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# ASSESSMENT OF THE QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS RECEIVING ANTI-RETROVIRAL THERAPY IN THE NEW JUABEN MUNICIPALITY

**BY**

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# DECLARATION

I declare that except for references made to other people's work which have been duly cited, this dissertation is the result of my own research and that this dissertation either in whole or in part has not been presented for any degree elsewhere.

..... .....

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# DEDICATION

This work is dedicated to the Almighty God and my lovely wife Dr. Mrs. Angela Fosu as well as my wonderful children Maame Efua and Fiifi Addo Biney for their love and support.

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INTEGRI PROCEDAMUS

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# ABSTRACT

**Background:** The Human Immune-Deficiency Virus (HIV) epidemic is a major public health issue confronting the world today. As a result of the effectiveness of the highly active antiretroviral therapy (HAART), people living with HIV/AIDS (PLWHA) now live longer. Quality of life (QOL) of PLWHA has become a distinct and important patient-reported prognostic measure in HIV care.

**Objectives:** This study was on the assessment of the QOL of PLWHA receiving anti-retroviral therapy; the physical, psychological, environmental characteristics that affected the QOL; the effect of social relationships on QOL as well as the predictors of QOL of PLWHA in the New Juabeng Municipality.

**Methodology:** This study was a cross sectional survey employing simple random sampling technique to recruit 420 participants. This study was conducted in the Eastern Regional Hospital, Koforidua. A standardized WHOQOL-HIV questionnaire was administered to participants to solicit for information on their demographic data and the determinants of QOL. Statistical analysis was done using STATA software (version 13). A correlational analysis was conducted to ascertain the relationship between social relationships and QOL of PLWHA. Furthermore a multiple linear regression was done to identify the predictors of QOL of PLWHA. Significance level was set at $p < 0.05$.

**Results:** The QOL score was poor in all domains. Hence the overall mean QOL score ($44.05 \pm 18.98$) was poor. Factors such as availability of medicines, energy, mobility, sleep and work capacity affected the physical health of PLWHA. Psychological factors such as enjoying life, meaningfulness of life, ability to concentrate, acceptance of bodily appearance and negative feelings affected the QOL.

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The association between social relationships and QOL was found to be statistically significant (p=0.000). Social relationships also had a positive linear correlation with QOL of PLWHA: personal relations (r = 0.469, p <0.01); sex (r = 0.164, p = 0.001); emotional support (r = 0.308, p = 0.001). As regards environmental domain, financial resources, living environment, transport and access to healthcare were the environmental characteristics that affected the QOL. Overall, only the highest educational level of PLWHA positively predicted the QOL in all domains.

**Conclusion:** The overall QOL of PLWHA receiving ART from the Eastern Regional Hospital, Koforidua was poor (44.05 ± 18.98).

**Key words**: people living with HIV and AIDS (PLWHA), quality of life (QOL), human immune deficiency syndrome (HIV), acquired immune deficiency syndrome (AIDS).

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# LIST OF ABBREVIATIONS

AIDS …….. Acquired Immune Deficiency Syndrome

ART…….Anti -Retroviral Therapy

CDC……Centre for Disease Control and Prevention

GAC……..……Ghana AIDS Commission

HAART…… Highly Active Anti-Retroviral Therapy

HIV.…… Human Immune-deficiency Syndrome

MPH…….. Master of Public Health

NACP……..National AIDS Control Programme

PLWHA……. People Living with HIV and AIDS

QOL……Quality of Life

UNAIDS…….United Nations Programme on HIV and AIDS

WHO……..World Health Organization

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# DEFINITION OF TERMS

PLWHA- Individuals who have been tested positive and have been diagnosed of HIV/AIDS

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# CHAPTER ONE

# INTRODUCTION

## 1.1 Background

Every aspect of the society including individuals, families, communities and institutions have been affected by human immune-deficiency virus (HIV) epidemic. It continues to destroy the lives of millions of people and has ravaged the social fabric of many communities (Imam, Karim, Ferdous, & Akhter, 2011). The total estimated number of people living with HIV/AIDS (PLWHA) globally by the end of December 2015 was about 36.7 million; 2.1 million new infections and 1.1 million HIV related deaths (UNAIDS, 2015).

In Sub-Saharan Africa, an estimated number of PLWHA at the end of 2015 was about 25.8 million, accounting for about 70% of the global burden. The sub region also recorded 1.4 million new infections (UNAIDS 2015). In Ghana, the first case of the disease was detected in 1986 in Accra and since then, it continues to spread throughout the country (Ulasi *et al.*, 2009). The highest national prevalence of the disease was found in the Eastern Region. Initially, this high prevalence was linked to indigenes who had come back to Ghana after being infected in neighboring countries notably, Cote d'Ivoire (Ulasi *et al.*, 2009). About 224,488 people were infected with the disease, 7,812 new infections and 10,074 HIV related deaths at the end of 2013 (Ghana AIDS Commission, 2014). The Eastern Region has the highest prevalence of HIV (3.7%) which is far higher than the national average (1.3%) (Ghana AIDS Commission, 2014).

According to the UNAIDS (2015), 17million (46.5%) PLWHA have access to antiretroviral therapy. About 10.7 million people are accessing antiretroviral therapy in sub-Saharan

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Africa. In Ghana, 90,573 PLWHA are on anti-retroviral therapy (ART) as at the end of 2013 (UNAIDS, 2014).

The recent advances in the level of knowledge of HIV, improvement in diagnostic tools and methods, increased assess to ART, better treatment and advancing HIV programs have provided a major opportunity for PLWHA to live longer lives (Imam *et al.*, 2011). The HIV infection has been included in the rising list of chronic diseases since the inception of the highly active antiretroviral therapy (HAART), (Degroote, Vogelaers, & Vandijck, 2014). The number of PLWHA aged 50 years and older keeps increasing over the past two decades (Balderson *et al.*, 2013). Between 1990 and 2001, the population of PLWHA aged 50years and beyond more than quadrupled between. This again increased by 77% from 2001 to 2005, accounting for 25% of all HIV cases and 29% PLWHA in the USA (Balderson *et al.*, 2013). The Center for Disease Control (CDC) (2008) projects that by the end of 2015, more than half of the population of PLWHA in the USA will be more than or equal to 50 years.

This sudden rise in the number of elderly PLWHA will have important consequences for medical prognosis, functional status, and quality of life. The prospects of improved life expectancy of PLWHA makes the assessment of their quality of life (QOL) increasingly more important (Balderson *et al.*, 2013). In the management of chronic diseases, evaluation of QOL has become a core aspect of follow-up. This provides important feedback about treatment outcomes (Degroote *et al.*, 2014).

### 1.2 Problem Statement

A patient's well-being is influenced by a lot of factors including psychosocial and environmental factors and not only by his or her current health status and response to

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treatment. The assessment of the QOL is crucial in order to provide better comprehensive care to clients so as to improve the functioning and total well-being of PLWHA (Rüütel, Pisarev, Loit, & Uusküla, 2009). PLWHA now have an increased life expectancy. This is due to a combination of ART and strengthening of health systems and improved health services, social support systems, spiritual well-being, better coping strategies, the adaptation process with a chronic illness, as well as QOL which have become of paramount significance (Khumsaen, Aoup-por & Thammachak 2012).

Even though PLWHA now live longer, they are faced with numerous challenges that affect their QOL. They are confronted with painful episodes that interfere with their daily activities (Rosenfeld *et al.*, 1996). They lack the energy to work as they are easily fatigued with little activity (Tanaka *et al.*, 2015) and most of them experience sleep disturbances (Allavena *et al.*, 2015). This affects their mobility and makes them very dependent on caregivers thereby worsening their QOL (Parker, Stein, & Jelsma, 2014).

In Ghana, as in Sub-Saharan Africa, HIV/AIDS is generally considered as the result of promiscuity or sexual immorality and so infected individuals are highly discriminated against and stigmatized (Ulasi *et al.*, 2009). In some instances, they experience extreme violence especially women and homosexuals (Mills, 2003; Anafi, Mprah, & Asiamah, 2013). The worst case is that individuals are even discriminated against by the very health care professionals who are supposed to care for them (Rahmati-Najarkolaei *et al.*, 2010 ; Zarei, Joulaei, Darabi & Fararoue, 2015). These discriminations and stigmatization lead to decreased self-esteem, lower body image, negative feelings about self, depression, anxiety, self-isolation, feeling of guilt and failure to disclose status (William *et al.*, 2009; Bharat *et al.*, 2011). Some studies have even reported of PLWHA committing suicide because they

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can no longer cope with the social rejection and discrimination (Prachakul, Grant, & Keltner 2007; Holt-Lunstad, Smith & Layton, 2010; Yu *et al*., 2015).

The association between social isolation, decreased psychological health and QOL is well documented (Kawachi & Berkman, 2001). Fewer social networks, smaller close relationships, and perceived inadequacy of social support have been associated with depression and poor QOL (Kawachi & Berkman, 2001). PLWHA need a lot of affection and love from family, friends and colleagues at work. Physicians do not normally evaluate social resources of their patients to be able to develop a tailor-made comprehensive care plan and so they do not get the quality of care they deserve. (Webel, Sattar, Schreiner & Philips, 2015).

Several studies have been done in developed countries and Asia about the QOL of PLWHA (Rüütel *et al.*, 2009; Imam *et al.*, 2011; Degroote *et al.*, 2014; Odu, Adeleye, & Olumese 2014;. However, in spite of the high prevalence rate of HIV/AIDs in Ghana and the West African sub-region, no empirical evidence was identified by the researcher on the QOL of PLWHA. This study sought to examine the QOL of PLWHA in Ghana.

### 1.3 Justification of the Study

Quality of life (QOL) among PLWHA is a major issue. Marked by the signs and symptoms of the disease, the increasing accessibility to drugs and the variety of populations living with HIV/AIDS, the proper assessment of QOL can be very challenging (WHO, 2004).

The WHO defines Health as the total physical, social, environmental and psychological wellbeing and not just the absence of disease. Most PLWHA go through various challenges

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in their lives. They have pain, lack energy to go about their normal activities, sleep disturbances, negative feelings, low self-esteem, lack social care, high rate of stigmatization and many more. Across the globe, extensive research has been conducted on the QOL of PLWHA. However, the same cannot be said of for sub-Saharan Africa. Moreover, there is limited or no data on the QOL of PLWHA in Ghana thus the basis of this research.

This study will contribute to knowledge since there is very little work in the sub-region. Furthermore, the study outcomes can set the pace for further studies. The findings will also enable the stakeholders of health in the country and sub-regions to have an idea of the baseline QOL of this vulnerable group so as to make and implement policies that can improve their QOL. Improving the QOL of these PLWHA will improve productivity. QOL is a prognostic tool and so the study will inform stakeholders of the overall state of health of PLWHA as this will inform resource allocation (Fallowfield, 2003).

### 1.4 Research Questions

1. What physical characteristics affect the QOL of PLWHA?
2. Which psychological factors affect the QOL of PLWHA?
3. What are the environmental characteristics that influence the QOL of PLWHA?
4. What are the effects of social relations on QOL of PLWHA?
5. What are the predictors of QOL of PLWHA?

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## 1.5 Objectives of Study

### 1.5.1 General Objectives

To assess the quality of life (QOL) among people living with HIV/AIDS (PLWHA) receiving ART from the Eastern Regional Hospital, Koforidua.

### 1.5.2 Specific Objectives

The specific objectives are:

1. To identify the physical characteristics that affect the QOL of PLWHA.
2. To assess the psychological factors that affect the QOL of PLWHA.
3. To explore the environmental characteristics that affect the QOL of PLWHA.
4. To determine the effect of social relationships on the QOL of PLWHA.
5. To determine the predictors of QOL of PLWHA.

## 1.6 Conceptual Frame work of Factors influencing QOL of PLWHA

This conceptual framework (figure 1) explains the contributions and correlations of the physical characteristics, environmental characteristics, psychological factors and social relationships on the overall QOL of PLWHA (Skevington et al., 2004; Gakhar, Kamali, & Holodniy, 2013; Degroote et al., 2014)

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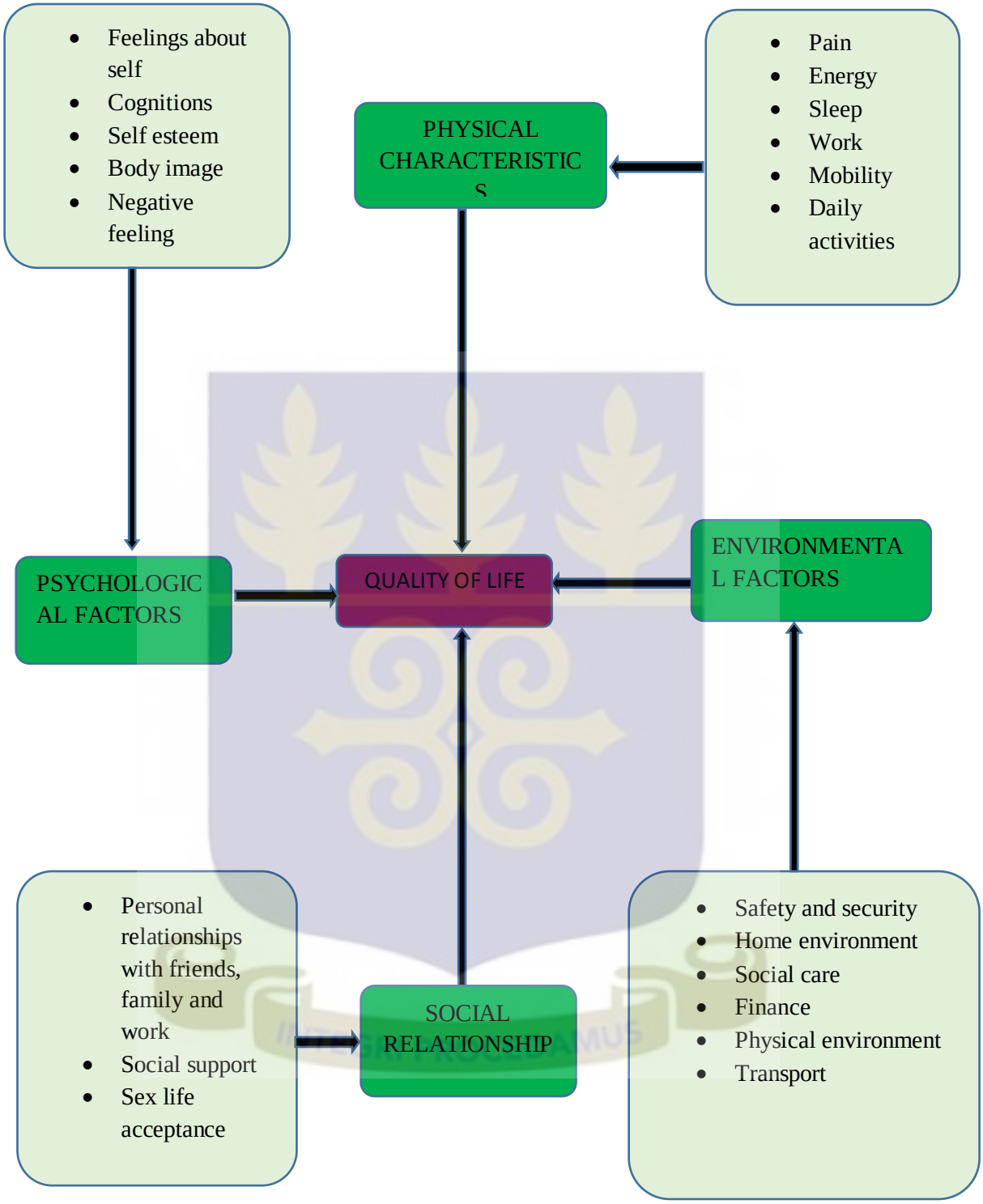


**Figure 1: Conceptual Framework of QOL of PLWHA, Adopted from WHOQOL-HIV BREF: (Skevington, Lotfy, & O'Connell, 2004)**

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Physical characteristic such as pain, lack of energy due to frequent fatigue and inability to sleep or maintain sleep affects their physical nature and QOL (Tanaka *et al.,* 2015). The QOL is also affected by lack of mobility, inability to work and inability to carry out ones daily activities. Factors such as body image, cognition, self-esteem and negative feelings about self affect the psychology of PLWHA and this influences their QOL (Parker *et al.,* 2014; Gaudine *et al.,* 2010)

The social relationships of PLWHA is affected by the level of social support, personal relations with family and friends, sexual relations and the level of acceptance in the home and community (Kawachi & Berkman, 2001; Prachakul *et al.,* 2007). Environmental factors such as safety and security, physical environment, finance, home environment, social care, and transport also influences the QOL of PLWHA (Ferrans *et al.,* 2005). Hence the overall QOL of PLWHA is influenced by physical, psychological, social and environmental factors (Webel *et al.,* 2015).

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# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Quality of life

Health as defined by the WHO is "*a state of complete physical, mental, and social well-being not merely the absence of disease*"(WHOQOL Group, 1998). Moreover, the determination of health must also include an evaluation of total well-being and not just a measure of changes in the severity and frequency of diseases. This can be determined by assessing the improvement in the person's QOL. Even though there are standard ways of determining the frequency and severity of diseases, this is not the situation when evaluating the total well- being and QOL of a person.

The QOL of a person is defined by WHO as an individual's perception of his/he status in life in the context of their value systems and culture in which they live and in accordance with their expectations, goals, standards and concerns (WHOQOL Group, 1998). It is a very broad concept that is influenced in diverse ways by the person's physical health, psychological status, social relationships, and environmental factors.

Over the past 25years, assessment of QOL has increasingly become very useful in health care. QOL research has improved in methodology and complexity (Ferrans *et al.*, 2005). Furthermore, the QOL of PLWHA is a concept that has gained a lot of recognition in literature since HIV is now accepted as a chronic illness. Therefore assessing the QOL has become an integral part of patient follow-up (Degroote *et al.*, 2014). An individual's well-being is influenced by psychosocial and environmental factors and not only by his or her health status and response to treatment. Therefore, the determination of factors that affect QOL is very crucial. This helps to better program healthcare and social services to PLWHA

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to improve their functioning and total well-being. Moreover, the determination of modifiable factors influencing QOL could help with the identification of people with special needs to improve their QOL (Khumsaen *et al*, 2012). QOL is a useful as prognostic indicator for evaluation and management of healthcare (Liping, Peng, Haijiang, Lahong & Fan 2015). Consequently, most physicians normally make implicit and very subjective assessment about QOL when managing a patient. However, very few physicians make explicit, objective evaluation about QOL using standardized validated tools and instruments. Formal assessment of QOL is now a mandatory requirement in most clinical trials but most physicians still use informal appraisal mostly clinical judgment due to time constraints (Fallowfield, 2003).

It has been established that patients with a good QOL at the commencement of treatment have better prognosis than those with a poorer baseline score (Fallowfied, 2003). However, there are lots of studies showing the utility of QOL as an effective prognostic tool (Fallowfield, 2003). Factors that have facilitated this rise in usage include the accumulation of evidence that show that measures of QOL are valid and reliable. Additionally, the results of several clinical trials indicates that these outcome measures are responsive to important clinical change (Wilson, 1995).

Several studies reveal the QOL of PLWHA to be lower than the average population of people without HIV (Gielen, Mc Donnell, Wu, O' Campo & Faden 2001; Glickman *et al.*, 2007; Bakas *et al.*, 2012; Gakhar *et al.*, 2013). Additionally, their evidence asserts that even asymptomatic HIV infection has an important impact on QOL of patients. The overall QOL of patients improves significantly with ART as compared to pre-ART (Abera, Gedif, Engidawork & Gebre-Mariam, 2010). The final component of the QOL model defined by Wilson and Cleary (1995) as subjective well-being in relation to an individual's happiness or

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satisfaction in life as a whole. Subjective well-being signifies multiple concepts such as pleasant and unpleasant affect, total judgment on fulfillments of life and individual's satisfaction with the domains of life (Diener *et al*., 1999).

## 2.2 Physical Characteristics Influencing QOL

### 2.2.1 Work, Mobility and Daily Activity

The human immune-deficiency virus (HIV) attacks the cellular structures of the immune system, impeding their function and resulting in continuous destruction of the immune system (Mbada *et al.* , 2013). Chronic HIV infection results in presentations that eventually result in various forms of disability and mortality. This includes muscle weakness and cachexia, easy fatigability and decreased functional work capacity leading to decreased QOL (Bopp, Phillips, Fulk, & Hand 2003). Many studies have indicated that the presence of HIV/AIDS together with its signs and symptoms and the associated complications have adverse impact on QOL of PLWHA (Mbada *et al.*, 2013; Bopp *et al*., 2003 ; Degroote *et al.*, 2014).

A study conducted in South Africa by Hughes *et al* (2004), found 30.9% of PLWHA to have severe problems with mobility. This may be related to the muscle weakness and cachexia associated with the disease.

The functional exercise capacity of PLWHA is believed to be lower than the normal population. The association between functional exercise capacity and HIV/AIDS is very complex and intricate. The pathophysiological process of the reduced functional exercise capacity results from the viral anaerobic metabolism leading to myalgia and eventual cachexia in PLWHA (Mbada *et al*., 2013). Studies comparing PLWHA with healthy

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controls revealed that PLWHA had significantly lower functional exercise capacity (Mbada *et al.*, 2013). Some studies have associated the usage of ART among PLWHA as a cause of decreased locomotor performance due to direct toxic effects of the drugs on the peripheral nerves and muscles (Moyle, 2000; Park-Wyllie *et al.*, 2007). The impact of ART on QOL has been depicted as a balance between a reduction in HIV-infection related symptoms and good QOL on one end and the adverse-effects of the medications on the other end. In PLWHA with an fairly good health status prior to commencing ART, these adverse-effects could outweigh the potential gains (Degroote *et al.*, 2014).

### 2.2.2 Pain

The negative effects of pain on QOL has been documented in literature (Rosenfeld *et al.*, 1996; Nkhoma, Seymour, & Arthur, 2015). The association between QOL, pain and psychological distress were assessed during a cross-sectional prospective study involving 438 PLWHA who were ambulatory from various health facilities in New York, USA. More than 3 out of every 5 individuals (62.6%) of the 274 participants reported persistent or frequent pain in the last two weeks prior to study (Rosenfeld *et al.*, 1996). In addition, a systematic review by Parker, Stein and Jelsma (2014) on the prevalence of pain in PLWHA revealed that pain was common occurrence in every stage of the disease. The study also showed that over the 30year duration of the review, pain was still highly prevalent in PLWHA. Even though there is a lot of literature on the subject, there has not been any meaningful impact on pain management among PLWHA (Parker *et al.*, 2014).

### 2.2.3 Sleep

A median sleeping time of 7 hours was obtained in cross-sectional study conducted in France, where the an evaluation of the prevalence and factors causing sleep disturbances in

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adult PLWHA was done using the Pittsburgh sleep quality index (PSQI) (Allavena *et al.*, 2015). About 47% of the respondent had poor sleep quality. Factors such as depression, active employment, male gender, living single, duration of HIV infection, tobacco-smoking, nevirapine or efavirenz-base ART were shown to be significantly related with sleep disturbance. HIV adult outpatient population had a high prevalence of poor sleepers (Allavena *et al.*, 2015).

### 2.2.4 Energy

For PLWHA, energy requirements often increase in order to maintain their regular body weight. An individual whose body is already compromised with HIV/AIDS has an immune system even less effective in at defending against infections when body is malnourished (Parento & Joy, 2009). During the asymptomatic phase, the energy requirement of PLWHA increase by about 10% (USAID, 2007). However, it further increases by 20-30% in the symptomatic phase in both adults and adolescents. Many PLWHA are already burdened with a lack of good access to a good quality diet and suffer from malnutrition (USAID, 2007). Energy balance equals energy consumption minus energy usage. However, the relative significance of these factors in the energy deficit in relation to HIV-related wasting is unknown. Historically, several studies have documented a high resting energy expenditure in HIV infection (Grunfield & Feingold, 1992). Furthermore, despite this, during rapid weight loss in the presence of secondary infection, the intake of energy rather than its expenditure appeared to be critical in determining energy balance and weight loss (Grunfied *et al*., 1992)

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## 2.3 Psychological Factors Affecting QOL

### 2.3.1 Stigmatization and Self Esteem

Health-related stigma is defined by Weiss, Ramakrishna and Somma, (2006), as ‘‘*a social process, experienced or anticipated, characterized by exclusion, rejection, blame or devaluation that results from experience, perception or reasonable anticipation of an adverse social judgment about a person or group*” (Genberg *et al*., 2009) Stigmatization against PLWHA results in silence and denial, violence, self-isolation, failure of disclose HIV status disclosure, self-blame and rejection. It is also associated with negative emotions such as shame, guilt, negative feelings about self, lower self-esteem, fear and anxiety (Yuh, Ellwanger, Potts &Ssenyonga, 2014). Stigmatization also leads to discrimination at an individual level, structural discrimination in the social structure and self-stigmatization where the person stigmatizes tends to accept the society dictates attached to the labels (Yuh *et al.*, 2014).

A systemic review by Mahajan *et al.,* (2008) revealed HIV status disclosure rate of just 31% out of 112 PLWHA on ART for fear of being stigmatized. This is no different here in Ghana. Ghanaians are very religious and have a moral value system to which they strongly believe in (Ulasi *et al.,* 2009). They believe that sexual relations is the preserve of the married couple and that those infected with the HIV infection presumably through promiscuity bring embarrassment to their families. Thus, PLWHA are blamed for acquiring the disease. The stigmatization associated with HIV/AIDS may be due to cultural values coupled with the fear of contracting the disease (due to myth surrounding HIV/AIDS at the time) (Ankomah, 1998).

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There is evidence that PLWHA are being stigmatized and marginalized even by health personnel (Rahmati-Najarkolaei *et al.,* 2010). A qualitative study conducted by Rahmati-Najarkolaei *et al.*, (2010), showed that PLWHA are being discriminated and stigmatized in Iran even by their health care providers. Health care providers openly displayed anger and avoidance at PLWHA. They were denied healthcare and even those who were attended to received sub-standard care, unnecessary precautionary measures and avoidance of physical contact, coupled with verbal and non-verbal accusations (Karamouzian, Akbari, Haghdoost, Setayesh, & Zolala, 2015). The patient-doctor relationship is held in high esteem and based on trust and that the physicians are seen to be the confidants of the clients. Therefore, when PLWHA face stigmatization and rejection even from their trusted physicians, it becomes very frustrating, thus they subsequently try to find avenues to avoid being stigmatized while they still continue to access healthcare. This abusive behaviors is not peculiar to Iran but occurs globally ( Gaudine *et al.*, 2010, Rahmati-Najarkolaei *et al.*, 2010 ; Karamouzian *et al.*, 2015).

Many PLWHA resort to spirituality as a means of dealing with the burden of the disease with its associated stigmatization and discrimination. There is enough empirical data to support the association between spirituality and QOL (Khumsaen *et al.*, 2012). Dunbar, Mueller, Medina & Wolf (1998) revealed that 34 women living with HIV sought ways of using their experiences of HIV disease as a means of improving their spiritual well-being. Again, this finding was similar to a study conducted by Tuck, McCain, & Elswick, (2001).

### 2.3.2 Negative feeling

Negative feelings in PLWHA have been related to bad mood, anxiety, despair and depression. Most PLWHA feel guilt and shame because of their HIV status (Nworuh &

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Ogbalu, 2013). Depression has been documented to strongly interfere with daily activities and negatively affects QOL (Holzemer, et al., 2009). A study conducted by Bing et al (2001) revealed that as many as 33% of PLWHA may suffer from depression. However depression could be triggered by stress, difficult life events, side effects of medications or the effect of the disease on the brain and this could even accelerate the progression of HIV to AIDS (Bhatia & Munjal., 2014). Different levels of anxiety have been documented among PLWHA. A higher prevalence of anxiety disorders was revealed by Tuck *et al*., (2001). Another study by Mukesh *et al* (2016) revealed that majority (92.1%) of the patients (PLWHA) had mild severity of anxiety symptoms.

### 2.3.3 Body Image

The body image plays a key role in the development of self-concept as it serves as an important base for evaluation by one's self and others (Jain &Tiwari, 2016). The PLWHA undergo and face many undesirable physical and psychological changes which affect their direction and level of body image satisfaction, ultimately resulting in QOL and life's satisfaction (Jain &Tiwari, 2016). Body image and HAART associated body changes have been linked to physical discomfort, worries about disclosure, social isolation, adherence, low satisfaction of life and mental health problems (Tiwari, 2015). The changes in body shape due to lipodystrophy has a high on body image. Lipodystrophy is associated with diminished self-esteem and depression, fear of stigmatization, problems with dressing and social isolation. A person with low body esteem will be more adversely affected than someone with high body esteem scores; thus the effect of PLWHA having poorer body image and life satisfaction (Yang *et al.*, 2015)

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### 2.4 Social Relationships Influencing QOL

The increase in disease burden among PLWHA requires a better insight into what social resources are available and accessible, and the consequences of these resources on their health outcomes. Attempts at addressing these challenges would require holistic innovative strategies that incorporates their daily context-specific challenges (Webel *et al.*, 2015). The achievement of standard healthcare requires the contribution of both individual and collective resources. Social resources is defined Foa & Foa, (1980) as '*any concrete or symbolic material that can be used as a means of exchange among people'* These are however constructs that have been consistently identified to maintain and improve healthcare. Examples of these vital resources include both tangible items such as services ,money, goods, and information and less tangible construct such as affection/love and societal status (Webel *et al.*, 2015).

#### 2.4.1 Personal Relationship with Friends, Family and Work

Social inclusion or belonging is a universal basic necessity of man for being accepted as a member of a group. Attributes of social belongingness include companionship, association, and connectedness (Webel *et al.*, 2015). Associations between social belonging and QOL have also been established in literature (Kaczynski &Glover, 2012). Therefore, understanding this association may give crucial information and insight on the kind of social resources available, resulting in improvement in health promotion strategies and QOL.

Among the different types of social support, family support is generally one of the most important factors affecting how patients adopt to illness (Shor *et al.*, 2013). The family is frequently the main source of support in times of illness, whether through tangible

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instrumental support such as preparation of meals, drug administration or through emotional support. The family positively influence self-esteem, self-image of PLWHA (Da Silva & Tavares, 2015).

Previously, PLWHA were unable to work due to AIDS-related illnesses but are now able to consider the possibility of working due to their improved health (Martin, 2011). In spite of the health improvements, efforts at workforce re-entry is still a major challenge. Impediments to workforce (re)entry including concerns over uncertain future health, possible loss of benefits, outdated job skills, discrimination, disclosure, and accommodation for HIV/AIDS-related disabilities.

### 2.4.2 Social support

Social support network is a multifaceted model that stresses on the significance of structure and function of an individuals' social relationships (Bruhn, 2011). Members of a social support groups may assist to portray a high sense of social belongingness. Social support groups can be influenced by personal factors (e.g. personality, norms, and beliefs), interpersonal factors (e.g. family, friends and collogues at work) and socio-structural characteristics (e.g. local geography, civil stability, macroeconomic factors) (Webel *et al.*, 2015). The impact of social support networks on health outcome has been well documented in literature. Research has also shown that the impact of social support in reducing morbidity and mortality.

Social support has been credited with higher QOL of PLWHA in both cross-sectional and longitudinal studies. With increasing awareness of its positive health impact, social support has been incorporated into health care interventions for PLWHA (Yu *et al.*, 2015). In a

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cross-sectional study by Webel *et al*, (2015) social resource variables in 102 PLWHA, were strongly associated with positive health outcomes.

Christopoulos *et al*., (2013), examined barriers and facilitators of engagement in HIV care among newly diagnosed HIV-positive clients using qualitative interviews. Their findings revealed the importance of the quality of the relationship with healthcare professionals for continuity of care, which was prime importance as the patients underwent various stages of the disease condition over time. The findings, when viewed in the context of this evidence on the quality of the relationships between PLWHA and healthcare professionals indicate that the development and implementation of social resource interventions to improve health outcomes in the population cannot be over emphasized. Social connectedness/friendship and social capital were positively associated with adherence to medication and QOL among the respondent (Webel *et al*., 2015).

### 2.4.3 Sex Life

People living with HIV/AIDS have sexual and reproductive needs just like any other person. According to a mixed method cross sectional descriptive study conducted in Iran to evaluate the sexual and reproductive needs of 400 PLWHA, 74.8% of the respondent on ART reported no change in their sexual desire since the commencement of treatment, 18.2% reported worsened condition, while 7% reported improved condition. These results indicated that there were no significant differences in sexuality and sexual desires between HIV-positive individuals and the healthy population. According to the results, 83.8% of respondent had sex during the past year, 71.1% had sex with a permanent partner such as spouse, 16.1% had sex with a unique partner other than their spouses, and 21.2% had sex with a casual partner. Moreover 67.2% of the participants reported using condom during the

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last year. Among those who used condoms in the last year, 24.9% reported always using the condom, 32% almost always and 43.1% sometimes used condoms. The decision to use a condom was a mutual one by both sexual partners in 46.1% of cases.

### 2.5 Environmental Factors Affecting QOL

The environmental characteristics influencing the QOL describe eight facets: physical, financial resources, health and social care, safety and security, home environment,: accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment and transport (Imam *et al.*, 2011).

#### 2.5.1 Social Care

Social support has a direct influence on health outcomes or serves as a buffer to reduce the impact of stressors on health outcomes. Research have shown a positive linear correlation between QOL and the availability of social support ( Gielen *et al.*, 2001; Bruhn, 2011; Webel *et al.*, 2015; ). Moreover, a good baseline social support system was a positive predictor of QOL (Cobb, 2006).

Studies confirm a significant relationship between HIV-related individual discriminatory attitudes and perceived marginalization in the health care systems (Rahmati-Najarkolaei *et al.*, 2010; Zarei *et al.*, 2015). However, the insufficient knowledge of the health care professionals, fear of being infected, and believing that HIV is associated with unethical behaviors are three main reasons of HIV-related stigma in the health system ((Rahmati-Najarkolaei *et al., 2010*).

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But nonetheless, the most dominant attitude of the health care providers toward HIV/AIDS patients is dealing with fear. These attitudes negatively affects accessibility and quality of health care (Zarei *et al.*, 2015).

### 2.5.2 Safety and Security

The HIV related violence and its role in health and human rights-related violations is globally gaining the needed recognition (Peitzmeier *et al.*, 2015). Women living with HIV are more susceptible to violence compared with healthy controls. A cross-sectional study in Brazil, 161 women living with HIV/AIDS revealed that 72.0% of them suffered gender violence, 63.0% suffered psychological violence, 52.0% suffered physical violence and 28.0% sexual violence. Physical and sexual violence, which normally coexist corresponded to 56.0% of cases (Ceccon, Meneghel, & Hirakata, 2014). The negative impact of violence on the physical and psychological health of women living with HIV exposes them to discrimination, decrease access to financial and social resources, and conflicts in personal relationships contributing to the risk of suicidal tendencies (Abramsky *et al.*, 2011).

### 2.5.3 Finance

Poverty and access to health care are two main challenges confronting PLHIV. Their determination to improve their situation are obstructed by the lack of employment opportunities and widespread stigma and discrimination, on the basis of gender as well as of HIV status (ILO, 2016) There is a positive association between an individual's financial situation and QOL (Degroote *et al.*, 2014). A low income level was associated with a lower overall health and vice versa. Yet income level alone may not be the best determinant of an individual's financial resources. Available data on personal expenditures, composition of the family, financial insecurity and worries could serve as very useful added information. The

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prevalence of stigma may constrain PLWHA from employment opportunities, which further disempower them from meeting their financial needs (Rao *et al.*, 2008). Also, the higher degree of enacted stigma constrains PLWHA capacity to make a higher income, obtain a full-time job or meet the financial needs of their households.

### 2.5.4 Transport

Lack of transport to health services for PLWHA has resulted in some not adhering to anti-retroviral treatment. Research indicates that PLWHA with unmet transportation needs are less likely to access HIV-related primary care services and ancillary services (Sagrestano *et al.*, 2012). Indeed transportation is critical for medical adherence for PLWHA. Consumers who live in rural areas are at a disadvantage due to limited transportation options, whereas urban consumers face challenges with insufficient transportation infrastructure (Sagrestano *et al.*, 2012).

### 2.5.5 Physical and Home Environment

Environmentally, several communities have struggled to cope with the HIV/AIDS pandemic by increasing their dependence on the physical environment as a way to maintain their livelihood. The barriers identified to have the greatest impact included transportation, environmental surroundings, government policies, attitudes and the natural environment. (Oramasionwu *et al.*, 2011) There is a rising proportion of older adults, often females, who assume the role of provider and caretaker for other dependent family members. These changing dynamics have caused many to exploit their natural surroundings, adopting less sustainable land use practices and utilizing protected resources as a primary means of generating revenue (Oramasionwu *et al.*, 2011). Food insecure or impoverished households are considerably more likely to be affected by HIV and the resultant high mortality of AIDS.

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These families are also more likely to depend on natural resources as a safety net (Andrew *et al.*, 2003; Torell *et al.*, 2006). Natural resources are a "safety net" for families when HIV/AIDS and/or poverty restrict(s) them from otherwise maintaining a livelihood. Natural resource collection is generally less labor-intensive than agriculture, and requires little to no start-up capital (Bolton & Talman, 2010).

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# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

This chapter discusses the study design, setting, population, inclusion and exclusion criteria. Furthermore, sampling method, sample size determination, recruitment of participants, data collection tool and procedure, data management and analysis as well as the ethical considerations made.

## 3.2 Study Design

A cross-sectional descriptive study design based on quantitative methods was employed. Cross sectional studies are snapshot descriptive studies of a situation at one particular time. This study design was adopted due to time and financial constraints. It is also the most widely used design for assessing QOL of PLWHA (Degroote *et al* 2014; Khumsaen *et al*, 2012).

## 3.3 Study Area

Koforidua is the regional capital Eastern region and also doubles as the municipal capital of the New Juaben Municipal Assembly. The district shares common boundaries with East-Akim Municipal to the North-East, Akwapim North District to the East and South and Suhum-Kraboa-Coaltar District to the East as shown in figure 1. The municipality covers a land area of 159 square kilometers representing approximately 0.6 % of the total surface area of the Eastern Region. It has 52 major communities (Ghana Districts, 2015).

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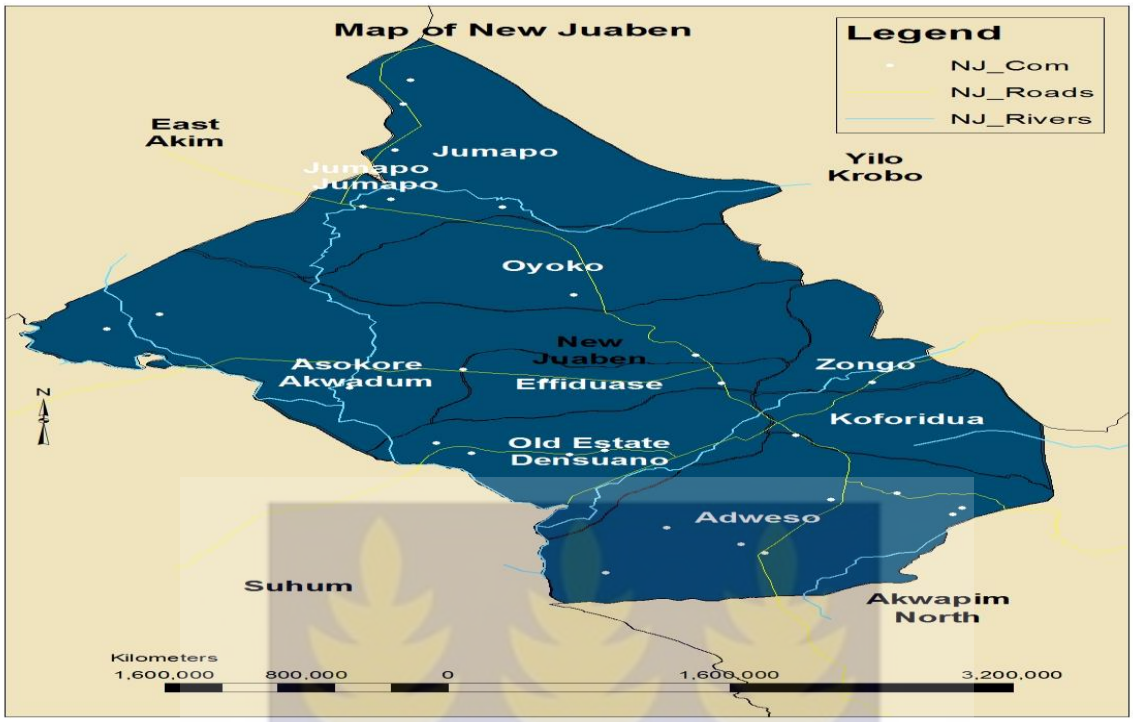


**Figure 2: Map of new Juabeng Municipality Source: Ghana Statistical Service (GIS)**

According to the 2010 National Population and Housing Census (Ghana Statistical Service, 2014), there were about 183,727 people living in the New Juaben Municipality. This consists of more females (51.7%) than males (48.3%). Majority of the population in the Municipality live in urban areas (93.3%). This is predominantly a young population with the highest age group within the range 20-24 years accounting for 12% of the total population (Ghana Statistical Service, 2014).

The Municipality is heterogonous in terms of ethnicity with a high dominance of Akans and Ga-Adangbes. The Municipality is predominantly Christian, constituting a population of 82.8 percent, Moslems 6.1 percent and 2.4 percent traditional believers (Ghana Statistical Service, 2014).

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The key sectors of the Municipal economy are: the service sector which constitutes 39.9 percent, industrial manufacturing and processing 26.7 percent, agriculture 26.1 percent and other socio-economic activities constitutes 7.3 percent.

The New Juaben Municipality has adequate health infrastructure. They consist of two main hospitals; the Regional Hospital and the St. Joseph's Hospital; three (3) Health clinics, two (2) Community clinics, ten (10) private owned clinics and three (3) maternity homes (Ghana Districts, 2013 ).

The Eastern region has the highest HIV occurrence rate (3.7%) in the country which is far and above the national average of 1.3% (Ghana AIDS Commission, 2014).

The Eastern Regional Hospital, popularly known as the Koforidua Regional Hospital, is the only tertiary hospital in the region serving as the main referral center for about sixteen (16) district hospitals in the Region. It was established in 1926 to serve the inhabitants and now has a total bed capacity of 325. The ART clinic is managed by the Regional AIDS coordinator stationed in the hospital at the ART center. He is assisted by trained nurses, midwives, data entry clerks and pharmacists. The total ART clinic attendance for 2014 was about 7,479. The daily attendance as at June 2015 was about 80 clients (Eastern regional hospital, 2015).

### 3.4 Study Population

The target population for the study were PLWHA who attend ART clinic at the Eastern Regional Hospital, Koforidua.

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### 3.5 Inclusion Criteria

People with confirmed HIV status receiving anti-retroviral therapy were included in the study. Moreover, PLWHA attending ART clinic at the Eastern Regional Hospital, Koforidua were eligible for the study. Furthermore, PLWHA aged 18years and above who consented to partake in the research were included.

### 3.6 Exclusion Criteria

All PLWHA who were on admission at the time of study were excluded. More so, PLWHA who presented with any apparent co-morbid medical conditions not linked with HIV/AIDS were excluded too.

### 3.7 Variables

#### 3.7.1 Dependent Variable

The dependent variable was the quality of life of PLWHA.

#### 3.7.2 Independent Variables

The independent variables were:

- Socio-demographic characteristics
- Physical characteristics such as Pain, Energy, Sleep, Work, Mobility and Medication
- Environmental characteristics such as Safety and Security, Home environment, Social care, Finance, Physical environment, Transport,
- Psychological factors such as Positive feelings, Cognitions, Self-esteem, Body image and Negative feeling.
- Social Relationships such as personal relationship, social support and sex.

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### 3.8 Sampling

#### 3.8.1 Sample Size

Yamane's formula, (Oakland, 1953) for calculating sample size for cross- sectional study was used

Using the formula $n = \frac{N}{1+N(e)^2}$

Where n= Sample size

N= Population size = the total number of HIV patients seen in 2014 = 7,479

e= Level of precision (0.05)

Substituting the value into above formula,

$$n = \frac{7479}{1+7479\ (0.05)^2}$$

n= 400

By adding on 5% [20] for non-response, the final sample size for this study was 420 PLWHA.

#### 3.8.2 Sampling Method

Simple random sampling technique was employed for data collection. This sampling technique was used because everybody has an equal chance of participating in the study, hence not biased. The research assistants and I visited the ART Clinic very early in the morning to obtain the number of patients booked for day. Any patient who visited the clinic, fitting the inclusion criteria and accepted to partake in the study was interviewed. An average of forty five patients were interviewed per day over a ten day period.

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### 3.9 Data Collection Tool and procedure- Questionnaire Design and Administration

The World Health Organization Quality of Life-HIV Bref Version (WHO,2012) has 31 items that have been grouped into four domains: physical, psychological, social relationships, and environment. It considers the respondent's perceptions of the overall quality of life within the four broad domains: physical characteristics, psychological factors, social relationships and environmental characteristics. The Physical domain described four facets: pain and discomfort, energy and fatigue, sleep and rest, mobility, dependence on medication, work capacity and daily activities. The Psychological domain described five facets: positive feelings, attentiveness, self-esteem, bodily image and appearance and negative emotional state. The Social relationships domain described three facets: personal associations, social support and sexual activity. The Environment domain described six facets: physical safety and security, home environment, financial means, social care, physical environment and transport. Items were rated on a 5-point Likert interval scale where 1 indicated low negative perceptions, and 5 indicated high positive perceptions. Facet scores are the average of the four items in each facet. This questionnaire (appendix B) was adopted and used for this study.

Raw scores were computed per domain questions set by the standard WHO HIV-QOL BREF questionnaire. Each participants' computed raw scores per domain were compared with a WHO module (Scoring template) to obtain the transformed scores as shown in appendix 4. This instrument had been authenticated and used extensively in HIV studies (Iman *et al.,* 2011; Khumsaen *et al.,* 2012; Degroote *et al.*, 2014). The instrument is found to be reliable and the Crombach's alpha for the various domains are physical health (0.82), psychological (0.81), social relationships (0.68) and environmental health (0.81).

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The Medical Director/Administrator of the Koforidua Regional Hospital was given prior notice on the date of data collection to remind them about the date for the exercise after permission was granted. Participants who could not read and write English were assisted to fill the questionnaire (Appendix C) by an interpreter (principal investigator/ research assistant) who understands English and the two languages commonly spoken in the area, Twi and Bonno. For those who can read and write, questionnaires were self-administered and the researcher/ assistant were available for any enquiries per questionnaires administered. Data collection was done between the May and June, 2016. Averagely, about twenty minutes was used to interview each participant.

The research team met the participants at the ART Clinic on the day of data collection to explain in details the rationale for the study.

### 3.10 Quality Control

1. Research assistants with requisite backgrounds were recruited and trained accordingly.
2. Data collected was checked daily to ensure that all information collected and the questionnaires were properly filled.
3. Questionnaires that were excluded for inconsistencies or incompleteness were kept for discussion in the final report.
4. Double data entry was done to ensure that the right information was entered from questionnaires.

***Training***

A two day training session was structured for the research assistants. The training aimed at equipping them with the needed capacity to perform their task. The training was

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organised by the researcher with a senior faculty from the School of Public Health as the resource person. The content of the training included a discussion of the purpose of the study, ethical issues and questionnaire administration.

***Pre-Test***

The questionnaire (Appendix B) was pre-tested on PLWHA attending ART clinic at the Lekma Hospital in the Ledzokuku Krowor Municipality in the Greater Accra region which has similar characteristics like the selected study area. The questionnaire was administered to twenty (20) PLWHA for pre-testing. The items in the instrument which were difficult to understand by the participants were also noted from the responses and modified for the easy understanding.

### 3.11 Data management

#### 3.11.1 Data Processing

Each questionnaire was coded for example 001,002,003, etc to help prevent double entry and easy verification of any observed anomaly. Data was entered into Epi-info version 7 and transported to STATA software version 13 for analysis.

#### 3.11.2 Statistical Analysis

Means, standard errors, standard deviation, ranges, p-values as well as percentages were used in describing data obtained. A correlational analysis was conducted to define the effect of the relationship between social relationships and QOL of PLWHA. Furthermore a multiple linear regression was done to identify the predictors of QOL of PLWHA. Graphical representation of frequencies, percentages and mean transformed scores, were done using bar charts and tables. ANOVA was conducted to define the level of variability within the

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regression and furthermore determine the level of significance. Significance level was set at $p < 0.05$.

### 3.12 Ethical Considerations

***Ethical Approval***

The ethical approval was given by the Ghana Health Service Ethics Review Committee before embarking on the study. The approval letter can be seen in appendix E.

***Study Area Approval***

Permission was sought from the Eastern Regional Health Directorate and the management of the Eastern regional Hospital before the study was carried out.

***Voluntary Participation and Informed Consent***

Informed consent (written) of the participants was sought after explaining the purpose of the study to them. This is shown in appendix 1. Each participant was given the information sheet and informed consent to sign for voluntary participation in the study. Participants were given opportunity to ask questions or seek clarification after reading the information sheet. Additionally, they were made aware of the right to pull out from the study at any point without any consequences on their care in the hospital.

***Privacy and Confidentiality***

Anonymity was ensured by administering questionnaire without identity of the participants such as names. Data was transferred to the principal investigator's personal computer, which was protected with a pass word in order to limit access of the data to a third party aside the research team. Consent form and answered questionnaires were kept under lock and key.

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Moreso, information was reported in such a way that it could not be traced to any particular participant.

Participants were assured that their names and identity were needed in the study. However, all information provided would be coded and treated as strictly confidential. Furthermore, participants were given enough privacy when answering the questionnaire during the data collection session. The participants were treated in the same way, regardless of age, tribe, religious affiliation, economic status and beliefs. The concerns of participants and agreements that were made with them prior to administration of the questionnaires were treated with respect.

***Risks and Benefits***

There were no associated risks with answering the questionnaire. However, any unforeseen risks for participating in the study were addressed accordingly. For instance, participants' apprehension during the session due to fear of the unknown. The respondents were guaranteed that the data collected was solely for research purposes and would not be used to penalize them. In addition, participants who experience emotional instability in the course of answering the questionnaire were handed over to a counselor to calm him/her. Participants were informed that there were no direct benefits to them by participating in the study. However, the indirect benefits of the study included generating data that could be used to provide policy guidelines that would help improve services offered to PLWHA. Participants were assured that research questions were phrased without any potential harm. Participants were also assured that data collected would not be used to harm their job or career in the future.

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***Data Storage***

Data collected was stored under lock and key and will be destroyed after a minimum of five years. A copy of the data collected was kept at the NACP as per their research requirements.

***Declaration of conflict of interest / funding***

The research was self-financed. As the principal investigator of the study and a clinician, the researcher worked closely with two research assistants. However the researcher did not have any other personal interest in this study except for its academic and public health importance.

***Incentives/Compensation***

People who participated in the study were appreciated with a snack as an incentive for taking some time off their busy schedule to participate in the study. There was however no compensation for partaking in this study.

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# CHAPTER FOUR

# RESULTS

## 4.1 Socio-Demographic Characteristic

About 432 PLWHA were approached but 12 refused to participate in the study. Overall, 420 respondents consisting of 270 (64.3%) females and 150 (35.7%) participated in this study. Their ages ranged from 18 to 76 years with a mean of 45.5±12.2. Most of the respondents engaged in jobs such farming, petty trading and artisanship. Table 4.1 represents the demographic characteristics of the participants.

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**Table 4.1: Socio-demographic characteristics of respondents (N=420)**

| | Frequency (n) | Percentage (%) | Min | Max | Mean±SD |
|---|---|---|---|---|---|
| Age | 420 | 100 | 18 | 76 | ±12.21 |
| Sex | | | | | |
| Male | 150 | 35.7 | | | |
| Female | 270 | 64.3 | | | |
| Marital Status | | | | | |
| Married | 281 | 66.9 | | | |
| Single | 139 | 33.1 | | | |
| Educational Status | | | | | |
| No education | 61 | 14.5 | | | |
| Primary | 53 | 12.6 | | | |
| Middle School | 161 | 38.3 | | | |
| JSS/JHS | 39 | 9.3 | | | |
| Secondary Level-SHS | 56 | 13.3 | | | |
| Secondary Level-Technical | 9 | 2.1 | | | |
| Secondary Level-Vocational | 16 | 3.8 | | | |
| Tertiary- Graduate/ Post Graduate | 23 | 5.5 | | | |
| Tertiary Cert/ Diploma/ Post Diploma | 2 | 0.5 | | | |
| Employment Status | | | | | |
| Employed | 224 | 53.3 | | | |
| Unemployed | 196 | 46.7 | | | |
| Religious Denomination | | | | | |
| Christian | 296 | 70.5 | | | |
| Muslim | 106 | 25.2 | | | |
| Traditionalist | 17 | 4.0 | | | |
| Other | 1 | 0.2 | | | |

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### 4.2 Transformed Domain Mean Scores

Figure 3 shows the transformed mean scores for the various domains. These were highest in physical characteristics (47.82±17.66) and environmental factors (47.08± 18.75). This was followed by social relations (41.71±20.22) with psychological factors exhibiting the least mean transformed score (39.58±19.30). The overall transformed mean score of the QOL obtained was 44.05± 18.98. This is a low score according to the WHOQOL-HIV score grading, which has four categories; very poor (0-25), poor (26-50), good (51-75) and very good (76-100).

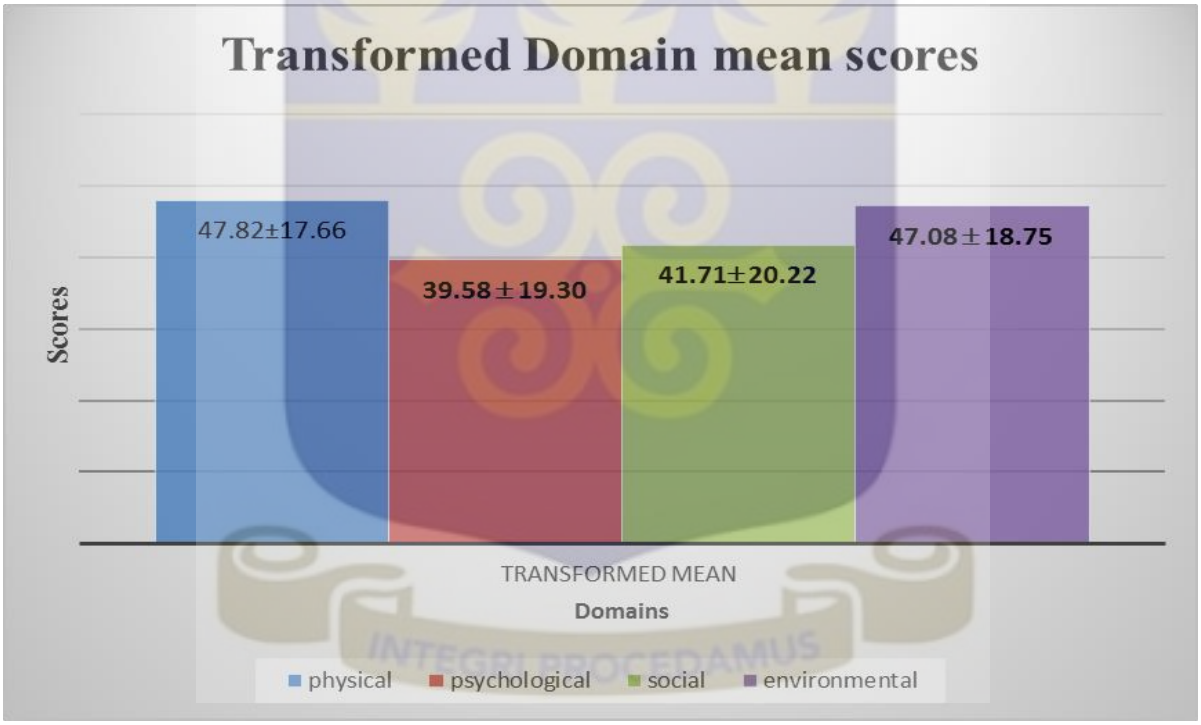


**Figure 3: Transformed mean domain scores**

### 4.3 Transformed Score Ranges of QOL for the various Domains

The transformed score ranges of QOL of the various domains are illustrated in figures 4a, 4b, 4c and 4d. Most respondents scored low in all four domains as shown in figure 3 above.

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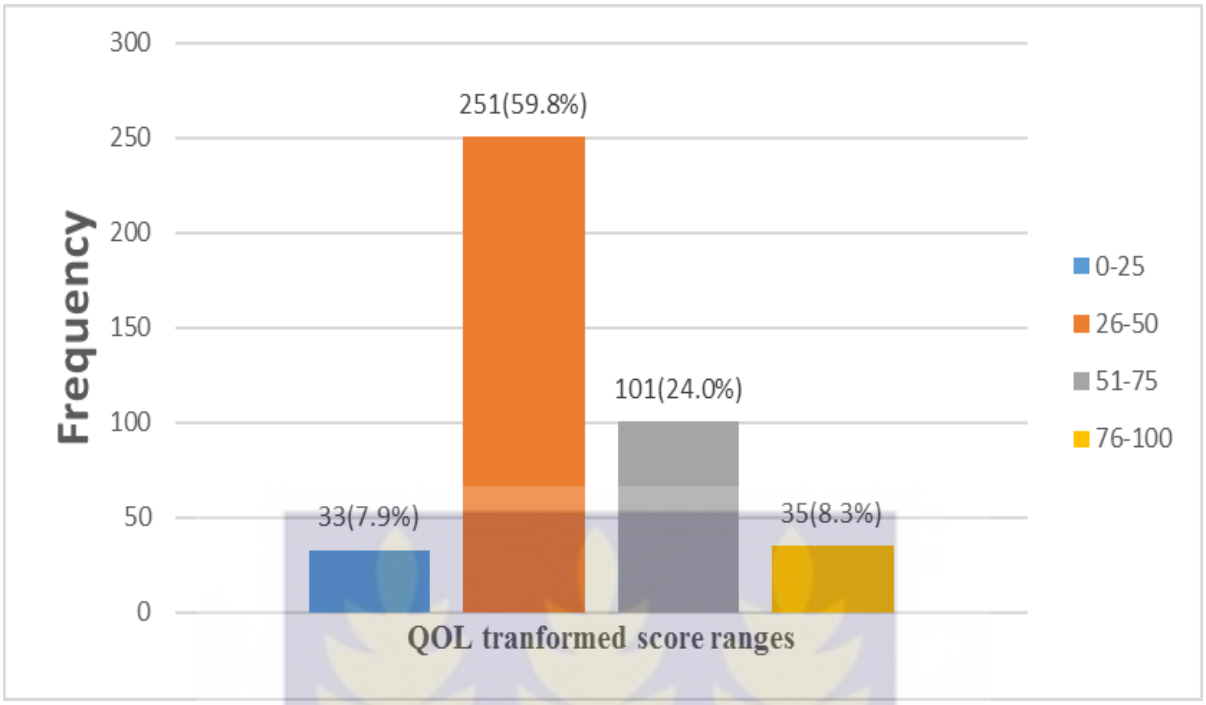


**Figure 4a: Transformed score ranges for physical characteristics**

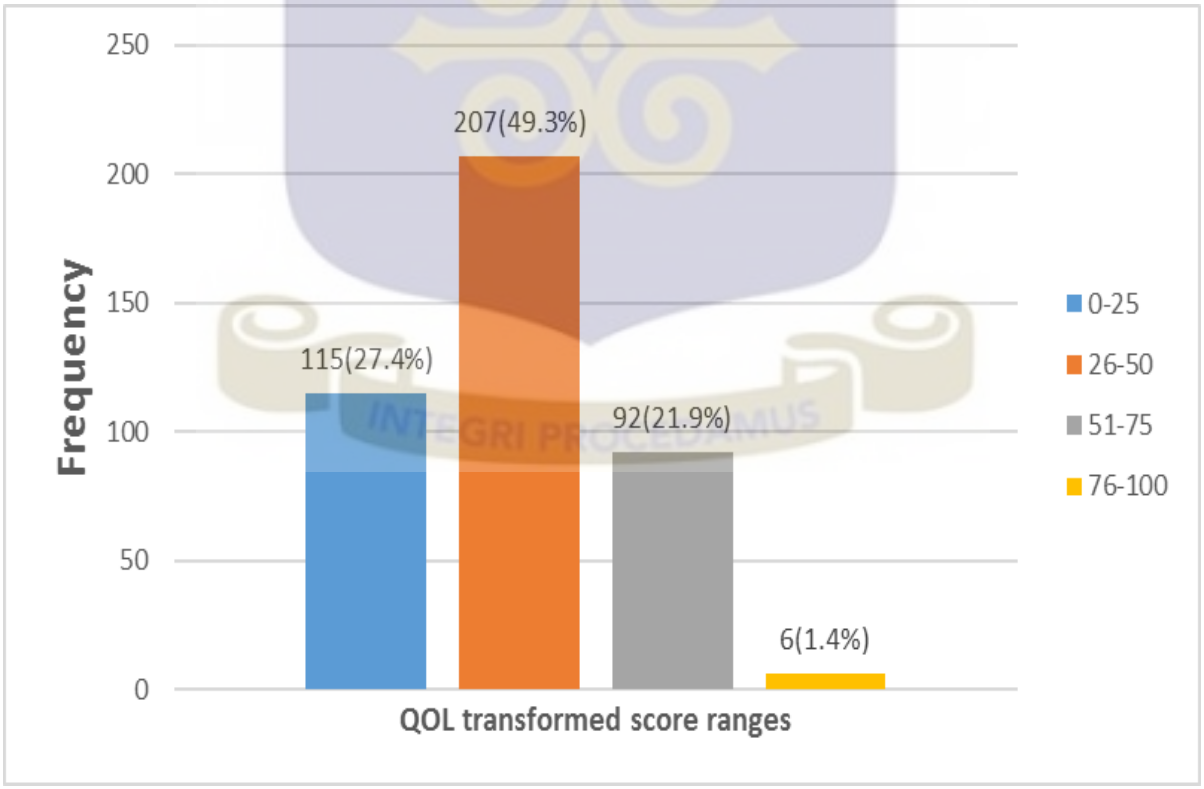


**Figure 4b: Transformed score ranges for psychological factors**

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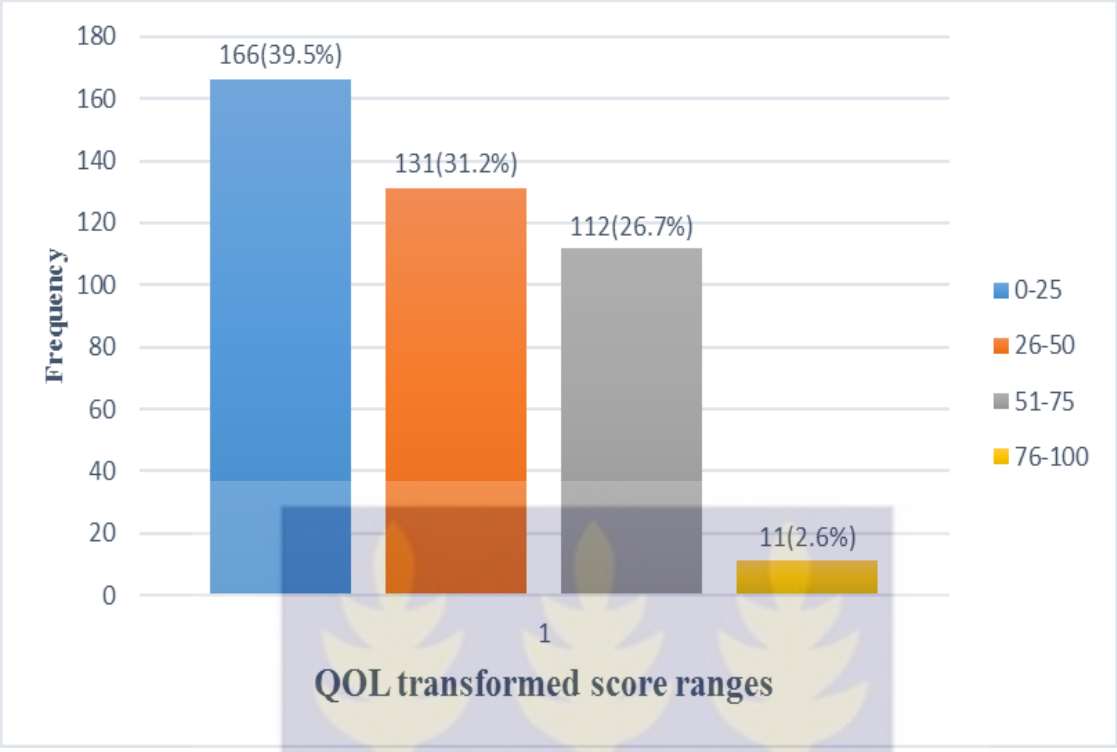


**Figure 4c: Transformed score ranges for social relationships**

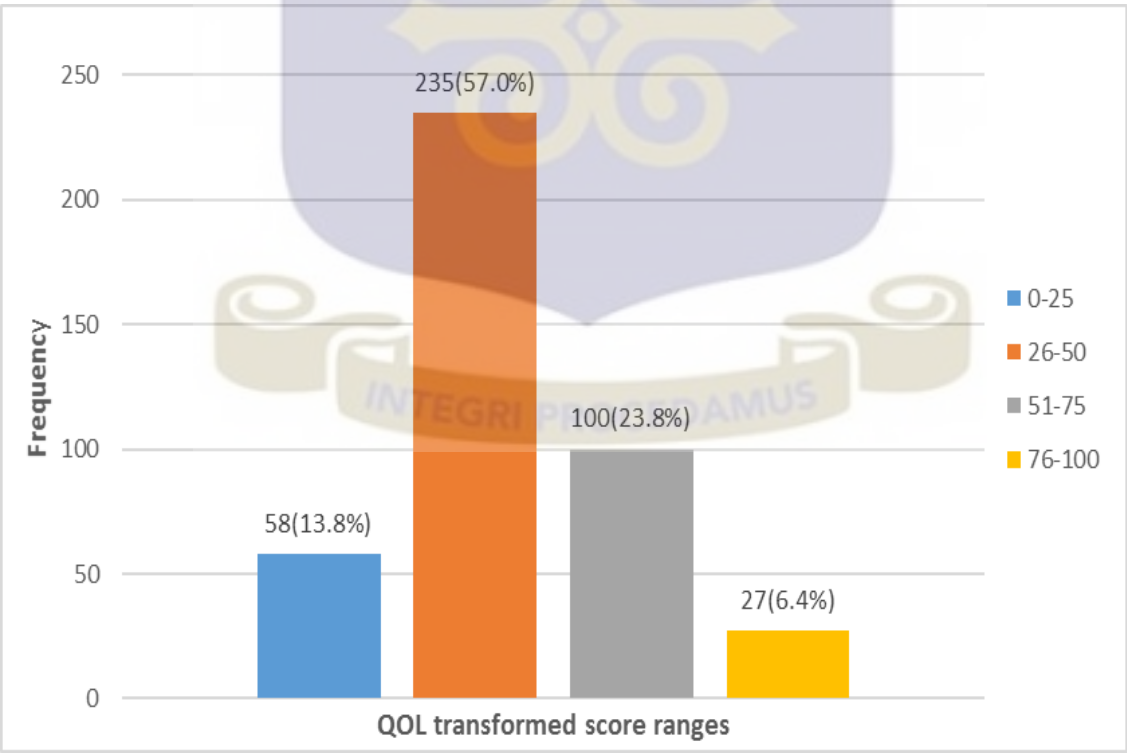


**Figure 4d: Transformed score ranges for environmental characteristics**

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### 4.4 Physical Characteristics that Affect the QOL

About 2 out of every 5 respondent (40.7%) stated that physical pain had little effect on them whilst 17.4% asserted that were very much affected. The study revealed that about 26.0% of respondent depended on medication to be able to go about their daily activities. Most of the respondent 41.7% were dissatisfied with their sleep and to a large extent their capacity to work too. This is represented in figures 5a, 5b and 5c.

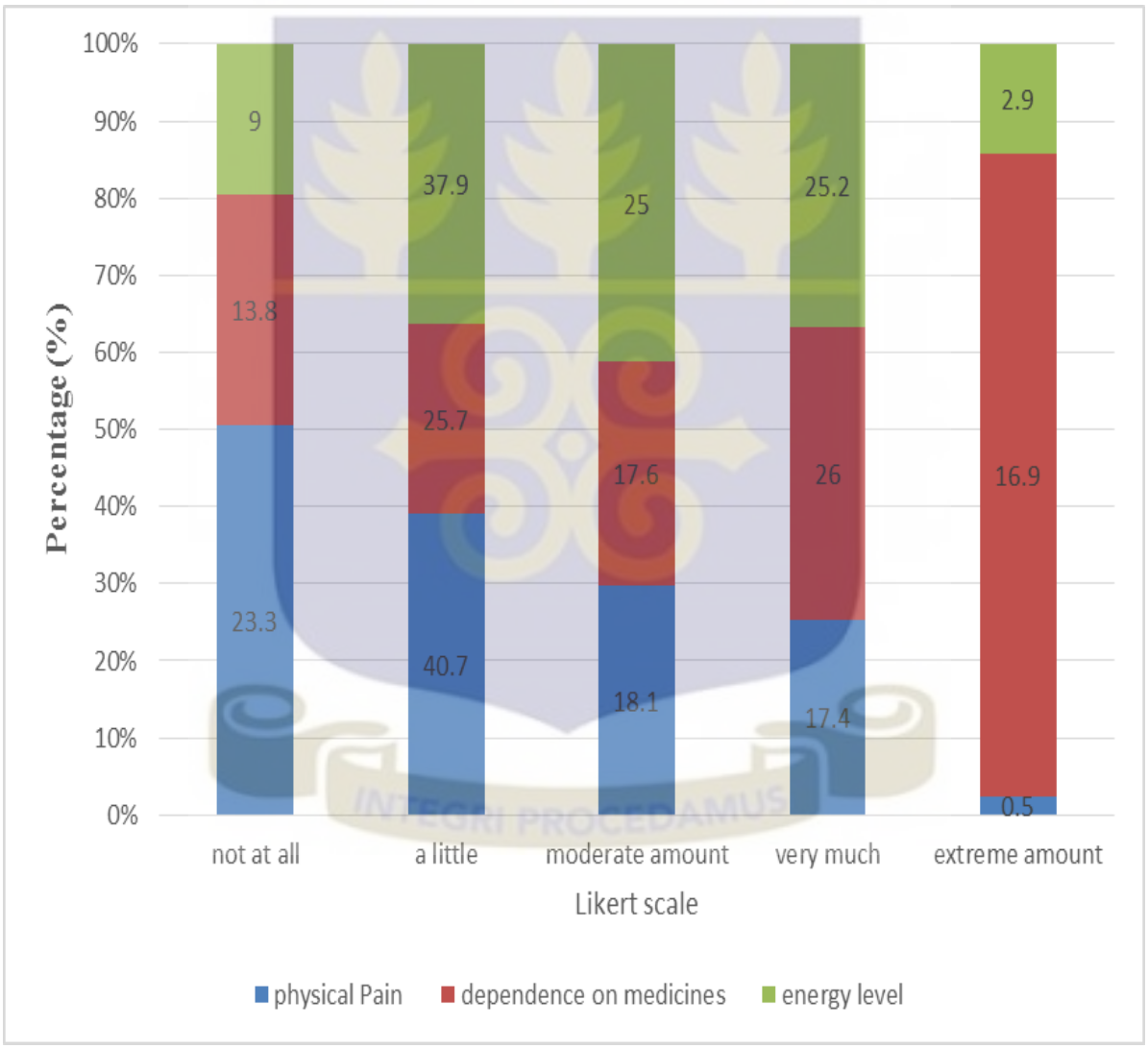


**Figure 5a: Effects of physical pain, dependence on medicines and energy level per physical health**

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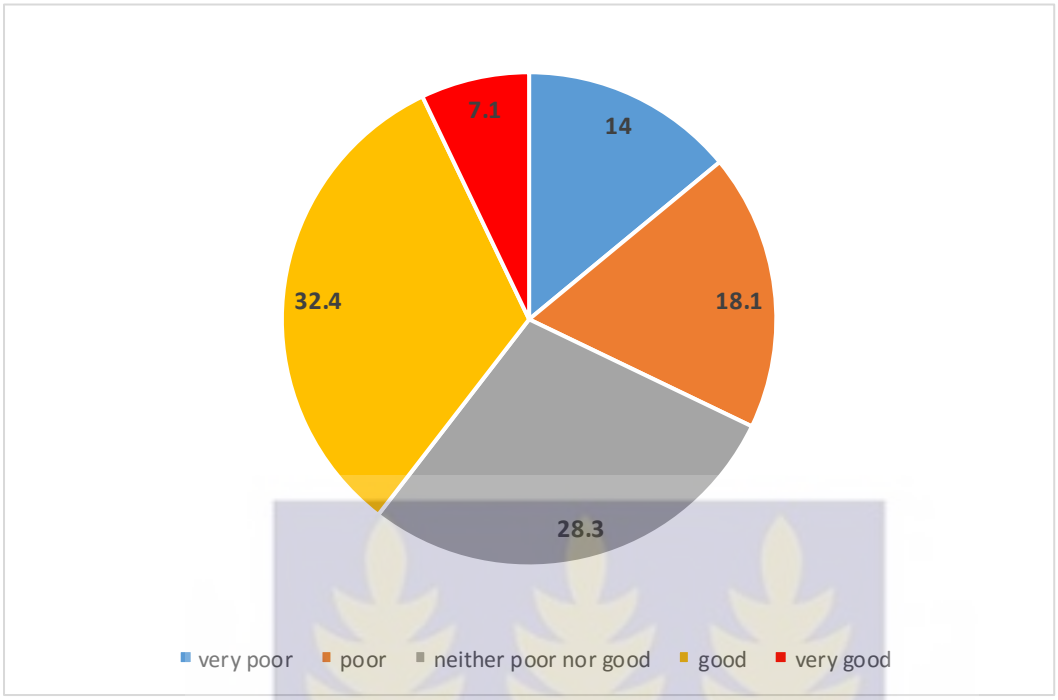


**Figure 5b: Effect of mobility on physical health**


**Figure 5c: Effects of sleep, daily activities and work capacity per physical health**

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### 4.5 Psychological Factors that Affect the QOL

A number of the respondents (34.8%) remarked that they were a little satisfied with themselves whilst just a few (1.4%) were extremely satisfied with their life. Moreover, 41.7% felt that life was a little bit meaningful whereas 9.8% felt life was just meaningless. Averagely, respondents had negative feelings about themselves such as anxiety despair, bad mood and depression. This is illustrated in figures 6a and 6b.


**Figure 6a: Effects of ability to enjoy life, meaningfulness of life, ability to concentrate, acceptance of bodily appearance and negative feelings per psychological health.**

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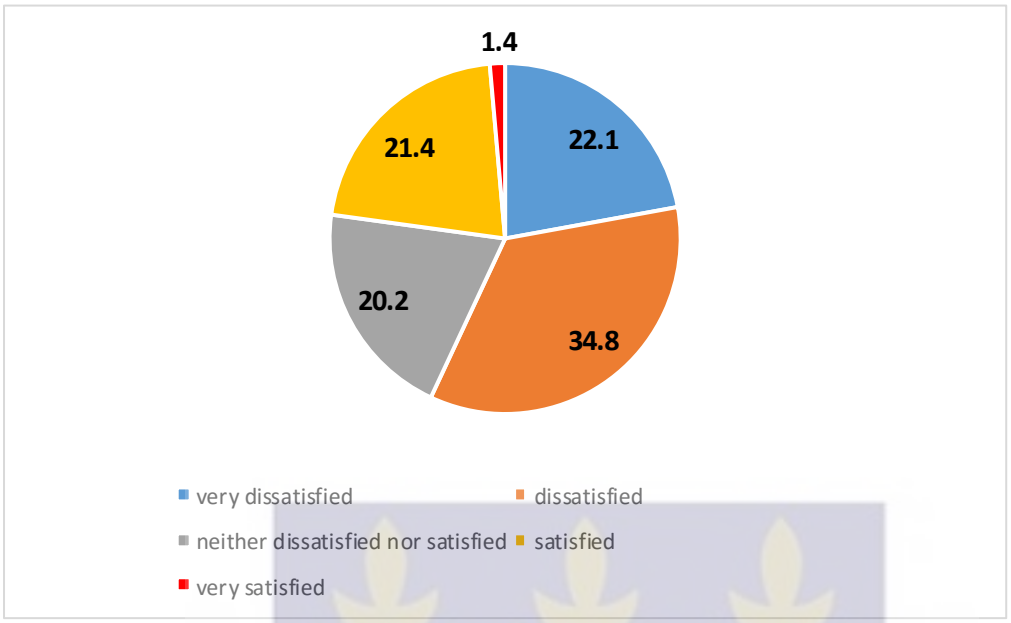


**Figure 6b: Effects of self-satisfaction on psychological health**

### 4.6 Environmental Characteristics that Affect the QOL

More than a half of the respondents (55.7%) did not have enough money to take care of their daily needs. One third of the respondents mentioned that information was moderately available to them. Though about 33% felt very safe in their environment, only 17% of the respondents asserted that they lived in a healthy environment. Only about 21% were satisfied with the condition of their living place whilst a couple of them were dissatisfied. This is shown in figures 7a and 7b.

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**Figure 7a: Effect of financial resources, availability of information, opportunity for leisure, safety and security and healthy environment on environmental domain.**

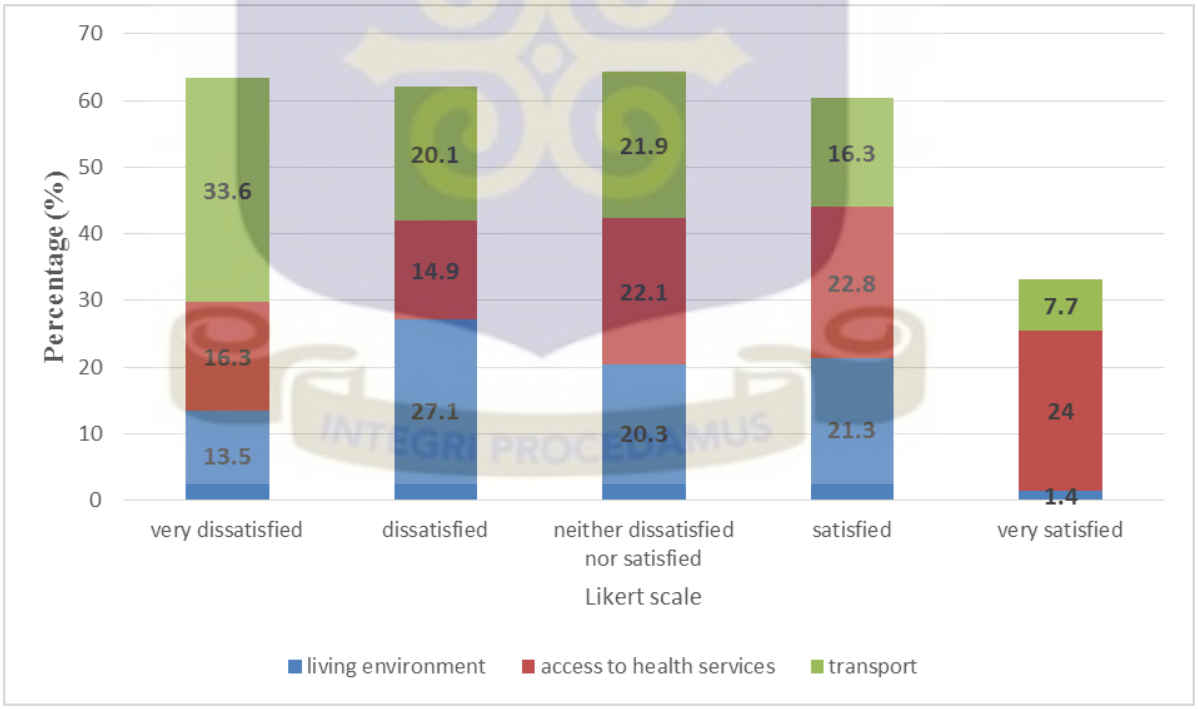


**Figure 7b: Effects of living environment, access to health and transport per environmental domain.**

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### 4.7 Effect of Social Relationships on QOL

Overall, the correlational analysis of the effect of social relationships on QOL of PLWHA studied revealed a statistical significant ($p<0.01$) association as seen in table 4.2. Statistically significant correlations were found among all three items; personal relationships, sex life as well as emotional support.

**Table 4.2: Correlation between social relationships and QOL.**

| Domain 3: Social Relationships | Pearson's Correlation R | *p*-value |
|---|---|---|
| Personal Relationships | 0.469** | 0.000 |
| Sex Life | 0.164** | 0.001 |
| Emotional Support | 0.308** | 0.000 |

**. Correlation is significant at the 0.01 level (2-tailed).

### 4.8 Predictors of QOL

A summary of the multiple linear regression of socio-demographic predictors of overall transformed with regard to domains 1 to 4 are represented in Table 4.3a and 4.3b below. The overall positive predictor of QOL was highest educational level ($p<0.05$). However, with regards to the physical domain, the positive predictors of QOL discovered included sex, marital status, highest educational level, religious denomination and employment status. Moreover, positive predictors of QOL obtained per the social relationships included only sex and highest educational level. There was a statistical significance only for highest level of education attained ($p=0.000$).

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**Table 4.3a: Predictors of Quality of Life Domains (N=420)**

| Predictors | Slope | Confidence Interval | Sig. |
|---|---|---|---|
| | Domain 1: Physical Health | | |
| Constant | 15.499 | 12.172-18.826 | 0.000 |
| Sex | 0.778 | -0.153-1.708 | 0.101 |
| Age | -0.004 | -0.043-0.034 | 0.826 |
| Marital status | 0.497 | -0.480-1.473 | 0.318 |
| Religious denomination | 0.052 | -0.045-0.148 | 0.291 |
| Highest educational level attained | 0.874 | 0.621-1.127 | 0.000 |
| Employment status | 0.082 | -0.839-1.003 | 0.861 |
| | Domain 2: Psychological Factors | | |
| Constant | 11.365 | 8.304-14.425 | 0.000 |
| Sex | 0.134 | -0.722-0.989 | 0.759 |
| Age | 0.009 | -0.026-0.045 | 0.599 |
| Marital status | 0.414 | -0.485-1.312 | 0.366 |
| Religious denomination | -0.024 | -0.112-0.065 | 0.601 |
| Highest educational level attained | 0.671 | 0.439-0.904 | 0.000 |
| Employment status | 0.245 | -0.602-1.092 | 0.570 |
| | Domain 3: Social Relationships | | |
| Constant | 6.380 | 4.636-8.125 | 0.000 |
| Sex | 0.738 | 0.250-1.225 | 0.003 |
| Age | -0.002 | -0.023-0.018 | 0.817 |
| Marital status | -0.213 | -0.725-0.299 | 0.413 |

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| | | | |
|---|---|---|---|
| Religious denomination | -0.012 | -0.063-0.038 | 0.636 |
| Highest educational level attained | 0.270 | 0.138-0.403 | 0.000 |
| Employment status | -0.131 | -0.614-0.352 | 0.593 |
| Domain 4: Environmental Factors | | | |
| Constant | 18.235 | 14.223-22.247 | 0.000 |
| Sex | -0.492 | -1.614-0.630 | 0.389 |
| Age | 0.029 | -0.018-0.075 | 0.226 |
| Marital status | 0.536 | -0.641-1.714 | 0.371 |
| Religious denomination | -0.025 | -0.141-0.091 | 0.675 |
| Highest educational level attained | 1.252 | 0.948-1.557 | 0.000 |
| Employment status | -1.170 | -2.281--0.060 | 0.039 |

There was a strong significant association between the domains and the QOL; Domain 1: ($F=10.3$, $p<0.05$), Domain 2: ($F=6.3$, $p<0.05$), Domain 3: ($F=4.5$, $p<0.05$) and Domain 4: ($F=12.3$, $p<0.05$). The co-efficient of determination obtained for QOL per physical health was 0.13, implying that physical health was responsible for 13% of the variation in QOL. However, domains such as psychological factors, social relationships as well as environmental factors contributed an 8%, 6% and 15% variation in QOL respectively. Table 4.3b presents the ANOVA results.

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**Table 4.3b: ANOVA**

| Model | Sum of Squares | Df | Mean Square | F | *p*-value | R- Square | Standard Error |
|---|---|---|---|---|---|---|---|
| Domain 1: Physical Health | | | | | | 0.13 | 4.610 |
| Regression | 1314.182 | 6 | 219.03 | 10.31 | 0.00[b] | | |
| Residual | 8778.426 | 413 | 21.26 | | | | |
| Total | 10092.598 | 419 | | | | | |
| Domain 2: Psychological Factors | | | | | | 0.08 | 4.241 |
| Regression | 681.448 | 6 | 113.57 | 6.31 | 0.00[b] | | |
| Residual | 7428.692 | 413 | 17.98 | | | | |
| Total | 8110.140 | 419 | | | | | |
| Domain 3: Social Relationships | | | | | | 0.06 | 2.417 |
| Regression | 158.862 | 6 | 26.48 | 4.53 | 0.00[b] | | |
| Residual | 2412.700 | 413 | 5.84 | | | | |
| Total | 2571.562 | 419 | | | | | |
| Domain 4: Environmental Factors | | | | | | 0.15 | 5.560 |
| Regression | 2285.339 | 6 | 380.89 | 12.32 | 0.00[b] | | |
| Residual | 12765.468 | 413 | 30.91 | | | | |
| Total | 15050.807 | 419 | | | | | |

*[b] shows statistical significance

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# CHAPTER FIVE

# DISCUSSION

This purpose of this study was to assess the quality of life (QOL) among people living with HIV/AIDS (PLWHA) receiving ART from the Eastern Regional Hospital, Koforidua. About 420 participants took part in this study with an average age of 45 years. About 35.7% of the respondents were males whilst 64.3% were females. The disproportionate gender prevalence of HIV may be attributed to poor capability of females in Koforidua to negotiate for safer sex with their male partners. Moreover, Females are more at risk of infection due to their anatomy and the fact that they are more receptive during sexual intercourse (Wilson, 2014). In this present study 66.9% participants were married as compared to 47.7% in a study by Ndaimani *et al*., (2015). This may imply that there is good spousal support in HIV & AIDS management and most married people are willing to enter the HIV treatment cascade.

Four domains were used to assess the QOL of the respondents. These were physical characteristics, psychological factors, social relationships as well as environmental characteristics. The physical domain assessed the presence of pain and discomfort, the dependence on medication, energy and fatigue, mobility, sleep and rest, activities of daily living as well as perceived working capacity, which indicated a better QOL. The psychological health domain, measured how much one enjoyed life, to the extent of life being meaningful, ability to concentrate, acceptance of bodily appearance, self-satisfaction as well as negative feelings. Furthermore, the environmental factors measured the respondent's freedom, quality of home environment, financial status, quality and accessibility of health and social care. The social relationships dealt with aspects such as social network, family and friends sexual satisfaction. Most of the respondents were middle school leavers so were at least able to understand and possibly make use of HIV-related

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public health education campaigns. Consequently, higher levels of knowledge may transcend to positive living, which may improve some quality of life domains.

Transformed WHOQOL BREF scores range from 0 to 100. This study obtained mean transformed QOL of 47.82±17.66 for the physical domain, 39.58±19.30 for the psychological health domain, 41.71±20.22 for the social relationships domain and 47.08±18.75 for the environmental domain. The values are relatively lower than that obtained by Ndaimani *et al.,* (2015) who obtained mean domain scores of 67.2 for physical, 65.8 for psychological, 68.3 for social and 55.8 for environmental. However this study's mean domains were in consonance with findings by Xiaoyan and Sato (2011) who obtained mean domain scores of 46.4 for physical, 47.4 for psychological, 43.4 for social relationship and 47.6 for environmental. The highest mean transformed score found in physical health reflected adequate energy, good capacity to move around, capacity to work, enough sleep, reduced pain as well as ability to perform daily activities. Furthermore, the environmental factors measured also indicated adequate safety, sufficient money, and easy access to transport, information and health services as well as the presence of a healthy physical environment.

Conversely, the lowest mean transformed score obtained from psychological factors (39.58±19.30) indicated less positive but more negative feelings about life not being meaningful, enjoyable, bad perception about body image, poor ability to think and concentrate poor self-satisfaction and poor self-esteem. The discrepancy may be linked to poor social support through peer social groups as well as inadequate presence of local NGOs which promote social support. However, use of self-reports may perhaps have led to under-reporting of QOL. Lower scores on the psychological factors appeared to be attributable to

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stigmatization, fear, criticisms low self- esteems and discriminations if their indigenes knew about their HIV positive status.

For physical factors, majority of the respondents were less affected by pain. Even though several studies indicate that pain is prevalent in PLWHA in all stages of the infection (Nkhoma *et al.*, 2015; Rosenfeld *et al.*, 1996), the reverse was obtained in this study. This is because PLWHA in Ghana have good access to healthcare service and free supply of anti-retroviral therapy. Nearly half of the respondents (41.7%) were not satisfied with their sleep and this is parallel to findings by Allavena *et al.*, 2015. In their study, depression, stigmatization, unemployment, and living single were the factors that were associated significantly with sleep disturbances. With regards to work capacity, almost half of the respondents had a poor work capacity. This can be due to the effects of the virus on anaerobic metabolism, myalgia, and cachexia as noted by Mbada *et al*., 2013.

Most respondents found life to be fairly meaningful, somewhat enjoyed life, a little able to concentrate, relatively accepted their bodily appearance, and less self-satisfied. Even though these psychological factors seemed as low indicators of the psychological domain, they may be attributed to issues of stigmatization and discrimination faced by PLWHA, which leads to depression and sometimes suicidal tendencies as reported in studies conducted by Li et al. (2009).

Environmental characteristics such as safety, financial resources, living environment and access to healthcare affected the QOL of PLWHA. Furthermore, some of the respondent (30%) felt just a little safe in their environment. This is synonymous with a cross sectional study in Brazil, where PLWHA reported to have suffered various forms of violence (Cecco *et al.*, 2014). These forms of violence negatively affects the physical and psychological

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health exposing them to discrimination, decrease accessibility to financial and social resources, and conflicts in intimate relationships increasing suicide risk (Abramsky *et al.*, 2011). More than half of the respondents did not have enough money to for their daily needs. This was due to the high unemployment rate and issues with discrimination and stigmatization. This finding corresponds with that of a study by Degroote *et al.*, (2014) which found a linear relationship between financial status and QOL. Nearly half of the respondents were satisfied with their accessibility to health care services, which may be due to the love and affection showed by care givers in the facilities. But this was in contrast to a study done in Iran, by Rahmati-Najarkolaei *et al.*, (2010), where PLWHA face various forms of discrimination and stigmatization by their health care providers.

The correlational analysis of the effect of social relationships on QOL of PLWHA studied revealed a statistically significant association ($p<0.001$). Overall, there was a positive correlation between social relationships and QOL. A strong correlation was obtained between personal relationships and QOL ($r=0.469$, $p<0.001$). However, a moderate correlation was found between sex life and QOL ($r=0.164$, $p=0.001$) as well as emotional support ($r=0.308$, $p<0.001$) and QOL.

Stigma has been noted to profoundly limit the ability of PLWHA to seek and maintain social resources in most settings (Takada *et al.*, 2014). Though disclosure of status is essential for PLWHA to receive social support, fear of becoming stigmatized prevents them from disclosing their status. The more their shame and guilt, the more likely they avoid disclosure and interactions with family and friends (Chandra, Deepthivarma, Manjula *et al.*, 2013). Moreover since most of the respondents were depressed, lonely and felt isolated there was the need for emotional support from family and friends as well as HIV support groups to

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help them carry out their daily activities freely. Since sex is a basic need, disclosure of their status may cause partners to deny them of their sexual needs. In addition, at some stage in the disease progression, lack of energy and muscle wasting and leading to disfigurement deters PLWHA from enjoying their sexual needs.

The regression analysis revealed that highest educational level ($p<0.05$) was the only overall positive predictor of the QOL of PLWHA. People with a higher educational level are presumed to have a better understanding of disease condition which may further transcend to a better compliance with treatment, thus a better QOL. However, there was a negative linear relationship between age and QOL with respect to both social relationships and physical health. This may be attributable to the fact that as one ages, energy levels, sleep, work capacity tend to decrease. Furthermore, factors such as marital status and being employed positively predicted QOL per psychological factors. In this study, the percentage of both the employed and unemployed were almost the same. The negative relationship between unemployment and QOL has been mentioned in some studies (Magafu *et al.*, 2009; Pereira & Canavarro, 2011). There was a statistical significance ($p<0.05$) only for level of education. For social relationships, employment status negatively predicted the QOL. Stigmatization, fear and discrimination are known to reduce PLWHA's chances of getting a job. With the environmental factors, age, marital status and highest educational level attained positively predicted the QOL. Nonetheless factors such as sex, religious denomination and employment status negatively predicted the QOL.

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# CHAPTER SIX

# CONCLUSION AND RECOMMENDATIONS

## 6.1 Conclusions

The QOL scores were poor in all domains: physical (47.82±17.66), psychological (39.82±19.30), social (41.71±20.22) and environmental (47.71±18.75). Hence the overall QOL of PLWHA receiving ART from the Eastern Regional Hospital, Koforidua was poor (44.05 ± 18.98). Physical characteristics that affected the QOL of PLWHA were the availability of medicines, energy, mobility, sleep as well as capacity to work. Moreover, the identified psychological factors that affected the QOL of included enjoying life, meaningfulness of life, ability to concentrate, acceptance of bodily appearance, self-satisfaction and negative feelings such as bad mood, despair, anxiety and depression. There was a positive linear correlation between social relationships (sex life, emotional support and personal relationships) and QOL. Environmental characteristics such as safety, financial resources, living environment and access to healthcare affected the QOL of PLWHA.

Lastly, the positive and negative predictors of QOL were identified. Physical health was positively predicted by sex, marital status, religious denomination, highest educational level and employment status. However, age was identified as a negative predictor of QOL on the physical health domain. Moreover, psychological health was positively predicted by sex, age, marital status, highest educational level and employment status. Sex and highest educational level were found to be the only positive predictors of QOL on the social relationships domain. For the environmental domain, factors such as age, marital status and educational level positively predicted the QOL. Overall, only the highest educational level of PLWHA positively predicted all the domains of the QOL.

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## 6.2 Recommendations

1. Quality of health should be incorporated by the Ghana Health Service and Ministry of Health into the clinical assessment of PLWHA to improve clinical outcomes.
2. A revolving interest-free loan should be made readily accessible by the Ministry of finance as well as the Ministry of Gender and Social Protection to all PLWHA through the support groups which can also double as a Cooperative Society for PLWHA. This is expected to empower and establish them as well as serve as a means of livelihood.
3. Government should continue to make antiretroviral drugs accessible to PLWHA at no cost to enhance higher quality of life.
4. The Ministry of health in conjunction with the Ministry of Education should make higher education more accessible to PLWHA as it has a direct correlation with QOL.
5. Very creative approaches by the media should be used to engage PLWHA to help improve their psychological needs.
6. Continuous community sensitization by the Ministry of Education and Ministry of Health should be done to improve the environmental features that affect PLWHA.
7. Future studies carried out by researchers in health institutions should employ a longitudinal study that focuses on the QOL of PLWHA in all regions in Ghana.

## 6.3 Limitations

1. There were a limited financial resource as the project was self -financed.
2. Limited time for data collection.
3. A cross sectional was conducted and this temporarily measures cause and effect, response at a given time and this can change if measured on another day.
4. The study may probably be underpowered due to the study design used.
5. This study did not consider those who were not on treatment.

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# APPENDICES

**Appendix A**: **Consent Form**

Title: Assessment of the quality of life of people living with HIV/AIDS receiving anti-retroviral therapy in the New Juaben Municipality.

Principal Investigator: Peter Kwabena Fosu

Introduction

School of Public Health, University of Ghana, conducting a research in this community to assess the health related quality of life of PLWHA receiving ART from this hospital. I would like you to participate in this study. Kindly read the consent before deciding to whether or not to be part of the study.

Description of Procedure

You are being invited to participate because you have been diagnosed of HIV receiving treatment in this hospital and you are aged 18years and above.

If you agree to participate, you would willingly sign or thumbprint the consent form. The research staff will ask you questions about yourself and your health.

Risks and Benefit

There is no risk in participating in this survey. You may feel a little uncomfortable with some of the questions and also take a little more of your time. However, well trained field assistants will carry out the interview in order to minimize time spent or any other discomfort.

There is no direct benefit. However, information obtained will be used to provide some recommendations to improve the quality of life of people living with HIV/AIDS in Ghana.

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Participant Rights

Your participation in the study is voluntary and you may choose to skip any of the questions you feel uncomfortable with or end your participation at any time. If you choose not to participate, it would not affect you or your therapy in any way.

Confidentiality

Participants would be given unique codes for identification. These codes will be written on the questionnaires and used during data entry. Records identifying participants will be kept confidential to the extent permitted by laws and regulations and would not be made publicly available.

Subject's Permission

The informed consent has been read to me and I understand all the conditions of this project. All my questions have been answered and so I agree to take part in the study

Name of participant……

Signature/thumbprint……

Signature of witness ……

Date ……..

Researcher's signature……. Date……

Contacts for additional information

If you have any further questions regarding clarification of the study, you can contact

Peter Kwabena Fosu on 020 873 9778/ 020 205 0051

Hannah Frimpong on 050 704 1223---GHS-ERC Administrator.

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**Appendix B: Questionnaire on assessment of the quality of life (QOL) of people living with HIV/AIDS (PLWHA) receiving antiretroviral therapy in the New Juabeng Municipality**

I am a student reading master of Public Health from the above school conducting a research into the QOL of PLWHA receiving ART in this hospital. This questionnaire is to gather information on your demographics and other characteristics that influence your QOL. Any information collected would be treated as confidential and I would not take much of your time.

Please will you like to take part in this interview? 1. Yes / 2. ☐ No

Interviewer ☐☐ Code:

Respondent code

☐☐☐

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| Ques No. | Questions | Response |
|---|---|---|
| **Section 1** | **Socio-demographic Information** | |
| | Sex<br>1. Male<br>2. Female | \|___\| |
| 1. | What is your age as at your last birthday? (in years) | \|___\|___\| |
| 2. | What is your marital status?<br>1. Married<br>2. Single | \|___\| |
| 3. | What is your religious denomination?<br>1. Christian<br>2. Muslim<br>3. Traditionalist<br>96. Other (specify)…….... | \|___\|___\| |
| 4. | What is your highest educational level attained?<br>1. No education<br>2. Primary<br>3. Middle School<br>4. JSS/JHS<br>5. Secondary level- SHS<br>6. Secondary Level- Technical<br>7. Secondary Level- Vocational<br>8. Tertiary- Graduate / Post Graduate<br>9. Tertiary- Cert/ Diploma/ Post Diploma<br>10. Refuse to Answer | \|___\|___\| |
| **5.** | What is your employment status?<br>1. Unemployed<br>**2.** Employed | \|___\| |
| **6.** | Occupation<br>Please Specify…… | |
| **7.** | If unemployed, what is the reason for not being employed?<br>1. Student<br>2. Housewife<br>3. Retired<br>4. Unable due to my current illness<br>5. No job available<br>6. Other (Specify): …… | \|___\|___\| |

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**Section 2**: **Quality of life assessment**

This assessment asks how you feel about your quality of life, health, or other areas of your life in the last two weeks. **Circle the number on the scale for each question that gives the best answer for you.**

***General Health***

| | | Very poor | Poor | Neither good nor poor | Good | Very good |
|---|---|---|---|---|---|---|
| 8. | Generally, how would you rate your quality of life | 1 | 2 | 3 | 4 | 5 |

| | | Very Dissatisfied | Dissatisfied | Neither dissatisfied nor satisfied | Satisfied | Very Satisfied |
|---|---|---|---|---|---|---|
| 9. | How satisfied are you with your health? | 1 | 2 | 3 | 4 | 5 |

***Write out the appropriate code in the space provided.***

| | | |
|---|---|---|
| 10. | Why do you think you have this quality of health?<br>1. I don't have money<br>2. My current illness<br>3. Cannot access healthcare services<br>4. Cannot afford medication<br>96. Others (Specify): …….. | \|___\|___\| |

***Physical health/functioning***

| | | Not at all | A little | A moderate amount | Very Much | An extreme amount |
|---|---|---|---|---|---|---|
| 11. | Does physical pain prevents you from doing what you need to do? | 1 | 2 | 3 | 4 | 5 |
| 12. | How much are you bothered by any physical problems related to your infection? | 1 | 2 | 3 | 4 | 5 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 13. | How much do you need medicines or any medical treatment to be able to go about your duties in your daily life? | 1 | 2 | 3 | 4 | 5 |
| 14. | Do you have enough energy for everyday life? | 1 | 2 | 3 | 4 | 5 |
| 15. | Are you able to accept your bodily appearance? | 1 | 2 | 3 | 4 | 5 |
| 16. | Have you enough money to meet your needs? | 1 | 2 | 3 | 4 | 5 |
| 17. | To what extent do you feel accepted by the people you know? | 1 | 2 | 3 | 4 | 5 |
| 18. | How available to you is the information that you need in your day-to-day life? | 1 | 2 | 3 | 4 | 5 |
| 19. | To what extent do you have the opportunity for leisure activities? | 1 | 2 | 3 | 4 | 5 |

| | | Very poor | Poor | Neither poor nor good | Good | Very good |
|---|---|---|---|---|---|---|
| 20. | How well are you able to get around? | | | | | |

| | | Very Dissatisfied | Dissatisfied | Neither Dissatisfied nor satisfied | Satisfied | Very Satisfied |
|---|---|---|---|---|---|---|
| 21. | How satisfied are you with your sleep? | 1 | 2 | 3 | 4 | 5 |
| 22. | How satisfied are you with your ability to perform your daily living activities? | 1 | 2 | 3 | 4 | 5 |
| 23. | How satisfied are you with your capacity for work? | 1 | 2 | 3 | 4 | 5 |
| 24. | How satisfied are you with yourself? | 1 | 2 | 3 | 4 | 5 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 25. | How satisfied are you with your access to health services? | 1 | 2 | 3 | 4 | 5 |
| 26. | How satisfied are you with your transport? | 1 | 2 | 3 | 4 | 5 |

***Write out the appropriate code in the space provided***.

| | | |
|---|---|---|
| ***27.*** | Why do you think you have this level of physical health?<br>1. I don't have money<br>2. My current illness<br>3. Cannot access healthcare services<br>4. Cannot afford medication<br>96. Others (Specify):…….... | \|___\|___\| |

***Psychological functioning***

| | | Not at all | A little | A moderate amount | Very Much | An extreme amount |
|---|---|---|---|---|---|---|
| 28. | How much do you enjoy life? | 1 | 2 | 3 | 4 | 5 |
| 29. | To what extent do you feel your life to be meaningful? | 1 | 2 | 3 | 4 | 5 |
| 30. | How well are you able to concentrate? | 1 | 2 | 3 | 4 | 5 |
| 31. | How safe do you feel in your daily life? | 1 | 2 | 3 | 4 | 5 |
| 32. | Are you able to accept your bodily appearance? | 1 | 2 | 3 | 4 | 5 |
| 33. | How satisfied are you with yourself? | 1 | 2 | 3 | 4 | 5 |
| 34. | To what extent are you bothered by people blaming you for your HIV status | 1 | 2 | 3 | 4 | 5 |
| 35. | How much do you fear the future? | 1 | 2 | 3 | 4 | 5 |
| 36. | How much do you worry about death? | 1 | 2 | 3 | 4 | 5 |
| 37. | How often do you have negative feelings such as bad mood, despair, anxiety, depression? | 1 | 2 | 3 | 4 | 5 |

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***Write out the appropriate code in the space provided***.

| | | |
|---|---|---|
| 38. | Why do you think you have this level of psychological functioning?<br>5. I don't have money<br>6. My current illness<br>7. Cannot access healthcare services<br>8. Cannot afford medication<br>96. Others (Specify): …….... | |___|___| |

***Social relationships***

The following questions ask you how **good or satisfied** you have felt about various aspects of your life over the last two weeks.

| | | Not at all | A little | A moderate amount | Very Much | An extreme amount |
|---|---|---|---|---|---|---|
| 39. | How satisfied are you with your relationships with family, friends etc? (Personal relationships). | 1 | 2 | 3 | 4 | 5 |
| 40. | How satisfied are you with your sex life? | 1 | 2 | 3 | 4 | 5 |
| 41. | How satisfied are with the support (eg. Emotional, financial etc) you get from your friends? | 1 | 2 | 3 | 4 | 5 |

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***Write out the appropriate code in the space provided.***

| | | |
|---|---|---|
| 42. | Why do you think you have this level of support (social relationships) from friends?<br>Because,<br>1. I don't have money<br>2. My current illness<br>3. I cannot access healthcare service<br>96. Others (Specify): …….... | \|___\|___\| |

***Health status and Environmental factors***

| | | Not at all | A little | A moderate amount | Very Much | An extreme amount |
|---|---|---|---|---|---|---|
| 43. | How healthy is your physical environment? | 1 | 2 | 3 | 4 | 5 |

| | | Very Dissatisfied | Dissatisfied | Neither Dissatisfied nor satisfied | Satisfied | Very Satisfied |
|---|---|---|---|---|---|---|
| 44. | How satisfied are you with the conditions of your living place? | 1 | 2 | 3 | 4 | 5 |

| | | Very poor | Poor | Neither good nor poor | Good | Very good |
|---|---|---|---|---|---|---|
| 45. | How will you rate your physical health in general? | 1 | 2 | 3 | 4 | 5 |

***Write out the appropriate code in the space provided.***

| | | |
|---|---|---|
| 46. | How many times do you eat in a day?<br>1. 1 x<br>2. 2 x<br>3. 3 x<br>4. More than 3 x | \|___\| |
| 47. | How many times do you eat fruits in a week?<br>1. Not at all<br>2. 1 – 3 times<br>3. More than 3 times<br>4. Every day | \|___\| |
| 48. | How many times do you eat vegetables in a week?<br>1. Not at all<br>2. 1 – 3 times | \|___\| |

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| | | |
|---|---|---|
| | 3. More than 3 times<br>4. Every day | |
| 49. | How many times do you exercise in a week?<br>1. Not at all<br>2. 1 – 3 times<br>3. More than 3 times<br>4. Every day | \|___\| |
| 50. | How many times do you exercise in a week?<br>1. Not at all<br>2. 1-3 times<br>3. More than 3 times<br>4. Every day | \|___\| |

THANK YOU VERY MUCH FOR YOUR TIME

INTEGRI PROCEDAMUS

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**Appendix C: Participants Transformed Scores for Domains (N=420)**

| Variable | Frequency | Percentage (%) |
|---|---|---|
| Domain 1 Transformed Score | | |
| 0-25 | 33 | 7.9 |
| 26-50 | 251 | 59.8 |
| 51-75 | 101 | 24.0 |
| 76-100 | 35 | 8.3 |
| Domain 2 Transformed Score | | |
| 0-25 | 115 | 27.4 |
| 26-50 | 207 | 49.3 |
| 51-75 | 92 | 21.9 |
| 76-100 | 6 | 1.4 |
| Domain 3 Transformed Score | | |
| 0-25 | 166 | 39.5 |
| 26-50 | 131 | 31.2 |
| 51-75 | 112 | 26.7 |
| 76-100 | 11 | 2.6 |
| Domain 4 Transformed Score | | |
| 0-25 | 58 | 13.8 |
| 26-50 | 235 | 57.0 |
| 51-75 | 100 | 23.8 |
| 76-100 | 27 | 6.4 |

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## Appendix D: Template for Raw and Transformed Scores

OPTIONAL MODULE 5: QUALITY OF LIFE

**(World Health Organisation Quality of Life-BREF)**
The WHOQOL-BREF assesses four domains of quality of life: physical health, psychological, social relationships and the environment.

It is possible to derive four domain scores from the WHOQOL-BREF. The four domain scores denote an individual's perception of quality of life in each particular domain.

**SELF REPORTING QUESTIONNAIRE**

Calculating domain scores involves two steps

| DOMAIN | EQUATION FOR COMPUTING DOMAIN SCORES | RAW SCORE |
|---|---|---|
| 1. Physical Health | (6-Q12) + (6-Q14) + Q15 + Q21 + Q22 + Q23 + Q24<br>Text + Text + Text + Text + Text + Text + Text + Text | = Text |
| 2. Psychological | Q29 + Q30 + Q31 + Q33 + Q25+ (6-Q38)<br>Text + Text +Text + Text + Text + Text | = Text |
| 3. Social relationships | Q40 + Q41 + Q42<br>Text + Text + Text | = Text |
| 4. Environment | Q32 + Q44 + Q17 + Q19 + Q20 + Q45 + Q26 + Q27<br>Text + Text + Text + Text + Text + Text + Text + Text + Text | = Text |

For instance to calculate the Physical Health domain raw score, note down the client's responses to each of the relevant questions.

| QUESTION | CLIENTS RESPONSE |
|---|---|
| Question 3 | Very much = 4 |
| Question 4 | A moderate amount = 3 |
| Question 10 | A little = 2 |
| Question 15 | Poor = 2 |
| Question 16 | Satisfied = 4 |
| Question 17 | Satisfied = 4 |
| Question 18 | Very Satisfied = 5 |

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Then add these responses into the equation in the table above. For example:

Physical health domain raw score = (6 - 4) + (6 - 3) + 2 + 2 + 4 + 4 + 5

= 2 + 3 + 2 + 2+ 4 + 4 + 5

= 22

## STEP 2

Convert raw scores to a transformed scores (on a 0-100 scale) using tables for each domain on the next page (i.e. if a client's raw score on the Physical Health domain is 22 then their transformed score will be 56)

Higher transformed scores on each of the domains indicates higher quality of life in that particular area (i.e. someone who scores 75 on the Social relationships domain has a higher perceived quality of life in relation to Social Relationships than someone who scores 25)

| DOMAIN 1: PHYSICAL HEALTH | | DOMAIN 2: PSYCHOLOGICAL | | DOMAIN 3: SOCIAL RELATIONSHIPS | | DOMAIN 4: ENVIRONMENT | |
|---|---|---|---|---|---|---|---|
| RAW SCORE | TRANSFORMED SCORE | RAW SCORE | TRANSFORMED SCORE | RAW SCORE | TRANSFORMED SCORE | RAW SCORE | TRANSFORMED SCORE |
| 7 | 0 | 6 | 0 | 3 | 0 | 8 | 0 |
| 8 | 6 | 7 | 6 | 4 | 6 | 9 | 6 |
| 9 | 6 | 8 | 6 | 5 | 1 | 10 | 6 |
| 10 | 13 | 9 | 13 | 6 | 2 | 11 | 13 |
| 11 | 13 | 10 | 19 | 7 | 3 | 12 | 13 |
| 12 | 19 | 11 | 19 | 8 | 4 | 13 | 19 |
| 13 | 19 | 12 | 25 | 9 | 5 | 14 | 19 |
| 14 | 25 | 13 | 31 | 10 | 5 | 15 | 25 |
| 15 | 31 | 14 | 31 | 11 | 6 | 16 | 25 |
| 16 | 31 | 15 | 38 | 12 | 7 | 17 | 31 |
| 17 | 38 | 16 | 44 | 13 | 8 | 18 | 31 |
| 18 | 38 | 17 | 44 | 14 | 9 | 19 | 38 |
| 19 | 44 | 18 | 50 | 15 | 1 | 20 | 38 |
| 20 | 44 | 19 | 56 | | | 21 | 44 |
| 21 | 50 | 20 | 56 | | | 22 | 44 |
| 22 | 56 | 21 | 63 | | | 23 | 50 |
| 23 | 56 | 22 | 69 | | | 24 | 50 |
| 24 | 63 | 23 | 69 | | | 25 | 56 |
| 25 | 63 | 24 | 75 | | | 26 | 56 |
| 26 | 69 | 25 | 81 | | | 27 | 63 |
| 27 | 69 | 26 | 81 | | | 28 | 63 |
| 28 | 75 | 27 | 88 | | | 29 | 69 |
| 29 | 81 | 28 | 94 | | | 30 | 69 |
| 30 | 81 | 29 | 94 | | | 31 | 75 |

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| | | | |
|---|---|---|---|
| 31 | 88 | 30 | 100 |
| 32 | 88 | | |
| 33 | 94 | | |
| 34 | 94 | | |
| 35 | 100 | | |

This module can be repeated at different time points to monitor progress in quality of life. You can read minister this module in two weeks after the completion of the form. This is the minimum amount of time needed, and the module should not be re-administered before two weeks time.

| | |
|---|---|
| 32 | 75 |
| 33 | 81 |
| 34 | 81 |
| 35 | 88 |
| 36 | 88 |
| 37 | 94 |
| 38 | 94 |
| 39 | 100 |
| 40 | 100 |

**Transformed Scores**

| | | | |
|---|---|---|---|
| **DOMAIN 1: PHYSICAL HEALTH** | Text | **DOMAIN 3: SOCIAL RELATIONSHIPS** | Text |
| **DOMAIN 2: PSYCHOLOGICAL** | Text | **DOMAIN 4: ENVIRONMENT** | Text |

INTEGRI PROCEDAMUS

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## Appendix E: Ghana Health Service Ethical Approval

**GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE**

*In case of reply the number and date of this Letter should be quoted.*

*My Ref. GHS/RDD/ERC/Admin/App*
*Your Ref. No.*

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
*Tel: +233-302-681109*
*Fax + 233-302-685424*
*Email: Hannah. Frimpong@ghsmail.org*

11th March, 2016

Peter Kwabena Fosu
University of Ghana
School of Public Health
Legon, Accra

**ETHICS APPROVAL - ID NO: GHS-ERC: 46/12/15**

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol titled:

**"Assessment of the Quality of Life of People Living with HIV/AIDS Receiving Anti-Retroviral Therapy in the New Juaben Municipality"**

This approval requires that you submit yearly review of the protocol to the Committee and a final full review to the Ethics Review Committee (ERC) on completion of the study. The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Please note that any modification without ERC approval is rendered invalid.

You are also required to report all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.

You are requested to submit a final report on the study to assure the ERC that the project was implemented as per approved protocol. You are also to inform the ERC and your sponsor before any publication of the research findings.

Please note that this approval is given for a period of 12 months, beginning 11th March, 2016 to 10th March, 2017. However, you are required to request for renewal of your study if it lasts for more than 12 months.

Please always quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....

PROFESSOR MOSES AIKINS
(GHS-ERC VICE-CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra