SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA, LEGON

ASSESSMENT OF QUALITY OF LIFE AMONG PERSONS LIVING WITH HIV ATTENDING SELECTED HEALTH FACILITIES IN GREATER ACCRA REGION

BY

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THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILLMENT FOR THE AWARD OF THE MASTER OF PUBLIC HEALTH DEGREE

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DECLARATION

I, CYNTHIA ADOBEA ASANTE hereby declare that this proposal is a result of my independent work. References to other works have been duly acknowledged. I further declare that this proposal has not been submitted for award of any degree in this institution and other universities elsewhere.

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DEDICATION

I dedicate this work to the one and Holy God who is more than able to perfect whatever concerns me and whose strength has brought me this far. To my dear husband, Mr Evans Abaadza; this work is dedicated to you in recognition of your support and encouragement which propelled me to successfully complete this programme.

To all Persons living with HIV, keep the hope alive, the cure for HIV is possible!

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ABSTRACT

Background: HIV continues to be a major global public health issue. Tremendous progress made against the response to AIDS over the past 15 years. Quality of life (QOL) has been recommended as a new frontier to the 90-90-90 to ending AIDS by 2030.

Objectives: To determine QOL in line with the physical, physiological, social and environmental factors and socio-demographic characteristics of persons living with HIV (PLHIV) and to establish association between the duration on treatment ART and QOL using WHOQOL-BREF.

Methods: A facility-based cross sectional study using systematic sampling was employed in the recruitment of study participants.

Result: 326 respondents participated, with mean age of 39.7±10.1 and 269 (82.5%) were females. The overall quality of life was found to be good (74.9%) with similar results observed in physical and environmental domain with the least proportion related to the social domain (62.3%). Except for being 45years and older, PLHIV who were married, had secondary education (JHS and SHS) or tertiary education were linked to better social wellbeing [AOR=0.24 95%CI (0.06-0.93); AOR=2.93, 95% CI (1.58-5.44); AOR=2.68, 95% CI (1.30-5.52; AOR=8.65, 95%CI (2.0-37.43)]. Compared to those employed, unemployed PLHIV observed reduced chances of achieving good physical, psychological and environmental wellbeing [AOR= 0.47 95%CI (0.25-0.89) AOR= 0.33 95%CI (0.17-0.62), AOR=0.53 95% CI(0.27-1.01)]. PLHIV on ART for 5-9 and 10years and over observed reduced physical wellbeing [AOR= 0.49 95%CI (0.27-0.91), AOR=0.44, 95% CI (0.21-0.93)] and 5-9 had a higher social wellbeing [AOR=2.56, 95%CI (1.37-4.78)] Duration on ART was not significantly associated with overall QOL.

Conclusion: The overall QOL was good. Improvement in the education levels, providing employment opportunities targeted interventions for PLHIV on treatment for more than 5 years and over and will address gaps and improve the QOL in the respective domains.

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AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-retroviral Therapy
ARVs	Anti-retroviral Drugs
CSO	Civil Society Organisation
EPP	Estimation and Projection Package
GAC	Ghana AIDS Commission
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
GoG	Government of Ghana
HIV	Human Immunodeficiency Virus
HRQOL	Health Related Quality of Life
NACP	National AIDS and STI Control Programme
NAP+	National Association of People Living with HIV
NSP	National Strategic Plan
PLHIV	People Living with HIV
QOL	Quality of Life
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organisation

DEFINITION OF TERMS

PLHIV– People living with HIV who know their status

QOL – Individual’s perception of life based on culture, value and belief system in respect of their goals and aspirations and concerns

CHAPTER ONE

INTRODUCTION

1.1 Background

As a global public health issue, HIV has claimed many lives in the past three decades. It has been estimated that US$ 26.2 billion will be required to meet Joint United Nations Against AIDS (UNAIDS) global target for 2020. Despite these huge resources required, tremendous progress made against Acquired Immune Deficiency Syndrome (AIDS) over the past 15 years continuously inspires the global efforts to ending the epidemic by 2030.

As part of global efforts to ending AIDS by 2030, the international community adopted the 2020 global UNAIDS 90-90-90 aspirational targets which means 90% of people living with HIV (PLHIV) know their HIV status, 90% of PLHIV who know their HIV status are placed on sustained treatment, and 90% of PLHIV on sustained treatment achieve viral suppression. Lazarus et al., (2016) have recommended for the inclusion of a ‘fourth 90’ to the 90 90 90 targets as a new frontier to the quality of life (QOL) beyond the viral suppression to achieve an overall wellbeing of PLHIV.

The Sub-Saharan Africa continues to disproportionately bear the brunt of the global HIV epidemic. Out of 70% of the world's HIV infections, 66% of new HIV infections, and 66% of HIV-related deaths occurred in the sub region, and adult HIV prevalence in sub-Saharan Africa hugely exceeded any other regions worldwide (UNAIDS 2014)

In Ghana, the first case of HIV was diagnosed and recorded in 1986. In recent times, Ghana is classified as a low generalised epidemic with higher pockets of prevalence among Key Populations comprising men who have sex with men (MSM), female sex workers (FSW) and prison inmates. HIV prevalence among MSM is 18.1%, whilst FSW and prison inmates are 7% and 2.3% respectively. According to the Ghana Demographic Health Survey (2014), HIV prevalence of 2.0% decreased from 2.2% in 2006. The Estimates and Projections in 2017 estimated HIV prevalence at 1.67%, incidence rate at 0.68% and 19,101 as new HIV infections.

According to the UNAIDS(2017), 36.9 million persons were living with HIV, out of which 21.7m were on Anti-retroviral Therapy (ART) and 1.8 million people became newly infected with HIV. In 2017, Ghana estimated 313,063 PLHIV, with 65% of them being women. One hundred and twenty five thousand six hundred and sixty seven (125, 667) PLHIV were on treatment at the end of 2017, with 75% being females (National Estimates Report, 2017-2020). Generally, women bear the disproportionate burden of the HIV worldwide (Duarte, Parada, & Souza, 2014).

With anti-retroviral drugs (ARV), PLHIV can achieve viral suppression, improve their health and quality of life (QOL) and continue to be productive (Tran, 2012). ARV has substantially increased life-expectancy in PLHIV (Miners et al., 2014). In times past, HIV was considered as fatal, but gradually, it has transitioned to a chronic and manageable condition (Kharsany & Karim, 2016). Advancement in HIV and AIDS knowledge, improved diagnostic methods, new treatments and strengthened HIV programmes have provided great hope for PLHIV (Imam et al., 2011). However, key challenges which continue to confront patients and service providers include drug side effects, non-adherence, lack of proper nutrition, ARV stock out, lack of disclosure of HIV status due to stigma and religious beliefs in supernatural healing (NACP, 2014)

Research has shown that the QOL among PLHIV deteriorates as result of depression, addiction, poverty, and violence (Razavi et al., 2012). Achieving QOL is paramount Mutabazi-Mwesigire et al., (2015) and therefore an assessment of it, in the lives of PLHIV has thus become increasingly important for healthcare providers to understand the impact of healthcare interventions on clinical outcome and not only the physical outcome (Selman et al., 2011)

1.2 Problem Statement

The World Health Organization (WHO, 2013) defined QOL as one's view of life based on culture, value and belief system in respect of their goals, aspirations and concerns. Typically, QOL is relatively viewed from an individual's perceptive; however it is meaningful to most people (Burckhardt & Anderson, 2003)

QOL among PLHIV continues to be a challenge in the developing countries especially Ghana. These challenges over the years have been attributed to several factors. PLHIV have to deal with pain, rashes, diarrhea, lipodystrophy among other symptoms as a result of side effects of ARVs (Parker et al., 2014; Silva et al., 2014). The fear of side effects and the low level of social support widens the barriers to access services (Ankomah, Ganle, Lartey, Kwara, Nortey, Perry, et al., 2016). PLHIV experience metabolic and morphological changes which cause changes in their body shape and composition (Yang et al., 2015) and are also confronted with the lack of energy, which interfere with daily activities De Carvalho et al., (2017), with the majority faced with sleep disturbances (Taibi, 2014).

Major barriers such as poverty, access to health services in resource-limited countries (Okello et al., 2013) and high self-stigma of PLHIV (Stigma Index Study, 2014) that leads to individual economic challenges (Musheke et al., 2013) are prevalent among PLHIV. The consequences may further be linked to psychological distress such as depression, anxiety and stress which is higher compared to the general population (Chikezie et al.,2013). This emotional and psychological tortures mostly compel them to seclude themselves from the mainstream individuals within the society (Liu et al., 2014) which affect the social relationship and QOL.

Studies carried out in various jurisdictions have provided mixed findings on the effect of chronic diseases and especially HIV on their QOL. Previous cited works by Osei-Yeboah et al., (2017) in the Ho Municipality of the Volta region, revealed good QOL among PLHIV and better social and environmental wellbeing which reflected good personal relations with family and friends, sexual satisfaction and living conditions. The study by Fosu, 2016 in the New Juaben Municipality of the Eastern region, found the QOL of PLHIV to be poor in the physical, psychological, social and environmental domains.

As the cosmopolitan region of the country, the researcher found no studies on the QOL of PLHIV in the Greater Accra region of PLHIV, thus this study aimed to assess the QOL of PLHIV.

1.3 Justification

Human immunodeficiency virus (HIV) has been a concern to the global community. Access to antiretroviral drugs has prolonged life expectancies and PLHIV QOL has become a priority. Moreover, due to this clinical improvement, the goal to achieve optimal physical functioning and general well-being have shifted from clinical outcomes to improved quality of life (Mutabazi-Mwesigire et al., 2015) However, an assessment of

QOL without any globally accepted tools can be challenging result in misleading conclusions. Hence, the adoption of the standard WHOQOL-HIV BREF in this study.

PLHIV are faced with challenges such as pain and symptoms, low self-esteem, fatigue, sleep disturbance, weak social relationship, high self-stigma, weak personal relationship and dependence on medication (Fatiregun et al., 2009; Selman et al., 2011; Chen et al., 2013; Monteiro et al., 2016). To identify targeted interventions for PLHIV, it is important to assess PLHIV QOL and address the gaps to improve their wellbeing (Imam et al., 2011).

Osei-Yeboah et al., (2017) & Fosu (2016) recommended further studies to be carried out in other regions in Ghana to assess the QOL of PLHIV, thus the basis for conducting studies in the Greater Accra region, the Capital City of Ghana to assess the physical, psychosocial well-being, social wellbeing, social support system and environmental health(Basavaraj et al., 2010) .

In view of the above, this study will provide valuable information on the quality of life of PLHIV and its associated factors. The results of this study will provide relevant information for implementers, health facilities, government institution and academia to address the factors that are linked with PLHIV QOL.

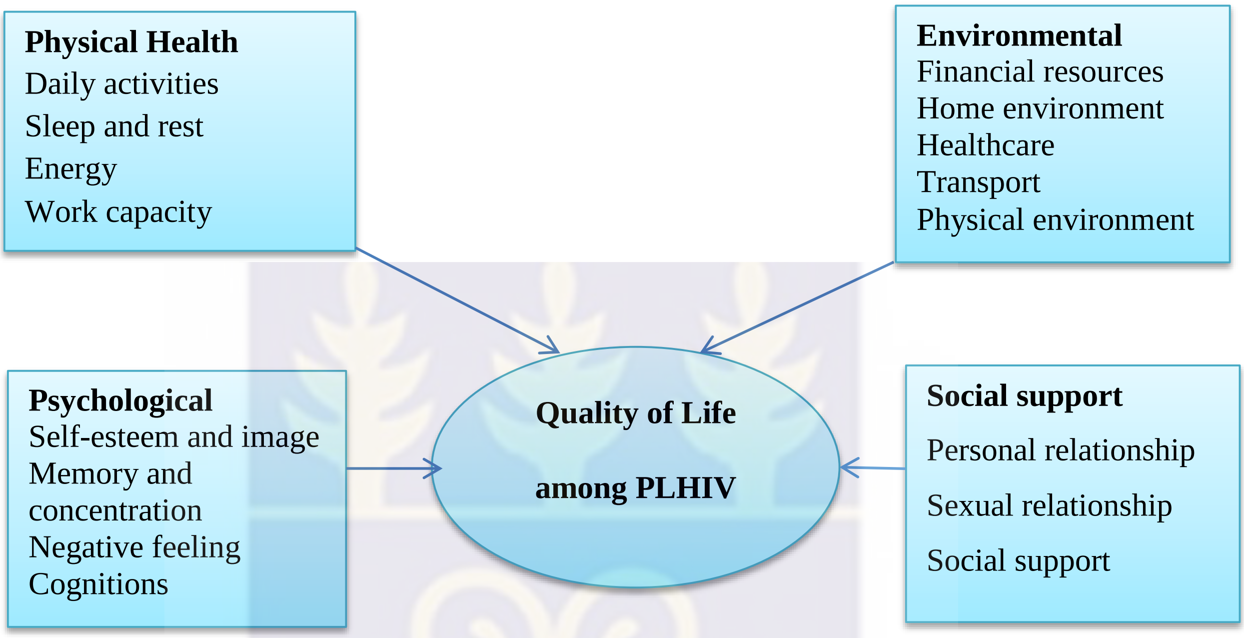
1.4 Conceptual Framework

Quality of Life reflects a subjective evaluation of one's self based on the cultural, social and environmental context. It focuses on the respondents' recognition of QOL in relation to the effect of disease, health interventions and not the measurement of detailed symptoms disease or condition.

WHO tool reports QOL in four (4) domains (Physical health, Psychological, Social relationships, and Environment). In view of the above and for the purpose of this study, the outcome variable of interest is quality of life of persons living with HIV. Physical health, psychological, social relationships and environment are the independent variables. The conceptual framework shows the domains of QOL and its linkages. The conceptual model allows for the measurement of a mix of structural processes and outcome measures. The framework produces scores relating to particular facet of quality of life and the overall quality of life.

Below is a conceptual framework of the various domains that contribute to the overall QOL.

Figure 1: Conceptual Framework



Narrative to Conceptual Framework

PLHIV tend to experience HIV-related stress which causes sleep disturbance and fatigue (Taibi, 2014). People, who are able to carry out their daily activities, sleep well and have enough energy for work or otherwise enjoy general sense of wellbeing (Kofie, 2015). High self-esteem is positively associated with higher dimensions in quality of life, therefore placing priorities on sexual health and safer sexual behaviour of PLHIV. This builds positive sexual self-esteem and improves QOL (Manhas, 2014; Rohleder et al., 2017)

Inadequate financial resources continue to pose challenges to implement impactful interventions in order improve socio-economic gain, survival and QOL among PLHIV

(Hadgu et al., 2013). The ability to afford the basic needs required in life, a satisfied place of abode and transport generally transcend to a more meaningful life.

The social environment of individuals diagnosed with HIV affect quality of life. A high level of social support was found to be associated with a high level of QOL (Shahrzad et al., 2010)

1.5 Research questions

i. What is the quality of life among PLHIV accessing services at selected health facilities
ii. What factors affect the quality of life among PLHIV accessing services at the selected health facilities?
iii. What is the association between the duration on ART and their quality of life?

1.6 General objective

To determine the quality of life and assess its associated factors among PLHIV attending selected health facilities in the Greater Accra region.

1.7 Specific Objectives

i. To determine the overall QOL among PLHIV in the selected health facilities
ii. To determine the physical, physiological, social and environmental factors of PLHIV and its association with QOL
iii. To evaluate the socio-demographic characteristics that affect QOL
iv. To evaluate the socio-demographic characteristics that affect the physical, physiological, social and environmental factors
v. To establish the association between duration on ART and QOL

CHAPTER TWO

LITERATURE REVIEW

2.1 HIV epidemic

Human Immune Deficiency Virus (HIV) infection is one of the moderately recent infections which was discovered three decades ago (Shete, 2013). The transition of HIV to the terminal stage, is a medical condition known as Acquired Immuno-Defiency Syndrome (AIDS) (Bhatti et al., 2016).

The main mode of attack is through the immune system, known as the CD4 T-lymphocytes. The mode of transmission is linked with blood or bodily fluids such as breast milk, vaginal secretions and semen from an infected individual to uninfected person. Blood and other body fluids can easily be exchanged between individuals through sexual contact and sharing of sharp objects Shannon et al, (2015). The virus invades the body's white blood cells, the CD4+ cells, and attaches itself to the genetic material (DNA) of the cells and begins to replicate (Jawad S. 2016). Once a person is infected, the virus progressively and silently overpowers the host's defense mechanisms. Subsequently, the body's debilitated immune system is left endangered and susceptible to AIDS-related opportunistic diseases such as cancer, tuberculosis, hepatitis, pneumonia and diarrhea(Bhatti et al., 2016).

Notwithstanding, HIV does not only affect the clients physical condition, but also, their sociocultural relations, mental health, and financial aspects which affect their overall wellbeing (Bello & Bello, 2013).

2.2 Quality of Life

The WHO defined health as the state of complete physical, mental and social wellbeing and not merely the absence of disease. While the absence of disease, is not indicative of ones' overall health, assessing the components of the physical, psychological, social and environmental wellbeing provides a next to perfect scenario of the overall wellbeing and provides an opportunity for improving one's QOL.

Even though, PLHIV are living longer Catalan et al., (2017), the relative survival rate for PLHIV has been found to be lower than the general population (Lohse et al., 2007). Comparatively, QOL among PLHIV has been known to be lower relative to the general population (Miners et al., 2014). Furthermore, psychological distress such as depression, anxiety and stress among PLHIV is higher than that of the general population (Chikezie et al.,2013 & Sikkema et al. 2015) and PLHIV are more likely to experience negative thoughts which could lead to mental illness (Ofovwe & Ofovwe, 2013).

In the management of HIV, the assessment of QOL has become an important measure for health outcome for both the physician and the client. The evidence of the level of QOL reflects the satisfaction or otherwise of the health experience of PLHIV and persons with chronic ailments. Improvement in the health care and measures results from the opportunity of clients to rate the physical and psychosocial impact of illness and treatment (Selman et al., 2011, Sodergren et al., 2017). QOL identifies the areas that need planning and interventions (Folasire et al., 2012).

2.3 Physical Related Factors

2.3.1 Capacity for daily activity, mobility and work

HIV gradually overpowers and weakens the host defense mechanisms to the extent where the host becomes susceptible to AIDS-related opportunistic diseases (Bhatti et al., 2016). Physical activity is important for an individual's health (Elmagd, 2016). PLHIV have been known to experience improvement in their viral load due to physical activity(Bopp et al., 2004).

The exercise capacity of PLHIV was found to be lower relative to the general population. The decrease was linked to the effect of HIV which weakens the immunity system and muscles (Mbada et al., 2013). In a study by Yahiaoui et al., (2012), on the randomized controlled trials, effects of physical exercise for sub groups of PLHIV of HIV-infected young adults, frail older adults and elderly individuals with metabolic syndrome was assessed. To improve, metabolic and muscle function, endurance and resistance exercises 3 rounds of exercise per week for at least 6 weeks was recommended. Another assessment of functional exercise capacity of PLHIV and the factors that influenced the outcome of exercise recommended a 6min walk test (Mbada et al., 2013).

However, low energy level, psychological stress and the lack of family support may serve as barricades to physical activities for PLHIV. Support of friends and family were found to be facilitators of physical activity (Roos et al., 2015)

2.3.2 Pain

One of the most common symptoms experienced by PLHIV is pain. However, the relative impact of pain is difficult to measure due to the wide ranges of prevalence of pain. A systematic review of the literature found pain to be commonly experienced at multiple pain sites and varied with severity which suggested differing pathological processes contributing to the pain at one time (Parker et al., 2014). An assessment by Lifson et al., 2015 among antiretroviral-naïve PLHIV also revealed highest scores for physical functioning (89.3 ± 23.0) and bodily pain (88.0 ± 21.4). Wasti et al, (2012) study clearly reaffirmed body pain as one of the side-effect which led to non- adherence among some PLHIV. The severity of pain negatively impact on the QOL of PLHIV(Silva et al., 2017). Even though, some researchers have investigated the effect on pain on QOL, Parker et al., (2014) is of the view that, if interventions to manage the experiences of pain among PLHIV is yet to realize any impact.

2.3.3 Sleep

A study conducted by Wantland (2013) described how stress among PLHIV caused them to become sleepless and fatigued due to the perceived stress of living with the condition. Though Taibi (2014) findings on the study of sleep disturbances among PLHIV showed that up to 70% of PLHIV experienced sleep disturbances, a systematic review by Dos Santos et al., (2017) to examine the extent of physical activity on sleep of PLHIV revealed that regular physical activity experienced improvements in total sleep time, satisfaction of sleep contributed to a better quality of life.

2.3.4 Energy

Lack of energy is closely related to fatigue and affect sleep pattern, anxiety and depressive symptoms (Barroso et al.,2016). A cross-sectional study carried out by Aouizerat et al., (2013) explored the perceived energy levels among PLHIV and compared those who reported lack of energy to those who did not on report on other socio-demographic variables. The study established that the lack of energy among PLHIV interfered with daily activities and caused sleep disturbances. Lower QOL scores were observed in subjects with inadequate energy intakes, reported weight loss, and a high waist circumference in bivariate analysis ($p < 0.05$); (De Carvalho et al., 2017)

2.4 Psychological Related Factors

2.4.1 Self Esteem and Stigma

Stigma compromises the quality of life of PLHIV by reducing access and quality of care, adherence to therapy, and disclosure of HIV status. Despite the discovery of state of the art technology in health service and stigma reduction activities in India, majority of PLHIV on treatment experience stigma (Datta et al., 2016). In Ghana, the narrative is similar. The Stigma Index Study conducted in 2014 in Ghana, showed a stigma index of 18.1 and a high level of self-stigma.

Disclosure to a steady sexual partner is necessary in the prevention of HIV transmission and improving the QOL of PLHIV (Kieto et al., 2014) PLHIV are faced with the crucial decision with whom to share HIV status. This apprehension could be justified by stigma experienced by PLHIV who disclosed their status to their family and friend (Vanable et al., 2006)

On the other hand, however, partners who disclosed HIV status to family members and friends, had a good family support base than those who rarely disclosed to their sexual partners (Tshweneagae et al., 2015) Stigma, ignorance and often violence tend compound the feeling of despair in PLHIV (Manhas, 2014) eventually leading depression and lower QOL (Charles et al., 2012).

2.4.2 Negative Feeling and thought

According to Ofovwe and Ofovwe (2013), the study findings showed that comparing general population to PLHIV, the latter were more likely to experience negative thought which could lead to mental illness. Paranoid, depression, and anxiety were found to be common psychopathologic symptoms in women compared to men although no significant statistical difference between the age groups. Akinyemi et al. (2017) highlighted the concerns about everyday memory difficulties, and anxiety and depression scores were strong predictors of poorer quality of life. Although, their cross-sectional nature of their study was limited in establishing a causal association, the findings indicate that concerns about memory difficulties, anxiety and depression, as well as gender, ethnicity, financial factors, and relationship status, were important contributors to QOL. Sikkema et al. (2015**)** noted that PLHIV experienced greater psychological distress than the general population. There was increased frequency of depression and suicidal thinking among PLHIV which elicited profound negative effects on quality of life. In a cross-sectional study conducted by Amiya et al.,(2014) on the perception of family support and among PLHIV, the researchers found that suicidal and thoughts depression occurred frequently alongside HIV and influenced QOL.

2.4.3 Bodily Image

Body image is the description of the positive and negative emotion of an individual's body and characteristics (Nayir et al., 2016). PLHIV on ARV experience metabolic and morphological body changes which result in changes in body shape and composition. These changes were associated with lipodystrophy which impact the body image. The resultant effect was poor body image and distress that affected QOL (Yang et al., 2015) A study conducted by De Carvalho et al., (2017) in Portugal, on the nutritional status and

QOL among PLHIV which used weight loss as a biomarker of disease progression and symptom status found body image alterations to significantly impact on psychosocial wellbeing. In a study by Palmer et al., (2011), PLHIV with high level of stigma and depressed were likely to have a negative body image as compared to those low level of stigma with no depression.

2.5 Social Factors

2.5.1 Social Support

High QOL has been credited with a level of social support in several studies. In a study by Odek, (2014) which assessed the social networks and QOL among PLHIV, revealed that females had more access to network resources due to more personal social networks and larger households compared to their male peers. This was however lower among the older participants. According to Mbada et al., (2013), poor living conditions, stigma and discrimination lower the QOL in the social relationship PLHIV. Support groups were found to play an effective role in the fundamental services offered to PLHIV(Paudel & Baral, 2015). Shahrzad et al.,(2010) study underpinned the importance of social relationship to ensuring the successful psychological adaptation to HIV.

2.5.2 Sex life

Sex is a basic need and as such, the fear of denial from a partner daunts PLHIV and reduces the probability of disclosure. Many have chosen that path to benefit from the pleasures of sex. Therefore in the view of Degroote et al., (2014) , sexual dysfunction has emerged as a side-effect for those on ARV which had significant impact on QOL. Priorities on sexual health and behaviours of PLHIV have been on promoting a positive sexual self-esteem and a general wellbeing. An interpretative phenomenological analysis of interviews with 7 PLHIV showed a sense of sexual self thus the recommendation to implement interventions to support PLHIV to lead sexually satisfying lives (Rohleder et al., 2017) Innovative interventions need to be employed to achieve sexual satisfaction among PLHIV(Bourne et al.,2012)

2.5.3 Personal Relationship with Family and Friends

Family relationships play a key role in the treatment, care and support for PLHIV and their families. The importance of families was reinforced in the study which employed family nursing intervention for families with PLHIV. This intervention resulted in an improved trust, established a more meaningful life and demystifying fears through education and encouragement from family and friends (Wacharasin, 2010) A family model framework to support PLHIV and their families through client friendly services realised increased uptake of testing through the use of family members (Kulzer et al., 2012) Building family relations is a very important social support factor in every individual's life (Shrestha et al., 2014)

2.6 Environmental Related Factors

2.6.1 Physical and home environment

The impact of physical environment on PLHIV has been assessed in QOL researches. In a study by Butt et al., (2018), PLHIV who received home-based care (HBC) had 4.08 points higher QOL than PLHIV who did not benefit from HBC services. The findings Kabore et al., (2010) corroborates the results by Butt et al., 2018 which revealed that PLHIV who received HBC and or food services exhibited marked improvement in their QOL. Additionally, PLHIV who were exposed to community based support services recorded an increase in their CD4 counts as compared to who were not exposed.

In a univariate analysis, significant association was found to exist between those who were exposed to noise and the environmental and physical health, although marginal associations existed in the psychological domain. Overall, those who experienced high noise level reported poor QOL(Feder et al., 2015) To ensure psychological adaptation to HIV, the environement of PLHIV should be prioritised to improve the quality of social relationship and environmental health (Shahrzad et., 2010)

2.6.2 Social Care

The findings from Bauman et al., 2014 study on barrier and facilitators of linkage to HIV and primary care in New York City found delays in accessing health care, unfriendly patient, intricacies of insurance among other which to affect linkage to care and by extension QOL of PLHIV. In Ghana, through a presidential directive on the World AIDS Day in 2012, a GHC5.00 surcharge for accessing ARVs was abolished.

2.6.3 Finance

Financing the HIV response is a major issue in Ghana since the evidence shows funds expended on direct HIV and AIDS programmes in Ghana are from external sources. (NASA, 2016). Inadequate financial resources among PLHIV remains a major challenge to achieve the full impact of interventions aimed at improving their quality of life, productivity and survival (Hadgu et al, 2013). In the assessment carried out by Riyarto et al., 2010 in Indonesia, on the extent of the financial burden due to out-of-pocket payments for health care incurred by PLHIV and the effect of this burden on their financial capacity confirmed previous findings that providing subsidized ART drugs alone does not ensure financial accessibility to HIV care. Moreover, Tran et al., 2013 assessed the out-of-pocket assessment of payments for health services, identified an average 5.1 times used inpatient and outpatient care besides ART service. The study recommended that scaling up free service of ART, decentralization and integration of health services to reduce their financial burden.

2.6.4 Safety and Security

In a Study Index Study conducted in 2014 among PLHIV, the respondents report to have experienced physical assault in the last 12 months. Physical assault was found to be common among partners, be it husband, wife, partners or another member of the household. Compared to their male counterparts, more females experienced physical assault. The results of the findings from Abramsky et al., 2011 revealed high intimate partner violence among women and their partners. The enactment of the GAC Act 938, passed in 2016 seeks to protect and promote the right of PLHIV and provide a legal framework to seek redress.

2.6.5 Transport

Transport had emerged as one of the key challenges affecting adherence and access to health service. In a study by Ankomah et al., (2016), one of the key barriers to retention in care was the long distance to ART site. Furthermore, a cross-sectional mixed-methods study by Wasti et al., (2012) which interviewed patients, care providers and personnel at the policy level identified transport to treatment sites as one of the highest causes of non-adherence by PLHIV.

2.7 Duration on ART and QOL

The introduction of ART has drastically changed the course of the disease from a rapidly progressive catastrophic illness to a chronic disease with reduction in mortality rate, opportunistic infections, and length of hospitalization. The use and access to ART, monitoring by health services and the related outcomes highlight a route in the quest to improving the QOL of PLHIV. Poor quality or lack of access, prolonged duration on treatment and adherence-related problems, potentially increased the risk of disease transmission and thereby reduced the QOL (Zelaya et al., 2012). Clinical monitoring is currently one of the most important tools and adherent clients experience viral suppression at least six months after the ART initiation (Hipolito et al., 2017)

Several studies have found inconsistent findings on the duration on ART and the QOL. The study by Arjun et al., (2017) revealed that PLHIV receiving ART for longer duration (>36 months) had scored higher scores in all the domains of QOL with significant associations in physical, psychological, level of independence, and environmental domains of QOL. Bello & Bello (2013) found a higher QOL among PLHIV who had a longer duration on ARVs while the study by Tran, (2012) revealed poorer QOL in clients who had advanced HIV infection with CD4 cell count, 200 cells/mL. In the first year on treatment, the results showed significantly poorer physical and social wellbeing but reasonable improvement in environment was attained after first year of ART as compared to those not on ART.

CHAPTER THREE

METHODS

3.1 Study Type

The study employed a facility based cross-sectional study. Cross-sectional study design is a type of observational study design that simultaneously measures both the outcome and exposure of participants (Betancur et al., 2017).

3.2 Study Area

The Greater Accra Region is the regional capital city of Ghana. It is the smallest of the ten (10) administrative regions in terms of area, occupying a total land surface of 3,245 square kilometres. It has a population of 4,010,054 with 1,938,225 males and 2,071,829 females, and account for 15.4 per cent of Ghana's total population. Accra is situated on the shores of the Gulf of Guinea (Atlantic Ocean), almost on the Greenwich Meridian. Accra is administered by the Accra Metropolitan Authority (AMA) under the Greater Accra Regional Coordinating (Ghana Districts, 2017).

Greater Accra has the highest growth rate of 3.1% (GSS: 2010 Housing and Population Census). This is partly because the region has the highest immigration rate in the country. About 1,200 people (both skilled and non-skilled) are reported to migrate to Accra daily.

The city of Accra is a cosmopolitan, predominantly Christians constituting the largest religious group (83.0%), followed by Moslems (10.2%), people who profess no religion (4.6%) and adherents of traditional religion (1.4%) (Ghana Statistical Service 2014)

The key sectors of the Greater Accra economy consist of the service sector which constitutes agriculture 22%, service 52% and industry 27%. The agricultural sector has been taken over by the service and industry sectors. According to the Ghana Statistical Service 2014, a high proportion of the employed population of Ghana work in the informal sector, the majority being self-employed.

The Greater Accra region has the second highest HIV prevalence (3.2%) in the country according to the 2017 HIV Sentinel Survey (HSS). The rate is above the national median prevalence of 2.1% and the national prevalence of 1.67%.

The Greater Accra Region has five (5) sentinel sites, namely Maamobi, Adabraka, Dangme East, Tema and Korle-Bu.

There are five hundred and eighty (580) health facilities providing HIV services in the region. There are fifty two (52) anti-retroviral therapy (ART) centers, three hundred and thirty (330) prevention of mother to child transmission of HIV (PMTCT) centers, and one hundred and ninety eight(198) HIV Testing Services (HTS) centers within the region.

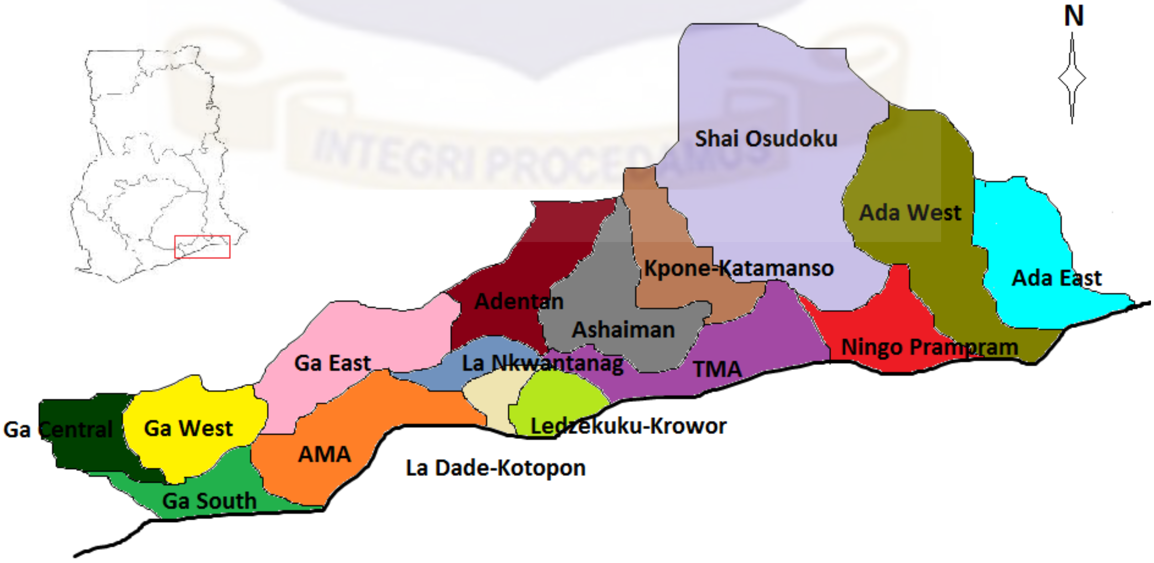


Figure 2: Map of Greater Accra

The Ridge hospital is located in Accra along the Castle road about 200 meters from the African Union Roundabout. It is a tertiary hospital, which serves as a referral centre in the Greater Accra region and beyond. It has been upgraded to an ultra-modern teaching hospital that attends to thousands of clients daily. Ridge regional hospital is one of the pioneer providers of ART treatment centre with an enrolment of about 2000 clients.

The La General hospital is located at La dadekotopon district. It has an enrollment of about 500 clients. The Adabraka Polyclinic within the same district as Ridge hospital and is located in Greater Accra, Ghana. All selected study sites provide HIV Testing and counselling, infant diagnosis, viral load testing, STI preventive and curative services to their clients. Data was also collected at ART sites from the Ridge, La General and Adabraka hospitals.

3.3 Study Population

The study population was PLHIV who were 18 years and above accessing ART services at the selected health facilities.

3.4 Variables

3.4.1 Dependent Variable

The dependent variable is quality of life

3.4.2 Independent variable

- Socio-demographic characteristics
- Physical characteristics such as evaluation of daily activities, pain, dependence on medication, energy, sleep, energy and capacity for work

- Psychological factors such as self-esteem, acceptance of body image and negative thoughts
- Social Relationships such as satisfaction with personal relationship, social support and sex life
- Environmental characteristics such as social care, finance, physical environment, safety and security, finance, access to health service and transport

3.5 Sampling

3.5.1 Sample size

Sample-size determination is a key component in designing a statistical study. It investigates the optimal allocation of study resources to increase the likelihood of the successful achievement of a study objective (STATA, 2013). In a related cross sectional study conducted by Osei-Yeboah et al., 2017 among PLHIV using the systematic sampling, the overall of QOL was 71.29%.

Minimum sample size, n= z2 (p* q) / E2

n=1.962 (0.7129*0.2871)/0.052 = 315

p= estimated percentage of QOL is 71.29%

q= 1 - p

e= margin of error= 0.05

z= 95th percentile of the z-score (1.96)

n=Sample size

The estimated minimum sample size for the study was calculated to be 315. To account for non-response, error or incomplete data, the computed sample was increased by 10%, thus bringing the minimum sample size to 347.

3.5.2 Sampling method

The researcher adopted the use of the systematic sampling. To do this, the register of clients at each ART facility served as the sampling frame. The number of participants on the register divided by required number represented the sampling interval. In a case where a client refused participation, the next client in the queue was recruited to participate.

3.5.3 Inclusion criteria

All PLHIV who were 18 years and above and had been on treatment for more than a month and accessed services at the ART site at the Ridge hospital, Adabraka and La General and were willing to participate in the study were eligible for inclusion.

3.5.4 Exclusion criteria

The exclusion criteria excluded clients who experienced adverse events such as divorce, separation or death of someone close, at least six (6) months prior to the data collection to avoid potential negative influencing of QOL. Clients on treatment for less than one month were also excluded from the analyses.

3.6 Data collection technique/ tool

The English version of the WHO QOL-Short Version (WHOQOL BREF) consists of 26 items in four domains. Respondents perception is categorised in four domains: Physical, psychological, social and environmental factors: and The physical health domain, consist of seven items to assess activities of daily living, dependence on medicinal substances, fatigue, limitation to movement and pain, satisfaction with sleep and rest, lack of energy, and perception of working capacity. The determination of psychological health was based on how much one enjoyed life, the meaningfulness of life, the ability to concentrate and accept body image and experiences of negative feeling and self-satisfaction. The domain in respect of social relationships focused on personal relationship with family and friends and satisfaction with sex. The environmental wellbeing measured respondent's freedoms, conditions of home environment, financial status, access to health services and transport. The items under each domain are rated on a 5-point Likert scale with one representing low negative perception and 5 indicating high positive opinion. The mean score and the percentages for each of the domain items were computed. The questionnaire is attached (Annex I)

3.6.1 Quality Control

Four research assistants were engaged to facilitate the data collection. All research assistants were taken through a-one day training on quantitative data collection techniques. The questionnaires were administered to 11 PLHIV at Adabraka polyclinic. Based on the difficulty with some of the questions, the data collection tool was modified. The data collected during the pretest was not included in the analysis.

3.6.2 Data Processing

Data was captured using questionnaires and android phones with installed redcap application. The questionnaires were coded and captured on the android phone. Data was verified and confirmed by a data officer and subsequently synchronized to a central database. Data was exported to STATA IC version 14 for analysis.

3.6.3 Statistical Analysis

Scale scores were computed by deriving the algebraic mean of each scale and transforming the raw score on 0-to-100 continuum.

Descriptive statistics including means, standard deviations for continuous data and frequencies and proportion for categorical data was calculated for the demographic characteristics. Chi square test analysis was done to determine the association between the socio demographic variables, other dependent variables and the outcome variable.

The four domains of QOL and the overall QOL were categorized into a dichotomous variables. Logistic regression analysis was carried between the demographic characteristics and the domains of quality of life and the overall quality of life to determine the association.

The overall QOL was computed by finding the mean of the question 1; perception of QOL and q2: perception of health and transforming to 100 (The WHOQOL Group, 1996). The average scores of each of the four domains were multiplied by 4 and divided by 100 to make it comparable to the scoring pattern in WHOQOL-100. A total score for each domain and an overall QOL score were calculated. The percentage distributions of the domain and overall QOL scores categorised as poor (score 0-50) and good (score 51-100). A 95% level of statistical significance was set at $p<0.05$.

3.7 Ethical Consideration

The protocol and research instruments together with consent forms were submitted to the Ghana Health Service Ethics Review Committee for ethical approval. Ethical approval was granted on the 28th of May, 2018. Copy attached. Please see annex.

CHAPTER FOUR

RESULTS

4.1 Socio-Demographic Characteristics

A total of 363 participants were interviewed. Out of this number, 326 complete questionnaire made up of (57) 17.5% males and (269) 82.5% females were used in the analysis. Eight (8) refused to participate in the study. The mean age (± SD) of the participants was 39.7 years ± 10.1. Of all participants, 108(33.1%) were single or had never married and 128(39.3%) married.

More than half 225(69%) reported to have achieved Junior and Second Secondary school certifications as their highest level of education. Most of the respondents engaged in informal sector such artisanship and sales. Christians formed greater proportion of respondents. 18.7% were unemployed. More than 56% had been on treatment for almost five (5) years. The duration on ART ranged from one (1) month to 17years.

Table 4.1 represents the demographic and other characteristics of the participants

Table 1 Demographic details

Characteristics of Respondent	n= 326	Percentage(%)
Name of Facility		
Ridge	169	51.8
La General	97	29.7
Adabraka	60	18.5
Gender		
Males	57	17.5
Females	269	82.5
Age(Years) mean ±SD	39.7 ± 10.1	
18-24	15	4.6
25-34	91	27.9
35-44	122	37.4
45 and older	98	30.1
Marital Status		
Single/never married	108	33.1
Married	128	39.3
Divorced	33	10.1
Separated	29	8.9
Widowed	28	8.6
Education		
None	44	13.5
Primary	36	11
Secondary	225	69
Tertiary	21	6.44
Religion		
Christian	282	86.5
Muslim	40	12.3
Traditional	1	0.3
Others	3	0.9
Employment		
Employed	265	81.3
Unemployed	61	18.7
Occupation		
Formal	34	10.4
Informal	231	70.9
Unemployment	61	18.7
ART duration (Years) mean	4.6	
<5	182	55.8
5-9	96	29.5
10+	48	14.7

4.2 Overall Quality of Life and Domain

The table 2 show the transformed scores equivalent to 100. Table 3 provides the transformed scores per health facility. The least mean score was recorded in the dimensions related to physical domain (57.3 ± 12.3) and highest in the psychological domain (60.4± 12.8). The overall QOL mean score was 66.7 ± 18.3. In terms of proportion, approximately, 75% of respondents reported overall QOL. The proportion was highest in the environmental domain (76.7%) and lowest in social domain (62.3%). Across the three (3) health facilities, the overall QOL was observed to be highest at Ridge hospital (68.3 ±18.2) and least mean score recorded at Adabraka hospital (63.3± 18.9). For the physical domain, the lowest mean scores were recorded in at Ridge hospital (54.3±11.1). La General and Adabraka hospitals had the least mean scores all related to the social domain. Ridge hospital recorded the highest mean score of QOL (68.3±18.2) relative to the overall mean score of 66.7 ± 18.3.

Table 2: Domains and Overall Quality of Life

		****Dichotomised QOL N (%)**	
Domain	**Mean Score (0-100)**	**Poor**	**Good**
Physical	57.3 ± 12.3	88(27.0)	238(73.0)
Psychological	60.4 ± 12.8	77(23.6)	249(76.4)
Social	58.1 ± 19.1	123(37.7)	203(62.3)
Environmental	59.9 ± 13.3	76(23.3)	250(76.7)
Overall QOL	**66.7 ± 18.3**	**82(25.1)**	**244(74.9)**

Overall QOL score was derived from the questionnaire as the mean of question 1 (''How would you rate your quality of life?'') and question 2 (How satisfied are you with your health?'') based on Users' Manual for Scoring and Coding WHOQOL-HIV-BREF by WHO. It ranges from 1 to 5, with 1 corresponding to very poor QoL and 5 corresponding to very good QoL. Median of Overall QOL (50) was used as the cutoff point to define poor and good QoL.

Table 3: Domain of QOL per Facility

	Ridge	La General	Adabraka
Domain	**Mean Score (SD)**	**Mean Score (SD)**	**Mean Score (SD)**
Physical	54.3±11.1	63.6±13.2	57.9±10.5
Psychological	61.6±11.8	60.6±13.8	56.9±13.5
Social	60.6±17.6	54.9±20.2	56.1±20.3
Environmental	60.4±13.2	60.7±13.2	57.6±13.7
Overall QOL	**68.3 ±18.2**	**66.1±17.9**	**63.3± 18.9**

4.3 Physical Characteristics

With reference to figure 4.3a, 4.3b and 4.3c, about half (51.2%) indicated that they had no physical pain whilst the rest asserted that were affected by physical pain at various levels. The study revealed that about 11.4% of respondent indicated an extreme dependence on medication, one out of five (21.7%) reported moderate satisfaction of energy levels and close to half (48.8%) were satisfied with their mobility. About 36.2% were very satisfied with their sleep and 15% were satisfied with capacity to work.

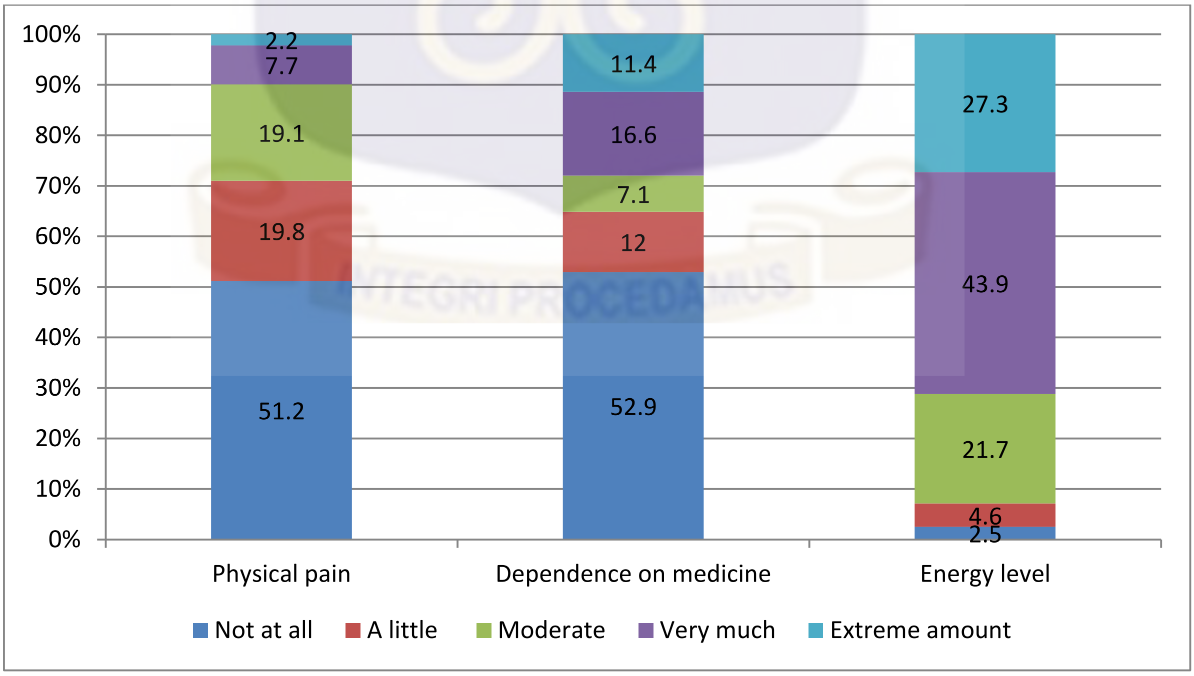


Figure 4.3a: Pain, dependence on medicines and energy factors

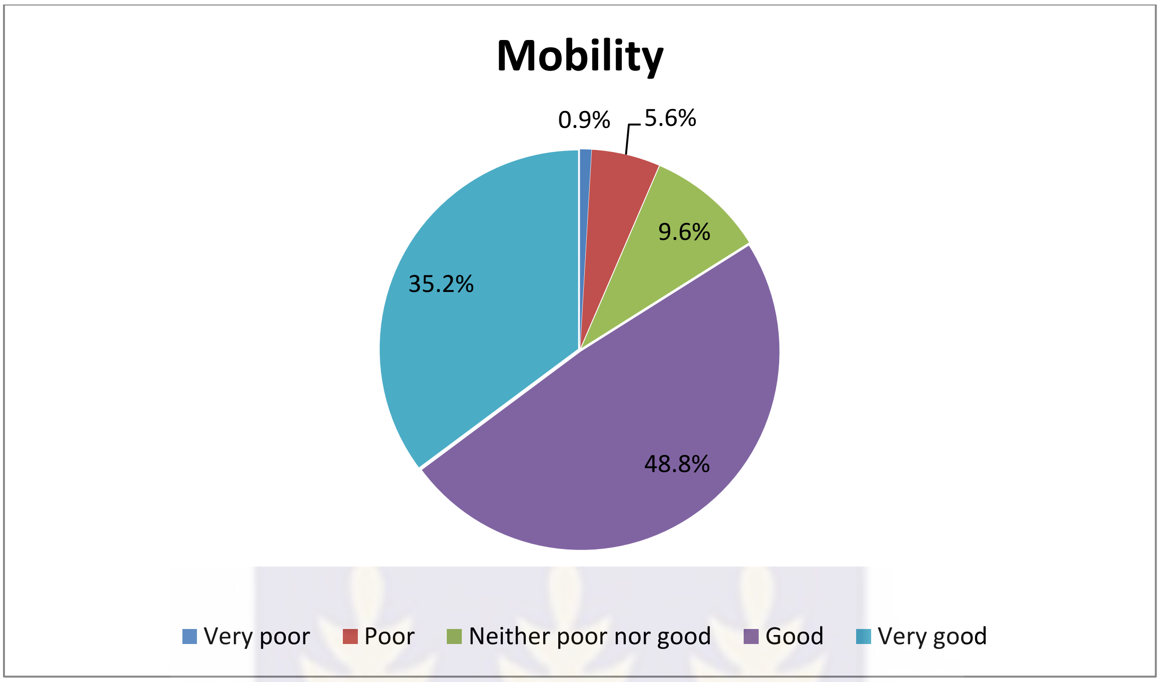


Figure 4.3b: Perception of satisfaction with mobility

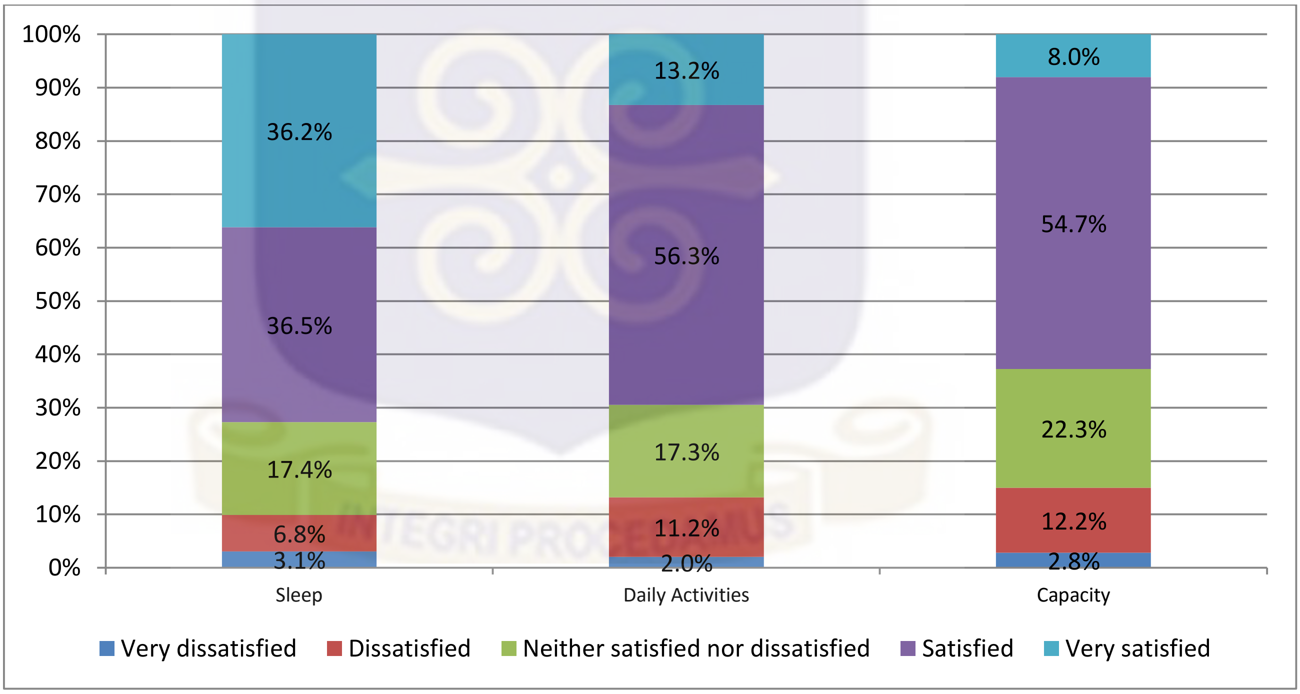


Figure 4.3c: Perception of sleep, daily activities and work capacity satisfaction

4.4 Psychological Factors

As shown in figure 4.4a, 4.4b, half of the respondents (50.6%) were very much satisfied with life whilst only 10.4% had a contrasting view. Moreover, 55.1% were of the opinion that their lives were very meaningful. Respondents (36.2%) rarely had occurrences of negative thoughts while 36.8% experiences moderate to extreme levels of negative thoughts. More than half (59.1%) indicated to be satisfied with themselves.

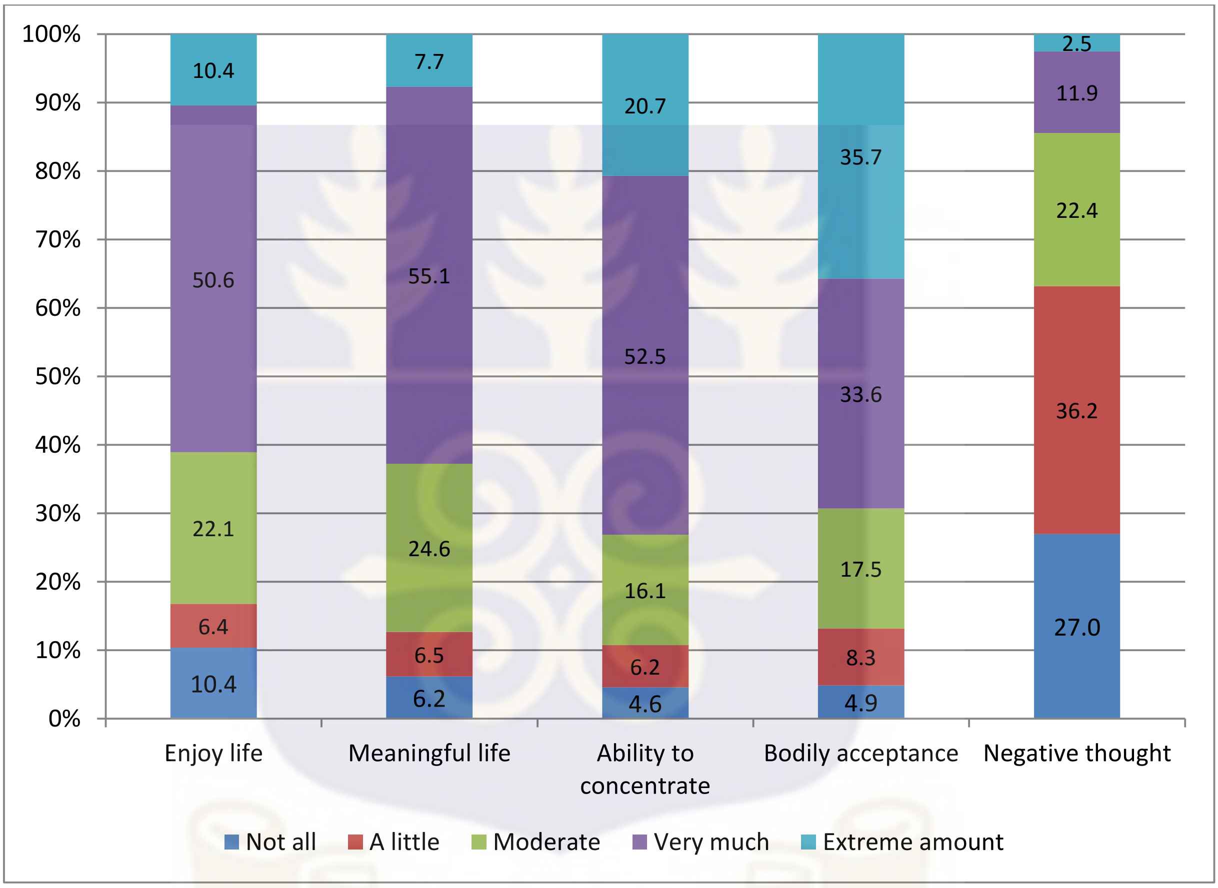


Figure 4.4a: Perception of enjoyment and meaningfulness of life, ability to concentrate, acceptance of bodily appearance and negative thoughts

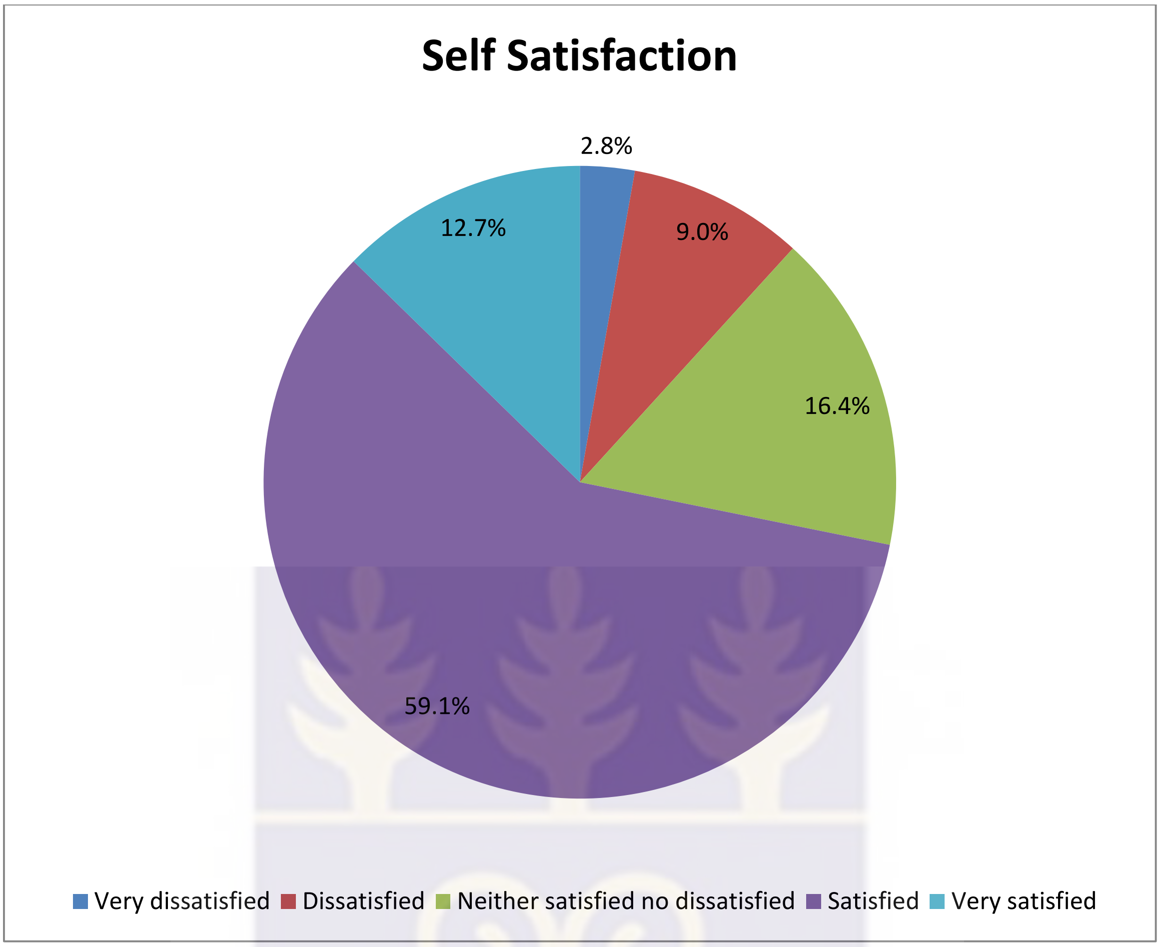


Figure 4.4b: Perception of Self-satisfaction

4.5 Social Factors

Respondents (55.2%) expressed satisfaction with their personal relationships. Almost 1 out of every 5 (22.7%) was very dissatisfied with their sex life whiles close to 6% reported to be satisfied with sex life. About twenty percent (20.9%) were not certain about the level of emotional support received support from friends. This is displayed in table 4.5

Table 4.5: Social factors affecting QOL

	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
	n (%)	n(%)	n(%)	n(%)	n(%)
Personal relationship	7(2.1)	12(3.7)	29(8.9)	180(55.2)	98(30.1)
Sex life*	74(22.7)	38(11.7)	94(28.8)	90(27.6)	19(5.8)
Emotional support	44(13.5)	40(12.3)	68(20.9)	143(43.9)	28(8.6)

* respondents refused to answer question; total does not add to 100

4.6 Environmental Characteristics

Almost five out of every 10 (46.0%) respondents indicated their inability to afford basic needs due to little or lack of financial resources. Information and opportunity for skills building available to them was limited to 51.4% whereas about three out of every 5 (60%)felt a sense of safety and security. About 17.6% expressed varying levels of dissatisfaction of transport. An overwhelming satisfaction of access to health services was recorded at 89.5%. whiles 5.3% shared a contrary view. Only about 3.4% were dissatisfied with the physical environment whilst half of them were satisfied. This is shown in figures 4.6a and 4.6b.

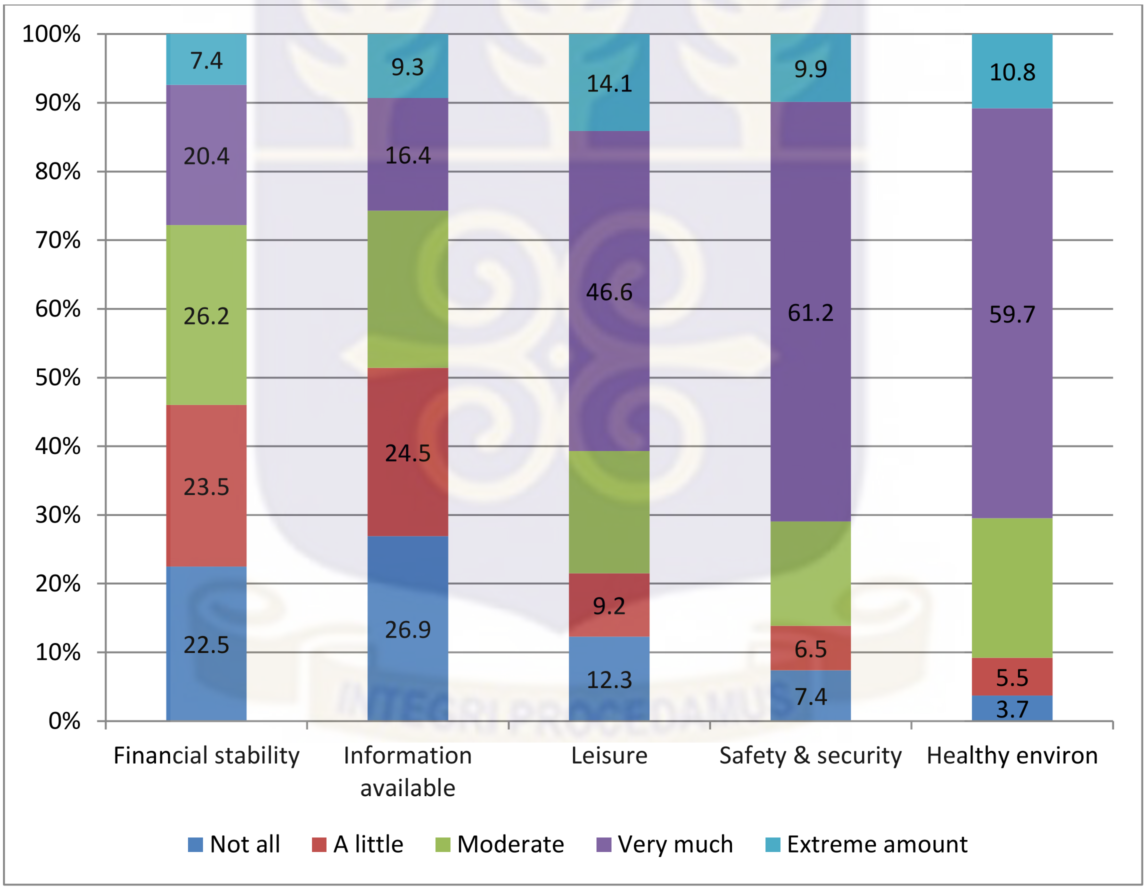


Figure 4.6a Perception of Financial stability, available information, leisure, safety and security and health physical environment

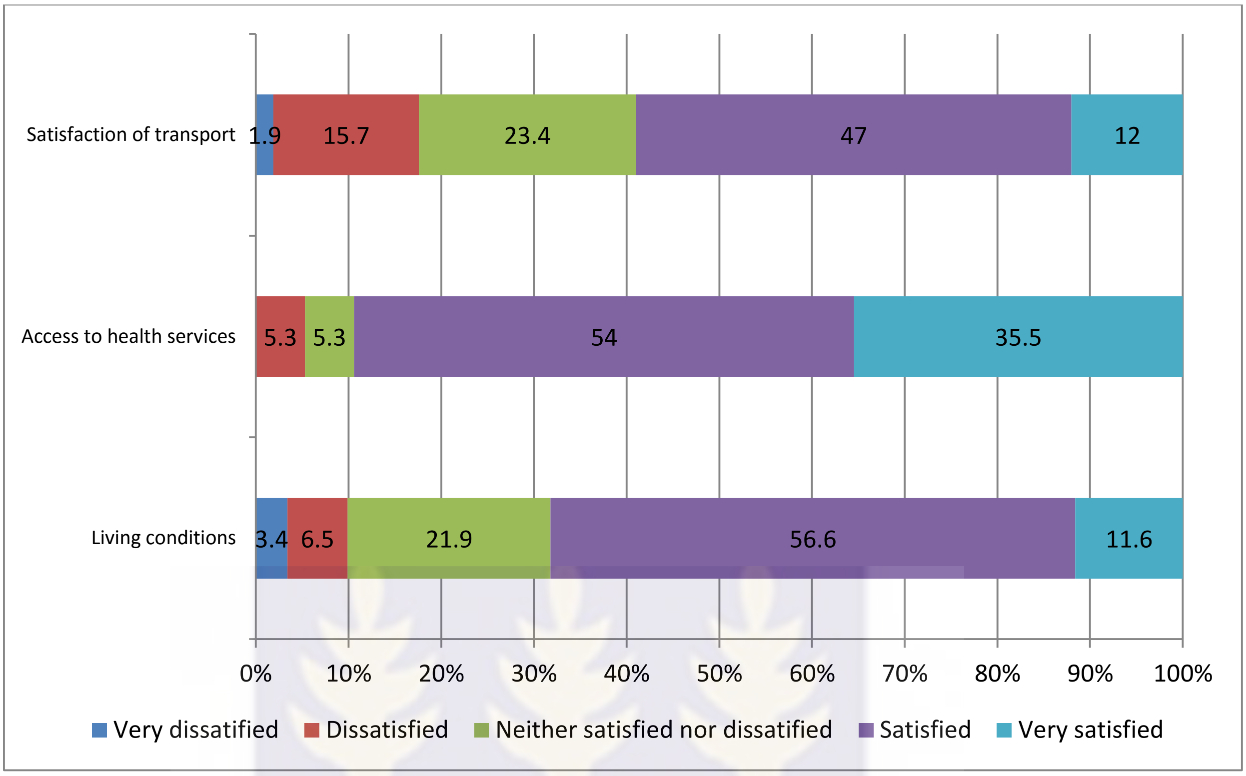


Figure 4.6b: Perception of satisfaction with transport, access to health services and transport

4.7 Association between Physical, Psychological, Social and Environmental Domain and Overall QOL

Except for the social domain, the physical, psychological, environmental factors were found to be associated with overall QOL adjusting for age, gender, marital status, employment status and duration on ART (p=0.02, p<0.001, p=0.097, p<0.007). Respondents with good physical wellbeing were twice likely to experience good QOL [OR: 2.74, 95% CI (1.45-5.16)], psychological wellbeing was associated with 3.5 times odds of QOL [OR= 3.51, 95%CI(1.84-6.64)], social wellbeing [OR=1.69, 95% CI(0.91-3.13)] and environmental health was significantly linked with overall QOL [OR=2.45, 95%CI (1.28-4.70)]. This is illustrated in table 4.8a

4.8 Social demographic Characteristics and Factors of QOL

A summary of the χ^2 test analysis of the socio-demographic characteristics and QOL and multiple logistic regressions of key demographic variables are presented in table 4.8a, 4.8b, 4.8c below. With regards to the physical domain, the χ^2 test analysis showed significant association of employment status and duration on ART. Education and employment status were associated with the psychological domain ($p=0.027$, $p<0.001$). Education, marital status and duration on ART were found to be linked with good social relationships ($p=0.004$, $p=0.002$, $p=0.005$).

Overall, respondents with tertiary education was associated with overall QOL [COR=9.33, 95% CI (1.14-76.7)] although adjusting for other variables this was found not to be significant. PLHIV aged 45years and older who were unemployed were 76% less likely to enjoy physical wellbeing compared to those aged 18-24years [AOR=0.24, 95%CI (0.06-0.93)]. Married PLHIV were twice likely to enjoy social wellbeing [OR=2.93, 95%CI(1.58-5.44)] Achieving secondary and tertiary education was associated with corresponding increase in obtaining good social wellbeing [OR=2.68, 95%CI(1.30-5.52); OR=8.65,95%CI(2.0-37.43)] relative to those with no education. Compared to employed PLHIV, unemployed PLHIV had 53%, 67%, and 47% reduced chances of having good physical, psychological and environmental health respectively adjusting for gender, age, education, marital status and ART length. [AOR=0.47, 95%CI (0.25-0.89); AOR=0.33, 95%CI (0.17-0.62); AOR=0.53, 95% (0.27-1.01)].

Table 4.8a Bivariate and Multiple Logistic Regression of Socio-Demographic Characteristics and Overall QOL

Variable	Poor(%) χ^2	Good(%)	P-value	Unadjusted OR [95% CI]	P-value	Adjusted OR [95% CI]	P-value
Sex			0.073				
Male	9(15.8)	48(84.2)		Ref.		Ref.	
Female	73(27.1)	196(72.9)		0.50 [0.24-1.08]	0.057	0.70 [0.27-1.79]	0.457
Age in years			0.385				
18-24	3(20.0)	12(80.0)		Ref.		Ref.	
25-34	19(20.9)	72(79.1)		0.95 [0.24-3.70]	0.938	1.18 [0.24-5.71]	0.841
35-44	37(30.3)	85(69.7)		0.57 [0.15-2.16]	0.411	0.71 [0.14-3.59]	0.675
45 and older	23(23.5)	75(76.5)		0.82 [0.212-3.14]	0.767	0.98 [0.18-5.18]	0.978
Marital status			0.81				
Single	30(27.8)	78(78.2)		Ref.		Ref.	
Married	29(22.7)	99(77.3)		1.31 [0.73-2.37]	0.366	1.60 [0.76-3.36]	0.22
Divorced	10(30.3)	23(69.7)		0.88 [0.38-2.08]	0.778	1.91 [0.64-5.66]	0.246
Separated	6(20.7)	23(79.3)		1.47 [0.55-3.98]	0.443	1.67 [0.50-5.61]	0.403
Widowed	7(25.0)	21(75.0)		1.15 [0.44-2.99]	0.769	0.93 [0.30-2.92]	0.9
Education			0.121				
No education	14(31.8)	30(68.2)		Ref.		Ref.	
Primary	10(27.8)	26(72.2)		1.21 [0.46-3.19]	0.695	1.17 [0.38-3.57]	0.789
Secondary	57(25.3)	168(74.7)		1.38 [0.68-2.78]	0.373	0.95 [0.42-2.15]	0.896
Tertiary	1(4.8)	20(95.2)		9.33 [1.14-76.69]	0.038*	3.10 [0.31-30.84]	0.335
Employment status			0.588				
Employed	65(24.5)	200(75.5)		Ref.		Ref.	
Unemployed	17(27.9)	44(72.1)		0.84 [0.45-1.57]	0.588	1.64 [0.78-3.48]	0.194
Physical			P< 0.001				
Poor	41 (50.00)	41 (50.00)		Ref.		Ref.	
Good	47 (19.26)	197 (80.74)		4.19 [2.45-7.17]	P< 0.001	2.74 [1.45-5.16]	0.002*
Psychological			P< 0.001				
Poor	40 (48.78)	42 (51.22)		Ref.		Ref.	
Good	37 (15.16)	207 (84.84)		5.33 [3.05-9.30]	P< 0.001	3.51 [1.84-6.64]	P< 0.001*
Social			P< 0.001				
Poor	45 (54.88)	37 (45.12)		Ref.		Ref.	
Good	78 (31.97)	166 (68.03)		2.59 [1.55-4.32]	P< 0.001	1.69 [0.91-3.13]	0.097*
Environmental			P< 0.001				
Poor	36 (43.90)	46 (56.10)		Ref.		Ref.	
Good	40 (16.39)	204 (83.61)		4.00 [2.30-6.93]	P< 0.001	2.45 [1.28-4.70]	0.007*
ART length			0.363				
Up to 5 years	44(24.0)	139(76.0)		Ref.		Ref.	
Between 5-9 years	22(23.2)	73(76.8)		1.05 [0.59-1.89]	0.869	1.12 [0.54-2.34]	0.765
>10 years	16(33.3)	32(66.7)		0.63 [0.32-1.26]	0.194	0.80 [0.35-1.86]	0.61

Ref: Reference category, OR: Odds Ratio, χ^2 – row percentage

Table 4.8b Bivariate and Multiple Logistic Regression of Socio-Demographic Characteristics and Physical Health

Variable	Poor(%)	Good(%)	P-value	Unadjusted OR	P-value	Adjusted OR	P-value
	χ^2			[95% CI]		[95% CI]	
Sex			0.433				
Male	13(22.8)	44(77.2)		Ref.		Ref.	
Female	75(27.9)	194(72.1)		0.76 [0.39-1.50]	0.434	1.10 [0.51-2.37]	0.8
Age in years			0.88				
18-24	3(20)	12(80)		Ref.		Ref.	
25-34	25(27.5)	66(72.5)		0.66 [0.17-2.54]	0.545	0.77 [0.19-3.16]	0.721
35-44	35(28.7)	87(71.3)		0.62 [0.17-2.34]	0.481	0.94 [0.22-4.00]	0.928
45 and older	25(25.5)	73(74.5)		0.73 [0.19-2.80]	0.646	1.09 [0.25-4.78]	0.913
Marital status			0.614				
Single	29(26.9)	79(73.1)		Ref.		Ref.	
Married	34(26.6)	94(73.4)		1.01 [0.57-1.81]	0.96	1.07 [0.56-2.03]	0.846
Divorced	12(36.4)	21(63.6)		0.64 [0.28-1.47]	0.294	0.59 [0.23-1.52]	0.271
Separated	8(27.6)	21(72.4)		0.96 [0.38-2.42]	0.937	1.11 [0.41-3.06]	0.834
Widowed	5(17.9)	23(82.1)		1.67 [0.59-4.86]	0.331	1.75 [0.54-5.73]	0.352
Education			0.083				
No education	14(31.8)	30(68.2)		Ref.		Ref.	
Primary	15(41.7)	21(58.3)		0.65 [0.26-1.64]	0.363	0.59 [0.23-1.52]	0.274
Secondary	56(24.9)	169(75.1)		1.41 [0.70-2.84]	0.34	1.17 [0.56-2.45]	0.675
Tertiary	3(14.3)	18(85.7)		2.8 [0.71-11.10]	0.143	2.29 [0.52-10.06]	0.272
Employment status			0.037*				
Employed	26(4.5)	200(75.5)		Ref.		Ref.	
Unemployed	23(37.7)	38(62.3)		0.54 [0.30-0.97]	0.038	0.47 [0.25-0.89]	0.019*
ART length			0.027*				
Up to 5 years	39(21.3)	144(78.7)		Ref.		Ref.	
Between5-9 years	31(32.6)	64(67.4)		0.56 [0.32-0.97]	0.04	0.49 [0.27-0.91]	0.023*
>10 years	18(37.5)	30(62.5)		0.45 [0.23-0.89]	0.022	0.44 [0.21-0.93]	0.032*

Ref: Reference category, OR: Odds Ratio, χ^2 – row percentage

Table 4.8c Bivariate and Multiple Logistic Regression of Socio-Demographic Characteristics and Psychological Wellbeing

Variable	Poor(%)	Good(%)	P-value	Unadjusted OR	P-value	Adjusted OR	P-value
	χ^2			[95% CI]		[95% CI]	
Sex			0.061				
Male	8(14.0)	49(86.0)		Ref.		Ref.	
Female	69(25.7)	200(74.3)		0.47 [0.21-1.05]	0.065	0.73 [0.31-1.76]	0.487
Age in years			0.683				
18-24	2(13.3)	13(86.7)		Ref.		Ref.	
25-34	23(25.3)	68(74.7)		0.45 [0.10-2.17]	0.323	0.46 [0.09-2.36]	0.35
35-44	31(25.4)	91(74.6)		0.45 [0.96-2.11]	0.313	0.49 [0.09-2.63]	0.407
45 and older	21(21.4)	77(78.6)		0.56 [0.12-2.70]	0.473	0.58 [0.11-3.22]	0.538
Marital status			0.326				
Single	26(24.1)	82(75.9)		Ref.		Ref.	
Married	29(22.7)	99(77.3)		1.08 [0.59-1.98]	0.797	1.10 [0.56-2.15]	0.782
Divorced	11(33.3)	22(66.7)		0.63 [0.27-1.48]	0.292	0.65 [0.24-1.72]	0.385
Separated	8(27.6)	21(72.4)		0.83 [0.33-2.10]	0.698	0.78 [0.27-2.22]	0.638
Widowed	3(10.7)	25(89.3)		2.64 [0.74-9.47]	0.136	2.89 [0.73-11.44]	0.13
Education			0.027*				
No education	15(34.1)	29(65.9)		Ref.		Ref.	
Primary	9(25.0)	27(75.0)		1.55 [0.58-4.13]	0.88	1.32 [0.48-3.65]	0.593
Secondary	53(23.6)	172(76.4)		1.68 [0.84-3.36]	1.46	1.42 [0.68-2.98]	0.352
Tertiary	0	21(100)		1		1	
Employment status			0.001*				
Employed	51(19.2)	214(80.8)		Ref.		Ref.	
Unemployed	26(42.6)	35(57.4)		0.32 [0.18-0.58]	P<0.001	0.33 [0.17-0.62]	0.001*
ART length			0.91				
Up to 5 years	44(24.0)	139(76.0)		Ref.		Ref.	
Between 5-9 years	21(22.1)	74(77.9)		1.12 [0.62-2.02]	0.717	1.09 [0.56-2.12]	0.792
>10 years	12(25.0)	36(75.0)		0.95 [0.45-1.98]	0.891	1.07 [0.48-2.42]	0.862

Ref: Reference category, OR: Odds Ratio, χ^2 – row percentage

Table 4.8d Bivariate and Multiple Logistic Regression of Socio-demographic Characteristics and Social Relationship

Variable	Poor(%)	Good(%)	P-value	Unadjusted OR	P-value	Adjusted OR	P-value
	χ^2			[95% CI]		[95% CI]	
Sex			0.098				
Male	16(28.1)	41(71.9)		Ref.		Ref.	
Female	107(39.8)	162(60.2)		0.59 [0.32-1.11]	0.1	0.69 [0.34-1.42]	0.316
Age in years			0.083				
18-24	4(26.7)	11(73.3)		Ref.		Ref.	
25-34	32(35.2)	59(64.8)		0.67 [0.20-2.28]	0.522	0.46 [0.13-1.64]	0.23
35-44	40(32.8)	82(67.2)		0.75 [0.22-2.49]	0.633	0.40 [0.11-1.52]	0.18
45 and older	47(48.0)	51(52.0)		0.39 [0.12-1.32]	0.132	0.24 [0.06-0.93]	0.038*
Marital status			0.002*				
Single	49(45.4)	59(54.6)		Ref.		Ref.	
Married	32(25.0)	96(75.0)		2.49 [1.44-4.32]	0.001	2.93 [1.58-5.44]	0.001*
Divorced	19(57.6)	14(42.4)		0.61 [0.28-1.34]	0.222	1.16 [0.46-2.89]	0.752
Separated	11(37.9)	18(62.1)		1.36 [0.59-3.15]	0.474	1.31 [0.51-3.37]	0.577
Widowed	12(42.9)	16(57.1)		1.11 [0.48-2.56]	0.812	1.60 [0.60-4.23]	0.345
Education			0.004*				
No education	25(56.8)	19(43.2)		Ref.		Ref.	
Primary	16(44.4)	20(55.6)		1.64 [0.68-4.00]	0.272	1.68 [0.65-4.38]	0.287
Secondary	79(35.1)	146(64.9)		2.43 [1.26-4.69]	0.008	2.68 [1.30-5.52]	0.007*
Tertiary	3(14.3)	18(85.7)		7.89 [2.03-30.76]	0.003	8.65 [2.00-37.43]	0.004*
Employment status			0.144				
Employed	95(35.9)	170(64.1)		Ref.		Ref.	
Unemployed	28(45.9)	33(54.1)		0.66 [0.38-1.12]	0.146	0.83 [0.45-1.53]	0.553
ART length			0.005*				
Up to 5 years	78(42.6)	105(57.4)		Ref.		Ref.	
Between 5-9 years	23(24.2)	72(75.8)		2.33 [1.34-4.04]	0.003	2.56 [1.37-4.78]	0.003*
>10 years	22(45.8)	26(54.2)		0.88 [0.46-1.66]	0.69	1.18 [0.57-2.43]	0.661

Ref: Reference category, OR: Odds Ratio, χ^2 – row percentage

Table 4.8e Bivariate and Multiple Logistic Regression of Socio-Demographic Characteristics and Environmental Health

Variable	Poor(%)	Good(%)	P-value	Unadjusted OR	P-value	Adjusted OR	P-value
	χ^2			[95% CI]		[95% CI]	
Sex			0.257				
Male	10(17.5)	47(82.5)		Ref.		Ref.	
Female	66(24.5)	203(75.5)		0.65 [0.31-1.37]	0.259	0.97 [0.43-2.22]	0.951
Age in years			0.671				
18-24	2(13.3)	13(86.7)		Ref.		Ref.	
25-34	20(22.0)	71(78.0)		0.55 [0.11-2.62]	0.45	0.72 [0.14-3.67]	0.696
35-44	32(26.2)	90(73.8)		0.43 [0.09-2.02]	0.287	0.57 [0.11-3.02]	0.513
45 and older	22(22.4)	76(77.6)		0.53 [0.11-2.54]	0.428	0.77 [0.14-4.19]	0.766
Marital status			0.057				
Single	21(19.4)	87(80.6)		Ref.		Ref.	
Married	34(26.6)	94(73.4)		0.67 [0.36-1.24]	0.199	0.65 [0.33-1.28]	0.213
Divorced	13(39.4)	20(60.6)		0.37 [0.16-0.86]	0.022	0.41 [0.16-1.07]	0.069
Separated	4(13.8)	25(86.2)		1.51 [0.47-4.80]	0.486	1.37 [0.40-4.69]	0.615
Widowed	4(14.3)	24(85.7)		1.45 [0.45-4.62]	0.532	1.42 [0.40-5.03]	0.585
Education			0.065				
No education	16(36.4)	28(63.6)		Ref.		Ref.	
Primary	11(30.6)	25(69.4)		1.30 [0.51-3.32]	0.585	1.12 [0.42-2.98]	0.815
Secondary	46(20.4)	179(79.6)		2.22 [1.11-4.45]	0.024	1.96 [0.94-4.09]	0.073
Tertiary	3(14.3)	18(85.7)		3.43 [0.87-13.46]	0.077	2.67 [0.62-11.47]	0.187
Employment status			0.052*				
Employed	56(21.1)	209(78.9)		Ref.		Ref.	
Unemployed	20(32.8)	41(67.2)		0.55 [0.30-1.01]	0.054	0.53 [0.27-1.01]	0.053*
ART length			0.266				
Up to 5 years	45(24.6)	138(75.4)		Ref.		Ref.	
Between 5-9 years	17(17.9)	78(82.1)		1.50 [0.80-2.79]	0.205	1.61 [0.81-3.18]	0.171
>10 years	14(29.2)	34(70.8)		0.79 [0.39-1.61]	0.518	0.92 [0.43-2.00]	0.841

Ref: Reference category, OR: Odds Ratio , χ^2 – row percentage

4.9 Association between Duration on ARVs and Domains of Quality of Life

Respondents who had been on ARVs for less than five(5)years reported the highest (78.7%) physical wellbeing and the least score among those on treatment for a decade and over. Psychological wellbeing were observed to be highly rated to be good among respondents on treatment between five (5) to nine (9) years. Respondents reported to enjoy good social relationship especially among five (5) to nine (9) years and the highest poor rating among those who had been on treatment for more 10 years and more (p=0.005). The association between the overall QOL and duration on treatment was not significant. (p=0.363). Logistic regression analysis showed that compared to those on treatment for less than 5years, the probability for those on ARVs for more than 5years and above cohorts experiencing good physical wellbeing was reduced by 51% [OR= 0.49, 95% CI (0.27-0.91)] and 56% [OR=0.44, 95% CI(0.21-0.93)] respectively adjusting for gender, age, marital status and education. Unemployed PLHIV were 53% less likely to have a good physical wellbeing 53% [OR= 0.47, 95% CI (0.25-0.89)] while clients on treatment for 5-9 years were 2.56 likely to achieve better social relationships [OR=2.56, 95% CI(1.37-4.78)] adjusting for the key variables included in the regression model. This displayed in table 4.8a, 4.8b, 4.8c, 4.8d, 4.8e and 4.9a.

Table 4.9a: Chi-square Analysis of Duration on ARVs Domains and Overall Quality of Life

	< 5years	**5-9 years**	**10years+**	**P value**
Domains	**n(%)**	**n(%)**	**n(%)**	
Physical				0.027*
Poor	39(21.3)	31(32.6)	18(37.5)	
Good	144(78.7)	64(67.4)	30(62.5)	
Psychological				0.91
Poor	44(24.0)	21(22.1)	12(25.0)	
Good	139(76.0)	74(77.9)	36(75.0)	
Social				0.005*
Poor	78(42.6)	23(24.2)	22(45.8)	
Good	105(57.4)	72(75.8)	26(54.2)	
Environmental				0.266
Poor	45(24.6)	17(17.9)	14(29.2)	
Good	138(75.4)	78(82.1)	34(70.8)	
Overall QOL				0.363
Poor	44(24)	22(23.2)	16(33.3)	
Good	139(76.0)	73(76.8)	32(66.7)	

Data is presented as frequency with corresponding percentages in parentheses. P<0.05 significant

n(%): Frequency (column percentage)

CHAPTER FIVE

DISCUSSION

The objective of the study was to assess the quality of life (QOL) among PLHIV receiving anti-retroviral drugs from the Ridge hospital, La and Adabraka hospitals. About 326 complete questionnaires were used for the analysis. The mean age ± SD of the study participants of 39.7years ±10.1. Majority of the participants (82.5%) were females. The sex distribution of respondents from the three health facilities reflected the disproportionate burden of the HIV epidemic in Ghana which has 65% of females accounting for majority of the HIV population National Estimates Report (2016-2020). Female vulnerability due to the biological disposition, social, economic, legal and cultural factors account for this trend is consistent with other data worldwide (Duarte et al., 2014). Using the WHOQOL BREF tool, the physical characteristics, psychological factors, social relationships and environmental characteristics were assessed to determine the QOL.

The physical health domain, with seven components, assessed the impact of HIV on the activities of daily living, dependence on medicinal substances, fatigue, restricted mobility, presence of pain and discomfort, sleep and rest, lack of energy and initiative, and perceived working capacity. The determination of psychological health was based on how much one enjoyed life, the meaningfulness of life, the ability to concentrate and accept body image and experiences of negative feeling and self-satisfaction. The domain in respect of social relationships focused on personal relationship with family and friends and satisfaction with sex. The environmental wellbeing measured respondent’s freedoms, conditions of home environment, financial status, access to health services and transport.

Transformed scores of WHOQOL scores range from 0 to 100. The study obtained mean score of 57.3 ± 12.3 (73.0%) for Physical activity, 60.4 ± 12.8 (76.4%) for psychological domain, 58.1 ± 19.1 (62.3 %) for social domain and 59.9 ± 13.3(76.7%) for environmental domain, and 66.7 ± 18.3 (74.9%) for the overall QOL. Comparatively, findings from this study are higher than Karkashadze et al. (2017) who obtained 63.6% rating on good quality of life compared 74.9% score found in this study. However, the overall QOL mean score (66.7) in this study finding was lower than the results from Bakiono et al., (2014) in Burkina Faso which scored an overall mean score of 82.4. Considering the local context, Osei-Yeboah et al., (2017) in the Volta region showed better QOL mean score (79.5) compared to this study results. The QOL among PLHIV attending Ridge hospital recorded the highest score compared to those attending La General and Adabraka hospitals. As referral centre with long years of service provision to clients compared to the other two health facility, this may be as result of the impact of counselling by health professionals for PLHIV and other clients with chronic conditions and its effect on their quality of life as alluded by Bello & Bello (2013).

Similar results were recorded in the environmental and social wellbeing. The percentage score in the environmental domain (76.7%) portrays respondents felt safe, were satisfied with conditions of living environment, their financial status and ease of access to health services and transport. Psychological domain recorded 76.4% which was a reflection of perception of a meaningful life, acceptance of body image and self-satisfaction. The implementation of the community system strengthening (CSS) module from 2015- 2017 in the Greater Accra region could have partly contributed to this achievement. The CSS focused on capacity building of persons living with HIV at the national and decentralised level in Human Rights, Management and Social Accountability. The project aimed at building the image of PLHIV, accepting the bodily image and improving on their capacity and coping strategies as persons with chronic illness. Nonetheless, the impact of the CSS module per its objectives can be established upon the conduct of an evaluation.

The lowest score from the social domain (62.3%) depicts weak personal relationship, dissatisfaction with sex and the lack of emotional support from friends. According to Mbada et al., (2013), lower QOL in the social relationships domain is suggestive of stigma and discrimination. This could be attributed to high level of stigma among PLHIV. Support groups provide an enabling environment for PLHIV to educate, inform and keep abreast with issues relating to HIV and other skill building processes. Stigma among PLHIV who were registered with support groups was relatively lower to those non-members of a support group (Study Index Study, 2014)

For physical characteristics, majority of the respondents (51.2%) indicated that they were not affected and 19.1% reported to be moderately affected by physical pain. Study findings from Lifson et al., 2015 rated physical functional as 89±23.0 compared to 80.1 ± 9.76 and bodily pain (88.0 ± 21.4). This is considerably higher than the finding in my study. Attribution could be made to the free National Health Insurance Scheme available to all PLHIV and Ghanaians to access free services. Even though several studies report that sleep disturbance is prevalent among PLHIV including Taibi (2014) study which reported sleep disturbances among 70% of PLHIV, the reverse is observed in this study. On the contrary, nearly the same percentage 72.7% (36.5% satisfied and 36.2% very satisfied) reported to be satisfied with sleep in this study.

In relation to work capacity, about 15% of respondents viewed their capacity for work as less satisfactory or neither satisfied nor dissatisfied. This corresponds with the findings from Mbada et al., 2013 which explained decreased functional exercise and capacity in anaerobic metabolism, muscle fatigue associated with the effects of HIV and AIDS.

With respect to psychological factors, half of the respondents indicated they enjoyed life, Furthermore, about 1 out of every 3 respondents had a positive acceptance of their bodily appearance. This findings contradict Yang et al., (2015) whose study findings confirmed the association between acceptance of body image of PLHIV. Nearly 60% experienced little or moderate levels of negative feelings. Notwithstanding, the results from this study which reported high levels, reaffirmed Sikkema et al. (2015) findings where PLHIV experienced greater psychological distress than the general population. Additionally, depression and suicidal thinking occurred frequently among PLHIV, leading profound negative effects on quality of life.

Social relationship such as personal relationship, satisfaction with sex and support from friends affected the QOL of PLHIV. Respondents (55.2%) expressed satisfaction with their personal relationships whiles about 12% of them were dissatisfied with sex life and only 6% reported to be satisfied with sex life. 11 respondents failed to answer this question due to its sensitive nature. About twenty percent (20.9%) were not certain about the level of emotional support received from friends and family. Sex with the right person, place and time may leave one with lasting memories. However, majority of Ghana are Christians (US DoS, 2015) and view marriage as sanctimonious and preserve for married couples. According to Bssc et al., (2017), misconceptions about HIV transmission routes and overestimation of the perceived contagiousness and risks through casual contact heighten stigma against PLHIV. With the assumption that partners who expressed good personal relationship to their family had disclosed HIV status, the observation of this study could corroborate Tshweneagae et al.,(2015) finding which revealed that partners who were more likely to disclose HIV status to family members and friends had a good family support base than those who rarely disclosed to their sexual partners. The low dissatisfaction with sex may result from the side effect of ARVs which causes sexual dysfunction as established by Degroote et al., (2014).

Environmental characteristics such as conditions of living environment, safety and security, financial stability, transport and access to health services affected QOL of PLHIV. Majority of the respondents indicated their inability to afford basic needs due to little or lack of financial resources. This finding corroborates the assertion by Hadgu et al., (2013) that inadequate financial resources among PLHIV remains a major challenge to improving their quality of life, productivity and survival. Although, Ghana provides free access to ARVs for all PLHIV, Riyarto et al., (2010) position on that the provision of subsidized ARVs alone does not ensure financial accessibility resonates with the findings in this study.

A sizeable number of respondents were engaged in services or sales and expressed little margins of profits on their sales. This reflects the data in the Labour Force Report by (Ghana Statistical Service, 2016) which revealed the main occupation of Ghanaians in urban localities as service and sales work. Almost a fifth reported to have been unemployed. This was consistent with the unemployment rate recorded in the Stigma Index report (2014). Although, lower than the Ghana's national average, contradict

Annequin et al.,(2015) study which noted a high unemployment rate in PLHIV compared to the general population.

Even though respondents reported experiencing high level of satisfaction with safety, environment, transport, and living conditions, this may be attributable to robust health systems and enabling environment for PLHIV and ease of access to transportation. The establishment of the Commission of Human Rights and Administrative Justice (CHRAJ) online reporting system for all PLHIV, the promulgation of the GAC Act 938 and the capacity building programmes by GAC and other civil society organisations may have empowered PLHIV to know the rights and obligations and seek redress through established institutions. This may have contributed to a high safety and security among study participants (60%). Almost 1 out of 5 expressed varying levels of dissatisfaction of transport. Notwithstanding, findings from Ankomah et al., (2016) and Wasti et al., (2012) which revealed long distance to treatment centres and transportation challenges as one of the key barriers to access and retention to care, an overwhelming majority (89.5%) reported to be satisfied with access to health services whiles 5.3% shared a contrary view. Moreover, the abolishment of Gh 5.00 sur-charged for ARV by the President of the Republic of Ghana on the 1st of December, 2012 that paved the way for free access to services except for some laboratory services could also have contributed to this marked level of satisfaction. This finding aligns with the recommendation by Tran et al., (2013) study in Vietnam on scaling up free ARV services, earlier access to and initiation of ART, decentralisation and integration of HIV services to reduce their financial burden.

At the bivariate level, there were no significant associations in the age, education, marital and employment status and type, occupation and the overall QOL. On the contrary, study findings from Amanuel et al., 2015 revealed significant associations of gender differences in all domains of the QOL. However, this study was consistent with Karkashadze et al., (2017) & Liang et al., (2014) which revealed that males had a better quality of life than females. However, education was associated with better outcomes in the psychological and social domain. Marital status and education was associated with social wellbeing. This correlates the findings from Bello & Bello (2013) which found better social wellbeing among married PLHIV than for unmarried women. It is believed that emotional, and social support the married women received from their partners to a great extent improves QOL. Additionally spousal support serve as treatment adherence and motivate disclosure either before or after initiation on ART which led to improved personal relations and QOL (Haberlen et al., 2015).

Significant associations were found to exist in the employment status and physical domain psychological and environmental domain. This is in line with findings of Degroote et al., (2014) which found employment influenced both physical health. These results underscores the recommendation by Razavi et al., (2012) on the importance of providing employment opportunities for PLHIV as a necessary steps in improving their overall wellbeing.

The association between socio-economic and demographic variables and QOL is well documented (Degroote et al., 2013). The logistic regression analysis results show the highest level of education was associated with overall QOL. COR= 9.33 CI (1.14-76.) The finding correspond with that of the facility-based cross-sectional study in the Eastern region of Ghana carried out by Fosu, 2016 which found the highest level of education as the only predictor of the overall QOL in a multiple linear regression. Being 45years and older, secondary education (JHS and SHS) and tertiary education linked to a better social wellbeing. This could partly be explained 2014 GDHS, that comprehensive knowledge of HIV increased with education Consequently, PLHIV 45years and older with secondary and tertiary education are well informed, have access wider access to information, broader perspective of issues and economically stable. This could provide the basis for improved personal relation, sexual life and support from friends in the social domain.

Previous studies showed inconsistent results for the association between ARV treatment and overall QOL. Contrary to some studies which have shown better quality of life among PLHIV antiretroviral drugs, this study did not show such an association in the overall QOL.

In, the bivariate analysis, except for the physical domain, this was consistent with Silva et al., (2014) study findings which did not present significant difference in the QOL domains for the same ARV duration sub-categories. This study contradicts the findings from Bello & Bello (2013) which established a significant association between duration on treatment and overall QOL. Adjusting for socio-demographic variables, PLHIV on treatment for 5-9years had significant association with the physical domain and 2.56 times higher in social wellbeing compared less than 5years. According to Karkashadze et al., (2017) & Silva et al., (2014) the beneficial effects of ARV to improve immunity and control viral is more possible among adherent users. This could have contibuted to achieving better QOL in the physical and social domains.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The Quality of Life (QOL) score were rated as physical domain (76.0%), psychological domain (76.4), social domain (62.3%) and environmental domain (76.7%). The overall quality of life of PLHIV living with HIV attending selected health facilities (Ridge, La General & Adabraka hospitals) was 74.9%.

The physical attributes that affected QOL were satisfaction with activities of daily living, dependence on medicinal substances, mobility, presence of pain and, sleep and rest, a lack of energy and perceived working capacity. Psychological factors that affected QOL were the level of satisfaction of enjoyment and the meaningfulness of life, the ability to concentrate and accept body image and experiences of negative feeling and self-satisfaction. Moreover, personal relationships and support from friends and family were found to affect social wellbeing. The environmental attributes that affected were conditions of home environment, financial status, access to health services and transport.

Logistic regression analysis showed that except for being 45years and older, PLHIV who were married, had secondary education (JHS and SHS) or tertiary education and PLHIV on ART for five (5) to nine (9) years were linked to better social wellbeing. Unemployed PLHIV observed reduced chances of achieving good physical, psychological and environmental wellbeing. PLHIV on ART for more than ten (10) years observed reduced physical wellbeing. Duration on ART was not significantly associated with overall QOL.

6.2 Recommendations

The following recommendations are made based on the findings from the study:

1. The National Coordinating Body for the HIV and AIDS response should incorporate the quality of health in the subsequent National Strategic Plan for HIV response and Differentiated Models of Care to improve the quality of life of PLHIV.
2. Institutions responsible for Demographic Health Survey should include the assessment of QOL among PLHIV in national surveys.
3. The National Coordinating Body for the HIV and AIDS response, the private sector and civil society organisations should revamp public education and interventions to de-stigmatise HIV and AIDS and reduce stigma and discrimination against PLHIV.
4. The National Coordinating Body for the HIV and AIDS response in collaboration with other partners should scale up training on human rights to PLHIV to empower PLHIV and reduce the high level of internal stigma.
5. Build the capacity of Civil Society Organisations to understand the tenet of quality of life and its effect on the wellbeing of PLHIV
6. Revamp the Stigma and Discriminating reporting system to provide platform to cases of abuse against PLHIV.
7. Ministry of Education in partnership with the National Association of Persons Living with HIV (NAP+) should provide avenues for encouraging PLHIV to attain higher educational levels (Tertiary education and more) to increase social relationship.
8. Countries must review existing laws to ensure the protection of the human rights of PLHIV and assign committees to enforce the implementation of such laws.

9. National HIV/STI Control Programmes in collaboration with the National Coordinating Body for the HIV and AIDS response and NAP+ should revamp the PLHIV support group to provide the platform to improve their social wellbeing of PLHIV.

6.3 Limitations

1. Due to limited financial resources the project was self-financed and could have increased the coverage; nonetheless, this did not affect the quality and the conclusion drawn on this study.
2. Concurrent data collection by another researcher limited the sample size obtained and therefore additional sites had to be included.
3. The cross sectional nature of the study limited the extent to which we can draw conclusions regarding temporality or the causal nature of observed associations.
4. Data on the number of children among individuals collected which could have provided additional information on its effect on the Quality of Life

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APPENDICES

Appendix I: Questionnaire

Questionnaire on WHO Quality of Life

WHOQOL-BREF

My name is Cynthia Adobea Asante and a student of School of Public Health. I am currently conducting a research on the quality of life of persons living with HIV attending the Ridge Hospital. The study is solely for academic purposes. I assure you of absolute confidentiality on any information you may provide. This should take about 20 minutes of your time.

The following ask you feel about your quality of life. I will read out each question to you, along with the response options. Please choose the answer that appears most appropriate. If you are unsure about which response to give to a question, the first response you think of is often the best one (The numbers after responses indicates the scores of the responses).

Please keep in mind your standards, hopes, pleasures, and concerns. We ask that you think about your life in the last four weeks (The overall quality of life and general health facet)

Section A: Demographic Characteristics

Age…

Gender: Male [ ] Female [ ]

Religion: Christian [ ] Muslim [ ] Traditional [ ] Others [ ]

Level of Education: None [ ] Primary [ ] JHS [ ] SHS [ ] Tertiary [ ]

Marital Status: Single [ ] Married [ ] Divorced [ ] Separated [ ]

Employment: Employed [ ] Unemployed [ ]

Type of employment: Skilled [ ] Unskilled [ ]

Length on ART [ ]

		Very poor	Poor	Neither poo nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied no dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with yo health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the la

st four weeks

		Not at all	A little	A moderat amount	Very much	An extrem amount
3.	To what extent do you feel tha physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel yo life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do cert ain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	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
15	How well are you able to get around					

		Very dissatisfied	Dissatisfied	Neither satisfied no dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

Do you have any comments about the assessment?

Thank you for your kind assistance

Appendix II: Participant Information Sheet

STUDY TITLE: Assessment of Quality of Life among Persons Living with HIV attending ………………………….. hospital.

Introduction:

My name is Ms Cynthia Adobea Asante of School of Public Health, affiliated to the Department of Epidemiology, College of Health Sciences, University of Ghana. My contact detail is c/o Ghana AIDS Commission, 4th Floor Olympic Committee Building, Accra. My cell phone contact is 0264738083 and email contact is casante@ghanaids.gov.gh/cynthia.asante1@yahoo.com.

Nature of Research:

In Ghana, ARV coverage among the total population of PLHIV has been low over the past three years. Based on the evidence available through researches conducted in the West African sub regions and other continents that ARVs prolongs longevity, the quest to assess the quality of life among PLHIV has become necessary. Additionally, limited published research has been conducted in Ghana to assess the quality of life for PLHIV. This study seeks to assess the quality of life among persons living with HIV attending the Ridge hospital. The study is descriptive in nature and would involve PLHIV responding to closed- ended structured questionnaire. For the purpose of this study, Quality of life scores would be categorized into two; with scores ≤ 50 representing poor QOL and ≥ 51 denoting good QOL

Participant Involvement:

Duration/Time Involved Practically, the study will last for three months beginning from March to May 2018. Participants involvement is scheduled in March 2018, and they would be required to answer questions in the semi-structured questionnaire.

Potential Risks The study does not possess any clinical risks to participants except that projected psychological and emotional discomfort may occur to participants due to the structure and nature of the questionnaire, however, the investigator seeks to explain the questionnaire to participants to the extent that this projected discomfort is averted.

Confidentiality All information provided in this study will be secured and stored on the REDCap database of the School of Public Health, University of Ghana. Other researchers may find and use the data; however, participant's name or any other identifying information will be removed from the data to keep confidentiality.

Benefits There will be no direct benefits to the participants in this study. However indirect benefits to the PLHIV community are anticipated, but cannot be guaranteed, as the evaluation will inform future policy and program implementation.

Confidentiality will be maintained as far as possible and interviewers will insure privacy.

Costs The study would not be of any financial cost to participants as it is solely funded by the investigator.

Compensation There would be no remuneration or compensation to participants. Participants are at liberty to participate or otherwise.

Voluntary participation/withdrawal Participation in this study is voluntary and participants may withdraw at any time without any penalty. Participants can choose not to participate or to answer any individual question or all the questions. Participant participation may be terminated if they feel too uncomfortable talking about the subject, become tired, or find the study too intrusive.

Feedback The study findings although for academic, would be shared with the management team of the health facility and the network association of PLHIV.

Funding information The principal investigator has a sole financial responsibility for this study.

Contacts for Further Clarifications:

Further clarifications on this study would be communicated on a request to either the investigator, Cynthia Adobea Asante on telephone number 0264738083 or Madam Hannah Frimpong, the administrator, Ghana Health Service – Ethics Review Committee of the Research and Development Division on a phone contact 0507041223.

Appendix III: Consent Form

Study Title: Assessment of Quality of Life among Persons Living with HIV attending …………………………… hospital

Principal Investigator: CYNTHIA ADOBEA ASANTE Address: School of Public Health, University of Ghana. Information

Dear Participant, This consent form contains information about research on Quality of life among persons living with HIV attending to Ridge. In order to be sure that you are well informed of the research, the researcher is asking you to carefully read (or have it read and explained) to you this Consent Form. You will be asked to sign it or on behalf of your ward and a copy given to you.

Why the study

In Ghana, ARV coverage among PLHIV has been consistently low over the past three years. Based on the evidence available through researches conducted in the West African sub regions and other continents that ARVs prolongs longevity, the quest to assess the quality of life among PLHIV has become necessary. However, limited published research has been conducted in Ghana to assess the quality of life for PLHIV. This study seeks to assess the quality of life among persons living with HIV attending the Ridge hospital. The study is descriptive in nature and would involve participants responding to closed-ended structured questionnaire.

General Information and your part in the study

For you to qualify to be part of this study, you must be a person living with HIV. I may contact you by phone if further information is needed.

Possible Benefits

There are no direct benefits to you; however, findings of this study will help us to suggest improved ways of providing interventions for persons living with HIV.

Confidentiality/Privacy

The researcher will keep subjects' contributions to the research confidential unless subjects have agreed otherwise (preferably in writing). Data captured during data will be coded and therefore will not require the name of subjects. The data will be securely transmitted through a secure network to a central server using the redcapp application. Data will be entered directly onto computer during the interview, and will be backed-up daily. The system will create a unique automated serial number for each participant. Please be assured that data obtained from this study will be managed under the strictest codes of confidentiality.

Voluntary Participation and Right to Leave the Research

Your participation in this research is strictly voluntary and so if you do not want to participate you are free to do so. You are not going to lose anything if you decide not to take part. If you participate and in the process you want to stop you will be allowed to do so.

Contacts for Additional Information

If you ever have any questions about the research study or study-related problems, you may contact Ms Cynthia Adobea Asante, School of Public Health, 0264738083 casante@ghanaids.gov.gh; Dr. Ernest Ḵenu ernest_kenu@yahoo.com 0244592122; ERC administrator Ms Hannah Frimpong 0243235225 or 0507041223

Volunteer Agreement

The above document describing the benefits, risks and procedures for the research title (Assessing the Quality of Life Among Persons Living with HIV attending Ridge Hospital) has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

-- --

Date Name and signature or mark of volunteer

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

-- --

Date Name and signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

-- ---------------------------------------

Date

Appendix IV: Raw Scores for Domains

Physical	Freq.	Psychological	Freq.	Social	Freq.	Environmental	Freq.
11	1	8	2	3	2	15	1
12	1	11	2	4	1	16	5
14	2	12	1	5	5	17	3
15	4	13	3	6	18	18	5
16	4	14	4	7	26	19	4
17	7	15	11	8	27	20	6
18	11	16	12	9	44	21	5
19	12	17	13	10	68	22	13
20	20	18	29	11	49	23	12
21	26	19	26	12	49	24	22
22	39	20	38	13	19	25	23
23	54	21	42	14	11	26	30
24	42	22	57	15	7	27	36
25	24	23	48			28	39
26	21	24	19			29	31
27	26	25	9			30	22
28	11	26	8			31	24
29	13	27	1			32	11
30	5	28	1			33	14
31	1					34	8
32	2					35	5
						36	4
						37	2
						38	1

Appendix V: Participant Transformed Scores (N=326)

Domain	Frequency	Percentage(%)
Physical		
0-50	88	26.99
51-100	238	73.01
Psychological		
0-50	77	23.62
51-100	249	76.38
Social		
0-50	123	37.73
51-100	203	62.3
Environmental		
0-50	75	23.31
51-100	251	76.69