.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

The findings indicated that despite increasing access to ART, high level of burdensome and manageable symptoms exist. The assessment of these problems is essential alongside assessment of ART virological outcomes.

Symptom assessment provides information that may be valuable in evaluating AIDS treatment regimens and defining strategies to improve quality of life. Because of the high levels of symptoms reported, the results imply an urgent need for effective health care, home- and community-based as well as self-care symptom management to help patients and their families manage and control AIDS symptoms. The physical coping strategies can be categorised under consulting medical professionals, using safe drinking water and using over the canter drugs.

Majority of the PLWHA were utilizing problem focused coping strategies more than emotion focused coping strategies.

6.2 RECOMMENDATIONS

Based on this study finding, the following recommendations were made;

1. The HIV patients under HAART should receive multidimensional care from healthcare providers that reflects the nature of their problems, that is, the social, the psychological (e.g., worry and sadness), and the physical (e.g., pain).
2. The communication and information needs of patients (PLWHA) should be considered by healthcare providers for effective provision of multidimensional care.

3. Further clinical research studies by researchers in field of HIV/AIDS are required to determine the symptom burden in other parts of the country as well as barriers to symptoms report to ensure that the high prevalence and burden of symptoms are managed in all settings where HIV-infected persons present for care alongside ART.
4. A symptom check list should be made available to PLWHA when presenting for follow-up. To make it easier for the patient to recall symptoms and also time saving for health care providers.
5. To better assess symptom prevalence and burden in the African context, the HIV-symptoms severity check list should be revised and validated by HIV/AIDS researchers for PLWHA, especially for those living in Nigeria.
6. The state government and the non-governmental organizations with interest in HIV/AIDS should provide continuous medical education programs for general practitioners in public and privateservices and should include education about symptom assessment and management.
7. Clinicians should assist patients with continuous health education and counseling that focuses on appropriate strategies to cope with the side effects of ARVs in order to buffer the negative impact of HIV treatment on patients' adherence and quality of life.

6.3 Contributions of the study to scientific knowledge.

1. The study further reaffirm the previous literature by confirming previous studies that show that HIV outpatients on ART in Nigeria are experiencing physical and psychosocial symptoms.

2. The findings of the study can guide clinical psychologists and clinicians toward other variables that may be useful in counseling and treatment.

3. Health care professionals are encouraged to become familiar with the full spectrum of predictors of wellbeing in HIV infected people, which may eventually contribute to the development of multiple entry points for interventions in promoting wellbeing in these patients.

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APPENDIX I: CONSENT FORM

DEPARTMENT OF NURSING SCIENCES FACULTY OF MEDICINE AHMADU BELLO UNIVERSITY ZARIA

CONSENT FORM

I am a Master of Science student in Nursing sciences Department of Ahmadu Bello University, Zaria, carrying out a research on the above mentioned topic.All information given will be strictly used for academic purpose and remained highly confidential.

The purpose of the study is to assess stressors associated with HIV/AIDS and ways of coping with the stressors among People Living with HIV/AIDS (PLWHA) in Bauchi state, Nigeria.

Procedure: A structured questionnaire would be used to interview participant for about 10-15 minutes anonymity and confidentiality would be ensured.

Benefit: Result of the study will be used to modify counseling services provided to HIV/AIDS patients in the state and People Living with HIV/AIDS who show or described mal-adaptive coping would be counseled accordingly

Risk; Interview may cause participant to remember unpleasant situation.

By signing this form you are declaring that you have been informed and you fully understood the procedure involve in this research work and therefore granted your consent to participate in the study, you have the right to withdraw at any point as participation is voluntary.

…… ……..

Identification number Clinic

Witness …….

Usman Hafsat 08027875035

APPENDIX II: QUESTIONNAIRE

DEPARTMENT OF NURSING SCIENCES FACULTY OF MEDICINE AHMADU BELLO UNIVERSITY ZARIA

QUESTIONNAIRE ON ASSESSMENT OF COPING STRATEGIES AMONG PEOPLE LIVING WITH HIV/AIDS IN BAUCHI STATE NIGERIA

Name of Interviewer……..

Section A; Socio-Demographic characteristics

1. Age in years…….
2. Sex: male ( ) female ( )
3. Marital status: single ( ) married ( ) divorced ( ) widow ( ) widower ( )
4. Level of education: No formal education ( ) Primary ( ) Secondary ( ) Tertiary ( )
5. Occupation: Civil servant ( ) Unemployed ( ) Farmer ( ) Private employee () Self-employed ( ) Student ( )Others, specify ()
6. Religion: Islam ( ) Christianity ( ) Traditional African Religion( )

Section Bi; Physical stressors related to the Disease and its treatment

Problems	Symptoms	None	Mild	moderate	severe
Fatigue	Muscle aches				
	Weakness				
	Painful joint				
Fever	Fever				
	Chills				
	Day sweat				
	Night sweat				
Gastro Intestinal Upset	Diarrhea				
	Gas/bloating				
	Abdominal pain				
	Nausea				
	Vomiting				
Shortness of breath	Shortness of breath at rest				
	Wheezing				
	Shortness of breath with activity				

Section Bii; Physical stressors related to the Disease and its treatment

Problems	Symptoms	None	Mild	Moderate	Severe
Sore throat	Sore throat				
	Painful swallowing				
	Mouth ulcers				
	White spot in the mouth/rash				
Numbness	Numbness/tingling of arms				
	Numbness/tingling of hands/fingers				
	Numbness of legs				
	Numbness of feet/toes				
Headache	Dizziness				
	Headache				
	Heart racing				
	Chest pain				
Rectal Itch	Rectal itching				
	Rectal bleeding				
	Rectal discharge				
Bruising/bleeding	Sore/bleeding gum				
	Nose bleed				
	Easy bruising				
	Blood in spit/sputum				
Body changes	Concern over weight gain				
	Hump on back of neck/shoulders				
	Skinny arms and legs				
	Prominent leg veins				
Others	Swollen glands				
	Swollen feet				
	Thirst				
	Coughing				
	Lack of appetite				
	Constipation				
	Weight loss				
	Rash				
	Itchy skin				
	Insomnia/lack of sleep				
	Blurred vision				
	Seizures/tremors				
	Breast pain/changes				
	Sore or lumps on genital				
	Burning with urination				
Gynecological	Irregular periods				
	Heavy periods				
	Vaginal itching/ discharge/ odour				
	Bleeding between period				
	Pelvic pain				

Section C: Psychosocial Stressors related to HIV/AIDS

Problems	Symptoms	Mild	Moderate	Severe
Fear	Difficulty concentrating			
	Depression			
	Memory loss			
	Fear/worries			
		NP	P	MSP
Social problems	Marital/relationship concern			
	Family problem			
	Discrimination due to HIV			
	Alcohol/drug abuse			
	Unemployment			
	Finances			
	Sexual discrimination			
	Receiving social support services			
	Not having someone to talk with about HIV			
	Getting good information about HIV			
	Loss/death of partner or family to AIDS			
	Medical/health care			

Key; NP- not a problem, P- problem, MSP- most serious problem

Section D: Physical Coping Strategies

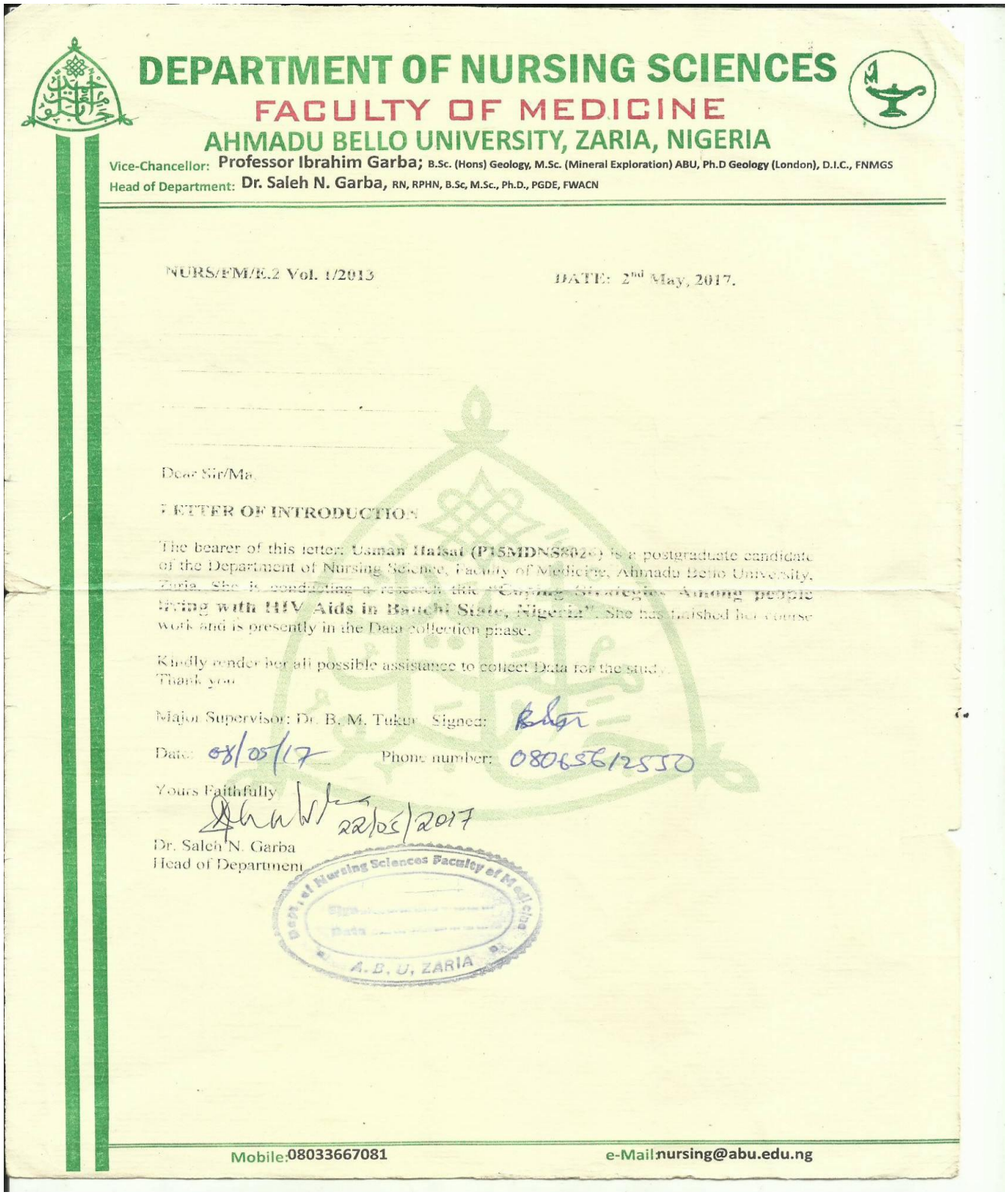
Key: 0 I don't do it, 1 I rarely do it, 2 I do it at times, 3 I always do it

Physical Coping	Items	0	1	2	3
	I takeadequate diet				
	I ensure sufficient activity (exercise)				
	I do take deep breath				
	I tackled environmental changes affecting sleep				
	I drink slowly and more frequently				
	I ensure sufficient resting style				
	I ensure intact skin and healing period (personal hygiene)				
	I consulted medical professionals				
	I used over the counter drugs				
	I use condom when having sex				
	I wash my hands after using the toilet				
	I wash my hands before eating or preparing meal				
	I used safe drinking water always				
	I avoid contact with people who have other infections				
	I sleep under insecticide net				

Section E: Psychosocial Coping Strategies

Coping subscales	Items	0	1	2	3
Problem Solving	I worked on solving the problem in the situation				
	I make a plan of action and follow it				
	I change something so that things will turn out all right				
Cognitive Restructuring/Religion	I told myself things that helped me feel better.				
	I convinced myself that things are not as bad as they seem				
	I looked at things in a different way and make use of what was available				
Express Emotion	I let my emotions go.				
	I let out my feelings to reduce the stress				
	I did something to get it out of my system				
Social Support	I accepted sympathy and understanding from someone.				
	I talk to someone about how I was feeling.				
	I spent more times with people I liked				
Problem Avoidance	I went along as if nothing were happening.				
	I tried to forget the whole thing.				
	I slept more than usual				
Wishful Thinking	I hoped a miracle would happen.				
	I wished that the situation would go away or be over				
	I wished that the situation had never started				
Self-Criticism	I realized that I brought the problem on myself.				
	I blamed myself.				
	I criticize myself for what happen				
Social Withdrawal	I spent more time alone.				
	I avoid my family and friends				
	I tried to keep my feelings to myself.				

APPENDIX III: LETTER OF INTRODUCTION



DEPARTMENT OF NURSING SCIENCES
FACULTY OF MEDICINE
AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA

Vice-Chancellor: Professor Ibrahim Garba; B.Sc. (Hons) Geology, M.Sc. (Mineral Exploration) ABU, Ph.D Geology (London), D.I.C., FNMGS
Head of Department: Dr. Saleh N. Garba, RN, RPHN, B.Sc, M.Sc., Ph.D., PGDE, FWACN

NURS/FM/E.2 Vol. 1/2013 DATE: 2nd May, 2017.

Dear Sir/Ma,

LETTER OF INTRODUCTION

The bearer of this letter, Usman Hafsat (P15MDNS8026) is a postgraduate candidate of the Department of Nursing Science, Faculty of Medicine, Ahmadu Bello University, Zaria. She is conducting a research title "Coping Strategies Among people living with HIV Aids in Bauchi State, Nigeria". She has finished her course work and is presently in the Data collection phase.

Kindly render her all possible assistance to collect Data for the study.
Thank you

Major Supervisor: Dr. B. M. Tukur Signed: [signature]

Date: 08/05/17 Phone number: 08065612550

Yours Faithfully

[signature] 22/05/2017

Dr. Saleh N. Garba
Head of Department

Dept. of Nursing Sciences Faculty of Medicine
Sign
Date
A.B.U, ZARIA

Mobile: 08033667081 e-Mail: nursing@abu.edu.ng

APPENDIX IV: ETHICAL CLEARANCE

SECRET

GOVERNMENT OF BAUCHI STATE

MINISTRY OF HEALTH

Bello Kirfi Road, Off Murtala Mohammed Way,
P.M.B. 065, Bauchi.

E-mail: bauchismoh@gmail.com

Reference..... MOH/GEN/S/1409/I ..... *Date*..... 17th July 2017 .....

PROTOCOL REC. N0: BSMOH/NREC/19/2017
PROTOCOL APPROVAL N0: NREC/12/05/2013/2017/26

Hafsat Usman,
Department of Nursing Sciences,
Faculty of Medicine,
ABU Zaria.

ETHICAL CLEARANCE FOR SUBMITTED PROTOCOL:
"Assessment of Coping Strategies of people Living with HIV/AIDS in Bauchi State"

The Bauchi State Health Research Ethics Committee (HREC) under the State Ministry of Health has received the above named protocol for ethical clearance and approval in line with the guidelines set by the Committee. The protocol was reviewed and the committee noted that that the research falls under the low risk Category which does not entails clinical trials or any invasive procedures.

2. Consequently, the Committee hereby granted expedited approval for the research to be conducted. However, you should share with us your workplan clearly indicating the start date, where and when to visit the research site(s) and also **the final results of your findings.**

3. The Committee requires you to comply with all Institutional Guidelines, Rules and Regulations and with the tenets of the National Health Research Ethics Committee Code including that all adverse events are reported promptly to the Committee. **No changes are permitted in the research without prior approval by the Committee** except in circumstances outlined in the Code. The Committee reserves the right to conduct compliance visit to your research site without prior notice.

4. Thank you.

(Usman U. Muhammad)
For: Hon. Commissioner.

SECRET