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Knowledge, Attitudes and Practice of Adherence to Antiretroviral Therapy (Art) in HIV/aids Adult Patients in Onandjokwe Health District Hospital, Oshikoto Region, Namibia

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Abstract

Background: Adherence to antiretroviral therapy (ART) is a dominant predictor of survival for individuals living with human immunodeficiency virus (HIV), because poor adherence may lead to the development of resistance, resulting in increased medical expenses related to HIV care and treatment, disease progression as well as high mortality rate. This study aimed to assess the knowledge, attitudes and practices of patients infected with HIV towards adherence to ART in Onandjokwe health district of Namibia.

Methodology: A quantitative research design, descriptive in nature, was applied to include patients on ART for two years or more, a purposive sampling method was used to select 390 study participants. Data were collected from the patient ART booklet and through questionnaires as patients came for their follow up visits, the questionnaire consisted of three sections, namely; section A elicit demographic data; section B dealt with knowledge and section; C covered issues related to attitudes and practices, and EPI info version 3.5.1 was used for data analysis.

Results: The study found out that there is a high level of knowledge on adherence with 93.9%, however, knowledge of specific medications taken by participants was very low with only (0.3%) being able to recall the names of all the medications. The majority (98.2%) of the respondents reported that the medications helped to improve their health and wellbeing. Adherence practice was found to be 84% since none of the participants reported missed a dosage in the past three weeks. However, the adherence level was reported to be below the international and national recommendations; that is, perfect or near-perfect adherence to therapy, defined as an over 95% adherence level.

Conclusion: It is clear that people do not always put what they know into practice; therefore, this study recommends that the knowledge and practice relating to ART adherence be aligned through collaborative efforts by different stakeholders.

Keywords: ART Adherence; Anti-Retroviral Therapy (ART) HIV/AIDS; Treatment supporter, Attitudes on ART Adherence, Knowledge on ART Adherence,

1. Introduction

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Treatment adherence is generally regarded as an important factor in achieving optimal outcomes across many disease stages in the treatment of HIV, (Schaecher, 2013). Moreover, adherence to antiretroviral therapy is a dominant predictor of survival for individuals living with human immunodeficiency virus (HIV), because poor adherence may lead to development of resistance, resulting in increased medical expenses related to HIV care and treatment, disease progression as well as high mortality rate Nachega et al, 2013.

The most important goal of antiretroviral therapy (ART) is to reduce HIV-related morbidity and mortality; by suppressing the virus in the body. Full viral suppression allows for maximal reconstitution or maintenance of immune function and minimises the emergence of drug-resistant viruses selected by ongoing replication in the presence of ARVs, Günthard, 2016.

The issue of non-adherence is becoming crucial as patients may develop drug resistance, and drug sensitivity tests can increase the costs of HIV care and treatment as well as ill health and death. In addition to years of life lost as a result of premature deaths and the health care costs attributable to preventable morbidity, the economic consequences of poor adherence include stimulating the need for ongoing investment in research and development for new compounds to fight new resistant variants of the causative organisms (World Health Organization ([WHO, 2015) Therefore, the WHO requires at least 95% adherence for an ART regimen to be fully effective and to avoid the emergence of resistant strains of the virus (MoHSS, 2013)

Patients on ART are considered to be adherent if they are taking all prescribed medications all the time or most of the time (missed no more than two doses per week if on a twice-a-day regimen) and no more than one dose per week if on a once-a-day regimen (ART, 2013). It has been shown that consistent high levels of adherence are necessary for reliable viral suppression and prevention of drug resistance, disease progression and death. An adherence level to ART of 80 to 95% for each patient is considered necessary to ensure treatment success (Savoldellia et al., 2012).

The ART adherence helps in boosting the patients' immunity, decreases illnesses resulting from opportunistic infections, and improves the quality of life, as well as prolonging life. Therefore, having better access to care is significantly associated with better ART adherence (ART, 2013). The rollout of ART in the poorest parts of the world is one of the greatest public health achievements in history. The Antiretroviral therapy, currently in use, is improving the conditions of the HIV infected patients. Therefore, extension of patient adherence to antiretroviral therapy is known to be the most powerful regimen for long-term positive health outcomes. In other words. It was also reported that adherence is associated with demographic characteristics, depressive symptoms, physical health, access to care, social support and internalised shame, HIV disclosure and family communication (Li, Sung Jae, Yi, Chunqinq and Wan Chuleeporn (2010).

Patient readiness for ART commencement is very important. The criteria for the assessment for readiness to start ART and maintain adherence are the following: two visits at least one to two weeks apart and ensuring readiness before first ART prescription (this does not include patients being considered for PMTCT of HIV and Post Exposure Prophylaxis [PEP]); having a treatment

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supporter who could be a family member, a friend, a peer or a community member to support him or her; negotiation of a plan or regimen that the patient understands and to which they commit themselves and the use of memory aids, such as timers/alarm clocks, cellphones and written schedules, and the availability of pillboxes (MoHSS, 2013).

The ability of youth to adhere to therapy needs to be considered as part of therapeutic decision-making concerning the risks and benefits of starting treatment, even though pre-adherence counselling is done. Erratic adherence may result in the loss of future regimens because of the development of resistance mutation (Aids Info, 2014). Therefore, the following provider-related methods for readiness are recommended: education of patient regarding goals of therapy, proper dosing, medication interactions, food effects, importance of laboratory monitoring and meaning of results, assessment of adherence potential before ART, monitoring at each visit and managing side effects (MoHSS, 2013).

In addition to clinical and immunological criteria, the Namibian Ministry of Health and Social Services (MoHSS) has established social criteria for being initiated to ART such as having a fixed address; having ready access to a designated treatment centre for follow up; not abusing alcohol or ready to stop alcohol abuse; not a having mental disorder; patient being committed to lifelong treatment with ART; practising safer sex; and allowing home visits if indicated. The intention of these social criteria is therefore to maximise adherence and reduce the risk of failure of ART and the development of resistance (MoHSS, 2013. Although the researcher assumes that patients are fully prepared before starting their pills, it was observed that many patients were defaulting on a daily basis. Therefore, achieving high levels of adherence is a serious concern in the Onandjokwe health district. It was against this background that the researcher aimed at assessing the knowledge, attitudes and practices of patients infected with HIV regarding adherence to ART in Onandjokwe health district.

2. Method and design

A quantitative and descriptive design was selected because the researcher wanted to determine whether people's adherence and non-adherence to ART is as a result of their knowledge, attitudes or practices, as well as to quantify the magnitude of these issues. Data were obtained by means of a checklist questionnaire and from the patient ART care booklet for the patients receiving antiretroviral therapy in Onandjokwe health district.

2.1 Study Population

Patients who have been on ART treatment for two years or more were selected to participate in the study, regardless of their age and gender at Onandjokwe hospital ART clinic and pharmacy. This included patients who came for follow up visit for ART refills. This group was expected to have sufficient knowledge about the management of adherence and were expected to have developed some strategies that might help them to adhere to their medication regimen.

2.2 Sampling procedure

The study applied purposive sampling on patients who have been on ART for two year and came for their follow up visits for ART refills at Onandjokwe ART clinis.

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2.3 Sample size

Three hundred and ninety (390) eligible participants were purposively selected at the enrolment sites used Israel's formula, that is: n=, (Israel, 2009).

2.4 Validity and reliability

To ensure validity, the questionnaire was piloted at Onayena Health Centre before the final data collection was carried out. Onayena health centre is one of the health facilities dealing with the Integrated Management of Adolescent Illnesses (IMAI) at Onandjokwe health district. Ten patients participated in piloting, using the same tools drafted for the main study. Some minor corrections were made on the questionnaire

2.5 Data collection instruments and procedure

Checklist questionnaire was employed for collecting data over a period of four months (April – July 2017) from the patients attended their scheduled follow-up visits for ART refills at the Onandjokwe district hospital ART clinic and pharmacy during the period of June 2017-December 2017. Since most of the participants could not read or write, researcher asked the patients the questions in the questionnaire and completed it in line with the patients' responses. The researcher also accessed the ART care booklet and the patient's file in order to extract information about the patients 'treatment regimen, age and place of residence.

The questionnaire comprised three sections: Section A: Sought to elicit demographic data that included age, sex, marital status, occupation, distance in kilometres to and from the health facility, cost of transport to and from the health facility and whether the patient had a treatment supporter – if yes, the supporter's relationship to the patient. Also included was the duration of therapy in years.

Section B: Questions dealt with the level of knowledge, including what the people infected with HIV/AIDS and on ART are allowed to do. Respondents were requested to answer as many questions as they could. The issues included having a sexual relationship; safer sex; getting married; having children; being elected to important positions in the community and being encouraged to mix the ART with other medicines; names of their medications, as well as the importance of being adherent to ART. Section C: This section covered issues related to attitude and practices of how they perceive the ART towards adherence, as well as behaviour or practice related to HIV/AIDS and adherence.

2.6 Data analysis

The data was analysed, using EPI-INFO software version 3.5 programme Descriptive statistics were calculated and frequencies and percentages were generated, finally, the researcher interpreted the findings from the data.

2.7 Ethical Consideration

The study was approved by the management of the hospital where the study conducted and permission was granted. Ethical clearance was obtained from the University of Namibia research Ethics committee. Informed consent were obtained from participant before the study.

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Fundamental ethical principles based on a human right were respected throughout the study; such as: rights to self -determination, privacy, anonymity, confidentiality, fair treatment and protection from harm.

3. Results of the study

A total of 390 participants fulfilled the inclusion criteria were purposively recruited in the study. Out of them (N= 276) 70.8% were females, and (N = 114) 29.2% were male, representing an approximate female to male ratio of 3:1.

The ages of respondents in this study ranged from 18 to 60 years. The respondents were classified on a continuum of different age groups. The majority, 38.7% (n = 151) of the participants fell into the age group 31–40 years, and 34.4% (n = 134) in the age group 41–50 years, while 21% (n = 82) fell into the age group 51–60 years, with the lowest percentage of 5.9% (n = 23) falling into the 18–30 age group. The findings indicated that (n = 204) 52.3% had attended school up to the secondary level of education, (n = 155) 39.7% had a primary education, (n=3)0.8% had a tertiary level of education while (n = 28) 7.2% had never attended school. The study have shown that 83.6% (n = 326) of respondents did not know the names of the medicines they were taking on a daily basis. Among the rest of the respondents (16.4%; n = 64), Nevirapine was the medicine most indicated by 13.1% (n = 51), while other respondents knew one or two names. Only one (0.3%) respondent could recall all the names of the three medicines he was taking (Lamivudine [3TC], Stavudine [D4T] and Efaverenz [EFV]). It seems that the names of the medicines are difficult to memorise as well as to pronounce.

Table 1 represent the employment status of the respondents. The majority (63.8%) of the respondents were unemployed, with 9.7% being formally employed. The formally employed included among their number administrators, members of the defence force, police officers and insurance company workers. The respondents who were informally employed included general workers employed either in private companies or those working in various ministries as labourers, cleaners and domestic workers. Of those10.8% of respondents who were self-employed, were some who owned small businesses such as a minibar or selling fat cakes and traditional home-brewed alcohol drinks such as tombo and okatokele. Others sold woven baskets and some were tailors. The category of 'others' (3.6%) included farmers, fieldworkers, Total Control of Epidemic (TCE) volunteers/field officers, security guards, shopkeepers, and taxi drivers, as well as school learners.

Table 1: Employment status of respondents

Employment status	Frequency	Percentage
Formally employed	38	9.7
Informally employed	47	12.1
Self-employed	42	10.8
Unemployed	249	63.8
Others	14	3.6
Total	390	100.0

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Table 2. The following table revealed the participants' responses regarding their attitudes relating to whether ART could be shared or not by age and gender.

Table 2: Do ART medicine can to be shared according to the age of the participants

Age	Yes	no	Do not know	Total
18-30	1 (4.3)	22 (95.7)	0	23 (5.9%
31-40	2 (40%)	149 (38.8%)	0	151 (38.7%)
41-50	1 (20%)	133 (34.6%)	0	134 (34.3%)
51-60	1 (20%)	80 (20%)	1 (100%)	82 (21)%
TOTAL	5 (13%)	384 (94.4%)	1 (0.3%)	390 (100%)

Understanding of ART treatment adherence by educational level

Table 3: Below presents, the participant understands of ART treatment adherence, according to level of education, ranging from never attended school to tertiary education.

Education level	Take ART as prescribed	Don' know	Safer sex	Others e.g. stress relief, disclosure, avoid drugs, avoid alcohol
Never attended school	23 (6.0%)	0	4 (4.8%)	6 (7.3%)
Primary education	155 (40.2%)	2 (100%)	29 (34.5%)	28 (33.7%)
Secondary education	204 (53.0%)	0	50 (59.5%)	48 (57.8)
Tertiary education	3 (0.8%)	0	1 (1.2%)	1 (1.2%)
Total	385 (100%)	2 (100%)	84 (100%)	83 (100%)

Perceived length of time for a person to stay on ART treatment

The following graph (Fig 1) depicts the respondents' responses relating to their knowledge regarding the length of time for a person to be on ART. The majority of the respondents (96.7%, n = 377) responded that this is a life-time treatment, although 12 (3.1%) participants said that

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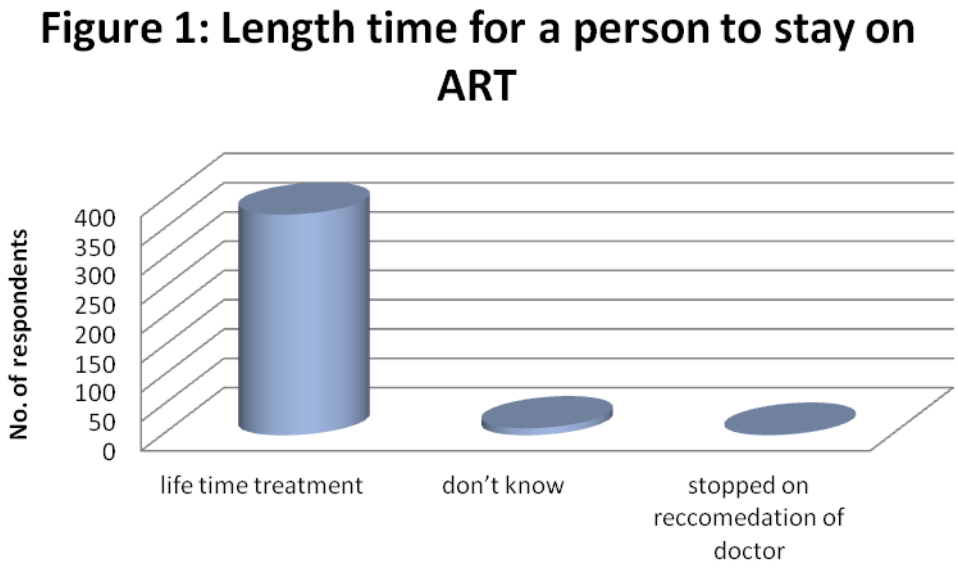
they did not know and another one (0.3%) responded that treatment could be stopped on the recommendation of a doctor.



Reasons for a person to be on ART and adhere to it

The research sought to elicit from the participants their perceived reasons for taking ART medicines and the importance of adhering to the treatment. The reasons provided by the respondents for taking medication include primarily to prolong life (n = 252, 64.6%) and to prevent the progression of HIV and AIDS (205, 52.5%). Among the participants, 156 or 40% responded that they took ART to treat the opportunistic infections. Other responses included to strengthen the immune system (84, 21.5%) and others reasons as seen in Table 4 below.

Table 4. Reasons for a person to be on ART and adhere to it

Reasons	Frequency	Percentage
Prevent progression of HIV and AIDS	205	52.5
Treat pain	7	1.8
Treat AIDS	8	2.0
To strengthen the immune system	79	20.0
To treat opportunistic infections related to HIV and AIDS	156	40.0
Prolong life	252	64.6
Do not know	2	0.5

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Table 5. Reasons for taking ART, by age group

Reasons for taking ART	Age group	31–40	41–50	51–60	Total	%
	18–30					
Prevent progression of HIV and AIDS	17	82	66	40	205	52.5
Prolong life	13	77	105	62	252	64.6
Treat opportunistic infections	6	51	60	33	156	40.0
Strengthen the immune system	3	37	31	8	79	20.0
Treat AIDS	0	3	5	0	8	2.0
To treat pain	0	1	3	2	7	1.8

Availability of treatment supporters compared with the dosages missed in previous three weeks

The majority of the respondents (n = 383, 98.2%) reported having a treatment supporter, while only a few (n = 7, 1.8%) did not have such supporters. Four respondents did not indicate whether they had a treatment supporter or not. The highest number of respondents (n = 253, 64.9%) had family members as treatment supporters, which included mothers, fathers, sisters, brothers, cousins and grandparents.

Table 6: The doses missed in the past three weeks compared to those with treatment supporters

Type of treatment supporters	The dosages missed in the past three weeks			Totals	
	2–3 doses	More than 3 dosages	None	Number	%
None	0	1 (14.3%)	6 (85.7%)	7	1.8
Boyfriends	2 (15.4)	0	11 (84.6%)	13	3.3
Family members	31 (12.3%)	9 (3.6%)	213 (84.2%)	253	64.8
Girlfriend	1 (7.7%)	1 (7.7%)	11 (84.6%)	13	3.3
Husbands	7 (16.7%)	1 (2.4%)	34 (81%)	42	10.7
Others	2 (10%)	0	18 (90%)	20	5.1
Sexual partners	3 (10%)	0	3 (0.9%)	3	0.7
Wives	4 (10.3%)	3 (7.7%)	32 (18%)	39	10
Total	47	15	328	390	100

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4. Discussion

This study aimed to assess the knowledge, attitudes and practices of patients infected with HIV towards adherence to ART in Onandjokwe health district of Namibia. Participants in this study were 360 between the age of 18 and 60 year old. The age group of 31–40 (38.7%) was in the majority of 38.7%. These findings are similar to the findings reported by a study conducted in southwest Nigeria, where respondents in the age group 26–35 represented 49.3% of the total respondents (Kasumu & Balogun, 2014).

The study found out that the proportion of working people among the participants, regardless of the nature of work, was relatively low (36.2%). 63.8% of the participants were unemployed and this also contributed to poor adherence, because a follow-up visit may be missed owing to not being able to pay transport costs.

The study also revealed that patients on ART in the Onandjokwe health district have good knowledge of ART: 96% of the respondents in this study were aware that ART cannot be stopped as it is a life-time treatment. Similarly, 96.2% indicated that there are no other medicines in the community that may relieve the symptoms or prolong the lives of people living with HIV/AIDS (PLWHA). A high proportion (93.9%) of respondents in the current study responded that treatment adherence is when the patient takes ART as prescribed. They also indicated a high level of adherence strengthened by the relevant knowledge of HIV/AIDS, the usefulness of the ART itself and sticking to the correct use of the condom and avoid alcohol abuse. The findings of a study conducted in Tikur Anbessa Specialized Teaching Hospital, Addis Ababa, Ethiopia indicated that 33% of the participants had good knowledge on the treatment plan and regimen (Demessie, Mekonnen, Amogne, & Shibeshi, 2014).

Despite having knowledge on the meaning of adherence, 15.9% of respondents self-reported having missed more than three dosages in the three weeks prior to the study; this brought the adherence level to 84.1% from the total number of respondents A total of 353 (90.5%) participants in the current study knew the reason for taking ART, including preventing the progression of HIV/AIDS (viral suppression), treating opportunistic infections related to HIV/AIDS and prolonging life. Since prolonging life is the primary reason for ART, this is similar to a study conducted in southeastern Nigeria in a tertiary health facility, which found that ART is reducing the risk of HIV transmission (Onyeonoro et al., 2013). Therefore, this knowledge can encourage patients to adhere simply because nobody wants to die prematurely because of poor adherence. The majority of participants had a secondary level of education, which also helped them to maintain a level of understanding and a willingness to be open to information on adherence management and coping strategies. This study is also supported by a study conducted among patients at a Nigerian clinic it was found that majority of the respondents (76.9%) had completed secondary education and that their good knowledge about HIV/AIDS and their positive attitude to the disease tended to make them more adherent to ART (Olowookere, Fatiregun, & Adewole, 2015).

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The study also found out that, 98.2% of participants responded positively that ART promotes health and wellbeing in general, results in increased weight and increased CD4 count and makes them feels strong and able to continue/resume performing daily activities just like other non-infected people. This strengthens their belief towards taking ART and enhances their positive attitudes. The adherence level in this study revealed that 84.1%, of participants adhere to treatment. The findings of this study shown a far higher adherence level than a similar study conducted in Zambia, which indicated that only 59.9% of the patients surveyed were fully adherent to treatment six weeks after starting ART (Sasaki et al., 2012).

The study also revealed that patients seek help from the hospital or health facility to manage pain and ailments rather than using complementary therapies or other means, for example traditional complementary and alternative medicine (TCAM). This finding is in contrast to a report from KwaZulu-Natal, South Africa, where TCAM had been commonly used for HIV in the preceding six months by study participants (51.3%) and herbal therapies alone by 29.6% of study participants (Peltzer, Friend-du Preez, Ramlagan, & Fomundam, 2008).

Regarding the strategies used to adhere to their treatment, 76.2% responded that they had a sense of personal responsibility and were committed to their treatment, while some had to be reminded by an alarm, watching the clock or the use of the treatment supporters and other mechanisms. These patients have shown interest in and commitment to the lifelong treatment and they are responsible for their lives and wellbeing since they were aware of the effectiveness of the treatment.

Generally, patients can forget to take doses and about 70.5% participants of the respondents indicated that when they forget a dose, they take it as soon as they remember to without delay. This study also revealed that 28.7% stated that if they forgot to take the dose they skipped it completely; these participants did not know that it could be taken immediately to cover the missed dose. This indicates poor adherence and may create resistance to ART. In a study conducted in Nairobi, Kenya, it was found that 18% of the ART patients surveyed reported missing at least one dose of therapy per week (Wakibi, Ng'ang'a, & Mbugua, 2011).

This study also revealed that food insecurity have an adverse effect on adherence because you cant take medications on empty stomach, this means some participants that can only have one or two meals a day, meal could be either breakfast and lunch or supper. This irregular availability and consumption of food may have an adverse effect on adherence to ART, as it is generally believed that patients on ART need to eat before or after taking their medications. A study done in northern Ethiopia indicated that malnutrition was about ten times more frequent in non-adherent participants than in their adherent counterparts (Berhe, Tegabu, & Alemayehu, 2013). If those on second-line therapy have poor adherence the final option is salvage treatment; this is very costly and less effective than first-or second-line treatment. According to Metzler (2007), in a study conducted in South Africa, it was found that none of the participants with greater than 90% adherence had developed an AIDS-related illness compared to 41% in the group with less than 50% adherence. The adherence in the present study stood at 84.1%. For those who do not

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adhere there is a risk that some of the respondents may develop drug resistance if they continue to miss the doses.

5. Limitations

The findings of the study may therefore not be generalizable to all the patients in the district or those on ART in Oshikoto region or the whole of Namibia. Based on the findings, may contribute to the recommendations that will be made to address areas in need of improvement.

6. Conclusion

Poor adherence to ART treatment is the culprit in virological failure and may cause resistance to medication, thus patients should be advised that good adherence is needed for improved health and wellbeing and to avoid having to switch to second-line drugs. Strict adherence to ART is key to sustained HIV suppression, reduced risk of drug resistance, improved overall health and quality of life, and survival, as well as decreased risk of HIV transmission.

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