The role played by Prison Officers in ensuring ART Adherence on Prison Inmates who are HIV/AIDS infected (KweKwe Central and Conemara Prisons).

by

Keeteretsi Tlou

Assignment presented in fulfilment of the requirements for the degree of Master of Philosophy (HIV/AIDS Management) in the Faculty of Economic and Management Science at Stellenbosch University

Supervisor: Prof Elza Thomson

April 2014

DECLARATION

By submitting this assignment electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

February 2014

ABSTRACT

HIV/AIDS has severely impacted the Sub-Sahara region and Zimbabwe has been not spared of such an impact. There is high infection and mortality rates due to the impact of this disease. Prison centers within the Sub-Sahara region attract high HIV prevalence and mortality rates. This is also true in Zimbabwe prisons centers where the impact proportion is higher than that of the general population. Living with HIV/AIDS does not mean a death sentence, but ARTs have a lease of life that they have subsequently reduced the mortality rate and subsequent improvement of health. Reducing the impact of the epidemic within prison environment, where the role played by prison officers to ensure ART adherence by prison inmates living with HIV/AIDS was explored in this study. Various tools which help ensure adherence to ARTs were explored and placed in context. Questionnaires were administered; data evaluated and analyzed produced recommendations on how best ART adherence can be improved throughout the prison centre environments. Assurance of ART adherence subsequently results in viral load suppression, improvement of health and prolonging of life of those living with HIV/AIDS.

Prison health staff was the only referral personnel who are handling ART adherence during day working hours and in the evening turning off of lights is used as the reminder. The rest of prison staff are out of the picture when it comes to ensuring ART adherence. It is imperative to note HIV/AIDS responsibility and taking care of prisoners living with it is all our responsibility. There is a stipulation on taking care of prisoners living with HIV/AIDS by prison staff and allocation of additional resources to the prison services to improve the quality of prison care in the National HIV/AIDS Policy, Zimbabwe (1999).Failure to adhere to respective medication among others result in drug resistance, worsening of health conditions, shortening of life and change of regimens which ultimately increase expenses to the Government providing them free of charge. There should be a proactive approach of ensuring ART adherence within prison environments. It can only be made possible by tailor made tools suitable for prison centers which aid ART adherence. These can be made to suit a targeted environment, easy to procure and apply but ensuring maximum taking of ARTs as per stipulated time intervals. Prison centers are strategic in contributing towards health rehabilitative roles on prisoners living with HIV/AIDS.

OPSOMMING

MIV / vigs het erg geraak die Sub-Sahara-streek en Zimbabwe het nie gespaar van so 'n impak. Daar is 'n hoë-infeksie en die sterftesyfer as gevolg van die impak van die siekte. Gevangenis sentrums binne die Sub-Sahara-streek lok hoë voorkoms van MIV en sterftesyfers. Dit is ook waar in Zimbabwe tronke sentrums waar die impak verhouding is hoër as dié van die algemene bevolking. Wat met MIV / vigs, beteken nie 'n doodsvonnis nie, maar kunste het 'n huurkontrak van die lewe wat hulle dan verminder die sterftesyfer en daaropvolgende verbetering van gesondheid. Die vermindering van die impak van die epidemie in die tronk-omgewing, waar die rol van die gevangenis beamptes ART nakoming deur gevangenes wat met MIV / vigs te verseker is in hierdie studie ondersoek. Verskeie gereedskap wat help om die nakoming verseker kunste, is ondersoek en in konteks geplaas. Vraelyste is voltooi; data geëvalueer en ontleed wat aanbevelings oor hoe om die beste ART nakoming regdeur verbeter kan word die gevangenis sentrum omgewings. Versekering van ARB handhawing later lei tot virale lading onderdrukking, die verbetering van gesondheid en verlenging van die lewe van diegene wat met MIV / vigs.

Gevangenis gesondheid personeel was die enigste verwysing personeel wat die hantering van ART nakoming gedurende die dag werksure en in die aand aanskakel van ligte word gebruik as die herinnering. Die res van die gevangenis personeel is uit die prentjie wanneer dit kom by die versekering van ARB handhawing. Dit is noodsaaklik MIV / vigs verantwoordelikheid om daarop te let en die versorging van gevangenes wat met dit al ons verantwoordelikheid. Daar is 'n bepaling oor die versorging van gevangenes wat met MIV / vigs by die gevangenis personeel en die toekenning van bykomende hulpbronne aan die gevangenis van die kwaliteit van die gevangenis sorg te verbeter in die Nasionale MIV / vigs-beleid, Zimbabwe (1999). Versuim om te voldoen aan onderskeie medikasie onder andere lei tot weerstand teen die medikasie, verslegtende gesondheid voorwaardes, smeer van die lewe en verandering van regimens wat uiteindelik verhoog uitgawes te die Regering hulle te voorsien gratis. Daar moet 'n pro-aktiewe benadering te verseker ARB handhawing binne die gevangenis omgewings. Dit kan net moontlik gemaak word deur die maat gereedskap geskik vir die tronk sentrums wat hulp ARB handhawing. Dit kan gedoen word om 'n geteikende omgewing, maklik om te verkry en toe te pas aan te pas, maar verseker maksimum neem van kuns soos per vasgestelde tyd intervalle. Gevangenis sentrums is strategiese in te dra tot gesondheid rehabilitatiewe rolle op gevangenes wat met MIV / vigs.

ACKNOWLEDGEMENTS

First and foremost, I would like to express heartfelt thankfulness to my Heavenly Father who has made this research a possibility and success.

Professor Elza Thomson, Prof Jan du Toit, B. Davis, A. Willets, A. Laas, R. Alexander, Zimbabwe Prison Services, Prison Officers at KweKwe and Conemara, Medical Research Council of Zimbabwe and the rest of Stellenbosch University staff working behind the scenes your input, guidance, corporation and availability deserves a special mention in this piece of work. Thank you very much. It was indeed a blessing working with all of you.

I dedicate this work to my Wife Venacious, Daughter Makatendeka Reign, Parents Puso, Gladys Tlou, Brother Tendaishe, Brother Revesai, Sisters Nkamuheleng, Iponeleng, Keneetswi and Spiritual Father Prophet Tafadzwa Muzira .When the journey seemed tough, you were a source of strength, encouragement and motivation. Keep up the good work, thank you and God bless.

Together we can achieve: zero HIV infections, zero discrimination and zero AIDS related mortality.

TABLE OF CONTENTS **PAGE**

CHAPTER THREE
RESEARCH METHODOLOGY

CHAPTER FOUR
REPORTING RESULTS

CHAPTER FIVE
CONCLUSION AND RECOMMENDATIONS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

Pis	Prison inmates
Pos	Prison officers
HIV	Human immune virus
AIDS	Acquired immune deficiency syndrome
ZACRO	Zimbabwe Association for Crime Prevention and Rehabilitation of the Offender
UNAIDS	United Nations AIDS Programme
ARVs	Antiretroviral
ART	Antiretroviral treatment
PrLWHA	Prisoners are living with HIV/AIDS
PLWHA	People living with HIV/AIDS
NAP,Zw	National AIDS Policy, Zimbabwe
MSM	men having sex with other men
MoCHW	Ministry of Child and Heath Welfare
REC	Research ethics Committee
WHO	World Health Organization
NAC	National Aids Council- Zimbabwe

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Prisons as an institution with individuals all in close proximity remain severely affected by HIV/AIDS prevalence. Rolling out of ARVs among prisoners with infections improves health, quality of life and duly prolongs life with the view of their ultimate release or those remaining behind bars for long prison terms. Positive results can be attained with regards to reducing HIV/AIDS prevalence rate, improving of health and prolonging of life if antiretroviral treatment (ART) rolling out is ushered without compromise. There is a need for the corporate world, civic organizations to become increasingly involved with interventions to fight against HIV/AIDS in prisons. Whilst rolling out antiretroviral (ARVs) by government for free to prisoners living with HIV/AIDS (PrLWHA) is a positive move which ensure availability, there is therefore need to ensure that there are tools in place which encourage adherence.

1.2 Background of the study

Zimbabwe has an estimated fifty five prisons including satellite ones with a population of 17900 (Mazire, 2013). These centers hold prisoners on remand and imprisonment from as little as one month to life sentences depending on the intensity of the crime committed. Kwekwe Central and Conemara prison centers are located in the midlands region of the country. Kwekwe Central is a closed type prison whilst Conemara is an open one for correctional and rehabilitative services. Due to lack of space in the country's prison, these centers hold those with incarcerating terms ranging from remand, rehabilitative and correctional. Prison officers (Pos) work on shifts both day and evening which are eight working hours; these Pos are targeted in this study.

Prison centers are confinements where relatives and friends are only allowed to visit on set times per given period and prisoners are mostly in custodianship of Pos. Visitations are scheduled for once a week or fortnight and restricted to half an hour or less. Jürgens(2007) described a prison as a place of detention for a given time period as determined by time of imprisonment/sentence. It is on this pretext that prison inmates may be neglected and live under harsh conditions where relatives or close friends may shun them depending with the scenario of conviction and distances. Among prisoners, HIV prevalence and mortality rate remain high and female frequency rate exceed that of male prisoners. There are some prisoners who are convicted HIV positive, already living with the infection and those

who contract the epidemic due to high risk sexual behaviors in such confinements. National AIDS Policy, Zimbabwe (NAP, Zw 1999) guiding principle 33 stipulates "… prisoners have basic rights that must be respected and protected including the right to HIV/AIDS/STI information, counseling, care and treatment".

The subject of concern is on the role Pos can play in facilitation the adherence of antiretroviral treatment (ART) prison inmates (Pis) who are living with HIV/AIDS. The main reason warranting such concern is Pos spend time schedules with convicted prisoners. Lack of adherence by Pis living with HIV/AIDS can be triggered by inhuman conditions which exist within confines of prison centers. Taking of prescribed medication is timed and should be done according to a prescription given by health personnel. Mostly, in a prison environment certain conditions such as restrictions to take cell phones, alarm clock watches and other devices which promotes adherence are not allowed hence adversely affecting treatment. This though is in line with restricting of certain liberties, there is a requirement that aiding devices which promotes ART adherence be devised to promote such a noble cause.

1.3 Motivation of the research project

In many instances, people living with HIV/AIDS (PLWHA) fall victim to shortened life, poor health living due to neglect, no access to medication and adherence. Many PLWHA died not because their lives were due but there was a lack of medication and adherence to respective prescriptions. ARVs prolong and improve quality of lives on those with HIV/AIDS. Lack of adherence affects the lives of those on medication, should they not take it and if there are no structures in place which aid adherence.

1.4 Problem statement

The study is aimed at exploring the research question in order to recommend solutions and solve a problem in-line with promoting of ART adherence among prisoners living with HIV. The problem statement is: What role does prison officers play in ensuring ART adherence on prison inmates who are HIV/AIDS infected (Kwekwe Central and Conemara Prisons)?

1.5 Objective of the study

The objectives of the study are:

- To investigate if prison officers encourage taking of ARVs on prescribed times by prison inmates who are living with HIV/AIDS.

- To establish if prison officers are empowered to assist inmates in imparting knowledge with reference to advantages of taking ARVs.
- To investigate if prison officers and other related staff have a role to play in promoting prevention, care and treatment of prisoners living with HIV/AIDS.
- To establish what tools are in place which encourage ART adherence in their respective prison centers.
- To make recommendations on the way forward in ensuring adherence to medication.

1.6 Research methodology

Quantitative research method through a descriptive research design will be used in data collection. Data will be collected through self-administered questionnaires. The reason the descriptive research design was chosen was due to a concern about gathering information on a phenomenon on study and describes what happens in the process Christensen, Johnson, Turner (2011).These self-administered questionnaires are objectively used to gather Pos' views pertaining to the subject of ART adherence. POs were targeted because they work directly with and are the custodians of prisoners who are both living with HIV/AIDS and those not yet infected.

1.7 Limitations of the study

The research was conducted in the shortest time possible due the nature of the environment. Only two prisons in Zimbabwe were used in this study, therefore the findings cannot be generalised for the rest of the prison populations throughout the country.

1.8 Outline of Chapters

Chapter One – Introduction

An introduction, in-depth background and rationale of the study are expounded with a notion to contextualize the study under discussion. The research problem, significance, aims, objectives and limitations of the study are included.

Chapter Two – Literature review

Review of literature in relation to the subject under discussion will be availed. Different sources will be consulted and be accordingly quoted to bring about a clearer picture of the study under discussion. This therefore allows for sufficient exploring of the research question and key words in question.

Chapter three – Research methodology

The methodology used in this study will be adequately described in this chapter. Data collection techniques and sources, data presentation and analysis, sampling techniques which are sampling methods, size and population will be applied and presented accordingly. Ethical considerations and delimitations will be applied accordingly as per the stipulated requirements.

Chapter four – Reporting of results

Results based on data gathered through the administration of questionnaires will be reported accordingly and based on findings, diagrammatic presentations presented accordingly. These are used to express findings, relevant diagrammatic presentations like pie charts, tables and graphs used where necessary. Whenever necessary, responses will be quoted and cited accordingly so as to put more emphasis on disparities based on the subject under discussion.

Chapter five- Conclusions and recommendations

Conclusions and recommendations based on data analysis and evaluation will be made and presented in this chapter. Recommendations made will be proposed for future references, studies and interventions addressing the same subject matter.

1.9 Conclusion

Improving health and prolonging of lives of prisoners living with HIV, adherence to medication should not be compromised but be a matter of priority. ART adherence is among others a measure available which improves health and prolongs life of those living with HIV/AIDS. The next chapter explores the subject on ensuring adherence to ART by prison inmates who live with the epidemic and this gives incite on the topic under discussion.

CHAPTER TWO

LITERATURE SURVEY

2.1 Introduction

Zimbabwe among other Sub-Saharan countries is not spared by high HIV/AIDS prevalence and mortality rate among prisoners. This is mainly attributable by unsafe sexual practices, men having sex with other men (MSM), unprotected sex and other means of infection. Mortality rate is mostly fueled by lack of adherence or failure to access ARTs on time. There are prisoners who contract the disease whilst serving their prison terms and some at the time of conviction are convicted already infected by HIV/AIDS.

According to UNAIDS Global Report (2010) world HIV/AIDS prevalence rate stood at 33.3 million with Sub-Saharan Africa impacted and attracting the highest prevalence rate of 22.5 million which is 67% of global prevalence. Coleman (2009) concurs by mentioning Sub-Sahara Africa has the highest infection rate in the world. Zimbabwe is not spared of such an occurrence being among the top ten with adult HIV prevalence rate of 14.3%. Not only does Sub-Sahara Africa attract the highest HIV prevalence rate in the world but it has the maximum frequency rate in its prison centers with 668 000 population (HIV and Prisons in Sub Sahara Africa). South Africa has the highest HIV prevalence rate of 157 375 among prisoners, Zimbabwe having an average of 15 000 and 30% of these being on remand (Todrys, Amon 2012). The current country prison population statistics is estimated at 17 900 (Mazire, 2013). Generally, it is on record prison centers attract high HIV prevalence and mortality rate. Zimbabwe Association for Crime Prevention and Rehabilitation of the Offender (ZACRO) concurs and in Zimbabwe prisons "…a high proportion of the general population in the prisons is infected with HIV/AIDS". Prison centers remain high risks areas where incidence, prevalence, mortality rate are always on the increase, impacting lives of those living with HIV/AIDS. Though medication is availed in such centers free of charge, a challenge in adherence is of major concern. Todrys et al. (2012) mentioned "…HIV prevalence in Sub Sahara Africa prisons has been estimated at two to fifty times higher than that of non-prison populations"; is alarming and requires attention.

In Zimbabwe HIV/AIDS prevalence rate among prisons remain high and is found to be doubling the national prevalence. Mugurungi (MoHCW, 2013) indicated the HIV prevalence rate remain high, female prisoners are more affected attracting 18% and males at 12% compared to the national statistics at 15%.

Mostly PrLWHA if they do not have access to ARTs fall victim of poor health, general deterioration in physical condition amounting to premature mortality rates. Availability of ARVs and concurrent lack in adherence amounts to the same scenario. Among others, ART adherence is saving lives, improving health and prolonging life. This therefore calls for continuous, effective administration of ARTs on prisoners living with HIV/AIDS.WHO (2006) stressed a point where "…prisoners are entitled, without discrimination, to a standard of health care equivalent to that available in the outside community including preventative measures". Support can be rallied not only by prison health staff but by all employees and other measurers who can be put in place aiding ART adherence. A prison environment is secluded and different from a home setting, having certain restrictive measures which may promote lack of adherence. The environment is made up of prisoners, prison staff and other employees. Ensuring ART adherence is of effect, there are measurers that should be put in place. In a bid to assist them, ethical issues of privacy and confidentiality have to be taken into cognizance.

2.2 Adherence to antiretroviral treatment/ therapy (ART)

Adherence to antiretroviral treatment (ART) can be explained as taking the correct prescribed dose on the schedule specified (CDC guidance and recommendations for ART adherence). Steel et al (2007) stressed the significance of ART where "…adherence to treatment is critical to obtain full benefits of ART including maximum and durable suppression of viral replication, reduced destruction of CD4 cells, prevention of viral resistance, promotion of immune reconstruction and slowed disease progression". Adherence therefore comes in a package to re-build the immune system of an individual living with HIV/AIDS, significantly improving health status and prolonging of life. Access and use of ARTs assists in declining AIDS related deaths. According to UNAIDS World AIDS Day Report (2012) a report recorded a decline in AIDS related deaths dropping by more than 50% between 2005 and 2011.This was as a result of accessing of HIV treatment and taking it according to respective prescription.

2.3 Right to treatment and care for prisoners living with HIV/AIDS

HIV infection in prisons is high and it is imperative that among others prisoners living with HIV have rights to information, counseling and care (National HIV/AIDS policy, Zimbabwe 1999). Notably 'care' is among the rights that have to be executed on prisoners living with HIV/AIDS. Oxford dictionaries (2013) defined care as "… serious attention or consideration applied to doing something correctly or to avoid damage or risk". The Zimbabwe National AIDS policy stipulated Pos have to take care of PrLWHA, lest

serious damage or risk inform of worsening sick conditions and death become inevitable. Other rights which were mentioned in their policy are the right to HIV/AIDS/STI information, counseling and care; have to be executed by prison staff regardless of medical background.

2.4 Adherence to Antiretroviral Therapy

There is therefore a pre-condition for ART adherence to be effective and a requirement that medication be taken on a more consistent and near perfect adherence. Starace, Alessandra, Amico and Fisher (2006) stressed a point "… consistent and nearly perfect adherence is considered an essential requirement for HIV positive patients on ART to fully realize its life-extending benefits". ART adherence has to be ensured on individuals living with HIV, failure results in drug resistance impacting on worsening of disease condition on those on respective medication. Efforts to successfully suppress the viral load and prevention of drug resistance, treatment have to be taken on a near perfect adherence basis. ART adherence is fundamental to improvement of health on prisoners living with HIV/AIDS (PrLWHA). The therapy comprising of any three of the combination of ARVs as prescribed by the medical practitioner and have the capability of improving the CD4 count for the better, the virus is suppressed and effectually stopped from continual replication, immune system improves, slows disease progression and opportunistic infections becomes less severe. This, however, results in improved health living and life is generally prolonged. To successfully suppress the virus, there is need for near perfect adherence which is marked at 95 percent (Steel et al, 2007). They further attested if ART adherence is below optimal and drug levels are low, viruses continue to replicate and drug resistant is inevitable. This in essence denotes ART adherence is required to marked levels and this is to the advantage on those living with HIV/AIDS. If adherence is, however, below the stipulated levels this results in viral resistance resulting failure to subdue the replication of viral load and reduction of CD4 count to unprecedented levels. In comparison with patients who are adherent to ART, non-adherence people have a higher mortality rate (WHO et al 2007).

2.5 Tools which aid and measure antiretroviral therapy adherence

Adherence to antiretroviral treatment is required from patients who live with HIV/AIDS to suppress viral load as well as improving the quality of their lives. ART adherence in essence is mainly about taking drugs on prescription as stipulated by medical practitioners. Steel, Nwokike and Joshi (2007) made an observation in developing countries where the rate of ART adherence is generally low as attributed by

patients experiencing difficulty in following treatment recommendations and general lack of access. When the aim is to maximally attain viral suppression patients require 95 percent adherence which is termed near perfect adherence. In support there is need to take the appropriate medicine in the correct doses at the same time on daily basis (Coleman, 2009). This, however, calls for proper placement and application of tools which encourage adherence. Tools to measure and aid ART adherence should be non-invasive, simple to use, sensitive, specific and predictive of non-adherence. The following tools can be used to measure and aid adherence. These are tailored made to suit experts in the field of health as well as applicable in resource constrained settings:

- **Direct measures**

  Directive Objective Measures (DOMs) are used in ensuring that individuals are adhering to their medication and there are closely monitored by health care workers ensuring higher chances of adherence. These comprise of Direct Observed Treatment (DOT), Therapeutic Drug Monitoring (TDM), Biomarkers and Medication Event Monitoring System (MEMS).

- **Direct Observed Treatment (DOT)**

  It is a method which is used by health care professional to ensure the prescribed medication is taken as per prescription and is monitored on a more direct observation basis. Glossary of HIV/AIDS (2011) emphasized on this concept that it is a method used to ensure a person receives and takes all medication as prescribed and to monitor response of the treatment. DOT is therefore commonly used on TB (tuberculosis) patience on medication and on HIV/AIDS patients on medication, a variant term directly administered antiretroviral therapy (DAAT) is used. In this study, DOT shall be commonly used as a monitoring system on patience on ART.

- **Therapeutic Drug Monitoring (TDM)**

  It mainly focuses on measuring the concentration of a drug in the blood at scheduled Intervals (Glossary of HIV/AIDS). This method is confined to medical practitioners who are expects in the field.

- **Biomarkers**

  Machinger and Bangsberg (2006) defined biomarkers of adherence as plasma concentration of ARV drugs and they, however, stressed a point that it is of limited use in clinical practice and costly to conduct.

- **Medication Event Monitoring System (MEMS)**

  MEMS contain an electronic device fitted to pill containers which records the removal of a cap

and taking of a pill (Steel et al, 2007).This is a facility which measurers intake of a prescription through a computer programmed facility on pill bottle caps and each time pills are taken, it automatically records. Such a method has its own limitations and cannot guarantee if ever one has really taken his or her medication or thrown away. This facility comes at a price.

- **Indirect Measures**

  Indirect Measurers (IMs) are useful in resource limited settings (Steel et al. 2007).These comprise of Pharmacy Report (PI), Pill Count (PC), Self Report (SP), Pill Identification Test (PIS) and Visual Analogue Scale (VAS).

- **Pharmacy Report (PR)**

  A pharmacy report is based on the dates a prescription is given and when a refill is intended. Prescription refill data is used as an adherence measure, providing dates on when ART medication was given. Adherence is therefore measured by failure to come for a refill or coming late for the refill could be a sign of lack of adherence. Machinger, Bangsberg (2006) attributed to the fact this tool provides a less intrusive means of measuring adherence than most other measures.

- **Pill Count (PC)**

  It is generally a scenario where pills are counted either at the clinic or unannounced visitations to ascertain if whether individuals are taking their medication as per prescription. This method is more useful if there are pill organizers in place and these are used to account for doses taken. A major short fall is gained mostly when a person taking these pills opens them and never taking them, that is to say throwing them away. At the clinic they count and remaining tablets represents missed doses. Taking note of this approach, it is only done on clinic visitations or if there is an unannounced visitation.

- **Self Report**

  It is a patient self-reporting measure used to assess adherence on clinical trials and routine clinical visitations (Steel et al).This method is applicable in limited resource settings. They further attributed to the fact that this method though it has some short fall, has been validated and shown to predict virological response.

- **Pill Identification Test (PIT)**

  It is a tool which is used to detect low adherence on patients who are on ARTs. Patients who are on medication are invited to identify regimes they take even amidst identical pills but not similar pills. Questions can be used in the process in order to affirm if the patients have a knowhow on medication he or she is taking. According to Steel et al (2007) the question construct are meant to "…to provide further evidence that the patient has a good understanding of how to take the prescribed medicines".

- **Visual Analogue Scale (VAS)**

  VAS is a measurement instrument that tries to measure a characteristic or attitude that is believed to range across a continuum of values and cannot easily be measured directly (Steel et al.) To measure adherence, a patient is asked to place a mark on a scale ranging from 0-10 and this according to the author best describes the taking of the prescription by a patient living with HIV/AIDS. It is also known as a good measure used to unearth any cases of none adherence and it is advantageous on resource limited areas. It is however open to some errors.

- **Devices used to promote adherence**

  Some of methods given above are very clinical in nature and require expertise to be able to foster ART adherence. In this paragraph, none clinical devices for ensuring adherence are discussed accordingly. These devices are: reminder devices, medication organizers and visual medication schedules.

- **Reminder devices**

  Reminder devices are easy to use and do not require any skill. Devices like watches, beepers, electronic items which can carter for multiple daily reminders, calendars and or electronic devices which allow for person pill documentation. Machtinger, Bangsberg (2006) asserted that such devices are imperative on patients who cite unwarranted excuses such as 'simply forgot', hence promoting lack of adherence. These devices allow for flexibility as much as time is concerned.

- **Medication organizers**

  The whole essence of applying these methods of ensuring adherence is to promote those who are on pills to take them according to respective prescriptions. It is a prescription medication procedure which works to the convenience of a patient. According to Machtinger, Bangsberg "…

they allow patients to organize their weekly dose of medication in convenient location instead of carrying multiple pill bottles and to verify if whether they have taken a given dose". This device system allows clinicians to monitor if one has defaulted in taking medication or not.

- **Visual medication schedules**

  It is a method in visual form which assists individuals on medication to understand prescribed pills and how they are taken. It is handy on independent caregivers and inexperienced individuals who aid adherence. This pill taking method is portrayed in the form of sticker sets, prescribed medications superimposed on a weekly calendar (Matchinger, Bangsberg). Such schedules are given in clinics on every visitation.

- **Fellow individuals as means to ensure adherence**

  Supportive family members or friends or prison officers can help remind patients to take their respective medication and assist with management of adverse effects (Aidsect 2012).This, however, is indicative of the fact, it is not only the responsibility of the health personnel to ensure ART adherence. Family, friends, close confidants or an acquaintance play a significant role in ensuring ART adherence. The major thrust behind ensuring of ART adherence is to attain 95 percent which is near perfect adherence.

2.6 Measurers to ensure ART accessibility and availability

Prisoners living with HIV/AIDS, amongst others have the right to care and treatment as the rest of the community. What the rest of the population is entitled to in respect of HIV/AIDS treatment and care, should be availed to prisoners living with the infection. The National HIV/AIDS Policy, Zimbabwe (1999) stated "…prisoners have basic rights that must be respected and protected including the right to HIV/AIDS/STI information, counseling and care". Reference to upholding ART adherence the Government of Zimbabwe through the Ministry of Health and Child Welfare (MOHCW) has a free provisional availability of this medication to prisoners living with HIV/AIDS. WHO et al. (2007) holds the same view that right to medical care in prisons include the provision of ARTs in the context of comprehensive HIV care. ARTs if administered effectively improve the immune system by suppressing the viral load and decreases mortality on prisoners infected. Coleman (2009) concurs if ARVs are taken correctly, the immune gets stronger and fights infection as well as slowing down AIDS progression. In prisons ART adherence should be prioritized as a way of upholding the rights of prisoners living with HIV/AIDS. ARTs' availability and accessibility if not duly administered impacts heavily on adherence

posing challenges on drug resistance and worsening of patient condition. The Government of Zimbabwe through the Ministry of Health and Child Welfare (MOHCW) provisionally avail ART drugs to prisoners free of charge and this in a way is a move aimed at ensuring adherence.

2.7 Implications on failure to adhere to antiretroviral treatment

Adherence to ARTs as stipulated in respective prescriptions by medical practitioners is a prerequisite. This is important especially towards reduction of mortality rate as well as improvement of health among prisoners living with HIV/AIDS. Failure to adhere has some implications on prisoners and people living with HIV/AIDS and the Government at large. One problem with antiretroviral treatment is on the interruption of treatment leading to resistance to at least some of the drugs used (Menabde, Laticevschi 2007).There are measurers which should be put in place to ensure that intake of these drugs is not intercepted. They further attributed "…police and correctional officers need to be educated about importance of treatment". This encourages them to ensure prison inmates on antiretroviral drugs adhere to their medication. Implications of lack of adherence include drug resistance, deterioration of health, worsening health conditions, shortening of life, viral load replication and CD4 count weakening paving way for opportunistic infections. This has negative impact on patients living with HIV/AIDS. Implication of lack of adherence also weighs down on government supplying this medication free of charge. Each time there is an encounter of drug resistance, a new regimen level is proposed and coming at a more expensive price. Mabizela (2013) affirmed this position and said second level regimen costs at least ten times higher than the first level regimen and this expense is absorbed by the Government in a bid to promote easy access and availability of ARTs. If it is friends and relatives who are providing these at such an inflated cost, they may end up defaulting resulting in lack of adherence.

2.8 Barriers to antiretroviral therapy adherence

Lack of adherence to medication is mainly attributed by many factors among others lack of social support, patient level, provider–patient level, complexity of the regimens and fear of stigma if they take medication in the open or attending clinic for refilling of medication. Social support has been described as support accessible to an individual through social ties to other individuals, groups and other communities (Ozbay, Johnson, Dimonlas, Morgan, Charney and Steven, 2007).

Storrace et al. (2006) concurs "…adherence- related motivation includes personal and social motivation to follow one's ART regimen". A prison environment is mainly secluded and restrictive of certain liberties

promoting social isolation of prisoners serving their terms. Jürgens et al. (2011) admit "…by its very nature, imprisonment involves the loss of the right to liberty". This can significantly impact on ART adherence on prisoners who live with HIV. Psychological implications associated with an environment can also fuel lack of adherence. WHO (2007) concur "…the environment in the prison system can offer small and large obstacles to adherence". Prisoners spend most of their time in confinements, doing chores under the custodianship of Pos. Pos spend quality time with prisoners more than families, friends and associates. Visitations are programmed and conducted based on time stipulations where in targeted prisons visited, time slots are once a week or fortnight. An aspect such as fear of stigma and discrimination play a contributory role where some may refuse to take medication for trepidation of being noticed with regards to HIV status, worse still fearing to losing associates/friends. In developing countries, data about adherence from prisons remain limited.

ART administration is mainly offered in first, second and third line regimens and these make the medication and taking of them complex. The dosages can be administered once or twice or thrice a day, complicating the matter on those living in certain confinements. When individuals miss out on required near perfect adherence, drug resistance is imminent and inevitable. This translate if individuals were on first line regimen, is automatically referred to the second which is more expensive and a strain on the Government which is supplying them free of charge. Besides these are taken on a more life-long basis and the process has to be done on a more prescribed basis. Mabizela (2013) postulates" defaulting is now a major challenge as moving patients to second line medication in the case of HIV drugs is expensive. First line drugs cost between US$ 10 to US$ 15 depending on a type but for the second line medication the cost is ten times more". This according to National AIDS Council (NAC) becomes a strain on the Government supplying ARTs free of charge. There are some conditions that may be attached to them depending with the nature of medication and an instruction from the medical specialist. Henry (2006) and Roberson (2007) concur to the complexity of the regimen and conditions attached thereto by reflecting that many agents used in ART require three times daily dose taken on either empty stomach, light meal or avoidance of certain meals and care to avoid interactions with other drugs. This makes the regimen complex in a prison environment where care matters and dietary supplements maybe limited. ART medication is also associated with side effects like headaches, tiredness, dizziness, liver problems, bad dreams, nausea, diarrhea, rashes, loss of fat on face, arms and legs, loss of feeling or tingling in hands and feet (Coleman 2009).

These side effects play a pivotal role in impacting on adherence for the negative.

Lack of adherence in a prison environment can be triggered by interruption of supply of ARTs or failure to supply them on time when required and complexity of regimens. In most cases, patients access their pills through inbuilt pharmacy dispensaries where they endure long queues. There is a need for serious intertwining of Pos services and medical centers in order to support the cause of ART adherence since unprecedented misses may well result in worst health conditions on prisoners who are living with HIV. Steel et al (2007) agrees to this notion by mentioning "…if adherence is below optimal and drug levels are low, viruses continue to replicate". This calls for the notion that supply of respective regimes should be readily available at all times.

2.9 Conclusion

Ensuring ART adherence to take place there are a diversity of tools and other means which can be put in place. These range from direct, indirect measures, aiding devices and fellow individuals or acquaintances. Since ART adherence is all about ensuring those living with HIV take their medication without fail that is at prescribed time periods, such measures play a significant role and promote a cause of ensuring near perfect adherence of 95 percent. Mentioned tools are a mixed bag where some require skilled expert, personal commitment and easy to use devices to ensure that perfect or near perfect adherence are attained without fail. There is no perfect means of ensuring adherence but if these are to be used successful, they have to be used on a multi-tool approach and tailor made to suit a particular environment. Attainment of perfect or near perfect adherence is of essence in ensuring improvement of health status hence reduction of mortality and morbidity rate on those living with HIV/AIDS.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology selected in a research project to assist with the collection of information and data is fundamental to the success of ultimate interpretation and providing a basis for recommendations. Qualitative research method through use of descriptive research design was employed in the process of data collection where self-administered questionnaires were particularly used in data collection. This chapter comprise of: problem statement, objectives of the study, research approach and sampling method.

3.2 Problem statement

With the aim of further exploring the subject in question, the following problem statement was formulated: What role does prison officers play in ensuring ART adherence on prison inmates who are HIV/AIDS infected (Kwekwe Central and Conemara Prisons)?

HIV prevalence and mortality rates remain a challenge in prison centers. Despite concerted efforts to ensure availability of antiretroviral medication free of charge by respective governments, it is on record both mortality and morbidity rate remain high, severely impacting prisoners who live with HIV/AIDS. In order to improve the quality of lives for those infected with the epidemic, there is a need they adhere to respective medication. It is therefore another issue to access antiretroviral medication for free and taking them as per prescription. ART adherence form the major basis within which health is improved and life prolonged. In order to achieve near perfect adherence, there are many measures and tools which must be put in place. Lack of adherence has serious implication on those taking related medication. In this respect, the research explores if Pos have a role to play in ensuring ART adherence by Pis living with HIV/AIDS.

3.3 Objectives of the study

There are four objectives of the study and these were deduced from the research question of the study:

- To investigate if prison officers encourage taking of ARVs on prescribed times by prison inmates who are living with HIV/AIDS.

- To establish if prison officers are empowered to assist inmates in imparting knowledge with reference to advantages of taking ARVs.
- To investigate if prison officers and other related staff have a role to play in promoting prevention, care and treatment of prisoners living with HIV/AIDS.
- To establish what tools are in place which encourage ART adherence in their respective prison centers.
- To make recommendations on the way forward, ensuring adherence to medication.

3.4 Research approach

Quantitative research is mainly a research which collects some type of the numerical data to answer a research question (Christensen, Johnson, Turner, 2011). The reason descriptive research design was chosen is mainly concerned about gathering of information on a phenomenon on study and describes what happens in the research. The main difference which exists between quantitative research being objective and the qualitative approach is subjective. Quantitative research measures on how many and strength of association where as qualitative seeks to address questions such as what, why, how? A comparison between the two approaches justifies on how and a phenomenon occurs. This, however, has a connotation that it goes an extra mile to address the research question accordingly.

3.5 Advantages of using quantitative research

Quantitative research has strengths by producing quantifiable, research data which are generalizable to large populations. It also gives allowance to hypothesis testing which is attainable through quantitative analysis by researchers and the results are independent of the investigator. Data analysis with quantitative research is possible in the shortest possible time; useful in studying large numbers of people.

3.6 Disadvantages of using quantitative research

Quantitative lacks depth and richness of data whilst its counterpart has the opposite. Results are limited as they provide numerical descriptions than detailed narrative of what would have transpired. The outcomes given may not reflect how an individual feels where in most cases the answer is portrayed the closest. The larger the sample size the longer it takes to analyze the data and results; quantitative research ignores important human elements.

3.7 Data collection procedure and instrument

The study focused on Pos who work close and directly with prison inmates to solicit information if they have a role to play in ensuring ART adherence on those living with HIV/AIDS. This is the most important stage in the research study where data is collected in the form of questionnaires. A self administered questionnaire consisted of 26 questions comprising of both open and close ended questions. A questionnaire is regarded as a self report data collection instrument completed by research participants and these measure their opinions, perceptions and provide self-reported demographic information (Christensen at al., 2011). Bias and duplication of outcomes can be avoided by adhering to a process of close monitoring. Data was collected in November 2013, where a total of thirty questionnaires were distributed and one was subsequently spoiled in completion process. The target area where data was collected is KweKwe and Conemara Prisons and the questionnaires were divided into fifteen per each prison centre. Questionnaire administration was conducted in three days and the completion process was not timed but allowed respondents to take their time since they were committed to their work.

3.8 Data analysis and presentation

When data is collected through the administration of the questionnaires, it is analyzed to give meanings to the relevance of the subject under discussion. Christensen et al. (2011) argue "…as data are collected, they should be analyzed for themes, patterns and meanings."As soon as this is done, a narrative account provides a description and interpretation of the subject under discussion. Data collected was analyzed and evaluated and presented in form of tables, pie charts and other related graphical presentations.

3.9 Sampling

A sample size of thirty was used in this study where twenty nine questionnaires were successfully completed and one was spoiled. Simple random sampling method according to, Christensen, Johnson, Turner (2011) is "…a popular and basic equal probability selection method". This follows a notion the whole population cannot participate in the study but only a subset of the chosen few to represent the people. The targeted population males and females were given equal chances to participate in the study.

The main reason this method was chosen was it enabled respondents to equally participate depending with their willingness to be part of the study. Table 4.1 is a summary of the male and female Pos at KweKwe and Conemara Prisons who participated.

Table 4.1

PRISON OFFICER PARTICIPATION INFORMATION

PRISON NAME	MALE	FEMALE	SPOILED	GRAND TOTAL
KWEKWE PRISON	8	6	1	15
CONEMARA PRISON	12	3	-	15
TOTAL	20	9	1	30

The participants who were targeted were from KweKwe and Conemara Prisons, targeting prison officers who work directly with prisoners. The qualifying factor for individuals to participate in the study was they were supposed to be prison officers.

3.10 Ethical consideration of participants

In line with ethical considerations, the study was successfully conducted in accordance to acceptable requirements of human subjects. Ethical considerations with regard to consent upholding confidentiality, anonymity, right to participate or withdraw from the study were followed accordingly. Only one out of the targeted thirty pulled out after attempting the questionnaire and refusal to complete a consent form. Permission to conduct this research study was sought with University of Stellenbosch Research Ethics Committee and permission was granted prior starting this process. Before conducting the research, consent form contents were thoroughly explained to participants of the study and they willingly participated except for one who pulled out because he was not comfortable with completing, disclosing the name on a consent form.

3.11 Conclusion

The research methodology was followed on both identifying, selection of participants and data gathering. Data gathered was analyzed and is presented accordingly in the next chapter. All findings were discussed and presented adequately in different tabular and graphical presentations.

CHAPTER FOUR

REPORTING OF RESULTS

4.1 Introduction

The aim of this research project is to solve the formulated problem through the analysis and interpretation of results. This chapter focuses on data analyses, presentation of the findings and reporting of results. The findings are represented by relevant tables and graphical presentations to assist with explaining the ultimate outcome.

4.2 Prison officers' participation

The responses were elicited from Kwekwe and Conemara prisons where thirty individuals were targeted, however, one withdrew resulting in a spoiled questionnaire. This in essence is a 97% participation rate by both male and female Pos (table 4.1).

Table 4.1

Prison officer participation table

PRISON NAME	MALE	FEMALE	GRAND TOTAL
KWEKWE PRISON	8	6	14
CONEMARA PRISON	12	3	15
TOTAL	20	9	29

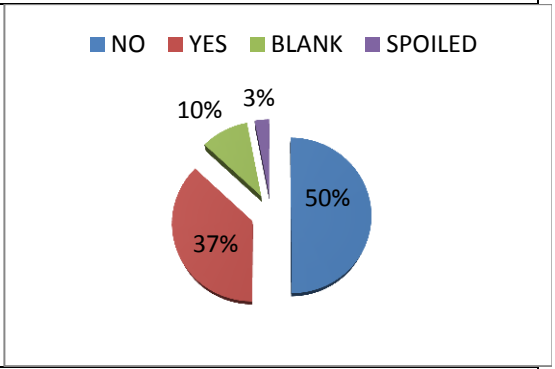
4.3 HIV prevalence and mortality rate among prison centers

There is evidence in Zimbabwe prison centers and regional prisons at large HIV prevalence and mortality rate is high. National HIV/AIDS Policy 1999 concurs the levels among prisoners is high. Mugurungi (2013) affirmed this position "… HIV prevalence rate in Zimbabwe prisons stands at 27%, where women were severely affected at 39%, a figure which almost doubles the national HIV/AIDS prevalence rate".

This comes in the wake the Government is rolling out ARTs to both the general populace and prison centers free of charge. Assessing the basic knowledge if prison officers are aware of HIV/AIDS prevalence rate in national prisons is high, findings were that 37% know of HIV prevalence in prisons, 50% do not know and 10% left it blank (table 4.2).

Table 4.2

PRISON HIVAIDS STATUS AWARENESS

HIV PREVALENCE IN PRISONS	STATUS OUTCOME	PERCENTAGE %	PRISON HIV/AIDS STATUS AWARENESS
YES	11	37	
NO	15	50	
BLANK	3	10	
SPOILED	1	3	
TOTAL	30	100	

4.4 HIV/AIDS records for inmates who are on ARTs

It is common knowledge that records for people living with HIV/AIDS should be treated with utmost confidence but accessible by health personnel who directly work with PrLWHA and other health cases. It was noted within these prison centers there are clinical facilities and state registered nurses who assist prisoners with related health needs. Prisoners do have basic rights that must be protected and among others care and treatment. In whatever dealings with prisoners who live with HIV/AIDS, professional and ethical considerations such as confidentiality and informed consent on HIV testing should apply to prisoners (National HIV/AIDS Policy, Zimbabwe 1999).It is under this pretext that privacy with regards to record keeping come into play hence restricted record access. Findings indicated 13% of Pos who constitute health staff have since reflected they have access to HIV/AIDS related records which are kept and only accessible to them. This is in line with International privacy act which was enacted by UNAIDS reference to confidentiality and respecting of privacy for PLWHA.

4.5 Prison officers' perceptions on ART adherence

ART adherence is about taking medication as per a given prescription and according to the set time frames.

This subject stirred some controversies by prisoner officers where they referred to it as an exercise that has to be executed only by health personnel.

The Zimbabwe Government is providing ARTs free of charge to all but HIV/AIDS mortality and prevalence remain higher among prisoners. Findings indicated 73% claimed they knew what ART adherence is but 63% did not have any idea and as such could not explain in their own words. Those who had an idea of what ART adherence was, were represented by 37%. There is no way an individual can claim knowing something and fail to give a brief explanation on the subject matter (table 4.3 and figure 4.1).

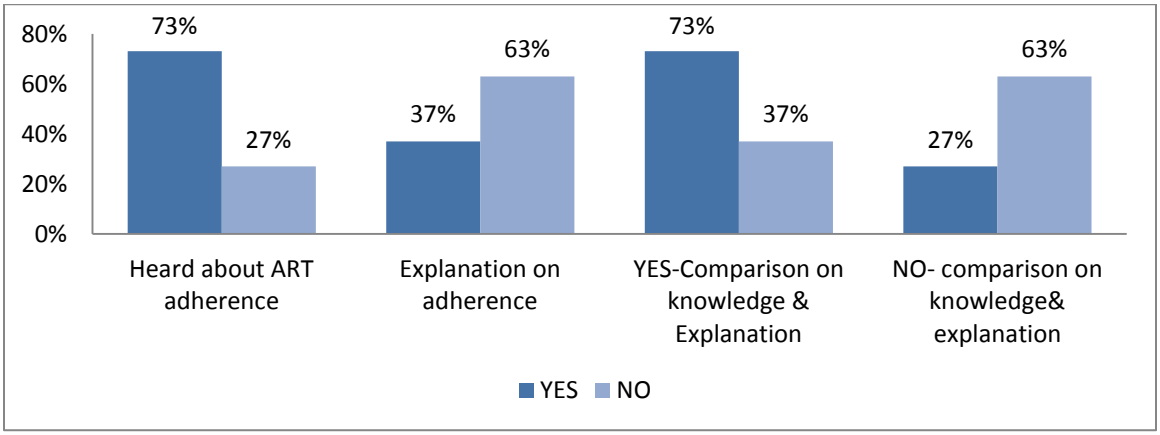
Table 4.3

COMPARISONS ON KNOWLEDGE AND EXPLANATION OF ADHERENCE

HEARD ABOUT ART ADHERENCE	STATUS OUTCOME	PERCENTAGE %	EXPLANATION ON ADHERENCE	PERCENTAGE %
YES	22	73	11	37%
NO	8	27	19	63%
TOTAL	30	100	30	100

Figure 4.1

COMPARISON ON ART ADHERENCE KNOWLEDGE AND EXPLANATION

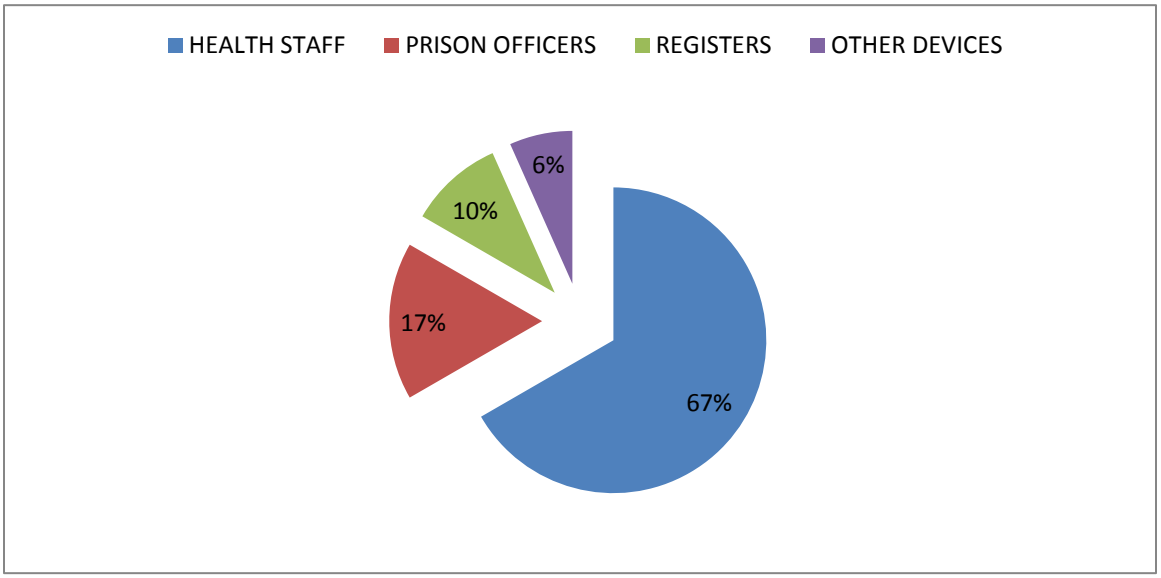


4.6 Tools and measures used to ensure ART adherence

There is a diversity of tools which are used to enforce and ensure ART adherence and these ranges from clinical devices, non-clinical and other devices which either falls within the categories (figure 4.2). Taking into cognizance a prison environment is restrictive of certain liberties such as having an alarmed clock devices or cell phones with time and alarms or other reminder devices, restrictive timed visitation of friends and relatives. There must be other means or devices which are applicable within a prison set up that ensures they timely without fail take respective medications. According to figure 4.2 other devices such as clocks are only permissible at Conemara which is an open prison and not in Kwekwe and they account for 6%, prison officers 17%, registers 10% since records are accessible by prison health staff and 67% which is health personnel as a major aider for ensuring ART adherence. Clock devices were only permissible at an open prison but not clear if used for reminder purposes. Findings were mostly the health personnel help remind those on medication to take their medication on time and are wholly responsible in ensuring ART adherence. Same officers who responded that health staff is responsible are also the very ones who also mentioned that Pos play a part. This is, however, done during day working hours and there are some who take their medication after hours when nurses or health personnel would have knocked off. Prisoners who are on medication are given their allocation for the night to take them when lights are turned off and it was not very firm that Pos are actively involved as reminder agents.

Figure 4.2

TOOLS CURRENTLY IN PLACE



4.7 Effects and impact of lack of antiretroviral adherence

Respondents were asked to name among others two consequences of lack of adherence. It was, however, discovered 26% could not identify one implication of lack of adherence. These individuals (26%) could not respond, drug resistance was represented by 8%, 8% identified death, 7% CD4 count deterioration and full blown AIDS was indicated by 8%. Many individuals could not identify any effects or implications associated with lack of adherence. Such implications come at human (PrLWHA) and Governmental level – Ministry of Health, Child and Welfare level (MoHCW) which is rolling out such medication free of charge to those in need.

4.8 Identifying on what ARTs can do if taken as per prescription

Participants were able to identify on what ARTs can do if taken as per prescription; 63% could identify correct answers and 34% were able to identify either of the correct answers. Answers such as: ARVs are able to slow down the HIV, stops replication of viruses in the body or both answers were identified as correct.

4.9 Involvement of other external stakeholders

There is participation of external stakeholders who frequent prison centers for the same cause of HIV/AIDS management. Population Services International (PSI) and International Community of Red Cross (ICRC) and their frequency of visits is once a week. This does not tally with an objective towards an achievement of 95% near perfect ART adherence. Near perfect ART adherence is therefore a means to improvement of quality of lives for those living with HIV/AIDS. Findings were 85% agreed they frequent these prison centers in a bid to address the scourge of the epidemic but not directly on the subject of ART adherence.

4.10 HIV related information, education and training of prison staff

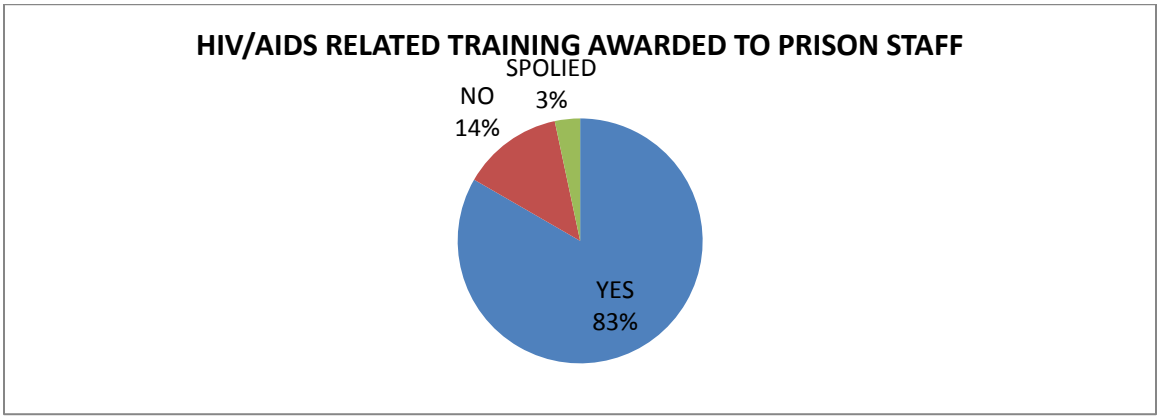
Reference to Zimbabwe National HIV/AIDS Policy (1999) there is a stipulation of a need to “provide appropriate information, education and training on HIV/AIDS/STI prevention, control and care to prison staff”. Findings were it is not yet achieved and prison staff did not receive any training save for health personnel that were trained as state registered nurses.

There is no way much can be expected from prison staff in relation to the fight against HIV/AIDS. The Government of Zimbabwe through this same policy targeted prison staff that to be able to curb the impact of the epidemic, there has to be an allocation of additional resources to the prison services to improve the quality of prison care in relation to HIV/AIDS. This therefore denotes that care for PrLWHA is not only reserved to prison health personnel but all the prison staff have a role to play. There is a requirement to uphold the rights of PrLWHA that Pos should be trained in this regard since they work directly with prisoners.

According to figure 4.3, 83% of the participants confirmed they received training, 14% did not receive training. Despite such an overwhelming response most of them could not answer basic HIV/AIDS related questions which pertain to ART adherence and other related issues; 83% they could not mention anything about being taught anything relative to ARTs its adherence. Most of the items mentioned were other general issues which do not pertain to prisoners and their current state of affairs such as "…received training on condom use, having one partner, formation of support groups". The subject on ARTs and its adherence was mentioned by a few health personnel; there are some HIVAIDS related training programmes in prison centers.

Figure 4.3

A REFLECTION OF HIVAIDS RELATED TRAINING OFFERED TO PRISON STAFF



4.11 Express interest to be trained in HIV/AIDS basics

There was an interest and willingness to be trained in HIV/AIDS related field by prison staff. The study reflected that 20 were very willing, 7 were willing and 2 were left blank (table 4.4).

TABLE 4.4

WILLINGNESS TO BE TRAINED IN HIVAIDS PREVENTION, TREATMENT AND CARE BASICS

ACTIVITY	SPOILED	BLANK	WILLING	VERY WILLING	TOTAL
WILLINGNESS	**1**	**2**	**7**	**20**	**30**

4.12 Conclusion

In this study it was concluded HIV/AIDS with reference to ART education, information dissemination remains an integral part in improving live for people living with HIV/AIDS. Findings indicated from the targeted group some were in favor and against ART adherence and the role that prison staff can play in ensuring that adherence is a success. ART adherence has managed to salvaged lives of people living with HIV/AIDS improving health, quality lives and prolonging lives. Many views were expressed as a result, resulting in many conclusions and recommendations drawn. Conclusions and recommendations are discussed in the following chapter.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Conclusion and recommendations are discussed against the background of the findings of the study. The research study, aimed at exploring on the role prison officers can play in ensuring ART adherence by prisoners living with HIV/AIDS.

The cardinal objective of the study is, however, to recommend solutions which can help means to ensuring ART adherence by prison inmates who live with HIV. The research was placed in context when considering the problem statement: What role does prison officers play in ensuring ART adherence on prison inmates who are HIV/AIDS infected (Kwekwe Central and Conemara Prisons)?

5.2 Conclusion

The conclusion drawn in this research was based on the analysis made on questionnaires administered.

Objective one: To investigate if prison officers encourage taking of ARVs on prescribed times by prison inmates who are living with HIV/AIDS.

Based on the investigation made a majority of prison officers indicated it is the responsibility of prison health staff to ensure ART adherence on prison inmates living with HIV/AIDS. According to figure 4.2, 67% of prisoners officers referred ART adherence responsibility to prison health staff. Alongside this contribution, there were no other devices which aid taking of ARTs most especially on those taking them after hours or in the evening when health prison staff have already gone. Taking of pills was attributed to switching off of lights as a reminder.

Objective two: To establish if Prison officers are empowered to assist inmates in imparting knowledge with reference to advantages of taking ARVs.

It was concluded, only a few were aware of the subject of ART adherence, this is despite many acknowledging they had received HIV/AIDS training. Among the few mentioned are prison health staff stationed in prison centers since they were trained as nurses. Indicators from findings (figure 4.3) were 73% claimed they knew what ART adherence was all about, 63% could not explain what ART adherence is all about and 37% managed to give an explanation, there is therefore a lot of inconsistencies in this feedback.

Though it was confirmed Pos received some training in relation to HIV/AIDS, most of the prison officers were ill-equipped on the ART adherence subject since it was referred to as a prerogative of the prison health staff. There is no way an individual can help impart ART adherence related knowledge to prisoners on ARTs where in reality they do not have the relevant knowledge. Most of them failed to define or identify what ART adherence is all about despite briefings on the subject matter prior data collection process.

Objective three: To investigate if prison officers and other related staff have a role to play in promoting prevention, care and treatment of prisoners living with HIV/AIDS.

Prison officers have a role to play in promoting prevention, care and treatment of prisoners living with HIV/AIDS. They work directly with prison inmates and spend quality time with them as they perform their chores. Reaching out to those living with HIV/AIDS does not require to be in the medical field. Most of them expressed interest to be equipped with knowledge and skill in relation to ART adherence. Despite a discovery of 83% claiming to have received HIV/AIDS related training there was an overwhelming express interest to be trained in HIV/AIDS related issues. Table 4.4 it was indicated 27 of the targeted 30 were willing to be trained and this translates to 90% willingness to be trained.

Objective four: To establish what tools are in place which encourage ART adherence in their respective prison centers.

Establishing if there were any tools in place which help aid ART adherence on prisoners living with HIV, tools like health staff, Pos, registers and other devices were mentioned. According to figure 4.2, prison health staff constituted 67%, Pos 17%, registers 10% and other devices 6%. Prison health staff remains the only highest option ensuring ART adherence in prison centers. Those taking their medication after hours, turning off of lights was used as a reminder and this is the only available other devices (6%) currently on use. Pos' 17% was, however, not adequately explained since they were distancing themselves from ensuring ART adherence. This does not guarantee taking of ARTs since no one accounts if prisoners have taken their medication. Family and other stakeholders who frequent these centers only visit once a week, only on stipulated time intervals; these are not in the picture of assisting in ensuring ART adherence.

5.3 Recommendations

Recommendations were drawn from the conclusions made in this study. Such recommendations turn to be useful in tendering future solutions with regards to improving ways of ensuring ART adherence on prisoners living with HIV/AIDS. Improving health and quality of life of those infected improves productivity, the following recommendations are proposed to be consideration:

- HIV/AIDS scourge and impact can be averted if prison officers play a health rehabilitative role by ensuring prisoners living with HIV/AIDS take their medication. This is mostly relevant after hours when health staff has knocked off and there are cases of those taking their medication in the evening. Turning off of lights can, however, not guarantee the taking of ART medication. It is recommended that Pos be strategically positioned and equipped to ensure medication is taken without fail; is despite a responsibility for health staff. Considering ethical issues which surrounds confidentiality ways should be devised which allow Pos to play a health rehabilitative role especially ensuring ART adherence and encouragement of near perfect adherence of ART medication.
- Among other HIV/AIDS education programmes currently available in prisons, it is recommended ART adherence education be emphasized and prioritized on both prison officers and prison inmates living with HIV/AIDS. ART adherence education and knowledge dissemination goes a long way as well ensuring those taking medication do so for the improvement of their health. Near perfect adherence of 95% is of advantage to an individual as well as the Government where expenses associated with lack of adherence are curtailed. Most prisoners negate adherence because they lack knowledge of what the prescription can do towards improving their health. Lack of adherence among others results in drug resistance where change of regimens impact greatly on costs, that is from first to second level which is ten times more expensive than the first. This is true and worse on the third regimen which more expensive than the second. This scenario compounds Government expenditure on those regimens which are provided free of charge. Such unwarranted expenditure can be averted if prison officers and other stakeholders emphasize on ART adherence. This can also help in suppressing viral load as well preventing worsening HIV/AIDS conditions, automatically addressing unwarranted expenses emanating from lack of adherence.

- Pos have a role to play in promoting prevention, care and treatment of prison inmates living with HIV/AIDS and it is recommended all prison officers should be trained with regards to ART adherence. Care is not only confined to prison health staff but all Pos have a role to play since they work directly with those infected in their prison cells and spend quality time with them. It is also imperative to take advantage of prison staff since they play a rehabilitative role on prisoners, HIV related health rehabilitative role can also help improve health, prolonging of lives for those living with HIV/AIDS and increase productivity. Incorporation of Pos in ART adherence and HIV/AIDS educational programmes helps in averting ignorance and hence an adage '…knowledge is power' comes into play. The statement is true and relevant as confirmed by high HIV prevalence and mortality rate in Zimbabwe prisons. Pos are strategic when it comes to alleviation of the impact of HIV in prison centers. There is thus a need for refinement of prison education in relation to among others ART adherence since it is key to improving health and lives of those infected. Where health expertise is required, there should be no negligence or compromise.
- Tools used to ensure ART adherence in prison centers are not diversified and adequate compared to those available outside the institution. Steel et al. (2007) indicate for ART adherence to be effective and a success a multi-tool approach should be put in place. Due to the nature of prison centers, it is important to note liberties are restricted hence there is a need to tailor make tools suitable for such environments. Health staff and turning off of lights are the only available means which were cited that are used in ensuring ART adherence. Turning off of cell lights cannot guarantee adherence hence can compromise near perfect adherence. The question will still remain what assurances will be available that individuals have taken their medication on that particular night if turning of lights is a reminder. Is the switching off of lights effective enough to effect a reminder to take ARTs on stipulated time? Should prisoners go out to do their chores where health personnel are not available, what happens to those on ARTs if time passes or they do not take their respective medication? There is a possibility that some in the process can throw away the medication. Adoption and use of multi tool approach suitable for such an environment should be put in place and these should be easy to use, apply, cheap and monitor. Tools which may be applicable in certain prisons may end up not appropriate and suitable in other prison environments hence flexibility is highly recommended when devising such tools.

5.4 Recommendations to the limitations of the study

Time factor due to other work commitments remained a challenge on targeted respondents. This therefore resulted in taking longer than necessary on questionnaire completion. The research was also carried in the shortest time due to the nature of environment which is high security. It is therefore recommended a targeted population be given ample time to participate and cooperate in an exercise. During data collection, there was a spoiled questionnaire. The respondent was not comfortable to let the name recorded on the consent form for fear that it could be published in the final document. It is therefore recommended assurance with regard to confidentiality be also stressed by a higher authority present in a particular prison environment. The sample size was initially pegged at sixty which was later reduced to thirty, reduction of the sample size was mainly attributed by delay in institutional approval. The approval was attained in the month of November where as an application seeking authorization to conduct this research was tendered in the month of April 2013. It is recommended institutions should timely approve research initiatives to enable coverage of the targeted sample without fail. In one of the prison targeted there was resistance to participate in the research study for fear of being exposed. It is recommended Pos be encouraged to participate in research initiatives since it is for the good of PLWHA, prison officers, Government and decision makers.

5.5 Conclusion

ART adherence remains strategic to reducing an impact of HIV/AIDS. Ensuring of near perfect adherence improves health of the infected as well as prolonging of life. The main objective being to maximize ways of ensuring ART adherence to the advantage of prisoners living with HIV, Government and other interested stakeholders since all have a role to play in this matter. Ensuring ART adherence, there must be diversified tailor made-tools in place suitable for prison centers. These should be implementable by both prison officers and health staff respectively. This is recommended to maximize and promote the rate of ART adherence among prisoners living with HIV/AIDS. ART adherence has improved health and prolonging of lives of those infected. WHO affirmed this position that accurate assessment of adherence is necessary for affective and efficient treatment and this is done to the advantage of those living with HIV/AIDS.

6.1 References

UNAIDS –Country Analysis Report for Zimbabwe (2010).

www.unaids.org

National Policy HIV/AIDS, Zimbabwe 1999.Prisoners, section 6.8.

Steel, G., Nwokike, J., Joshi M. P. (2007). Development of a multi-method Tools to measure ART Adherence in Resource constrained settings. South Africa experience.

Mabizela P. (2013). Healing School and killing school.

www.herald.co.zw

UNAIDS (2012), UNAIDS World AIDS Day Report.

www.unaids.org

Starace, F., Massa, A., Amico K. R. and FisherJ.D. (2006). Health Pyschology, Volume 25, No. 2, p.153-162.

Ozbay, F., Johnson, D. C., Dimonlas, E., Morgan, C. A. III, Charney D. and Southwick, S. (2007). Social support and Resilience to stress.Matrix Medical Communications.

Matchinger, L. E., Bangsberg, D. R. (2006). Adherence to HIV Anteretroviral Therapy. University of Carlifonia, San Francisco. www.hivinsite.ucsf.edu.

Mugurungi O. Ministry of Health and Child Welfare.(2013).HIV wreack havoc in prisons. (Chibaya M.- www.thestandard.co.zw.)

WHO, UNAIDS (2008.)HIV and AIDSin Places of Detention.A tool kit for Policy makers, Programme ManagersPrison Officers and Health care providers in prison Settings.

Aidsect.Supporting Education for Health care Professionals.AETC.National Resource centre.

www.aidsetc.org

Jürgens, R., Nowak, M. and Day, M.(2011).HIV and Incarceration: Prisons and Detention. BioMed Central Ltd.www.jiasociety.org

CDC/Antiretroviral Treatment www.cdc.gov/hiv.pwp/antiretroviraltreatment.html

UNITED NATIONS Office on Drugs and Crime. Prison Setting Prison UNODC, HIV/ AIDS Unit.www.unodc.org

Coleman, M. (2009).HIV/AIDS. Jacana Media: Ultra Litho Johannesburg

Tordrsy, K. W , Amon, J. J.(Journal 2012, Volume 9, Issue 5)Criminal Justice reform as HIV and TB Prevention in African Prisons. Human Rights Watch. www.plosmedicine.org

Ministry of Health and Child Welfare Zimbabwe (2010).Overview of the state of HIV Treatment and Care Programme in Zimbabwe.

WHO, UNODC, UNAIDS, Jürgens, R.(2007) Interventions to address HIV in prisons: HIV care, treatment and support.World Health Organization,UNODC, UNAIDS/Geneva.

The World Prison Population list. International Centre for Prison Studies, 7th Edition (2007) Kings College.London.

HIV and Prisons in Sub Sahara Africa: Opportunity for Action (2007). UNAIDS, World Bank. www.unodc.org

Roberson, W. D. (2007).Factors influencing adherence with Anti- Retroviral Therapy for HIV positive Female Inmates. Chapel Hill

Menbde, N. Dr. (2007).Health in Prisons: A WHO guide to the essentials in Prison Health.

Henry, J. (2006).Kaiser Family Foundation.FDA approves Gilead , Briston -Myers Squib once-a-Day combination antiretroviral pill (2006). www.thebody.com./Kaiser/2006/july13_06/atripla.html/

Zimbabwe Association for Crime Prevention and Rehabilitation of the Offender (2008). Zimbabwean Jails in deplorable state. ZACRO.

Statistical Overview(2013).Office for Institutional HIV/Coordination. Stellenbosch University.www.sun.ac.za/hiv

Glossary of HIV/AIDS related terms.(October 2011), 7th Edition.AIDS info. www.aidsinfo.nih.gov

Oxford dictionaries (2013).

HIV/AIDS Prevention, Care Treatment and support in Prison Settings.(2006)A Frame Work for National Response. WHO, UNAIDS

Christensen L. B, Turner, L. A, Johnson, R. B (2011) Research Methods, Design and Analysis.11th Edition. Pearson

Appendices

7.1 Questionnaire

Dear Respondent

I am a student at University of Stellenbosch and currently pursuing my Master of Philosophy in HIV/AIDS Management. In partial fulfillment of my programme, I am carrying out a research project on:

The role played by Prison Officers in ensuring ART(s) adherence by Prison Inmates who are HIV/AIDS infected.

My focus, however, shall be on Prison Officers and other related staff. All information collected shall be treated with strict confidence and no name or identity is required on this questionnaire.

Please tick appropriate box.

1) HIV/AIDS prevalence rate as well as mortality rate among prisoners is high, do you agree with this fact as expressed in the National HIV/AIDS Policy - Zimbabwe?

   YES ☐

   NO ☐

2) Do you have HIV/AIDS records of inmates who are on ARTs and how do you access them?.....

3) What is your view and role towards caring of prison inmates living with HIV/AIDS?
   ……

4) Are you aware prison inmates have basic rights that must be respected and protected including the rights to HIV/AIDS/STI information, counseling and care?

   YES ☐

   NO ☐

   AM NOT SURE ☐

5) In executing your daily duties, have you ever educated prison inmates on HIV/AIDS prevention, care and treatment?

   YES ☐

   NO ☐

6) Please justify your answer by specifying what you have done(according to your response in Question 5)……

7) The National HIV/AIDS Policy of Zimbabwe 1999 states that their objective is to provide information, education and training on HIV/AIDS/STI prevention, control and care to prison staff. What training so far have you received in relation to HIV/AIDS?

……

8) Have you ever heard about antiretroviral therapy (ARTs) adherence?

YES ☐

NO ☐

9) If your answer is yes, what is ART adherence in your understanding?.....

……

10) Since prisoners are detained without devices like clock - watches, cellphones and alarms which aid them to adhere to their ART medication, how do you ensure that they take their medication as per stipulated time periods?.....

11) To ensure that prison inmates on ART(s) adhere to their medication, do you work in conjunction with other stakeholders and who are they……..

……

12) Relatives and friends constitute families to prisoners who are living with HIV/AIDS, how often are they allowed to make visits and do they spend quality time with them?

.....

13) Whether one has taken his ART pills or not, it is none of my business. Do you hold this view point?

YES ☐

NO ☐

NEUTRAL ☐

14) Please justify any of your answer……

……

15) Do you know the consequences of lack of ART adherence? Please mention any of the two you are aware of a)……..

b)……..

16) If you were asked to rate importance of ART(s) adherence, how would you rank it?

Very important ☐

Important ☐

Least Important ☐

Other, specify……

17) Should ARVs get finished on prison inmates taking them, what measures are

in place which ensure that that they get them?.....

……

18) In the event that you switch shifts, how do you facilitate handover takeover on prisoners

on ARVs to ensure that they take medication as stipulated?.....

.....

19) Reference to Question 18, how does a prison officer account for a prisoner on ARVs that

he/she has not defaulted taking medication as per prescription?.....

……..

20)It is part of the Government of Zimbabwe to provide appropriate information, education and training on HIV/AIDS/STI prevention, control and care to prison staff. Have you received any HIV/AIDS related training and care programmes?

YES ☐

NO ☐

21) Do prison inmates receive HIV/AIDS related training from any other independent Stakeholders?

YES ☐

NO ☐

22) What do ARVs do? Choose the correct answer from the following?

a)Slow down the HIV ☐

b)Stops viruses from replicating ☐

c) all of the above ☐

23) What tools or measurers are in place which ensure that prisoners on ARTs take their ARTs/ARVs as prescription?.....

.....

24) Are you willing to be trained in HIV/AIDS Prevention, treatment, and care basics:

Very willing ☐

Willing ☐

Not Willing ☐

25) Do you keep records on average daily schedules of prisoners who are on ARTs?

YES ☐

NO ☐

26) Do prisoners keep their ART medications?

YES ☐

NO ☐

NO IDEA ☐

Thank you for your Input

7.2 REC Approval letter

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot • your knowledge partner

Approval Notice

Stipulated documents/requirements

05-Dec-2013

Tlou, Keeteretsi

Proposal #: DESC_Tlou 2013

Title:

The role played by Prison Officers in ensuring ART Adherence on Prison Inmates who are HIV/AIDS infected.

Dear Mr Keeteretsi Tlou,

Your **Stipulated documents/requirements** received on , was reviewed by members of the **Research Ethics Committee: Human Research**

(Humanities) via Expedited review procedures on **05-Dec-2013** and was approved.

Sincerely,

Susara Oberholzer

REC Coordinator

Research Ethics Committee: Human Research (Humanities)

7.3 Medical Research Council of Zimbabwe

Telephone: 791792/791193
Telefax: (263) - 4 - 790715
E-mail: mrcz@mrcz.org.zw
Website: http://www.mrcz.org.zw

Medical Research Council of Zimbabwe
Josiah Tongogara / Mazoe Street
P. O. Box CY 573
Causeway
Harare

APPROVAL

Ref: MRCZ/B/547 **16 August, 2013**

Keeteretsi Tlou
University of Stellenbosch
Industrial Psychology
P. Bag X1
Matieland
South Africa

RE:- The role played by Prison Officers in ensuring ART adherence on Prison Inmates who are HIV/AIDS infected (Kwekwe Central and Conemara Prisons)

Thank you for the above titled proposal that you submitted to the Medical Research Council of Zimbabwe (MRCZ) for review. Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study. This is based on the following documents that were submitted to the MRCZ for review:

a) Research Protocol
b) Informed Consent Form (English)
c) Questionnaire (English)

- **APPROVAL NUMBER : MRCZ/B/547**

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF REVIEW : Expedited**
- **EFFECTIVE APPROVAL DATE : 16 August 2013**
- **EXPIRATION DATE : 15 August 2014**

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Website should be submitted three months before the expiration date for continuing review.

- **SERIOUS ADVERSE EVENT REPORTING**: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Website.
- **MODIFICATIONS**: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Website is required before implementing any changes in the Protocol (including changes in the consent documents).
- **TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Website.
- **QUESTIONS**: Please contact the MRCZ on Telephone No. (04) 791792, 791193 or by e-mail on mrcz@mrcz.org.zw
- **Other**
- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.

Yours Faithfully

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
2013 -08- 16
APPROVED
P.O. BOX CY 573 CAUSEWAY, HARARE

.....

MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH

7.4 Zimbabwe Prison Services Institution permission letter

ZIMBABWE PRISONS AND CORRECTIONAL SERVICE

Telephone : 706501/2/3/4, 777384/5
754197,710095
Telegrams : "PENAL", HARARE
Fax : 754157
E-Mail : zpcs@gta.gov.zw

Reference:

OFFICE OF THE COMMISSIONER GENERAL
Private Bag 7718, Causeway
Harare
ZIMBABWE

08 November 2013

359/8
Mbizo
Kwekwe

REQUEST FOR AUTHORITY TO CONDUCT A RESEARCH AT KWEKWE AND CONNEMARA PRISONS -TLOU KEETERETSI 58-181453 J 28

1. The above subject refers;

2. You are hereby informed that your request to conduct a research on the topic: **THE ROLE PLAYED BY PRISON OFFICERS IN ENSURING ART ADHERENCE ON PRISON INMATES WHO ARE HIV/AIDS INFECTED : (A CASE STUDY OF KWEKWE AND CONNEMARA PRISONS.)** has been approved..

3. You are therefore required to make your arrangements to travel to the above named stations and on completion; you are required to submit both hard and electronic copies of your findings to the **Commissioner-General of Prisons.**

4. By copy of this letter, the Officer Commanding Midlands/Masvingo Region) and Officers in Charge Kwekwe and Connemara Prisons are advised of this approval.

P Chinamasa (Supt)
Acting Rehabilitation Co-odinator
to the **COMMISSIONER OF PRISONS**