

ANTIRETROVIRAL DRUG ADHERENCE: WHAT HAPPENS WHEN PATIENTS ARE HOSPITALIZED TO MEDICAL WARDS AND LEVEL ONE WARDS IN DR. GEORGE MUKHARI HOSPITAL, PRETORIA, AND THEY ARE ON HIGHLY ACTIVE ANTIRETROVIRAL THERAPY [HAART]

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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 authorship owner thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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To all the people who gave me support, I thank you.

ABSTRACT

Purpose of the study

The main purpose of the study was to investigate the antiretroviral drug adherence of patients on government HAART regimen while being hospitalized at Dr. George Mukhari hospital in medical wards and level one ward. Ensuring high levels of adherence to antiretroviral treatment is a priority in managing patients with AIDS.

Research Design

Qualitative and quantitative data was collected prospectively. Data was collected through interviewing patients and registered nurses using structured questionnaires. Doctors' clinical notes from the participant's (patients) files were audited to understand the real gaps in failing to support the patients with adherence to their treatment.

Findings

In investigating the antiretroviral treatment drug adherence of hospitalized patients, two indicators were used:

- The percentage of patient's drug adherence level.
- The level of support that is given by registered nurses and doctors to support the patients in maintaining their adherence to treatment while admitted.

The research findings from the 25 participants revealed that 28% of patients had >95% adherence level and 72% of patients had <95% adherence level. The level of support from the doctors and registered nurses was poor, there was no commitment. These findings suggest that further studies are needed to improve the adherence level of patients on antiretroviral treatment.

Conclusions

Adherence to antiretroviral treatment is a powerful predictor of survival for individual living with HIV and AIDS. Factors that contributed to non-adherence should be attended to without delay.

OPSOMMING

Doel van die studie

Die doel van die studie was om te bepaal of pasiënte voldoen aan die regering se “HAART-regime” wat Anti-retrovirale (ARV's) ontvang, gehospitaliseer te Dr. George Mukhari hospital. Die voldoening aan die toediening van ARV- behandeling is prioriteit in die behandeling en bevordering van pasiënte met VIGS.

Studie Ontwerp

Kwalitatiewe en kwantitatiewe data was prospektief ingesamel. Data was ingesamel deur onderhoudvoering met pasiënte en geregistreerde susters, deur gebruik te maak van gestruktureerde vraelyste. Kliniese notas gemaak deur dokters in die betrokke pasiënt-leers is ook bestudeer om die probleemareas vas te stel, waar toediening van ARV- behandeling nie voldoende plaasgevind het nie.

Bevindinge

Twee indikatore is gebruik om te bestudeer of voldoende toediening van ARV-behandeling plaasvind.

- Die persentasie van pasiënte wat wel voldoen aan korrekte ARV-behandeling.
- Die vlak van ondersteuning ontvang deur geregistreerde susters en mediese dokters in die toediening van ARV- behandeling.

Die navorsingsresultate toon die volgende van die studiegroep (=25):

- 28% : >95% voldoende toediening van ARV- behandeling.
- 72% : <95% voldoende toediening van ARV- behandeling.

Die vlak van ondersteuning ontvang deur susters en mediese dokters was swak. Die bogenoemde bevindinge toon dat verdere studies nodig is om die vlak van voldoende toediening van ARV-behandeling te bevorder en te verbeter.

Gevolgtrekking

Voldoende toediening van ARV-behandeling is 'n sterk voorspeller vir die oorlewing van individue met MIV en VIGS. Faktore wat bydrae tot onvoldoende toediening van ARV-behandeling moet aangespreek word.

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LIST OF ABBREVIATIONS USED IN THE STUDY

AIDS.....	Acquired Immune Deficiency Syndrome
ARV.....	Antiretroviral
ART.....	Antiretroviral Therapy
HAART.....	Highly Active Antiretroviral Therapy
DOH.....	Department of Health
HCW.....	Health Care Worker
DGMH.....	Dr. George Mukhari Hospital
S.A.....	South Africa
WHO.....	World Health Organization
PHC.....	Primary Health Care
NGO.....	Non Governmental Organization

OPERATIONAL DEFINITION

It is important to define the terms that are going to be measured and must be defined in the context of the study.

Adherence – Adherence means that treatment is taken according to a treatment plan designed in consultation with the patient and involves taking:

- The recommended dose
- at the recommended time
- in the recommended way

In order for one to be adherent, a client at least should not miss more than three doses in a month. Adherence rate of 95% must be sustained to maintain control over viral load, build the immune system and prevent the development of resistance to the drug (Adherence Network Group, 2006:27).

Adherence Supporter – This is support in the form of information, discussion, encouragement and motivation, provided by anyone in the patient's life who plays a supportive role. This could include a doctor, nurse, dietician, pharmacist, treatment assistant, family member, partner or a friend [buddy] (Adherence Network Group, 2006:29).

Adherence Counseling – This is counseling provided to a person who starting ART, or on ART, to assist them to make choices that support their treatment and enable them to adhere to the medication. This counseling is ideally provided by a person who has been trained in HIV/AIDS counseling skills and in adherence counseling (Adherence Network Group 2006:29).

Counseling – HIV/AIDS counseling may cover a wide variety of issues, example, substance abuse, mental health problems, preparation for death, medication and treatment approaches, job discrimination, financial needs, prenatal care, child care, family dynamics, and homelessness. This may include counseling from licensed professionals such as physicians, pharmacists, and psychologists or social workers and community members.

In the field of HIV/AIDS, counseling can be divided into categories such as:

- ARV adherence counseling which focuses on ensuring that the clients follow an ARV treatment regimen which has been designed for them in a consultative partnership between the client and the health care worker or counselor. This type of counseling includes explaining to the client the need to follow the prescribed instructions and supporting them in taking the recommended dose, at the recommended time, in the recommended way, that is, the role of the counselor is to promote and sustain adherence, as well as ascertain what factors might be preventing adherence and find solutions.
- Lay counseling which is commonly in the form of support from a caring person in the community. Lay counselors provide information such as where patients can receive ARV treatment, on improving their nutrition and on prevention.

•
DOT (Directly Observe Therapy) – A treatment strategy in which a health care provider or other observer watches a patient takes each dose of a drug. This strategy is used with diseases like Tuberculosis and HIV infection, where adherence is important for effective treatment and to prevent emergence of drug resistance (PIEGO, 2004).

Patient - in the context of this study, a patient refers to a hospitalized HIV positive person who is on a S.A. government antiretroviral therapy regimen.

Doctor - Refers to a medical practitioner who is registered with the Health Professional Council of South Africa and legally qualifies to practice medicine and surgery.

Level one ward - Wards that fall under Family Practice

Family practice deals with primary health care conditions.

Primary health care conditions do not fall under tertiary conditions.

Antiretroviral Therapy [ART] – It involves the use of antiretroviral drugs to suppress replication of HIV virus in the body and its destruction of the immune system. ART is also sometimes referred as antiretroviral treatment, HIV therapy or antiretroviral drugs (Adherence Network Group 2006).

Triple therapy – Triple therapy involves the use of three types of drugs for treating (NT curing) HIV. In 1988, mono-therapy (one drug) in the form of AZT was used to delay the onset of AIDS. Later on, dual therapy (two drugs) was seen to be better than mono - therapy, until triple therapy or combination drugs were produced.

Triple therapy is also known as Highly Active Antiretroviral Therapy (HAART). Combination therapy for HIV infection has led to decreased mortality rates and more effective long – term control of the disease (Adherence Network Group 2006).

CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Antiretroviral therapy started in the late 1980's with the introduction of the nucleoside reverse transcriptase inhibitor zidovudine [AZT]. The benefits were not sustained due to the development of resistance. In the early 1990's dual therapy was introduced and resulted in longer duration of benefit, again resistance developed within a few years. In the mid 1990's more powerful drugs like protease inhibitors [PI's] and the non- nucleoside reverse transcriptase inhibitors [NNRTI's] were developed. That justified the use of the concept HAART [FPD 2004].

Since then the accessibility of HAART has brought hope and has improved the quality of life to HIV positive patients. The South African government started rolling out comprehensive HIV/AIDS care, management and treatment in April 2004.

There is a common agreement amongst the clinicians that to achieve an undetectable viral load and prevent the development of drug resistance a person on HAART need to take at least 95% of the prescribed doses on time (Castro, 2005). It is critical that patients on HAART are monitored closely to maintain the blood levels that could sustain the patient, and achieve improved immunity system.

Adherence to medication is critical for maintaining or improving health status. This is evident for persons living with HIV, as adherence to HAART predicts both health status and failure success with antiretroviral therapy (ART: Ho et al; 1995).

Adherence to demanding antiretroviral regimens requires substantial support and monitoring. Effective approaches to promote and improve patient adherence to antiretroviral therapy are the focus of intensive, time-consuming research (Simoni, et al; 2003). The study will be helpful to endorse the support needed by patients when admitted in the hospital to take treatment as scheduled.

While full adherence to antiretroviral therapy has not been completely achieved even in developed countries, high adherence is a critical goal in sub-Saharan Africa, which has been hit by a catastrophic pandemic of HIV infection and where treatment often is a privilege of life. Little is known about

adherence to antiretroviral therapy in Africa (Meichernbaum et al; 1997, Eron et al; 2000; Golin et al; 2002; Tuldraand et al; 2003).

Adherence plays a critical part in the success of HIV/AIDS treatment plan and can jeopardize expected treatment outcomes. Such “perfect” adherence poses various challenges to the patient, including lifelong pill taking, pill burden, frequent dosing intervals and food restrictions (Jude and Nwokike, 2005).

The challenges were of concern when Botswana started rolling-up ARV's. The level of understanding the complex of HAART by Africans was cited. Adherence was understood from the chronic medicine compliance (example, hypertension and diabetes). It is now evident that ARV adherence is more demanding because the patient is centered, it is up to the patient to see her/his quality of life improves. The limited number of ARV regimen available in South Africa plays a major threat to the sustainability of treatment if the patient does not adhere to the treatment plan.

1.2 BACKGROUND OF THE PROBLEM

The epidemic of human immunodeficiency virus (HIV) acquired immunodeficiency syndrome (AIDS) is the world's biggest challenge. It is alarming that South Africa has the world's highest single HIV/AIDS case load, with more than five million of South Africa's 45million people infected with HIV. South Africa is currently experiencing one of the most severe AIDS epidemics in the world. At the end of 2007, there were approximately 5,7million people living with HIV in South Africa, and almost 1,000 AIDS deaths occurring every day (South Africa Journal Epidemiology Infection Control, 2008; 20). Taking into consideration the magnitude of the epidemic, it is extremely critical that patients started on antiretroviral treatment adhere to their treatment plan.

1.2.1 HIV AND AIDS IN South Africa

HIV and AIDS is one of the main challenges facing S.A. today. It is estimated that of the 39,5 million people living with HIV world while in 2006, more than 63% were from sub – Saharan Africa. In 2005 about 5,54 million people were estimated to be living with HIV in South Africa, with 18.8% of the

adult population[15 – 49 years] and about 12% of the general population affected (South Africa DOH, 2006).

To address the HIV epidemic challenge, the DOH has come up with the HIV and AIDS and STI Strategic Plan for South Africa 2007 – 2011 [NSP] which flowed from the National Strategic Plan of 2000 – 2005, the Operational plan for Comprehensive HIV and AIDS Care, Management and Treatment [CCMT] as well as other HIV and AIDS strategic frameworks developed for government and sectors of civil society in the past five years. The DOH was mandated by the Deputy President, Mrs. Phumzile Mlambo - Ngcuka in 2006 to lead the process.

The NSP is not a plan for the health sector alone, it involves all agencies working with HIV and AIDS in South Africa. Practically it seeks to strengthen and improve the efficiency of existing services and infrastructure and introduce additional interventions based on recent advances in knowledge. [DOH, NSP, 2006].

One of the NSP target goals is to give 80% of the people eligible to ARV's by 2011. South Africa started rolling out ARV's in April 2004.

1.2.2 HEALTH SYSTEMS IN SOUTH AFRICA

The implementation of the National HIV and AIDS Care and Treatment programme within the existing programme and service point is directed through Provincial Health Department. Each province is allocating a budget specifically for:

- Antiretroviral drugs(drug procurement)
- Diagnostic monitoring of patients on HAART through the laboratory.
- Human resource for antiretroviral site (South Africa HIV and AIDS Operational Plan, 2003:234 & 247).

South Africa's health system consists of a large public sector and a smaller but fast growing private sector. The basic primary health care is offered free by the government and those that can afford resort to the private sector.

The WHO framework, divides health systems into three objectives (goodness, fairness & responsiveness) and a set of functions (delivering services, creating resources and stewardship) required to achieve these objectives. This framework is appropriate for a classic service delivery intervention such as HIV treatment. Strengthening health systems is the key goal in accelerating ARV treatment and strengthening adherence programmes (Schneider et al; 2004:4-29).

1.2.3 SOUTH AFRICAN RECOMMENDED ANTIRETROVIRAL THERAPY REGIMEN

Regimen 1a	Regimen 1b	Regimen 2
Staudinger(d4t)	Staudinger	Zidovudine(AZT)
Lamivudine(3TC)	Lamivudine	Didanosone(ddl)
Efavirenz(EFV)(NVP)(AZT)	Nevarapine	Lopinavir:/Ritonavir

1.2.4 ENTRY POINTS FOR ELIGIBILITY TO ARV THERAPY

- HIV positive results
- CD4 count < 200
- Stage 4 HIV positive patients[according to WHO staging]
- Three adherence counseling to be attended before receiving HAART.

Adherence counseling is provided to HIV positive patients before starting ART or who is already on ART, to assist them to make choices that support their treatment and enable them to adhere to the medication (Meyersfeld, Hamilton and Lazarus, 2006).

1.2.5 THE PRIMARY GOALS OF ART

- Maximal and suppression of the viral load.
- Restoration and/or preservation of immunological function.
- Improvement of quality of life.
- Reduction of HIV related morbidity and mortality and its destruction of the immune system.

The patient should commit herself/himself to this lifetime treatment. It is imperative that the patient adhere to the HAART to maintain long term health benefits, to suppress replication of HIV in the body and to avoid development of drug resistance. The treatment criteria require the patient to have a treatment supporter who will remind her/him about taking treatment as expected. The treatment supporter is not an exclusive criterion (South Africa DOH, 2004). That is why it is critical that the patient is provided with a comprehensive plan to support adherence.

These goals are achieved by suppressing viral replication for as long as possible by using tolerable and sustainable treatment for an indefinite period of time. With prolonged viral suppression the CD4 lymphocyte count usually progressively increases with partial restoration of pathogen-specific immune function, dramatically reducing the morbidity and mortality associated with HIV infection (S.A. Journal of HIV Medicine, 2008).

1.2.6 PUBLIC PRIVATE PARTNERSHIP IN ACCELERATING THE ACCESS TO ANTIRETROVIRAL TREATMENT IN SOUTH AFRICA

The South Africa's HIV and AIDS Care, Treatment and Management programme was designed for implementation in the public sector. It is acknowledged that the HIV virus does not observe national borders. The South Africa government committed itself to ensure that the standards it establishes for quality and accreditation in the public health sector are replicated in the private sector. Pharmacovigilance, monitoring and evaluation and research agendas, are coordinated with the private sector to ensure a successful national AIDS treatment.

Private NGO's and companies do assist the government with community mobilization, support programmes, education and communications programmes, also programmes to integrate education and prevention with treatment and other health promoting activities. Non-Governmental Organization (example, USAID) enters into a Memorandum of Understanding contract agreement with the government (S. A. Operational Plan, 2003:235).

1.3 PROBLEM STATEMENT

Antiretroviral drug non-adherence from patients that are on highly active antiretroviral treatment [HAART] and are hospitalized to medical wards and level one wards in Dr. G. Mukhari hospital is a great concern that needs to be investigated.

Dr G. Mukhari hospital is a tertiary level hospital under University of Limpopo [MEDUNSA campus]. Treatment of antiretroviral [ARV] treatment to eligible HIV positive patients started in July 2004. The hospital is receiving patients from 16 surrounding primary health care sites. Presently there are 6000 patients that have been started on ARV treatment.

The greatest challenge with patients receiving ARV is adherence to their treatment irrespective of the situations they find themselves in. Patients that are admitted [hospitalized] in the health institutions depend mostly on the health care workers to remind them to take their treatment as scheduled or health care workers to take over when their too sick to help themselves. There is a concern from patients, lay counselors and patient's relatives about patients that are not receiving support from health care worker [HCW] in ensuring that hospitalized patients adhere to their antiretroviral treatment as expected. Health care workers should act as treatment supporters to in-patients.

According to [South Africa DOH, 2004], ideal adherence means a patient must take more than 95% of their doses [that is missing less than 3doses in a month] It is imperative that patients adhere to their treatment because if a patient is taking less than 95% of their ARV doses, they are at risk for developing viral resistance and ultimately biological failure. The doctors and registered nurse in charge of departments must play a key role in ensuring that patients receive treatment as expected while they are hospitalized.

1.4 PURPOSE OF THE STUDY

The main purpose of this study is to investigate ARV drug adherence of patients on government ARV regimen while being hospitalized at DGMH in medical wards and level one ward.

1.5 OBJECTIVES OF THE RESEARCH

These objectives will guide the research to:

- To measure the levels of adherence.
- To explore the factors associated with non – adherence among hospitalized patients receiving HAART.
- To measure the level of support given by health care workers to patients receiving HAART while admitted.

1.6 RESEARCH QUESTION

This research study will answer the following questions:

- What happens when a patient is admitted to medical wards and level one wards and is on ARV's in Dr. George Mukhari hospital?
- How far the doctors and registered nurses support and contribute to the sustainability of ARV drug adherence for patients under their care.

1.6.1 WHY IT IS IMPORTANT TO FIND ANSWERS TO THIS RESEARCH QUESTION?

- To improve adherence to patients on HAART while being hospitalized.
- To find out whether patients on HAART disclose their treatment to health care workers for the purpose of continuity of treatment, also for the patients to find out how to go about taking their treatment without being discriminated.
- To empower health care workers in managing patients with HIV and AIDS, also to those that are already on HAART.

The reason for me to choose this problem is through the concern of the community that the health care workers are not honouring the **Patient's Rights Charter**.

1.6.2 SOUTH AFRICA PATIENT'S RIGHTS CHARTER

EVERY PATIENT HAS A RIGHT TO:

1. A healthy and safe environment.
2. Participate in decision making'
3. Access to health

Everyone has the right of access to health care services that include:

- receiving timely emergency care
 - treatment and rehabilitation
 - **provision for special needs[in the case of newborn infants,children,pregnant women, the aged, disabled persons, patients in pain, persons with HIV or AIDS patients]**
 - **counseling[without discrimination, coercion or violence on matters such as reproductive health, cancer or HIV/AIDS]**
 - **palliative care[that is affordable and effective in cases of incurable or terminally illness]**
 - a positive disposition
 - healthy information
4. Knowledge of one's health insurance/medical aid scheme
 5. Choice of health services
 6. Be treated by a named health care worker
 - 7. Confidentiality and privacy**
 8. Informed consent
 9. Refusal of treatment
 10. Be referred for a second opinion
 - 11. Continuity of care**
 - 12. Complain about health services [everyone has the right to complain about health care services and have such complaints investigated and to receive a full response on such investigation (S.A. Department of Health, 2003).**

1.7 SIGNIFICANCE OF THE STUDY

The research study will empower health care workers with knowledge in managing patients with HIV/AIDS and assisting them to correlate their knowledge with practice. This study will give hope to HCW that HIV/AIDS is manageable, as long as the patient takes treatment as scheduled. This can be a motivator to the HCW to go and test for HIV.

Much as the S.A. government has developed guidelines in management of HIV/AIDS (DOH, 2004); there are still challenges that require S.A. health professionals to engage in researches regarding their own situations. The study will add understanding of developing national core standards in management of HIV/AIDS with an aim of improving the quality of care of people living with HIV/AIDS. Presently there are no national operating standards in public institutions regarding management of patients on HAART. Health care workers become confused because a patient receiving HAART from a private doctor cannot be prescribed ART in a public institution; this becomes questionable in terms of maintaining adherence.

1.8 CONCLUSION

The first chapter dealt mainly with the study problem, background the reason behind conducting this research study. The study definitely needs to be explored further as admissions of patients on HAART increases.

The next chapter will discuss the literature reviewed regarding **ANTIRETROVIRAL DRUG ADHERENCE**.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Literature review will guide me as to whether the problem that I have identified is already researched or not. Information that I gathered, researched ADHERENCE from another angle and I will be approaching it from the angle of treatment interruption of patients that are hospitalized (Struwig and Stead, 2004).

The general purpose of the library search is to gain an understanding of the current state of knowledge about the selected topic. Review of the literature will tell you whether the problem you have identified has already been researched and may guide you in designing the study (Christensen, 2007).

Highly active antiretroviral therapy has revolutionized the treatment of AIDS patients, leading to substantial reductions in the HIV – related morbidity and mortality. HAART provision requires careful and frequent monitoring to prevent and manage interactions, to avoid adverse effects and suppress development of HIV – 1 antiretroviral associated resistance. Studies in ambulatory patients have clearly demonstrated that greater expertise in HIV care provision lead to patient outcomes and reduce healthcare expenditures (Pharmacother, 2008). Following up from this information, it is critical that hospitalized patients on HAART adhere to their treatment and receive full support from health care workers so that the number of stay is reduced and patient’s health improves in time and health care costs are reduced. The WHO, (2003), convened a working group to review the literature around long term adherence within a chronic disease context. The long-term adherence was defined as “the extent to which a person’s behavior –taking medication, following a diet executing lifestyle changes”.

2.2 ADHERENCE

There is no universally accepted definition of adherence. With respect to HIV/AIDS care specifically, “medication adherence” has been defined as the ability of the person living with HIV/AIDS to be involved in choosing, starting, managing and maintaining a given therapeutic combination regimen to control viral (HIV) replication and improve immune function (Simon, et al; 2003).

In terms of ARV therapy it means adhering to the prescribed regimen.

For the patient it means taking all pills and doses in accordance with the prescription.

It also means:

- Maintaining certain life style like practicing safe sex.
- Maintaining a healthy diet
- Exercises and adequate sleep
- Attending follows up appointments
- Collecting prescribed treatment (South Africa DOH, 2004).

The term adherence has been adopted by the World Health Organization [WHO], it was preferred because it gives an element of patient choice.

Studies have shown greatly improved prognosis with correct adherence.

The level of adherence is entirely patient driven factor.

Adherence is considered to be the cornerstone of successful ARV therapy. It also represents the patient's and the health care professional's commitment to fighting HIV infection and achieving long term suppression of the virus (South Africa DOH, 2004).

Directly Observed Treatment [DOT] has been used with good results in one study in the United State Department of Correctional Services in the treatment protocol of HIV. In South Africa DOT is used in the treatment of Tuberculosis and our cure rate is 60%. It is assumed that therefore DOT in the treatment of HIV would not work in South Africa adding to the fact that stigmatization is still rife.

Adherence is a problem even in developing countries. In United Kingdom ART [antiretroviral therapy] guidelines are being formulated to increase adherence levels.

South African indicators show [Courtesy of MSD and Treatment Helpline] that:

- Twenty eight percent [28%] of patients do not inform anybody of their condition outside the doctor's surgery.
- Fifty four percent [54%] have only informed their partners or spouses
- Only 18% have any major family support

No real in depended studies on adherence levels have been done in South Africa.

Recent studies in Europe show that without any support [The Athena Study]

53% will be 100% compliant and 47% will be non-compliant.

According to Treatment Helpline Direct in South Africa shows that:

- Five percent [5%] of patients will take their pills according to doctor's prescription.
- Ninety five [95%] of patients will not take all their medication precisely as directed by their doctor.

Ideal adherence means a patient must take more than 95% of their doses [that is, missing less than 3 doses in a month]. Pill counting should be done with every visit to assess the adherence rate; this exercise is not practical in a heavy clinic with many patients.

Measuring accurate adherence to therapy is difficult. Self reporting by patients will be weighed, if the patient admits to missing doses that is helpful. Doctor's estimates of patient's adherence have been shown to be very unreliable (FPD, 2004).

Patients will be measured also using the "Categories of Non – Compliance" score board (FPD, 2005).

2.3 ART ADHERENCE IN SOUTH AFRICA

South African ART guidelines stress the adherence to ART as important to maintain long term health benefit and avoid development of drug resistance. Ideal adherence means a patient must take more than 95% of their doses (i.e. missing less than 3 doses in a month). If a patient is taking less than 95% of their doses, they are at risk for developing viral resistance and ultimately virological failure.

Role of the health care team:

There is evidence that there are fewer adherences as time progresses. Thus, monitoring and ongoing support of adherence is essential.

- New diagnoses or symptoms can influence adherence
- A trusting relationship between the patient and members of the health care team is essential.
- Optimal adherence requires full participation by the health care team: patient, family members and the community.
- Every patient interaction is an opportunity for reinforcement.

- Supportive and non – judgmental attitudes and behaviors will encourage patient honesty regarding adherence and problems.

Strategies to promote adherence

- Spend time with the patient. Explain the goals of therapy and need for adherence as many times as is necessary.
- Consider monitoring of medications such as cotrimoxazole or by an alternative method prior to ART initiation.
- Negotiate a treatment plan that the patient can understand and to which he/she commits.
- Encourage disclosure to family or friends who can support the treatment plan.
- Inform patient of potential side effects- severity, duration and coping mechanisms.
- Establish “readiness” to take medications before ART initiation.
- Provide adherence tools where available: written calendar of medications, pill box.
- Encourage use of alarms, pages or other available mechanical aids for adherence.
- Avoid adverse drug interactions. The patient must disclose any over- the – counter drugs and traditional medicines. Other medications as well as some traditional medicines cannot be taken concurrently with ART because they may cancel each other out or may lead to unacceptable adverse effects.
- Anticipate, monitor and treat side effects.
- Include adherence discussions in support groups.
- Develop links with community based organizations to support adherence.
- Encourage links with support groups.
- Create links with patient advocates (S.A. Dept of Health, 2004).

2.4 NON-ADHERENCE

Non-adherence means not following the treatment plan.

Examples of non-adherence are:

- Incorrect doses(e.g. too little/too much medication, taken in the wrong way)

- Missed doses(e.g. due to changes in routine, travelling or forgetfulness)
- Delayed doses(that is, not taking the dose on time)
- Failing to follow guidelines(e.g. social pressure or misinformation)
- Experimenting with dosing(example, trying unapproved once-daily regimens)
- Drug holidays(example, transient aversion to taking pills)

The results of non-adherence are the possible development of drug resistance.

Almost all patients will be non-adherent at some stage. Adherence tends to decline over time
(Adherence Network Group, 2006).

Castro (2005) looked at adherence s biological and social processes that changes with time. Several studies have tried to predict the causes of non-adherence in order to reduce the number of missed doses. They concluded that methodologically there is growing agreement that patients'' self assessment of adherence-through interviews or self- administered questionnaires show significant correlation with viral load tests, where-as estimations by their health care providers often lead to invalid results. **This correlation is critical to my research study because patient's information will be validated... against nurses and doctors clinical information.** There is a need to research adherence while patients are hospitalized based on the information found on this study,

WHAT HAPPENS IF ARV's ARE NOT ADHERED TO?

- Resistance to antiretroviral agents.
- Failure to suppress viral replication.
- Breakdown of the immune system.
- Increased risk of opportunistic infections.
- Increase risk of Kaposi's sarcoma and other AIDS – related cancer.
- An increasingly poor quality of life and shortened lifespan (FPD, 2005:216).

2.5 ADHERENCE versus COMPLIANCE

COMPLIANCE – The extent to which the patient’s behavior (taking medication, following dates or making other lifestyle changes) coincides with medical advice or health advice. Compliance often has connotations that the health care worker, knows best, with the patient passively following the advice of the health care worker.

ADHERENCE – The degree to which a patient follows a treatment regimen which has been designed in a consultative partnership between the client and the health care worker. It encourages discussion about treatment regimen (Adherence Network Group, 2006:18).

2.6 DRUG RESISTANCE

HIV is a retrovirus and therefore, mutates (changes its genetic structure) at an extraordinary rate on a daily basis. The result is that some strains of HIV develop that are naturally resistant to the presence of one or more drugs. HIV drug resistance refers to a reduction in the ability of a drug to block replication of HIV.

Resistance can apply to a particular drug or to a class of drugs or to a combination of a drug, example, patients who develop resistance from taking one non – nucleosides reverse transcriptase inhibitors (NNRTI) are likely to be cross resistant to other drugs in the same class. The development of resistance thus significantly reduces treatment options (Adherence Network Group, 2006:28).

2.7 CORRELATION BETWEEN ADHERENCE AND VIROLOGIC RESPONSE TO ART

Adherence to ART	Viral load < 400 copies/mm ³ (desired effect)
>95% adherence	78%
90 to 95% adherence	45%

80 to 90% adherence	33%
70 to 80% adherence	29%
<70% adherence	18%
(number of doses dispensed minus tablets returned) over (number prescribed) Example $(30-5)/28=25/28=0.9$ (90%)	

(S.A. Dept of Health, 2004:55)

2.8 DEFINING ART FAILURE

In resource – limited settings where viral loads are unavailable, the WHO has devised criteria for defining ART failure on the bases of CD4 count responses or clinical disease progression. There is currently no good evidence supporting these criteria. There is considerable concern that switching ART regimens using these criteria will result in both switching very late (with progressive accumulation of resistant mutations) and switching inappropriately (as the CD4 count response is not infrequently poor despite optimal virological suppression).

South African HIV clinicians recommend defining failure of ART on the bases of the viral load, irrespective of the CD4 response or the development of new HIV – related clinical features. If the viral load is undetectable, the virus cannot mutate and develop resistance.

CD4 RESPONSE

Typically the CD4+ count increases rapidly in the first month. In the first year the count typically increases by 100 – 150 cells and about 80cells per annum thereafter until the normal range is reached, provided the viral load is suppressed. However,CD4 responses are highly variable and about 10 -20% of patients may fail to respond despite virological suppression.CD4 count often continue to rise in the

presence of incomplete viral suppression(which will result in the emergence of drug resistance) until the viral load is high(approximately 10 000 copies/ml).

(S. A. HIV, 2008:21 -22)

2.9 ADHERENCE AND HOSPITALIZATION

A study was done in Pittsburgh, United States of America, which revealed that patients with adherence of 95% or more had fewer hospitalization days than those with lower treatment adherence rates .Also concluded that there is no opportunistic infections or deaths occurred in patients who had an adherence of 92% or more (Peterson et al, 20: 29).

This study will analyze also the reasons for admissions. (Diagnose) to exclude poor adherence before admissions as a reason for a diagnose.

2. 10 SUMMARY

Adherence to ARV treatment is essential to maintain long term benefits and avoid development of drug resistance. Continuous assessment of patient's adherence to their treatment is critical. It is therefore important to provide all patients with a comprehensive plan to support adherence. The next chapter deals with research methodology.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. INTRODUCTION

The research methodology has identified the method to collect data and instruments used and the process that was used to analyze the data to draw up the conclusions.

3.2. RESEARCH DESIGN

A research design is a plan according to which we obtain research participants and collect information from them. We describe what we are going to do with the participants, with the view to reaching conclusions about the research (Welman, Kruger and Mitchell, 2005:52).

Research design will specify how you will collect data that will enable you to test your hypothesis and arrive at some answer to the research question. It is advisable that meanwhile designing the research study one pays attention to ethical issues involved in the research (Christensen, 2007: 127).

The research design will apply the quantitative, descriptive and qualitative studies in a real setting at Dr. George Mukhari hospital, participants being admitted patients qualifying to the inclusive criteria set. My study design was explanatory and descriptive (Hardon et al, 2001: 178 – 179). Qualitative and quantitative data as collected prospectively. Descriptive statistics, information gathered from the patients, was used for describing the data; the information was sorted, arranged and presented in a scientific manner (Uys & Basson, 1991: 109).

3.2.1. QUANTITATIVE STUDIES

Quantitative study was used. It is relevant to this study, according to (Christen, 2004:40) it is a descriptive type of research because it provides an accurate description or picture of a particular situation. Patients that were admitted at Dr George Mukhari hospital medial wards and level one wards were interviewed and their missed pills checked. This is a natural setting. Qualitative research Is an

approach rather than a design or a set of techniques. According to Van Manes (1977), it is an “umbrella “phrase.

“Covering an array of interpretive technique which seeks to describe, decode, translate and otherwise come to terms with the meaning of naturally occurring phenomena in the social world”. Therefore, the qualitative approach is also fundamentally a descriptive form of research (Larry & Christensen, 2007: 188).

Qualitative approach is an interpretive multimethod approach that investigates people in their natural environment (Denzin & Lincoln, 1994). They are three primary components to understand when using the qualitative approach.

First component – Qualitative research consists of words, pictures, documents or non-numerical information. Quality research is interpretative, once the data is collected; some meaning has to be extracted from it.

Second component – Quality research is multimethod. This can include data collection method as an introspective analysis, interview individuals, observations of individuals, written documents. The use of several methods provides a better understanding of the phenomenon being investigated.

Third component – Quality research is conducted in the field or in the person’s natural surroundings, such as school, board meeting or therapy setting (Larry & Christensen, 2007: 59 -61).

3.2.2. DESCRIPTIVE STUDIES

Descriptive design aims to describe and elucidate a phenomenon including factors, which may be related to the phenomenon.(Pilot, Becker and Hungler, 2001:19).

Descriptive studies also use in- depth methods such as interviews to understand the phenomenon. In this study, interviewees were conducted, nurse and patients to understand the real gap in failing to support the patients with adherence to their HAART. Clinical file audits were conducted to identify whether doctors take full history of the patients previous treatment and re- prescribe it.

3.2.3. QUANTITATIVE STUDIES

Quantitative research is a systematic, interactive, subjective approach used to describe and give meaning to life experiences (Burns and Grove, 2005:747). My research study is a real life setting experience. It deals with patients that are admitted in the hospital. Attitudes of health workers towards HIV positive patients have been picked up. Interviews were conducted systematically and there was interaction between the interviewer and the responded.

3.3. RESEARCH SETTING

Patients were recruited from Dr. George Mukhari hospital, medical wards and level wards. The hospital is situated in the Gauteng province, Pretoria region, catering for about 900 000 households and informal settlements. The catchment area involves 26 Clinics that refer their patients to receive HAART.

3.4. STUDY POPULATION

The participants were at Dr. George Mukhari public hospital. This hospital is a tertiary institution next to MEDUNSA, with bed occupancy of 1000 patients. At the time of the data collection, 6000 patients had already being started on antiretroviral treatment. Eight wards were visited; each ward had about 38 – 40 bed occupancy and an operational manager.

Uys and Basson (1991:86) defines a study population as all the members or units of some clearly defined group (with distinguished criteria) of people, objects or events. Such a group is also known as the target population, for example, patients. In this study HIV positive patients admitted in the above mentioned hospital, specifically medical wards and level one wards, and are on a public HIV Comprehensive Care Management and Treatment Care programme.

The number of wards that were targeted is eight, medical and level one ward Total number of patients interviewed was 25 and one registered nurse from each ward was interviewed. Level one ward is covered by family medicine doctors with their own Head of Department and medical wards also fall under internal medicine with their own Head of Department. The 25 patients were amongst the eight wards. Twenty five files audited belonged to the 25 participants.

Population – It is the study object and consists of individuals, group organizations, human products and events. The population encompasses the total collection of all units of analysis about which the researcher wishes to make specific conclusions (Welman, Kruger and Mitchel, 2005: 52).

3.5 SAMPLING DESIGN

As a general rule, we should not use any sample with less than 15 units of analysis, but preferably one with more than 25 units of analysis (Huysamen, 1991). If the population size is 500, then the sample size should be 200. If random sampling is done, it is not necessary to use a sample size larger than 500 units of analysis, no matter what the size of the population may be (Welman, Kruger and Mitchel, 2005 :71).

According to Uys and Basson, 1991:86 defines sampling as a process where –by the sample is drawn from the population. The target population is not too large, thus sampling was not done. All eligible patients were included in the study. Population: 25 patients Percentage suggested: 100% Number of responded were: 25 participants

According to (Struwig & Stead, 2001:1 25). It is not possible to state what an ideal sample size is, as you must consider the purpose and goals of the study. Qualitative researchers are more interested in whether the information from the sample is rich in data and thick in description than the extent to which the sample's data can generalize to the population. The study involves interviews, thus in-depth data was collected and that will answer the research question. According to (Burns and Grove, 2005: 358) The number of participants in a qualitative study is adequate when saturation of data is reached.

According to (Ritchie, Lewis & Elam, 2003: 83-84 qualitative samples are usually small because :

- From the research, a rich and a large amount of information was yielded.
- Qualitative research is highly intensive in terms of resources so it becomes manageable when samples are small.
- There is no determination of statistically significant discriminatory variables.

This research study used interviews, closed and open-ended questions to find out why patients on ARV's do not adhere to their treatment while admitted in the hospital. The study focused more on the qualitative approach. According to (Hardon et al., 2001:175), comparative qualitative studies can have as few as ten (10) informants per group, and a study with 40 respondents is considered large.

3.6 DATA COLLECTION

Grove (2005: 539,733) defines data collection as the precise and systematic gathering of information relevant to the research purpose, objectives and questions. The researcher totally involved – perceiving, reacting, interacting, recording and attaching meaning. In this study, data was collected by use of structured questions, close and open – ended questions.

Data is collected after one has laid out the procedure, obtained institutional approval, tested the various phases of the experimental procedure with the pilot study, and eliminated the bugs. Consent is obtained to participate in the study from participants, written in simple, first person and layperson's language (Larry & Christensen, 2007: 382).

Questions were prepared by the researcher and forwarded to the MEDUNSA Principal HIV/AIDS Specialist for advice and input. Data was collected by the researcher only. Interviews were conducted in English, Setswana and Zulu, depending on the respondent's choice of language. Questions were the same. The standard format were prepared in English and interpreted in the respondent's choice of language. This approach ensured that respondents understood the questions irrespective of their literacy levels. Consent forms were signed before the interview.

3.6.1 THE INTERVIEW

According to (Cilliers, 1973:88), the interview is “the personal conversation through which research information is obtained”, or “A conversation with a purpose.....” or “The interview is a technique in which the researcher poses a series of verbal questions for the respondents in a face to face situation”, (Fox, 1976:225).

The standardized interview comprises of formally structured questions that are based on theory, research and/ or the experience of the interviewer, the questions are formally structured in that the wording is not altered from one participant to the next. The interviewer should be neutral and not engage in a conversation on the topic with the participants (Fontana & Frey, 1994).

This research study used standardized interview because it is appropriate for qualitative research study. Advantages of this approach:

- This technique assumes that the participants will understand the questions (Berg, 1995).
- It enables comparisons to be made between participants.
- The standardized interview does not enable the interviewer to probe for further data or allow the participants to provide information not covered in the interview (Struwig & Stead, 2001: 98).

Questions were not many, thus it was easy to observe the respondents' emotions while responding to the questions. All interviews took place in the respective wards where the patients were hospitalized.

3.6.2 CLINICAL FILE AUDIT

The 25 patients files were audited to assess whether the doctors indicated information that the patient is HIV positive or is on antiretroviral treatment, whether further management was planned for. This information is very critical for continuity of patient care and adherence to treatment. Doctors are the ones prescribing the treatment, nurses supervise and make sure that all patients receive their treatment according to prescription. Treatment was checked to verify whether nurses did give treatment and sign for it.

Nursing audit is the process of analyzing data about the nursing process or patient outcomes to evaluate the effectiveness of nursing interventions (Gillies, 1982: 108).

3.6.3 METHODS OF DATA COLLECTION

Standardized interviews with open and close – ended questions were used, for patients and nurses. Clinical file audit was done collect data about doctors and nurses to measure their support in ensuring adherence to HAART patients. This approach was relevant to this study because standardized interview does not enable the interviewer to probe for further data or allow the participant to provide information not covered in the interview (Struwig & Stead, 2001: 98).

Baseline information was collected from 25 patients was used as descriptive study. The data was presented in the form of average and percentages. Descriptive studies do not involve manipulation of data; neither is there an attempt to establish causality (Burns and Grove, 2005: 232).

Descriptive studies attempt to describe something, for example, the demographic characteristics of the users of a given product and the degree to which product use varies with income, age, sex, etc. Descriptive studies are an attempt to provide a complete and accurate description of a situation (Struwig & Stead, 2001: 8). An overall picture of baseline data collected from the patients will be presented using the descriptive statistics guide. Descriptive statistics provide statistics summaries of data. The purpose of these statistics is to provide an overall coherent and straight forward picture of a large amount of data (Struwig & Stead, 2001: 158).

3.6.5 HOW DID I COLLECT DATA

I visited the Dr. George Mukhari hospital adult ARV clinic and talked to the doctor responsible for responding to consultations from the wards. This particular doctor has been seeing admitted patients for more than 3years after receiving consultations from the doctors.

Consultation requests were specific:

- Doctors requesting continuation of ARV treatment.
- Doctors needed advice regarding patients experiencing ARV treatment side effects, for example, drug induced hepatitis or skin rash.
- Consultations for defaulters.
- Consultations for patients on HAART and their condition deteriorating.

- Consultations for private patients requesting to be shifted to the public sector ARV programme.
- Consultations requesting adherence counseling in preparation for starting antiretroviral treatment.
- Consultations for patients admitted as transfer from other public health sectors, mostly from Gauteng Province, North-West Province and Limpopo Province.

3.7 DATA ANALYSIS

Data analysis is a specialized area of research procedure and one should use experts in this field, this field provides some knowledge of the statistical techniques that are available and what technique may be best suited for one's research project (Struwig & Stead, 2001:150). Data analysis is the systematic organization of research data, which is conducted by reducing data to give meaning (Burns & Stead, 2005: 754; Polit et al 2001: 473).

The raw data was sent to an independent data analysis for analysis. The purpose for his move was to make sure that the researcher does not miss important information. The research questions, objectives and purpose were given to the data analyst.

3.8 ETHICAL ASPECT

Chambers Concise Dictionary (Schwarz, 1991) refers to ethics as a "system of morals, rules of behavior". Conducting research is an ethical enterprise. The ethics of research provide researchers with a code of morals guidance on how to conduct research in a morally acceptable way (Struwig & Stead, 2001: 66).

3.8.1 ETHICAL PRINCIPLES

Prior to conducting a human or animal research study, the research researcher must determine if the study can be conducted in an ethically, acceptable manner (Larry & Christen, 2007: 127).

The study involves human beings, it is critical that ethical principles are adhered to.

RESPECT AND AUTONOMY

An autonomous person is a person who is capable of making decisions and following through on those decisions. A prospective research participant has the right to choose to participate in a research study. Denial of this choice shows a lack respect for that person. The participant's informed consent must be obtained.

BENEFICENCE AND NON –MALEFICENCE

Beneficence means doing good and non- maleficence means doing no harm. When one conducts a research, one must minimize the probability of harm to the participant and maximizes the probability that the participants receive some benefit.

TRUST – The researcher should establish and maintain a relationship of trust with the research participants. Confidentiality of the information collected from the research participants should be maintained.

JUSTICE – This principle is one of the more difficult ones to accomplish and is unlikely to be fully achieved (Sales & Folkman, 2000; Christensen, 2007).

3.8.2 PERMISSION TO PARTICIPATE

- Permission to conduct a research study was received from the Stellenbosch University after the research proposal was accepted.
- Permission to collect data was given at Dr. George Mukhari hospital medical wards and level one ward was granted by the hospital Clinical Director.
- Request permission letter to conduct the research (see annexure: E)
- Consent form was signed by all responded. Participants participated voluntarily.

Informed consent – This involves informing the participants of all aspects of the research from the purpose and procedures to any risks and benefits including incentives for participation. Participants can then make an informed decision and choose to either decline to participate in the study or give his or her informed consent (Larry & Christensen, 2007).

It is always important to get permission to use the data from the person who provided it. In cases where patient records are used, permission for use of such records should first be obtained from the institution of which it belongs. When research is undertaken at a health service, permission for such

research should first be obtained from the authority in charge of the service. The patient should be informed about the research in such a way that he or she thoroughly understands it (Uys & Basson, 1991: 99).

This study deals with HIV positive patients, confidentiality and privacy should be maintained. Patients need to be assured that their identity is protected.

3.8.3 CONFIDENTIALITY AND PRIVACY

UYS & Basson (1991:98 defines confidentiality as “No information provided by a patient should be divulged or made available to any other person”. The anonymity of any person or institution is protected in the report by ensuring that it is not possible to relate that particular data to a particular person or institution. The patient’s privacy should be ensured. Privacy means that a person can behave and think as he or she pleases without interruption and without the possibility that private conduct or thoughts may later be misused to embarrass or humiliate the patient. To ensure privacy during the interview, bed screens were used to avoid disturbance and to maintain privacy.

3.9 CONCLUSION

The chapter focused on research methodology. Described the qualitative and descriptive studies taken to understand why hospitalized patients on HAART do not adhere to their treatment plans at Dr. George Mukhari hospital, medical wards and level one wards (total of 8 wards). Descriptive approach was used in the baseline data. Qualitative approach was used from the one- on -one interview data. Conducting a research project it is an ethical exercise. Ethical principles were adhered to. The next chapter will focus on data analysis and findings.

CHAPTER 4

DATA ANALYSIS AND FINDINGS OF THE STUDY

4.1 INTRODUCTION

The chapter will present the findings from the data collected in the study. The results are presented using the grading poor/good for the support given by the doctors and nurses, pill counting according to adherence percentages, non – compliance classification, pie-chart, Bar-charts and tables.

4.2 WARD EVALUATION RESULTS**4.2.1. TABLE: DESCRIPTIVE STATISTICS [RESPONSE FROM 25 PATIENTS INTERVIEWED]**

ANTIRETROVIRAL DRUG ADHERENCE – What happens when patients are hospitalized to medical wards and level one wards in Dr. George Mukhari hospital, and they are on Highly Active Antiretroviral Therapy [HAART]

DATA COLLECTED FROM 26/01/09 – 02/03/09

Code	Gender	Age In years	Diagnose	How long on ARV.s	Regimen	Reminde r	Where ARV.s kept	Admitt ed	Treatm ent time consiste ncy	Dose since admi
001	M	60	Pleural effusion	2month s	1(a)	watch	locker	21/1/09	No	Stav.10 Stocrin 5
002	F	32	Tumor spine	3month s	1(a)	cell	locker	20/01/0 9	No	3doses
003	M	52	PCP pneumonia	2month s	1(a)	TV & asking	locker		08:00- 09:00	nil

						other patients				
004	F	47	Cardiac(M VD)	2yrs	1(a)	cell	locker	13/01/09	Yes	nil
005	F	50	Hypertension	3months	1(a)	nurses	locker	07/01/09	No	Lam. 4 Stav. 4 Stoc. 2
006	F	36	Gastro Enteritis	>1year	2	cell	fridge	24/1/09	Not given from the fridge	3kaletra
007	F	29	Lymphoma R. Inguinal lymph node	4months	1(a)	nurses	locker	10/01/09	No	Stoc. >5
008	F	55	Tuberculosis	3months	1(a)	nurses	nurses	17/01/09	Yes	nil
009	M	32	Cryptococcal Meningitis	2months	1(a)	nurses	locker	17/01/09	No	>3
010	F	32	Meningitis	6months	2	cell	nurses	13/01/09	No	Not sure

011	F	30	Chest infection	7years Started from private	2	nurses	locker	12/01/09	Yes	nil
012	F	36	Gastro Enteritis	>1year	1(a)	watch	locker	12/01/09	No	Stav. 6 Lam. 6 Stoc. 3
013	F	33	Pneumonia	1month	1(a)	Guessing time	locker	29/01/09	No	3days
014	F	35	Respiratory Distress and Karposis spots oral thrush	3months	1(a)	Guessing time	locker	29/01/09	No	Did not co
015	M	39	? TB Meningitis	1year 4months	1(c)	cell	bag	11/2/09	No	>3
016	M	37	Chronic Renal Failure	1year	1(c)	cell	locker	10/02/09	Yes	nil
017	M	61	Liver Disease	1month	1(a) and TB treatment for 2months	nurse	locker	9/02/09	No	>3
018	F	28	Anaemia	4months	1(c) AZT	NONE	locker	3/2/09	guessing	Not sure

019	F	31	Chronic Recurrent Anaemia	1year	1(c)AZT	NONE	locker	11/02/09	guessing	nil
020	M	51	Severe Pallor	6months	1(c)AZT	Nurses	locker	09/02/09	No	<3 not because treatment was stopped
021	F	26	Drug Induces Hepatitis	2months	1(a) and TB treatment	Nurses	locker	18/02/09	No	Not sure
022	M	40	Pencytopaemia	1year 2months	1(c)AZT	Nurses	locker	19/02/09	No	forgotten
023	F	42	AZT induced anaemia	1year	2	cell	fridge	25/02/09	No	Not yet sure are taken ARV.s
024	F	30	Drug induced hepatitis	1month and 2months on TB treatment	1(b) Post delivery	watch	locker	24/02/09 T/F in from Jubilee hosp.	Too sick to remember anything, but days.	Given treatment
025	M	62	Anemia and Gynaemast macia	1year 7months	1(c)AZT	Cell off- asking other patients for time	Locker- treatment mixed	25/02/09	No	Treatment changed morning Kaletra

4.2.1.1 RESEARCH FINDINGS FROM THE WARDS

- Patients focused on their TB treatment more than ARV, s because nurses were giving them from the medicine trolley.
- Patients focused on new treatment given on admission.
- Nurses were not aware that other patients were on ARV's. One patient called me and asked if I don't want to check her because she was also on antiretroviral treatment.
- Treatment in the fridge easily forgotten by nurses.
- One nurse remembered to give the patient treatment when she saw me. The patient was suppose to receive treatment at 08:00 and it was 12:00.
- Some patients cited fear of side effect.
- Some patients cited loss of hope when treatment was changed or stopped temporally.
- Patients less than 3moths on ARV's did not feel free to take their ARV's openly. One patient cited the reasons for not sticking to the same treatment time as privacy being minimal in the wards.
- Only one patient was reluctant to be interviewed, she had started ARV's from private in 2002. When I left she called me back and told me that she is scared to be interviewed because the public sector it's not long that it started to give ARV's. She was currently unemployed that is why she was referred to a public sector. After reassuring her of the confidentiality and reading the questions to her, she opened up.

4.3 FINDINGS FROM THE DESCRIPTIVE TABLE (ANSWERS FROM THE PATIENTS)

4.3 .1 MEASURING LEVEL OF ADHERENCE:

Pill counting: From 25 patients interviewed:

>95% adherence level was identified from.....7patients (28%)

<95% adherence level was identified from.....18patients (72%)

Limitation of self-reporting – This measurement of adherence relied on patients and it is easy for them not to tell the truth. Pill counting by the researcher was done to check if the patient was taking the right

antiretroviral treatment as he/she mentioned them and to check whether right pills are in the correct containers. Only one patient had her pills mixed in one container.

4.3.1.2 Five (5) patients reported 100% adherence since admission.

This is their length of time on antiretroviral treatment and type of treatment Regimen they are in.

Patient	Regimen	Length of time on ARV's
003	1(a)	2months
004	1(a)	2years
008	1(a)	3months
011	2	7years
016	1(c)AZT	1year

4.3.1.3 Patients on Regimen 2(only 4 out of 25patients)

Patients	Period	Adherence	Remarks
006	>1year	<95%	Nurses were giving treatment and they did not bring Kaletra from the fridge. The patient thought other nurses did not know ARV's.

010	6months	<95%	Reported that she was too sick and thought she was on new treatment that focused on Meningitis.
011	7years	100%	The patient is highly motivated about her ARV treatment.
023	1year	<95%	Reported that she is on new ARV regimen but before the change she did skip some doses, she was too sick and too weak.

4.3.1.4 Reminders (To remind patients to take treatment on time)

<i>Reminder</i>	Number of patients	%
<i>Cell</i>	8	32%
<i>Watch</i>	3	12%
<i>Nurses</i>	9	36%
<i>Television</i>	1	4% (When I was in the ward, the television was off)

<i>Guessing time</i>	2	8%
<i>None(not taking same time and pills were in the locker One patient said she has never skipped pills but had nothing to check time)</i>	2	8%

4.3.1.5 Where pills were kept

Patient's side locker	20 patients	80%
Kept by nurses	5 patients	20%

4.4 EPLORATION OF FACTORS ASSOCIATED WITH NON-ADHERENCE

NON-ADHERENCE PREDICTORS INCLUDED THE FOLLOWING:

- Side effects of antiretroviral treatment.
- Stigma that is related to HIV and AIDS.
- Non-disclosure of ARV's to nurses or doctors
- Lack of support from the nurses
- Loss of hope from the patients when ARV Regimen where changed.
- Patient's condition while hospitalized.

This extends to patient sleeping, experiencing pain or patient depressed and feeling weak to take treatment on his own or even to shout for nurses to give assistants.

- Hospital counselors do not visit admitted patients for continuous counseling.
- Patient's not understanding the importance of continuing with ARV's and the new treatment (for the current diagnose) given by nurses.

Patients were exhibiting a sense of pill burden.

- Lack of privacy in the wards
- Patients becoming depended, relying too much on nurses.

4.5 PATIENT'S KNOWLEDGE ABOUT ANTIRETROVIRAL TREATMENT

Question:

When asked about the treatment skipped while being hospitalized. The researcher expected the patients to know their treatment and did not guide them.

Answers from the patients:

- Three patients described the three different containers and how many pills missed from each container.
- Pronunciation of pills names was a struggle but the researcher new the drug names.
- Other patients were describing the shapes and the colors of the pills.
- Three patients were so impressive, they described their pills and the names very well.
- The level of education was not requested from the respondents; definitely it had an influence but is not going to be discussed in detail.

- The 4 patients on Regimen 2 antiretroviral treatment were aware that their treatment was different and that Kaletra was kept in the fridge. No one of the patients kept their treatment in their bed side locker.

4.6 MEASURING THE LEVEL OF SUPPORT GIVEN BY HEALTH CARE WORKERS TO PATIENTS RECEIVING HAART WHILE HOSPITALIZED

4.6.1 RESEARCH FINDINGS FROM THE DOCTORS CLINICAL NOTES

FINDINGS FROM PATIENT'S AUDITED FILES [25 files]

- Sixteen [16] files clinical notes reflected doctors writing that the patients are RVD positive and patients are on ARV treatment.
- Sixteen [16] files ARV prescribed.
- From other files doctors mentioned that the patient had treatment from home but did not review the ARV treatment.
- Doctors that reflected that the patients were on ARV treatment mentioned in their plan to send a consultation to an ARV clinic

ACTIVITY BY DOCTOR	PERCENTAGE
Antiretroviral's prescribed	64% (16 files)
Antiretroviral's not prescribed	36%(9 files)

RESEARCH FINDINGS FROM THE NURSES CLINICAL NOTES AND QUESTIONNAIRES

RESPONSE FROM REGISTERED NURSES:

1. When asked how do they identify a patient on ARV's.
 - When completing a nursing care plan a nurse should ask whether on any treatment.
 - These patients do not disclose their treatment because they were told it is confidential.
 - Other patients do tell us that they have treatment with them.

2. They were asked where they keep Individual's ARV treatment.
 - Kept in the medicine trolley and in the fridge [4 registered nurses].
 - Patients prefer to keep them in their lockers or bags.
 - If the treatment is not prescribed, we tell patients to keep it and drink the way they were taught.
 - We are not sure of ARV side effects; we keep them next to the patients.

3. They were asked if they stick to individual's treatment plan.
 - Patients have different times and we have staff shortage.
 - We give them according to routine medicine giving times, starting between 08:00 – 09:00[8 registered nurses]

4. Interviewed nurses were asked if they were trained with HIV/AIDS management
 - Two [2] registered nurses were trained and well conversant about ARV patient management.
 - Registered nurses cited shortage of staff and rotation of staff that is trained moving to other wards.
 - Nursing managers are not choosing appropriate people to go for training.

5. Medicine given and recorded in the nurse's medicine sheet [25 files audited]

ARV treatment recorded as given	9 files[36%]
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ARV treatment not recorded	16files[64%]
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4.6.3 Hospital policy re-admitted patients bringing their own medication

According to Dr. George Mukhari hospital policy, on admission all treatment brought in by the patient from home, is disclosed to the doctor for review. If the doctor thinks it is still relevant to the diagnoses, then it will be reviewed. All treatment irrespective of antiretroviral must be recorded that the patient has taken. Research findings revealed that nurses did not take accountability by ensuring continuity of patient's treatment. Other nurses were aware that the patients were on ARV treatment, but expected the patients to take responsibility of taking their treatment on time and still remind nurses even if the treatment is kept by them. The condition of the patient [acuity level] and the level of understanding, emotional and psychological status were ignored. Files that were recorded, treatment time was not according to the patient's treatment plan, other medicine recording sheets had gaps that indicated inconsistency.

4.6.4 Standard operating procedure[SOP]

Standard operating procedures were not available in the wards to guide the nurses on how to manage patients on HAART. This was evident because there were different reasons for not adhering to patient's treatment times. Other nurses cited shortage staff.

4.6.5 Quality care

Quality care can be described as care that exceeds set standards and norms. It includes care that is professional, exceptional and of a very high standard in the eyes of both the person caring and the one being giving the care. Compliance with standards set by various councils and professional bodies is an example of quality care. Such care should improve health and meet the health care needs of patients and clients (Khokho, 2009).

The care given by nurses to patients receiving antiretroviral treatment in the wards I visited, did not meet the standard of being called “Quality “. Unit standards were not there, example, handling of ARV drugs. According to South African HIV/AIDS Management Care and Treatment protocol, ARV drugs should be controlled as schedule 5 drugs. They should be kept under lock and key not in patient’s lockers.

4.6.6 Attitudes of nurses

It was difficult to conclude whether the eight registered nurses represented the entire nurses in the medical wards and level one wards. The results revealed that patients on HAART were treated differently and it was not necessary except for the privacy and the confidentiality that is required solely to protect the individual. The health sector has been identified as one of the areas in which discrimination occurs (Mahindra, et al; 2007). Studies have documented negative attitude to People Living with HIV/AIDS in health care settings in Nigeria and elsewhere (Adelekan et al., 1995; Fido & Kamezi, 2002; Hengten, Jaureguiberry, Ramiliarisog, Andrianantoandro & Belec, 2002; Quach, Mayer, McGarvey, Lurie & Do, 2005; Reis et al; 2005). Physicians and nurses have been reported to be uncomfortable when administering medical procedures to HIV infected patients (Oyeyemi, & Bello, 2006, 2008).

4.7 MY EXPERIENCE WHILE COLLECTING DATA

While collecting information from the patients, I realized that it was not only a matter of getting consent and collecting data. I had to do drug counseling as well, because for the patients to adhere to their treatment, they definitely needed a person to remind them about their responsibility and not to forget that their treatment should not be skipped because their quality of life is going to be compromised. Minimum time spent with one patient was 20minutes. Adherence encourages discussion about treatment.

Collecting data from nurses and doctors gave a chance to cover even the training need analysis regarding HIV and AIDS, also Tuberculosis management. It was interesting to discover that much as patients do not disclose to each other, they are actually able to identify other patients taking treatment

from their lockers. When I was in one ward, having completed my talk with another patient, another patient called me to tell me that she is also on HAART. The sister who showed me patients was not aware that the patient was also on HAART.

4.8 CONCLUSION

The chapter presented the research findings. The findings were deducted from the interviews done from 25 patients on HAART during hospitalization, information from 8 nurses in supporting patients to adhere to their treatment and contributions of the doctors in proper history taking leading to prescribing all treatment necessary for the patient's recovery and maintenance of long-life treatment. The next chapter will cover the discussions, conclusions and recommendations from the researcher.

CHAPTER 5

DISCUSSION, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

This chapter will present a discussion of the research findings with the reference to the existing literature reviewed in relation to antiretroviral drug adherence to hospitalized patients. Conclusions will be drawn from there and recommendations made. According to Struwig & Stead (2001:228 and 232) discussion describe the data and compare the interpretations of the data with the existing theories and literature on the topic. Discussion, summary and recommendations refer to whether there is a proper discussion and summary of the research and whether useful recommendation was presented. It should include the discussion that is linked to the literature, aims and results.

The purpose of my research study is to investigate ARV drug adherence of patients on South Africa's government ARV government while being hospitalized at Dr George Mukhari hospital, in medical wards and level one ward.

The specific objectives of this research study are:

- To measure the levels of adherence amongst hospitalized patients on HAART.
- To explore factors associated with non-adherence.
- To measure the level of support given y health care workers to patients on HAART while admitted.

5.2 GENERAL OBSERVATION FROM THE EIGHT WARDS

The welcoming from the nurses was very positive and willing to help without complaints in responding to the questionnaires. All registered nurses showed me the patients that were on antiretroviral treatment without consulting others or referring to the nominal book. This was the impression that they knew their patients. I brought along a list of patients from their hospital adult ARV clinic consultations requested. They really appreciated that because they were not aware of other

patients that were on HAART. This indicated to me that those patients disclosed to the doctors and not to the registered nurses, meaning that their treatment was in their bedside lockers. This was one factor that contributed to treatment interruption because if the patient becomes too sick, he/she would not be able to remember to take treatment as expected.

5.3 PILL COUNTING

Pill counting was done from 25 patients and only missed pills were counted after asking the individual patients. It was difficult to count from their respective pill containers because patients would not remember the date treatment issued and the pills that were remaining in the used pill containers. The approach was to count the number of pills missed since admission. According to the South Africa's HIV/AIDS Comprehensive Care, Treatment and Management guideline, 2004: ideally for a patient to be termed as adhering to ART, he/she must take more than 95% of their doses (that is, missing less than 3 doses in a month).

If a patient is taking less than 95% of their doses, they are at risk for developing viral resistance and ultimately virological failure. Research findings revealed that 28% of patients their adherence level will be >95% and 72% their adherence level will be <95% and 62% might have missed more than 3 doses of their treatment since admission. This method was not easy because not all patients seemed to be sure of accurate number of pills missed. The focus was on identifying whether patients interrupt their treatment thus not adhering to the prescription and not suppressing the HIV virus in their blood system.

According to Treatment Helpline Direct in South Africa:

- Patients that would take treatment according to doctor's prescription are 5%.
- Patients that would not take all treatment according to doctor's prescription are 95%.

This literature concurred with my research findings because 28% of patients adhered to their treatment and 72% of patients did not adhere to their treatment. It was interesting to note that other patients omitted Efavirenz pills purposely to avoid side effects, thus altering the doctor's prescriptions.

5.4 PATIENTS THAT REPORTED 100% ADHERENCE WHILE HOSPITALIZED

Patients that reported to have taken 100% of their ARV's while admitted were 5(20%). One patient was on Regimen 2, 3 patients on Regimen 1(a) and 1 patient on Regimen 1(c). From the five patients, three patients were less than 4months on HAART and two patients were more than 1year on HAART. It was difficult to conclude whether the period on antiretroviral treatment has anything to do with adherence to treatment, not ignoring acquity level of the condition of the patient while admitted. There is evidence that there are fewer adherences as times progress. What is required is continuous monitoring and support of all patients on lifetime antiretroviral treatment.

5.5 ADHERENCE OF PATIENTS ON REGIMEN 2 ANTIRETROVIRAL TREATMENT

ART regimen taken by participants during the study

Treatment Regimen	Number	Percentage (%)
Reg.1(a) D4t/3TC/Efavirenz	13	52%
Reg.1(c) AZT/3TC/Efavirenz	7	28%
Reg. 1(b) D4t/3TC/Nevarapine	1	4%
Reg.2 AZT/ddl/Lopinavir& Ritonavir	4	16%
TOTAL	25	

In the research findings 4 patients (16%) are on regimen 2 treatment. Only one patient the adherence was >95%. One would expect regimen 2 patients to be assertive and strict about their treatment because South Africa has only 1 and 2 regimens to give to the public presently. Once patients are admitted, mostly rely on nurses to continue with the new treatment hoping that what-ever treatment given will cover even the previous illnesses.

5.6 THE ROLE OF TREATMENT REMINDERS IN MAINTAINING ADHERENCE LEVEL AT >95%

Treatment Reminder	Number	Percentage %
Cellular phone	8	32%
Television	1	4%
Watch	3	12%
Nurses	9	36%
Guessing time	2	8%
Not using reminders	2	8%

Much as all the patients were given information about the importance of having reminders so as to take their treatment on time, they still need to be educated to choose the reliable methods according to the situations they find themselves in. Only 36% of patients relied on nurses, this number is too low, nurses need to do more, take over by giving treatment to sick patients, supervise and support them while being hospitalized. Literature indicated that when the patient is depressed and too sick, that would have a negative impact on adherence.

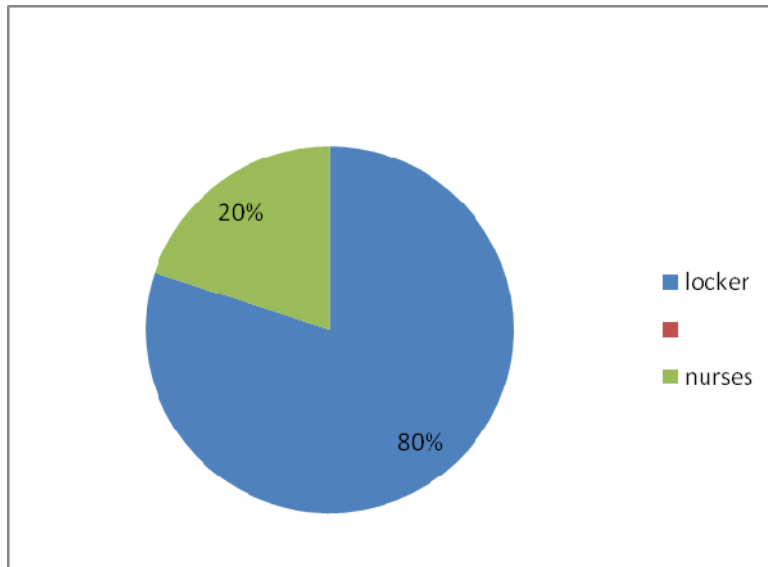
The use of cellular phones is preferred by patients and it is encouraged even to those using other methods. The sound of the alarm is alerting a patient even if sleeping. Other patients using other methods reported to be waiting for relatives to bring them chargers because their cellular phones were battery low.

The use of a television, watch and guessing time was found to be totally unreliable to remind a hospitalized patient. The patients that were using watch their watches did not have the alarm systems. During the interview, for the patient who said she was using a television, it was switched off, indicating that the patient has no control over it. Even if it was switched on, individual patients have no control over channels to easily estimate time according to a certain programme. The two patients (8%) which reported not to be using treatment reminders are a sign of not taking treatment according to treatment plan, not every day same time. That is why all admitted patients should be monitored and nurses take accountability for patients' treatment.

5.7 STORAGE OF PILLS IN RELATION TO CONTINUITY OF TREATMENT AND DISCLOSURE

Patient treatment should be kept by nurses in the medicine trolley or medicine cabinet. The reason given by nurses for not taking control of patient's antiretroviral treatment is that patients prefer to keep them. Only 20% of patients kept their treatment with nurses. The other reason given by the registered nurse for not keeping patient's treatment is that, if the doctor did not prescribe or review the treatment, they tell the patient to keep the pill. Another reason given by a registered nurse is that, they are not conversant to ARV drug side effects as a result they prefer pills to be kept next to the patients.

This is totally not accepted. According to the hospital policy all treatment should be kept safe, under control measures by nurses. Patients need to be protected from any harm or medico-legal hazards that are preventable. Nurses are suppose to communicate with doctors to review treatment. It is the responsibility of the nurses to require knowledge of all the treatment given to patients and to read the inside leaflets from treatment containers. How-ever, I did acknowledge that there is a great need for HIV and TB collaboration training for nurses and doctors.



Where pills were kept by 25 patients

It is critical that nurses take control of giving patients treatment while hospitalized, to ensure continuity of treatment and to reflect reliable evidence that the patient has taken his/her doses. To achieve these benefits, a high level of medication adherence is necessary. If patients interrupt their treatment, they might end up requiring Regimen 2 pills, which are costly and not easy to take due to specific conditions that need to be adhered to.

The research findings supports Steel G.et al; 2005:11, that cited that, if adherence falters, resistance to antiretroviral may develop, thus rendering the treatment regimen ineffective and possibly require a more costly and toxic regimen change.

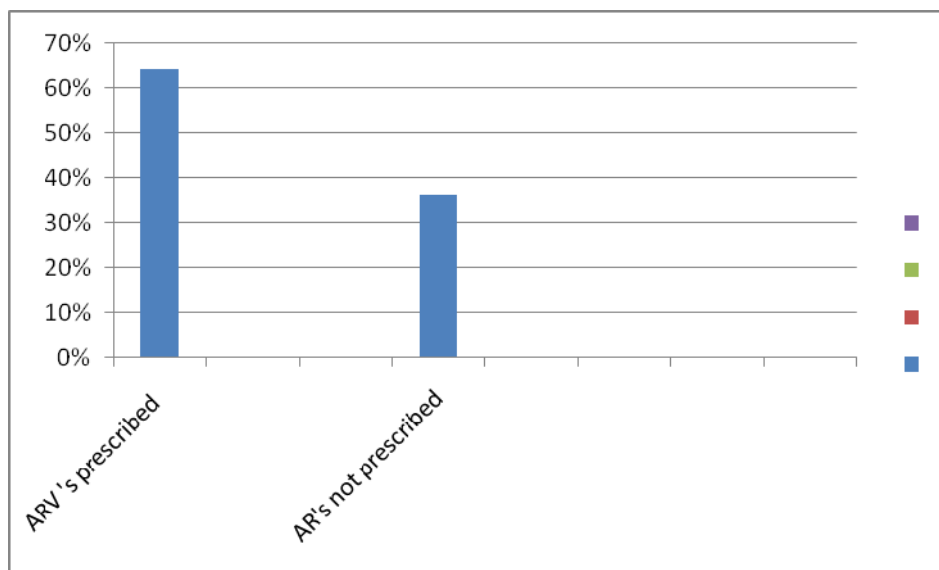
5.8 PATIENTS KNOWLEDGE ABOUT ANTIRETROVIRAL TREATMENT

Generally all patients knew how to distinguish their ARV drugs from other pills. Since South Africa HIV/AIDS management is using a triple therapy, patients easily identified that they take their treatment from three different containers but pronunciation of ARV drug names was difficult. The researcher was conversant to ARV drug names; it was easy to finish up the name of the drug. If the doctors and nurses had asked them all about the treatment they were taking before admission, they

would have picked it up and continued the treatment. Patients that were on Regimen 2, their treatment was kept in the fridge but still patients were missing their doses. One patient commented to me that she suspects the nurse does not know Kaletra pills that is why she did not come back to give her treatment.

5.9 MEASURING THE LEVEL OF SUPPORT GIVEN BY DOCTORS IN SUSTAINING ANTIRETROVIRAL DRUG ADHERENCE

Research findings revealed that from (16) 64% of files antiretroviral treatment was prescribed for patients and from (9) 36% of files antiretroviral treatment was not prescribed.



Antiretroviral treatment prescribed by doctors for hospitalized patients

The reason that can be made from the doctors that did not prescribe or review treatment for patients that are already on antiretroviral treatment when admitted is negligence. If proper history is taken, the previous notes read and correlated to the diagnose, surely there will be continuity of patient assessment and management plan. According to South Africa national Antiretroviral Treatment Guideline (section3) of 2004, medication adherence is an essential element to maintain the health benefits of ART.

Clinicians are required to monitor and evaluate adherence and respond appropriately. The South Africa ARV treatment guideline emphasizes that there is a need for training as a means to ensure patient adherence to ART. The level of support from the doctors to sustain adherence to treatment was poor. It needs to be 100% not 64% as discovered, it cannot be compromised, and it can only be good (100%) or poor (< 100%). Quality patient care also means not keeping the patient's stay long in hospital by not prescribing and monitoring that the treatment is received.

5.10 LEVEL OF SUPPORT GIVEN BY NURSES TO HOSPITALIZED PATIENTS IN SUSTAINING ANTIRETROVIRAL DRUG ADHERENCE

My research question needed an answer to know how far nurses are supporting patients under their care, to continue their lifetime treatment (HAART). The support from nurses was also poor. The registered nurses did not take a lead and develop unit standards for personnel on how to manage HIV positive patients on HAART. Nurses still need information on shared confidentiality and their accountability that patients should be treated the same and should be given treatment as expected.

Nurses are supposed to be advocates for patients. If doctors have not prescribed the treatment, they should communicate amongst themselves for continuity of treatment. Both nurses and doctors are equally responsible and accountable for quality patient care which cannot be graded to under TOTAL QUALITY PATIENT CARE. Dealing with human beings one cannot do one part and compromise the human life because it can be too late to reverse the negligence and loose the patient.

Other patients exhibited a sense of not trusting health care providers about disclosing their HIV status and ARV treatment. Response from other patients was confusion about their treatment plan time

changing because nurses were sticking to their routine schedule. The research findings indicated a need for strengthening the nurse-patient relationship so that patients become free to communicate with staff about their concern and fears. Patients needed to be re-assured that on discharged they need to continue with their individual treatment plans that suite their life programmes.

5.11 PATIENT'S RIGHTS CHARTER

According to South Africa Patient's Right Charter, (S. A. Department of Health, 2000).

Every patient has a right to:

- Provision for special needs (in the case persons with HIV or AIDS patients).
- Confidentiality and privacy
- Continuity of care
- Complain about health services (everyone has the right to complain about health care).

According to South Africa Department of Health, Patient's right charter should be displayed in all health institutions and patients educated about their rights and their responsibilities when visiting health sectors. The community has also taken –up the responsibility of advocating for their families. It is critical for the health care workers not to take patients for granted, that they will not report dissatisfaction, about the service they have received.

Patients with HIV and AIDS have special needs; health care workers should respect them and comply to reduce unnecessary law suits. If a patient insists that he/she will keep the treatment, the nurse should still take accountability to see that the patient takes treatment as prescribed. The information should be recorded so that as soon as the patient becomes too sick to take treatment on his own, nurses will take over.

The patient should still be supervised and other patients protected. Nurses still need to be empowered with information so that the importance of disclosure, shared confidentiality amongst health cares workers to maintain continuity of care.

5.12 FACTORS THAT CONTRIBUTED TO NON-ADHERENCE OF HOSPITALIZED PATIENTS ON HAART

5.12.1 STIGMA

Other patients cited lack of privacy in the wards which indicated that they needed to hide themselves when taking their antiretroviral treatment. They did not want other patients to know about their HIV status. Surely this factor had a negative impact on their adherence to the antiretroviral treatment.

5.12.2 ANTIRETROVIRAL DRUG SIDE EFFECTS

Patients had a tendency to avoid the next dose of treatment to minimize the effects of side effects , not realizing that the drug levels in the blood system decreases. This barrier to adherence contributed to patients avoiding to report side effects because their treatment will be changed.

Patients reported to be losing hope when ARV's are changed. The idea of having only regimen 1 and 2 in South Africa has an impact on patients, they become anxious or worried that, what if the last regimen does not work. That is why continuous education, support and adherence counseling is important.

5.12.3 LACK OF SUPPORT FROM THE NURSES AND DOTORS

According to the research findings, 64% (16) of files had not been recorded by nurses that the patient received or took antiretroviral treatment and 36% (9) of files had not been prescribed or reviewed antiretroviral treatment by doctors. It was expected that only 36% of files would have not been recorded by nurses because doctors did not prescribe ARV treatment from 36%. It showed that even if the doctors prescribed there was no evidence that the patients took their treatment. Support from both health care providers was poor to promote adherence and motivate patients.

Health care providers are thought to play a central role in providing support for adherence to antiretroviral treatment. Evidence from qualitative studies of HIV positive individuals suggest that

adherence may be influenced not only by health care providers, but also by members of the individual's social network who are aware of the individual's HIV positive status (Roberts & Mann, 2000). This study is relevant to my study because the community had a concern that the patient's right charter was ignored patients were interrupting their treatment while admitted. Informed family members and treatment partners may play a role in supporting daily adherence. This involvement of family members or friends in promoting adherence need to be further explored because it came as a complain but it is a necessary factor because HAART is a life time treatment. We cannot rely on health care providers only; the patient's social cycle should be explored.

5.12.4 ADHERENCE LAY COUNSELLORS NOT VISITING ADMITTED PATIENT

All participants on HAART had been given pre-adherence counseling by lay counselors in their respective health facilities. From the research findings it is evident that adherence counseling should be continuous and not stop when patients are hospitalized. At Dr. George Mukhari hospital lay counselors do visit new patients for pre-adherence counseling. The numbers of lay counselors need to be increased to cover even the wards for continuous adherence support for all patients admitted that are on HAART. While I was visiting the different wards, there were Tuberculosis (TB) community counselors seeing admitted patients but not patients on HAART. TB/HIV collaboration should be strengthened so that TB counselors can also be increased and work together with ART adherence counselors. It would be beneficial to the patients if lay counselors are equipped with HIV and TB information.

5.12.5 PATIENTS EXHIBITING A SENSE OF PILL BURDEN

Hospitalized patients have to take antiretroviral treatment and the new treatment for the current diagnose. Other patients interrupted their treatment and focused on the new treatment given by nurses. This did not come up as a complain but they did not see it as interrupting the treatment because they were going to take their treatment.

5.12.6 LACK OF PRIVACY VERSUS NON-DISCLOSURE

Patients actually complained that, they are unable to take their treatment in the ward because there is no privacy. Lack of privacy and non-disclosure of treatment were impacting on each other. For the fact that the patients did not disclose his/her ARV treatment, they would need privacy for the health care workers and other patients not to know about their treatment. This is difficult to maintain, because nurses and doctors would always be there in the wards. There is no need for drawing up curtains for patients to take their oral treatment. It is only when an injection is given particularly on the gluteus muscles (buttocks) that a privacy is required.

5.12.7 PATIENTS BECOMING DEPENDENT ON NURSES

This is understood when the patient is too sick to even remind the nurses about their treatment. Patients need to be taught to be responsible and assertive. They should demand their treatment because this is life time treatment, their life rely on ARV treatment and not on individuals (Mehta et al; 1997). According Mehta (1997) adherence also declines when illness becomes severe.

The patient may fall asleep due to effects of other treatment received or pain. This can be seen as the greatest accidental factor that can contribute to treatment interruption.

5.12.8 ADHERENCE versus COMPLIANCE

Compliance is the corner stone of any medical treatment. The literature states that if the patient fails to carry out the instructions of the doctor a return to good health is very unlikely. Compliance often has connotations that the health care worker knows best, with the patient passively following the advice of the health care worker. This was exhibited by other patients, thinking that nurses know best, even if when the ARV's were not given. The new treatment given by nurses was seen as comprehensive. Patients decided not to be active in taking responsibly for their treatment.

Adherence encourages discussion about patient's treatment plan. This becomes difficult for other patients because nurses give treatment according to their unit routine times. In fact nurses should be educated that patients need an open discussion about changing times of treatment. This is important

because on discharge the patient should adjust to his/her own treatment plan (Adherence Network Group, 2006:18).

The patients need continuous counseling to ensure that all the elements mentioned during the pre-ARV adherence counseling are still maintained and practiced.

Patient ART requirement list:

- Education - The need for the patient to be educated.
- Intelligence - The approach should consider the level of understanding of the patient, example, using the patient's home language.
- Responsibility – The need for responsibility, accountability, commitment and self discipline. The patient should understand that if they break any of these criteria, there is a likely hood of treatment failure.
- Compliant – Patients need to take treatment as instructed by their doctors. In the case of ARV treatment, to take treatment also as instructed the pharmacist after drug counseling.

Categories of Non – Compliance (classification)

Category 1 non-compliance

- Failure to take drugs at dosages prescribed.
- Failure to take drugs at the times stipulated.
- Failure to take drugs in the manner stipulated, example, on an empty stomach.

Category 2 non – compliance

- Failure to adhere to a healthy lifestyle.
- Failure to adhere to a risk free sexual behavior.

Category 3 non – compliance

- Failure to provide antiretroviral drugs of the pharmacological correct standards(example, poor quality generic equivalent)

Category 4 non – compliance

- Failure to initiate ARV's appropriately.
- Failure to provide proper, legible and understandable instructions with regard to medicine ingestion.

(FPD, 2005:216)

Looking at the classification of non –compliance, my research findings fall under category 1 non-compliance, which are very serious. Research studies have showed that most frequent reasons for missing doses were forgetting, sleeping through dosing time and not having medication at the time of prescribed dose.

5.13 LIMITATIONS

The study was done in two disciplines (Internal medicine-medical wards and Family medicine-primary health care wards). The study need to be extended to the whole Dr. George Mukhari hospital wards to have an overview of the whole institution regarding adherence to ARV treatment of hospitalized patients.

There research results were not conclusive, measuring adherence is not easy without using other variables. The information from the patients might have been falsified because patients were interviewed once. The accurate data was from the audited files because there was no chance for health care workers to change or record additional information. They were not aware of what was checked.

5.14 RECOMMENDATIONS

The South African health system should respond to changes brought by emerging disease and patient involvement in their treatment plans. Watches should be displayed in the wards for patients to view the time. The government should move to the combined pill to reduce the burden of pills experienced by HIV positive patients on HAART. Adherence counselors are needed in the wards for patients support and continuous adherence counseling. This would not be difficult for Dr. George Mukhari hospital because Tuberculosis counselors are allocated in the wards for TB counseling. Standards need to be

developed so that every health care worker knows what is expected when taking care of patients on HAART.

Training for HIV and AIDS management should be extended to all nurses, training should be included in their nursing training curriculum. There is also a great need to train health care providers about HIVTB collaboration and antiretroviral treatment.

5.15 CONCLUSION

Assessing medication adherence in general and ART in particular is difficult because of the need for longitudinal data. Literature reviewed mentioned this difficulty and even recommended a multi-method approach for measuring ART adherence. According to (Steel G; 2005: 12), self reporting over estimate adherence, electronic monitoring is costly, requires technology capabilities and can underestimate adherence; pill counting can be falsified and impractical in busy clinic setting. Currently in South Africa HIV/AIDS guidelines rely upon pill counts which have been shown to overestimate adherence.

Hospitalized patients on HAART really need 100% from nurses and doctors to promote continuous adherence to treatment. Patients that cited lack of privacy are those that did not disclose their HI positive status and ARV treatment. Disclosure it's a critical element for patients to be free to take their treatment as prescribed. Health care workers need to adapt to changes and be flexible in their health care systems. Antiretroviral treatment are not the only treatment that challenged the routine schedule for giving treatment, the only factor is that the number of patients might be taxing to choose their treatment plan.

According to literature studies, adherence to antiretroviral treatment is the powerful predictor of survival for individuals living with HIV and AIDS. There is a great need for HIV management training to increase staff knowledge and promote a positive relationship with admitted patients.

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ANNEXURE: A

ANTIRETROVIRAL DRUG ADHERENCE – HOSPITALIZED PATIENTS

REGISTERED NURSES QUESTIONNAIRES [8 NURSES]

1. How do you identify a patient on ARV's?

.....

2. Where do you keep individual's ARV's in the ward?

.....

...

3. Do you stick to individual's treatment plan time when giving ARV.s

.....

....

4. Are you trained with HIV/AIDS management?

.....

.....

RESPONSE FROM REGISTERED NURSES:

1. Identifying a patient on ARV's
 - When completing a nursing care plan a nurse should ask whether on any treatment.
 - These patients do not disclose their treatment because they were told it is confidential.
 - Other patients do tell us that they have treatment with them.

2. Individual's ARV kept
 - Kept in the medicine trolley and in the fridge [4 registered nurses].
 - Patients prefer to keep them in their lockers or bags.
 - If the treatment is not prescribed, we tell patients to keep it and drink the way they were taught.
 - We are not sure of ARV side effects, we keep them next to the patients.

3. Are they sticking to individual's treatment plan
 - Patients have different times and we have staff shortage.
 - We give them according to routine medicine giving times, starting between 08:00 – 09:00[8 registered nurses]

4. Registered nurses interviewed and trained with HIV/AIDS management
 - Two[2] registered nurses trained and well conversant about ARV patient management.
 - Registered nurses cited shortage of staff and rotation of staff that is trained moving to other wards.
 - Nursing managers not choosing appropriate people to go for training.

5. Medicine given recorded in the nurses medicine sheet[25 files audited]
 - Only nine [9] files were recorded for ARV's taken by patients.

ANNEXURE: B

ANTIRETROVIRAL DRUG ADHERENCE – HOSPITALIZED PATIENTS

DOCTORS FILE AUDIT [25 PATIENT'S FILE]

1. HIV status revealed or ARV treatment disclosed.

YES NO

2. ARV treatment prescribed.

YES NO

3. Plan written to send a consultation to an ARV clinic for further management of the patient.

YES NO

FINDINGS FROM PATIENT'S AUDITED FILES 25 files]

1. Sixteen [16] files clinical notes reflected doctors writing that the patients are RVD positive and patients are on ARV treatment.
2. Sixteen [16] files ARV prescribed.
3. From other files doctors mentioned that the patient had treatment from home but did not review the ARV treatment.
4. Doctors that reflected that the patients were on ARV treatment mentioned in their plan to send a consultation to an ARV clinic.

ANNEXURE: C

ANTIRETROVIRAL DRUG ADHERENCE – HOSPITALIZED PATIENTS

PATIENTS QUESTIONNAIRES

1. How long are you on ARV's?

.....

2. Do you remember the names of your ARV's?

Regimen 1(a).....Regimen 1(b).....Regimen 1(c).....Regimen 2

3. What reminds to take your ARV's on time?

Cell.....TV.....Watch.....Other

If yes, what was the reason?

.....

.....

4. Where are your ARV's kept now that you are hospitalized?

Nurses.....Locker/personal bag

5. Have you ever taken your ARV's late since admission?

Yes.....No

If yes, what was the reason?

6. Have you missed your ARV's since admission?

Yes.....No

If yes, how many did you miss?

.....

7. Did anyone ask you if you are on any treatment on admission?

Doctor.....Nurses

8. Did you bring your ARV's to the hospital?

Yes.....No

9. Have you disclosed your ARV's to the nurses?

Yes.....No

10. Do you always take your ARV's in the presence of other in-patients?

Yes.....No

If no, what are the reasons?

.....

Thank you for participating in the study.

ANNEXURE: D

CONSENT FORM FOR THE PARTICIPANTS

RESEARCH STUDY:

Antiretroviral Drug Adherence – What happens when patients are hospitalized to medical wards and level one wards in Dr. George Mukhari hospital, and they are on Highly Active Antiretroviral Therapy (HAART).

I have read information, the aims and the objectives of the proposed study. I have been given the opportunity to ask questions and given adequate time to rethink about it. I am satisfied about the answers to all my questions. The aims and the objectives of the study are sufficiently clear to me and I have not been pressurized to participate in any way.

I do understand that participation in this study is voluntary, my records will be kept confidential and I may withdraw from the study at any time without giving reason.

.....

.....

Name of the participant

Signature of the participant

.....

Signature of the researcher

.....

Date

RESEARCH DECLARATION

I provided translation to the participant's language verbally, the procedure and the potential benefits associated with participation in this research study. All questions asked by the individuals have been answered fully.

.....

.....

Name of the researcher

Date

ANNEXURE: E

APPLICATION LETTER FOR THE PERMISSION TO CONDUCT THE RESEARCH STUDY

1118 Block BB
Soshanguve
0152

The Director
Clinical Service
Dr. George Mukhari Hospital
Private Bag X422
Pretoria
0001

Dear Sir/Madam

Requesting permission to collect data for research at Level One and Medical Wards [Dr. George Mukhari Hospital]

I hereby request a permission to collect data at the above mentioned wards for the research thesis. I am presently studying a Master of Philosophy (HIV/AIDS Management) with the University of Stellenbosch (African Centre of HIV/AIDS). My research topic will be about, Antiretroviral drug adherence – What happens when patients are hospitalized to medical wards and level one wards in Dr. George Mukhari hospital, and they are on Highly Active Antiretroviral Therapy [HAART].

Find attached a copy of my research proposal and permission from Stellenbosch University to conduct this research study

Any questions concerning the study, you can contact the study Supervisor: Dr. Thozamile Qubuda, Tel no.:021-959 2615 E-mail:tqubuda@uwc.ac.za

Thank you

T. H. Nkosi [HAST-Project Manager]

Contact No: 012)529-3592

Cell No: 076-9608474