

PSYCHOSOCIAL FACTORS CONTRIBUTING TO NON-ADHERENCE OF ARV TO PEOPLE LIVING WITH HIV AT MABWEPANDE DISTRICT HOSPITAL, KINONDONI MUNICIPALITY

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Abstract: The purpose of the study is to identify psychological factors contributing to non-adherence for people living with HIV at Mabwepande District Hospital Kinondoni, Dar es salaam. Descriptive research design was employed in this study. Population of the study was 1168. For the purpose of this study probability sampling specifically simple random sampling technique was used to select ART patients, while purposive sampling was used to select key informants (health workers). The researcher used questionnaire which contained both close-ended and open-ended questions. Qualitative data were summarized, coded and analyzed through thematic content analysis. Also, Statistical Package for Social Sciences (SPSS) was used to analyze quantitative data. This included percentages, frequencies and statistical means that were determined through descriptive statistics. **Key findings:** Attitudes/beliefs about effectiveness of treatment, misunderstanding of prescribing instructions, life style, drug use, alcohol, forgetfulness, psychological factors, stress, depression, anger about disease, use of traditional medicine and acceptance of HIV status, stigma, complex regimens, pill burden, restrictions of food, alcohol, specific dietary requirements, providers patients' relationships treatment, inadequate staff and Provider attitude. It can be concluded that: The goal of adherence to antiretroviral treatment is to improve and prolong the lives of those who are on the treatment. **Recommendations:** there should be out-reach services, involving health workers, should be literacy programs, nutrition programme, employers' involvement in the HIV/AIDS care, provision of health education and involve national HIV/AIDS programme.

Keywords: Psychosocial factors, non-adherence, ARV, people living with HIV.

1. INTRODUCTION

The chapter introduces the study on psychological and economic factors contributing to non-adherence of antiretroviral therapy (ART) to people living with human immunodeficiency virus (HIV). The chapter is divided into such subsections as the background on which the problem is based, the statement of the problem that states the need for this study, research objectives and questions, the significance of the study as well as conceptual definitions contained in the study to guide the reader.

Background to the Research Problem

Adherence to ARV Therapy is fundamental in the achievement of the millennium development goal 6 which is; to combat HIV/AIDS. Malaria and other diseases (Nwonwu, 2008). A Healthy community is vital for social-economic development. In recent years, considerable resources and money have been invested so as to achieve universal access to ARV Therapy. Countries striving to expand treatment access have set goals of providing antiretroviral treatment to 80% of those infected. This has not yet been achieved as the current global coverage is 65%. The target has yet to be released due to factors associated with lack of ARV Therapy adherence. (Volberding, 2008).

The majority of people living with HIV are in low- and middle-income countries. According to WHO sub-Saharan Africa is the most affected region in the World with 24.7 million people living with HIV by the end of 2013. This translates to 71% of all people who are living with HIV in the world live in this region. (AIDS.gov, 2013). Maintaining adherence to ARV Therapy over time is a challenge in many social settings. In sub-Saharan Africa the average retention rate in ART programs for the period 2007–2009 (24-month period) was 70%. In Africa; Studies carried out in Botswana, Uganda and Tanzania showed that in spite of ARVs been provided freely the direct and indirect opportunity costs incurred due to ARV Therapy by PLWHIV undermines their motivation to adhere to ARV Therapy. This makes them non-adherent to ARV Therapy (Coll-Black, 2008). In sub-Saharan Africa most of the ARV Therapy adherence challenges are caused by socio-economic and environmental issues (Getnet Tizazu Fetene, 2013). In South Africa ARVs were rejected by Pentecostals as soon as they were made available with the churches' pastors preaching against the use of ARVs. They were aggrieved that the treatment was working against the belief of Holy Ghost healing power. This sheds light to the role played by religion in ARV Therapy adherence (Thera Rasing, 2014).

The Kenyan government has been in the forefront to combat HIV/AIDS seen mostly through NGOs involved in various health related projects for instance APhiAPLUS KAMILI a project in Eastern and Central regions of Kenya (USAID, 2014). In Kenya 40-50% people earn less than a dollar a day; with a majority living in rural areas. This has seen a surge of rural to urban migration in search of greener pastures hence the mushrooming of slums in major urban centers in the country. The poverty levels in slums give birth to flourishing prostitution, low moral standards and drug abuse that promote sexual immorality contributing to HIV/AIDS spread. When these people get infected, they have to ensure ARV Therapy adherence in these same conditions. Their low literacy levels contribute to their low understanding of ARV Therapy adherence due to the lack of generally acquired knowledge such as what constitutes a balanced diet (Kimani, 2007). The independent variables for this study are Social-economic factors, drug abuse, cultural and religious factors and Knowledge on ARV Therapy adherence by PLWHIV. Moderating factors for the study are the availability of ARVs, attitudes of the HCW and HIV/AIDS clients and the dependent variable is Adherence to ARV Therapy.

Despite various efforts aimed to address this problem, human immunodeficiency virus (HIV) still remains as one of the most prevalent yet incurable infectious disease. According to WHO, HIV has infected 75 million people worldwide and approximately, 32 million of them have died since the beginning of its epidemic (WHO, 2018). The treatment of antiretroviral therapy has been initiated in countries and regions, due to the concern of the development of acquired immunodeficiency syndrome (AIDS) as the next phase of HIV infection. However, 37.9 million people worldwide were still living with HIV in 2018. It is also highlighted that HIV still remains as one of the leading causes of death worldwide as stated by WHO (UNAIDS, 2019).

A study of global, regional, and national prevalence of HIV showed that the highest prevalence of HIV was found in the region of Africa. In 2017, South Africa had the highest number of new infections with 0.28 million new cases per year (GBD, 2017). Thus, plenty of researches have been done in order to eliminate and conquer the HIV/AIDS epidemic in Africa.

Currently, antiretroviral therapy (ART) is the first-line therapy in treating HIV patients, as it decreases the viral load and suppresses the virus (USDHHS, 2018). Even though ART coverage has increased by 90% across all age groups since 2008, HIV prevalence remains high as shown by the stagnant of change in its incidence (Girum *et al.*, 2018). Non-adherence to ART is one major concern that contributes to this problem. A nationwide study conducted in Asia has revealed that 29.6% of HIV patients had suboptimal adherence to ART (Kim *et al.*, 2018). Adherence to medication itself actually plays a crucial role in treatment outcomes; therefore, addressing factors related to adherence could be a breakthrough in making the treatment more effective.

As mentioned above, Sub-Sahara Africa is highly infected region with HIV in the world; it carries 70% of people living with HIV (PLWHIV) in the world (WHO 2016, UNICEF 2016). It has been reported that 75% PLWHIV in the world come from only 12 countries of which Tanzania ranks number three with total of 81000 ALHIV (UNAID 2016). In recent years there is an increase of number of newly diagnosed adolescent infected with HIV in Sub-Saharan countries due to aggressive scaling up of HIV testing and counseling services (UNAID 2014 and UNICEF 2016).

In Tanzania ART services and coverage has been scaling up to PLWHIV where by between 2010 to 2015 there was increase of more than 25% ART services coverage (UNAID 2016). The use of ARV drugs has reduced HIV/AIDS-related morbidity, mortality, and improved the quality of life of PLWHIV however the effectiveness of ART treatment depends on optimal and sustainable adherence to the prescribed ART regime (WHO 2016; Chesney MA (2017); Tanzania guideline for management of HIV and AIDS 2017). ART adherence rates as high as 95% has outcome benefit of suppressing of viral replication, decrease in viral load, increases in CD4 cell count, and improvement of the quality of life (Parietti *et al.*, (2018), Adejumo *et al.*, (2019). Poor ART adherence leads to disease progression and ART drug resistant (Tanzania guideline for management of HIV and AIDS 2019).

ART adherence rates among people living with HIV (PLWHIV) has shown to vary across different regions in the world; In North America it has been found that 53% of PLWHIV have optimal ART adherence, in Europe; 62% of PLWHIV have optimal ART adherence, in America; 63% of PLWHIV have optimal ART adherence and in Africa; 83% of PLWHIV have optimal ART adherence (Kim SH *et al.*, 2017). Poor adherence to ART medications results to progression of HIV infection to AIDS which also is associated with emerging of opportunistic infection and even death (WHO 2018 & 2019). Death among PLWHIV has been increasing in Sub-Saharan Africa whereby between 2015 and 2019 AIDS related deaths among PLWHIV increased by 50% and are associated with poor ART adherence, emotional and behavioral factors (Idele *et al.*, 2017; Mellins *et al.*, 2019).

Many studies in Tanzania have focused to study ART adherence among the youth and women and few studies covered the all age groups. Studies have shown different levels of ART adherence; Nyonge *et al.*, (2015) found 84% of children and teenagers 2-19 years and the mean age was 9.8 years had optimal ART adherence of $\geq 95\%$, Nshea *et al.*, (2013) found that 24.6% of pediatric had good adherence and Watt *et al.*, 2010 reported that 84% of adults had excellent ART adherence of 95% and above in Tanzania. Different factors have been shown to affect adherence to ART medication among PWHIV; for example, self-commitment, availability of emotion and practical life support, client ability to fit the medication into their daily routine, uninterrupted availability of ARVs, accessibility to CTC services and good tolerability to ARVs which have the positive influence PLWHIV to learn good ART adherence behavior and continuing to adhere on ARV medications (Tanzania guideline for management of HIV and AIDS 2017). Of these factors however, there is no mention of psychological and economic factors as having any impact of ART adherence among PLWHIV.

Despite Tanzania scaling up ART service across the country, adherence to ART medication remains a challenge for better outcome of viral suppression and raise of immunity against HIV viruses (Tanzania guideline for management of HIV and AIDS 2017). Most of the studies done in Tanzania on ART adherence have focused on children under 15 years of age and adults aged 15 years and above which have showed variation of ART adherence rates; such as a study done by Nyonge *et al.* (2015) among children and teenagers aged 2 to 19 years found 84% of the participants had optimal ART adherence level of $\geq 95\%$.

A study done by Nshea *et al.*, (2013) found that only 24.6% of PLWHIV were found to have good adherence. It was reported that there has been an increase of AIDS related deaths among PLWHIV in recent years, the deaths increase is associated with poor ART adherence among as the unique challenge related to their, psychological and social factors (WHO 2016 & 2019, Idele *et al.*, 2019).

The need for this study is based on the knowledge of the researcher that currently there is no study that has comprehensively re-viewed the factors related to ART non-adherence specifically on psychological and economic terms in Tanzanian settings, though such review is desperately needed considering the high HIV prevalence in Tanzanian population. Thus, this study aimed to assess ART non-adherence factors in Tanzanian HIV patients. Through this endeavor, hopefully, the results of this study can help to improve guidelines of ART adherence in Tanzanian population, as an integral part of achieving United Nations' Sustainable Developmental Program target 3.3 in 2030, which is to ensure healthy lives regarding

universal health coverage, via UNAIDS 90-90-90 strategy with the goal of reducing the mortality rate in HIV (Girum *et al.*, 2018, Kim *et al.*, 2018 & UNAIDS, 2019).

This study provided the findings on the level of ART adherence among the people living with HIV in Mabwepande District Hospital and also allowed to understand which factors and how they are associated with poor or optimal ART adherence among people living with HIV. These findings are significantly helpful to Mabwepande District Hospital, health management team, regional health management team, ministry of health community development gender elderly and children and the policy maker in addressing the ART adherence issues among PLWHIV.

The findings allow Mabwepande District Hospital to incorporate the factors associating with poor ART adherence in their quality improvement plans to improving ART adherence among PLWHIV. These results help district health management team and regional health management team to strategies the interventions to address the factors associated with ART adherence and including them in their planning and budgets, the results are also helpful them to understand the challenges areas for their routine supportive supervision of district and region health facilities.

In addition, the findings are helpful to the Ministry of Health, and policy makers to formulate different strategies in improving the friendly HIV serves delivery to people that can improve their adherence to ART. Finding of this study also opens the room for another study targeting people living with HIV.

ART: stands for antiretroviral therapy, is the use of HIV medication to treat HIV infection. People with HIV infection should use ART, which helps them to have longer and healthier life (Aids info Jan 2018).

Adherence: The World Health Organization (WHO) defined adherence as “the extent to which individual’s behavior in terms of taking medications, following a diet, lifestyle change following agreed recommendations from a health provider. Poor or sub optimal ART adherence is when “a patient forgets to take medication, taking the incorrect dose, poor observation of treatment intervals/frequency or neglecting other agreed recommendations. In Tanzania, adherence level $\geq 95\%$ needed to maximize the benefit of ART, adherence level less than 95% considered sub optimal (Tanzania guideline for management of HIV and AIDS 2017).

Factors that influence patients’ willingness to adhere to treatment include: poor knowledge/understanding and beliefs about medications effectiveness, forgetfulness, alcohol intake, lack of commitment, non-disclosure, unplanned travelling, lower education level, depression and severe anxiety.

Social and community related factors

Social and community related factors are the factors that they surround the ALHIV at the community and social relation with other people in the community and their care takers. Different literature showed different results social and community related factors; The study by Nyongea *et al.* (2014) showed ALHIV living with non- parental caretaker predicted poor adherence on ART, ALHIV with poor relationship with their caregiver and fear to disclose HIV status were significant associated with ART adherence (Xu *et al.*, (2017) while high parental and caregiver supervision to ALHIV showed to associate with reduced non-adherence (Cluver *et al.*, (2016).

The systematic review by Carly Hudelson and Lucie Cluver 2014 found that ALHIV living with single, or widow caregiver, low caregiver involvement and education, and caregiver being the only one knowing child’s serostatus correlated with poor ART adherence. Adolescents attending to HIV support groups and daily provision of at least two meals to adolescent showed association with good ART adherence Cluver *et al.* (2016). Bermudeza *et al.* (2006) found that greater odds of adherence were also associated with greater frequency of meals (OR1.49, 95% CI: 0.92–2.40)16). Nyongea *et al.* (2015) found that unfavorable school environment was associated with poor ART adherence among ALHIV.

Poor knowledge/understanding and beliefs about medications effectiveness

If a patient is well informed about HIV and believes that HAART is effective and prolongs life, and knows that poor adherence may lead to viral resistance and treatment failure, this contributes to a patient’s ability to adhere (Gifford *et al.*, 2020). Studies conducted in Tanzania on adherence for other diseases indicated that patients often do not have enough knowledge or do not remember how to use various prescribed medicines, contributing to their irrational use (WHO, 2016).

According to a study conducted by Osterberg and Blaschke (2019), 9% of patients in Ruanda reported not taking medications because of lack of information.

Medical related factors are the factors that relate to ARV medications from type of ARV medication, frequency of taking, side effect, care given by health care workers and health facility. Different literature showed different results related to medical factors. Xu et al. (2017) found that ALHIV with difficult in asking doctor questions were significantly associated with sub optimal ART adherence. Nsheha et al. (2013) found that poor ART adherence associated with children who developed ART side effects, could not attend clinic on regular basis and missed drug doses. Carly Hudelson and Lucie Cluver (2014) found that pill burden and route of ART administration are associated with ART adherence.

Nyogea et al. (2015) did not found association between pill burden and ART adherence but timing of morning ART dose was associated with poor ART adherence. The systematic review of studies by Carly Hudelson and Lucie Cluver 2014 found that administration of medication by adolescents was associated with suboptimal adherence, while caregiver administration of drug was correlated with good adherence and adolescents who taught how to take ART by a healthcare worker were more likely to have good adherence (Filho *et al.*, 2008).

Forgetfulness

Personal factors such as forgetfulness are predictors of sub-optimal adherence. A study done in Rwanda found that forgetfulness was among the top three reasons for missing a dose accounting for 30%, furthermore it was found that 44% of patients who took the correct number of doses but not according to schedule stated this was due to forgetfulness (Osterberg & Blaschke 2018; Baptiste, 2018). According to a study conducted by the Adult AIDS Clinical Trial Group in USA amongst all patients taking combination antiretroviral therapy the most common reason for missing medications given by 66% of patients was forgetting to do so (Chesney, 2020).

Alcohol intake

More recent studies indicate that alcohol intake is the most frequent and important factor reported to negatively impact adherence in developing countries (Gifford *et al.*, 2018; Nachege *et al.*, 2018; Chesney, 2020). Studies conducted in India, Tashkent, Uzbekistan, Mexico, and South Africa, found excessive alcohol intake contributed to treatment defaulting (Guillen *et al.*, 2008; Hasker *et al.*, 2018; Jaiswal *et al.*, 2018). The studies found that patients tend to forget or ignore taking their medication after excessive consumption of alcohol (Guillen *et al.*, 2018; Jaiswal *et al.*, 2019).

Lack of commitment

The patient's degree of commitment to follow a treatment regimen and, the degree of confidence in being able to follow it, influence treatment adherence (WHO, 2018). Having a constant goal will influence the effort used to bring a course of behavior to a successful conclusion and is likely to increase with perceived behavior control. For instance, if two individuals are equally strongly motivated to learn a skill and both try to do so, the person who is confident that he can master this activity is more likely to perceive success compared to the person who doubts his ability (Ajzen, 1991).

Unplanned traveling

According to WHO (2017), patients find it difficult to adhere to their treatment schedules when they are away from home and in the presence of strangers. A study conducted in the USA by the adults AIDS clinical group indicated that 57% of those who missed their doses claimed to have been away from home (Chesney, 2020). This happens most of the time when patients travel to social events that last for several days such as weddings, funerals or any other family related gathering. According to Munro et al. (2019), it was found that patients find it difficult to continue taking their treatment in the presence of others or miss their follow-up dates and consequently default treatment.

Lower education level

Some studies indicated that patients who are illiterate have poor knowledge related to diseases, self-management, and the worse self-reported treatment leading to poor treatment adherence and in turn leading to a 30% to 50% increase odds of hospitalization and high annual health care cost (Powell & Kripalani, 2018; Maskew *et al.*, 2019; Bassetti *et al.*, 2020). Bosworth and Oddone (2019) specify the importance of basic reading skills in a health care setting where patients participate in the planning and implementing therapeutic regimen. According to them in the USA it was found that only 42% of the

patients in two public hospitals were able to understand instructions for taking medications on an empty stomach and 26% were not able to understand that a next appointment was scheduled. A study conducted in Nepal, amongst non-adherent patients, indicates that the majority of the participants did not have basic levels of literacy and they indicated that they did not understand what was said by the health-workers which resulted in patients defaulting treatment (Wares *et al.*, 2018).

Depression and anxiety

According to the WHO (2016), psychological factors such as depression and anxiety are predictors of sub-optimal adherence and most people with HIV usually suffer from a psychiatric disorder. It was reported that up to 70% of AIDS patients have symptomatic depression and/or anxiety. Moreover, it was indicated that patients who are on long term treatment for diseases such as hypertension, TB, diabetic, and HIV/AIDS, tend to suffer from depression and stress as they are obliged to take medications on a daily basis (Simpson, 2016). Studies indicate that mental conditions, such as anxiety, stress and depressive disorders, have a negative effect on treatment adherence (Kagee & Le Roux, 2017)

Long distances to health facilities

Long distances to health facilities impact on adherence. Despite the fact that adherence is said to be 90% amongst people taking ART in Sub-Saharan and Africa, transportation over long distances from/ to health facilities remains an important barrier to sustain adherence to medications (Charurat *et al.*, 2018; Rougemont *et al.*, 2019). A study done in Addis Ababa found that it took up to two hours for patients to walk to the nearest health facility to receive treatment (Lindtjorn & Berhane, 2019). Transportation difficulties, according to Mills *et al.*, (2016), were often the major interference to adherence.

Shortage of staff at clinics

Factors that influence adherence to therapy include overworked health providers, because of overcrowding at the health facilities, which in turn lead to patients leaving the clinic without medications contributing to non-adherence (WHO, 2018). According to UNAIDS (2019), most Sub-Saharan Africa countries, as well as countries in Asia, the Middle East, and North Africa, are overburdened by a shortage of health-workers which in turn leads to overcrowding at health facilities. According to Mapunjo and Urasa (2017), developing countries are faced with many challenges such as shortage of qualified human resources leading to lack of knowledge on adherence and of effective interventions for adherence. In a study conducted in Tanzania it was found that one third of the health facilities did not have a social worker.

Poor patient – health provider relationship

A large number of studies indicate that poor follow-up by providers, and ill-treatment by providers, such as scolding the patient for missing appointments and refusing to give more medications, contributed to non-adherence among patients (WHO, 2018; Munro *et al.*, 2019). Non-compliance, according to Snelgrove (2016), can damage the relationship between health professionals and patients. Good relationship between doctors and patients is an aspect of social support that leads to good adherence (Ciechanowski *et al.*, 2017). According to Mills *et al.*, (2016), studies reported that a trusting relationship with HCPs was a facilitator of adherence. A health-worker is most of the times seen as a person in authority, in possession of specific expertise, and in whom a patient invests hope for the recovery process (Bary, 2018).

Unplanned ART interruptions

There are various types of different crisis that can potentially undermine ART treatment. According to Veenstra *et al.*, (2018) in Southern Africa and broader region, the 2008 floods in Mozambique, the ongoing political and economic crisis in Zimbabwe and the 2007 public sector strike in South Africa lead to poor access to food supplies and poor access to health care resulting in inadequate management of both acute and chronic diseases and those on ART not being able to access the medication they require. According to the WHO (2018) changing environmental situations such as natural disasters are some of the factors reported to have a significant negative effect on adherence. Unfavorable contexts limit individual's control over their own treatment, in Zimbabwe according to Veenstra *et al.* (2019) there were reports of patients on ART missing drug doses, sharing drugs, selling their drugs and changing regimens to try and cope with inadequate drug supplies and poor economic circumstances so increasing concerns of a drug resistant HIV epidemic.

The relationship between adherence and therapeutic success has been demonstrated across a range of highly active antiretroviral therapy (HAART) regimens including Nucleoside reverse transcriptase inhibitors, Protease inhibitors and

Non-nucleoside reverse transcriptase inhibitors. Through the suppression of plasma HIV-1 RNA, HAART has been shown to improve CD4 cell counts and, in turn to decrease morbidity and mortality among HIV-infected patients. These benefits of HAART in the management of HIV are well established in a number of settings (Conway 2007:17; Paterson *et al.*, 2000; Wood, Hogg, Yip, Harrigan, O'Shaughnessy & Montaner 2004).

In Sub Saharan Africa, initial findings about adherence have been promising. A meta- analysis found that a pooled estimate of 77% of patients in African settings achieved adequate adherence (most often measured as taking 95% of prescribed pills) compared with just 55% of patients in North American settings. In addition, high levels of adherence and positive outcomes of ART have been observed in some home-based ART care studies and in a multi-site studies including Botswana, Tanzania and Uganda (Mills *et al.*, 2006; Weidle *et al.*, 2006; WHO 2006a.).

There is no gold standard for measuring adherence. Across diseases, medication adherence is an individual, complex and dynamic behavior that presents measurement challenges. Accurate measurement of antiretroviral therapy adherence is essential for evaluating interventions aimed at improving adherence and prevents viral resistance. Measurement of medication adherence is further complicated by the diversity of available measures, which have different utility in clinical and research settings (Berg & Arnsten 2006; Chesney 2006).

Commonly used methods for measuring adherence include indirect measures, such as self-reports, electronic drug monitoring, pill counts, and pharmacy refill records and direct measures, including detection of drugs or drug metabolites in plasma (Berg 2006, Osterberg & Blaschke 2005).

Self-report is the most commonly used adherence measure in clinical and research settings because it has a low staff and respondent burden. It is also inexpensive and flexible, and takes little time. In clinical settings, self-report allows for a discussion of reasons for missed doses and potential solutions.

A systematic review of 77 studies employing various self-report measures of antiretroviral therapy adherence reported that self-reported adherence was significantly correlated with HIV viral load in 84% of recall periods. In a meta-analysis of 65 studies, the odds of having a detectable HIV viral load was more than double in nonadherent patients compared with adherent patients (adjusted odds ratio=2.31, 95% confidence interval: 1.99 to 2.68) despite significant heterogeneity in point estimates (Berg & Arnsten 2006; Nieuwkerk & Oort 2005; Simoni, Kurth, Pearson, Pantalone, Merrill & Frick 2006).

Electronic drug monitoring (EDM) has been used for several years to measure adherence in several chronic diseases and is frequently used by HIV researchers. It uses monitoring devices such as the medication event monitoring system (MEMS) cap which is a pill bottle, embedded with a microprocessor that records the time and date of each bottle opening as a presumptive dose. The cap stores the information until it is downloaded (Cramer, Mattson, Prevey, Scheyer & Ouellette 1989; Diaz, Levine, Sullivan, Sernyak, Hawkins, Cramer & Woods 2001; McNabb, Nicolau, Stoner & Ross 2003).

Electronic drug monitoring is often treated as the adherence "gold standard" because it produces adherence rates with lower central tendencies and more variance than other measures and correlates more closely with HIV viral load than other individual measures. Benefits include the ability to examine the patterns of adherence and detailed aspects of medication taking such as dose interval adherence (Arnsten, Demas, Farzadegan, Grant, Gourevitch, Chang, Buono, Eckholdt, Howard & Schoenbaun 2001; Liu, Golin, Miller, Hays, Beck, Sanandaji, Christian, Maldonado, Duran, Kaplan & Wenger 2001).

Monitoring of drug levels (in vivo drug concentrations) is a well-known therapeutic intervention considered as a direct objective measure of medication adherence that is feasible in clinical and research settings most especially if inadequate plasma drug levels arising from pharmacokinetics or adherence factors are the major cause of treatment failure. Some drugs like antiepileptics, their serum concentrations levels will reflect the level of adherence to these medications (Hugen, Langebeek, Burger, Zomer, Leusen, Schuurman, Koopmans & Hekster 2002; Osterberg & Blaschke 2005).

Low drug levels in the plasma have been associated with self-reported nonadherence and virologic failure. For example, in a cross-sectional study done to examine the relationship between untimed drug levels and adherence in 83 individuals, an abnormally low drug level had a specificity of 88% for detecting adherence of 90% or less (Liechty, Alexander, Harrigan, Guzman, Charlebois, Moss & Bangsberg 2004; Murri, Ammassari, Gallicano, Deluca, Cingolani, Jacobson, Wu & Antinori 2000).

Therapeutic drug monitoring is expensive and cumbersome in addition to lack of technological standardization across various settings. Further, factors other than those affecting adherence may affect drug levels such as drug-drug interactions and diet. Technically it is limited by the fact that serum drug levels only reflect adherence over the past 24 hours and patients who are aware of a planned visit may ingest medication in anticipation of the test (Berg & Arnsten 2006; Chesney 2000).

Individual related Factors

Individual factors are the factors which they are directly concern with adolescents living with HIV (ALHIV), personal factors include either their age, sex, ART knowledge, knowledge on outcome expectation of ART medication and others. Different literature showed different results concerning individual factors; Xu *et al.*, (2014) found that younger age, having a boy/girlfriend and extra cubiculum activities were significantly associated with suboptimal adherence.

The systemic literature review of 15 studies by Carly Hudelson and Lucie Cluver 2014 found that male gender was significant associated with good adherence in Uganda ($p=0.005$ these results are the same as the study done in Tanzania by Nsheha *et al.*, 2013. Ndiaye *et al.*, (2013) in Botswana. Carly Hudelson and Lucie Cluver (2014) found that different studies showed that younger age of adolescence was significant associated with good adherence Ndiaye *et al.*, 2013 found that no association between knowledge of expected outcome of ART and adherence to ART. Nyongea *et al.*, (2015) found that knowledge of HIV treatment being the lifelong is as not associated with good ART adherence on ART.

2. METHODOLOGY

Descriptive research design was employed in this study to assess psychosocial and economic factors contributing to non – adherence of ART to people living with HIV at Mabwepande District Hospital, Kinondoni. Descriptive research design was employed in this study for a number of reasons. First, it is suitable in obtaining information regarding the current status of the phenomena and in describing what exists with respect to conditions in a situation. Borg (1998) indicates that in descriptive survey, data about variables are collected as they are found in a social system without manipulating the variables. Therefore, the researcher was able to study the variables as they happen and hence data was collected and reported as they are. Secondly, the descriptive design gave participants freedom to articulate their views regarding psychosocial and economic factors contributing to non – adherence of ART to people living with HIV. Lastly, the design is economical and offered opportunity for broad and quick data collection. The study used quantitative research approach for analyzing and presenting the statistical findings such as percentages, frequencies and means. Population used was 1168 participants. For the purpose of this study probability sampling specifically simple random sampling technique was used to select ART patients, while purposive sampling was used to select key informants with sample size of 84 Participants. The study used questionnaires to obtain data. were summarized, coded and analyzed through thematic content analysis. The researcher pre-tested the research instruments to ensure the validity of the data. The researcher obtained a small sample of which was used to test the research instruments before conducting actual data collection. This is expected to enable the researcher to identify items that would cause any inconveniences and lead to ineffectiveness of the selected research instruments. The researcher used multiple research instruments to ensure the reliability of the research results. The instruments that were used in the study includes interviews, research questionnaires and the assistant research. The advantage of using the questionnaires and interviews at the same time is that the researcher it enabled the researcher to obtain even the information that she would have missed in case one instrument is to be used. On the other hand, the assistant researcher was useful especially in recording the information that the researcher had missed. Qualitative data obtained from interviews and questionnaires were summarized, coded and analyzed through thematic content analysis. The data was presented, interpreted and organized based on the conceptual description of ideas that were expressed by respondents during data collection. Statistical Package for Social Sciences (SPSS) was used to analyze quantitative data. This included percentages, frequencies and statistical means that were determined through descriptive statistics.

3. RESULTS AND DISCUSSIONS

Research question that guided the study was:

What are the psychological factors contributing to non–adherence for people living with HIV at Mabwepande District Hospital Kinondoni, Dare es salaam?

Table I:

S/N	ITEMS	AGREE	DISAGREE
1	Attitudes/ beliefs about effectiveness Of treatment	64 (76.1%)	20 (23.8%)
2	Misunderstanding of prescribing Instructions	70 (83.3%)	14 (16.6%)
3	Life styles	75 (89.2%)	9 (10.7%)
4	Drug and Alcohol use	80 (95.2%)	4 (4.7%)
5	Psychological factors (stress, depression, anger about disease	82 (97.6%)	2 (2.3%)
6	Use of traditional medicines and acceptance of HIV status	68 (80.9%)	16 (19.0%)
7	Stigmatization	78 (92.8%)	6 (7.1%)
8	Restriction of food	59 (70.2%)	25 (29.7%)
9	Providers' patient relationship	77 (91.6%)	7 (8.3%)
10	Inadequate staff and providers	72 (85.7%)	12 (14.2%)
11	Disclosure status	8196.4%	3 (3.5%)

The above results indicate the responses from the respondent basing on psychosocial factors contributing to non-adherence for people living with HIV at Mabwepande District Hospital Kinondoni, Dare es salaam.

4. CONCLUSION

Generally, the non-adherence for people living with HIV is a great problem which affects many persons in our societies. The main factor which contribute to the existence of this problem has been discovered by the researcher in this study was psychosocial factors, which has been discussed much with respondents of the study. It seems that the society have different perception concerning people who are living with HIV, and who are struggling by continuous treatment. These psychosocial factors seem to create pain to people who are living with HIV which leads to non-adherence in continuing with their treatment.

5. RECOMMENDATION

Basing on the results of the study, the research came up with the following recommendations: there should be out-reach services to make follow up to people who are in treatment to see their progress and complications if any, it is important to involving health workers to help patients when they need support, it will be better to have literacy programs basing on HIV acceptance and how to cope with, It should be better to have nutrition programme which will involve in providing knowledge about having required nutrition to people with HIV, to emphasise employers' involvement in the HIV/AIDS care, provision of health education and involve national HIV/AIDS programme. These will help to reduce the problem of non-adherence for people who are living with HIV at Mabwepande District Hospital Kinondoni, Dare es salaam.

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