Assessing Self-Care Practises of People Living With HIV/AIDS Attending the Antiretroviral Clinic of the University of Abuja Teaching Hospital, Nigeria

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Abstract

In pursuance of the Global and National Goals of achieving HIV-AIDS epidemic control, it's imperative to explore the Promotion of self-care management among people living with HIV/AIDS. Self-care management involves adhering to treatment regimens, good dietary patterns, increased physical exercise, social support, and health-seeking behaviours. The study reviewed five core pillars of self-care management: physical, psychological, emotional, spiritual, and workplace/professional. A cross-sectional descriptive, analytical study with a quantitative approach was conducted at the Antiretroviral Clinic of the University of Abuja Teaching Hospital from October to December 2020. Using random sampling, 372 people living with AIDS participated in the study. Trained research assistants collected data through a structured questionnaire administered at the antiretroviral clinic. The data was analysed using SPSS version 25.0, employing frequencies, computations, percentages, averages, means, standard deviation, and correlations, with a confidence interval of 95%. The study's findings indicate that the weighted matrix scores (WMS) for various aspects of self-care were significantly above average, suggesting that PLHIV attending the antiretroviral clinic at the University of Abuja Teaching Hospital exhibit good self-care practices. However, psychological and workplace self-care requires some strengthening. The study revealed differences between self-reported appointment adherence and the calculated average appointment gap (3 visits). Associations were found between the average appointment gap and viral load among participants. The study did not establish any significant association between Total Matrixed self-care scores, adherence (appointment gap), or viral load suppression. The COVID epidemic and the nationwide ENDSARS protest in Nigeria during the study period were significant confounders and limitations.

Keywords: Antiretroviral drugs, appointment adherence, HIV/AIDS, psychological health, self-care management.

Introduction

HIV remains a major global public health problem, claiming more than 32 million lives [1]. In 2019, The Nigeria National HIV/AIDS Indicator Impact Survey (NAIIS) reported a national prevalence of 1.4%. The South-South zone of the country has the highest prevalence (3.1%), then 2.0% in the North Central zone, and 1.9% in the South-East zone. HIV prevalence is lower in the South-West zone (1.1%), 1.1% in the North-East zone and 0.6% in the North-West [2]. HIV transmission can occur via unprotected sexual intercourse between heterosexual individuals, although the prevalence among the homosexual group is as high as 35% [3]. Another mode of transmission is from an HIV-positive mother to her child. This can occur during pregnancy, labour, and delivery or during breastfeeding of the infant. The risk is higher in the absence of an intervention.

The natural history of HIV infection can be divided into three stages: the primary infection, the asymptomatic infection, and the symptomatic infection including progression to AIDS (Acquired Immune deficiency Syndrome). HIV infection progresses to Acquired Immune deficiency Syndrome (AIDS) within a decade if left untreated. AIDS is the last stage of HIV infection, corresponding to a drop of CD4 cell levels below 200 cells per cubic millimetre of blood (200 cells/mm3) OR the development of severe opportunistic infections regardless of their CD4 count. Life expectancy after diagnosis is about 3 years after the diagnosis of AIDS [4]. Several opportunistic infections, including recurrent oral candidiasis and tuberculosis, are common during the early symptomatic phase of AIDS. With a further decline in the CD4+ cell count, additional life-threatening opportunistic infections such as herpes zoster, amoebiasis, and dermatomycoses may occur with increasing frequency and severity.

A combination of Antiretroviral drugs (ARV's) called Antiretroviral Therapy (ART), or Highly Active Antiretroviral Therapy (HAART) is used in the treatment of HIV infection. All HIV infected persons are to be initiated on ART as soon as possible following diagnosis [5, 6]. A comprehensive management approach including ongoing adherence counselling, baseline and routine laboratory investigations, prevention, and management of opportunistic infections (OI's), treatment monitoring and follow-up is needed to achieve continuous suppressed viraemic levels. Sustained and continuous adherence to highly active antiretroviral therapy (HAART) is very key to the desired treatment outcomes. The objectives of ART include the achievement of sustained virologic, immunologic, clinical, and subsequently epidemiological control of HIV. Sustained viral suppression is needed to prevent the development of treatment failure and ARV drug resistance. There is a progressive increase in the CD4+ cell count at a rate of 50–100 cells/μl/year, thus, further reducing the morbidity from opportunistic infections leading to overall improved quality of life of the HIV infected individual. ART is also effective in the reduction of transmission of HIV from an infected person to an uninfected person. This is the epidemiologic objective of ART. Thus, ART should be initiated in all adults, all including pregnant and breastfeeding women, adolescents and children living with HIV, regardless of the WHO clinical staging or CD4+ cell count [6].

The management of HIV/AIDS requires a comprehensive and integrated approach that incorporates various models, strategies, and interventions. These models encompass biomedical, biopsychosocial, harm reduction, community-based, and other public health approaches, all working synergistically to enhance the quality of life for individuals living with HIV/AIDS and prevent the further spread of the virus within communities. A prominent model is the biomedical model, which emphasises antiretroviral therapy (ART) as the cornerstone of treatment. It involves the daily intake of a combination of antiretroviral drugs to suppress viral replication, improve immune

function, and prevent the progression of the disease. This model emphasises medication adherence and regular monitoring of viral load and CD4 cell counts to assess treatment effectiveness. The biopsychosocial model on the other hand recognises the interconnectedness of biological, psychological, and social factors in HIV/AIDS management. This model highlights the importance of comprehensive care that addresses not only the physical health of individuals but also their emotional well-being, mental health, and social support systems. It emphasises the need for a holistic approach that encompasses psychosocial support, mental health services, and strategies to mitigate stigma and discrimination.

Another model is the harm reduction model, which focuses on minimising the negative consequences associated with high-risk behaviours such as drug use and unprotected sex. This model seeks to provide education, access to clean needles and syringes, condom distribution, and substance abuse treatment programmes to reduce the transmission of HIV and other associated harms. Furthermore, community-based models promote active involvement and empowerment of affected communities in the design, implementation, and evaluation of HIV/AIDS programmes. These models recognise the expertise and unique insights that affected individuals and communities possess, fostering collaboration and participatory approaches to address the specific needs and challenges they face. Public health models also play a significant role in HIV/AIDS management, encompassing prevention efforts, surveillance systems, policy development, and strategic planning. These models focus on implementing evidence-based interventions at the population level to reduce new infections, increase HIV testing, promote condom use, and facilitate access to care and treatment.

The increasing access to effective HIV prevention, diagnosis, treatment, and care, including that of opportunistic infections, has transformed HIV infection into a chronic manageable health condition, thereby enabling people living with HIV to lead long and healthy life [7]. The U.S National Centre for Health Statistics defined a Chronic Disease as one lasting three months or more. Such diseases cannot be prevented by vaccines or cured by medication and do not just disappear [8]. Often, chronic diseases don't have a cure but can be controlled or managed. Over time, epidemiology has evolved through specialisation in chronic and infectious disease epidemiology. This segregation is problematic as many chronic diseases have an infectious origin. Examples are cervical cancer (human papillomavirus) and liver cancer (hepatitis B and C viruses). Human immunodeficiency virus (HIV) infection has become classified as a chronic disease in many countries [9, 10]. Like all other chronic diseases, HIV/AIDS requires lifetime changes in physical health, psychological functioning, social relations, and the adoption of a disease-specific regimen based on informed choice and decision-making. An active and informed role in healthcare decision-making is required for Clients to change or adopt healthy behaviours and optimise the quality of health and overall well-being [11].

Being healthy refers to complete physical, mental, and social well-being and not merely the absence of disease or infirmity. The WHO defines self-care as "the ability of individuals, families, and communities to promote health, prevent disease, maintain health, and to cope with illness and disability with or without the help of a healthcare provider [12]. Therefore, self-care refers to what people do to establish and maintain health and deal with illness. The concept of self-care encompasses hygiene (general and personal), nutrition (type and quality of food eaten), lifestyle (sporting activities, leisure etc.), environmental factors (living conditions, social habits, etc.), socio-economic factors (income level, cultural beliefs, etc.) and self-medication [13]. Of the 8760 hours in a year, patients and clients spend less than 10 hours or 0.001% of their time with healthcare

providers, meaning that all other health maintenance, monitoring, and management activities are done by individuals, patients, or their families as self-care practices outside of clinical or hospital settings [13]. Promoting self-care management for people living with HIV/AIDS entails addressing complex issues such as keeping to Treatment Regimen, Good Dietary Patterns, and Increased Physical Exercise, seeking Social Support, handling Social Stigma/Discrimination, the use of Complementary and Alternative Medicine, and Health Seeking Behaviours.

The WHO scope of self-care centres around Health Promotion; Disease Prevention and Control; Self-Medication; Providing Care to Dependent Persons; Seeking Hospital/specialist care if necessary; Rehabilitation including Palliative Care [14-16]. Self-care interventions backed by evidence supports the use of quality drugs devices, diagnostics and or digital products which can all be provided outside of formal health services. These services may be accessed with or without direct supervision of a health care personnel [17].

Self-care decision making is, however, a complicated process, the naturalistic framework tried to explain it; thus, in a real-world setting, people make daily decisions that are meaningful and familiar to them. These decisions are often complex, involving a degree of uncertainty, ambiguity, dynamically evolving conditions, missing information, time stress, and high stakes [18]. These decisions may have ill-defined, shifting, or competing goals, and involve multiple individuals, unfortunately, if not well exercised, may result in untoward effects on the health and overall well-being of the individual. Thus, the teaching and supporting of self-care decisions should be a major activity in our healthcare system. Yet, intricacies in its conceptualization and practice result in the under appreciation of self-care by clinicians and healthcare systems. As a consequence, clinicians and the healthcare system have not emphasized self-care, and the vast majority of people/patients do not perform self-care behaviours well. Research into self-care practises has been hindered by the perception of both patients and providers that the available pharmacological interventions are more effective than lifestyle changes and other self-care practises. To ensure retention on treatment and ultimately sustain viral suppression, HIV/AIDS requires a self-management model where the client assumes an active and informed role in healthcare decisions. Thus, evaluating the role of self-care in achieving treatment goals is of utmost importance.

While many pieces of literature exist on Self-care practices concerning chronic diseases like Diabetes, Hypertension, Coronary Heart Diseases, other cardiovascular diseases and Stroke, very limited reviews have been done on its role in PLHIVs. Researcher Fang-Yu Chou extensively reviewed self-care among PLHIV. In a 2004 article, Chou discussed the link between HIV/AIDS clients' self-care and outcomes, presenting applicable models for nursing practices and research. The complexity of self-care in HIV/AIDS was highlighted, influenced by factors related to the individual, their family, and the healthcare system [19]. Chou also explored self-care strategies and information sources for HIV/AIDS symptom management [20]. To assess self-management information needs, Kathleen and Peter developed a 76-item HIV+ information self-care quiz, helping healthcare providers focus on addressing knowledge gaps during interactions [21]. Fang employed a predictive model for eight symptom self-care strategies, such as medications, complementary treatment, self-comforting, daily activities, diet changes, help-seeking, exercise, and spiritual care. A logistic regression test analysed questionnaires from patients with HIV/AIDS to determine the likelihood of employing these strategies [22]. In another report, Ijeoma Okoronkwo assessed self-care practices among PLHIV attending an antiretroviral clinic in Kafanchan, Kaduna State, Nigeria. The review covered dietary patterns,

exercise, treatment regimens and information, and client support services. Most respondents described their dietary habits as good, with 88% adhering to appointments and prescribed medications. Seeking support from family members, health workers, and significant others was preferred, and many engaged in exercises like walking, running, and physical work [23].

For this study, self-care was reviewed under the following core headings/aspects/pillars, which outline the comprehensive definition of health. Physical self-care, which includes an assessment of nutrition, exercise, health-seeking behaviours, and others. Psychological self-care, involves self-reflection, stress reduction, and saying no to extra responsibilities. Emotional self-care, which involves the identification of comforting activities and companionship. Spiritual self-care, which involves finding a source of inspiration, hope, and support. Workplace/professional self-care requires individuals to negotiate for their needs, balance their caseload, establish a support system, and achieve balance among work, family, relationships, play, and rest.

The study aimed to identify, describe, and score the self-care practices of People Living with HIV/AIDS (PLHIV) at the University of Abuja Teaching Hospital. The goal is to establish associations, if any, between these practices and the retention on ART and/or viral load levels/results of the client. The questions posed in the study include identifying and describing the self-care practices common to PLHIV at the hospital, matrix the self-care score from 0 (harmful) to 100 (safe) for each core component/aspect of self-care practices, computing the aggregate/matrixed total self-care score per participant, establishing associations (if any) between overall/total self-care score and retention on ART (measured by the frequency of missed appointments in the last three visits/scheduled appointments), and establishing associations (if any) between overall/total self-care score and viral load levels/results of PLHIV at the hospital.

Certain limitations of this study need to be considered when interpreting the findings. Only PLHIVs attending the ARV clinic at the University of Abuja Teaching Hospital comprised the target population, as such the result may not represent other health institutions or the entire PLHIV population at large. The study design was cross-sectional; hence, causality cannot be established. The use of self-reported data is also prone to biases that could affect the reliability and validity of the findings. Another limitation of the study is that the period under review coincided with the Covid-19 pandemic which completely altered the formation of events. The study also did not evaluate the sources of self-care information among the participants. The study did not also control VL results of clients returning to care (RTT) after being lost to follow-up (LTFU) of having a period of Interruption in Treatment (IIT).

Methods

A cross-sectional descriptive, analytical study with a quantitative approach was conducted in the Special Treatment Clinic (ARV clinic) of the University of Abuja Teaching Hospital between October and December 2020. The University of Abuja Teaching Hospital (UATH) is located 45 minutes from downtown Abuja, in Gwagwalada. The University of Abuja Teaching Hospital had about 5350 clients currently on treatment as of 30th March 2020. The ARV clinic is staffed by a full range of consultants, medical officers, dedicated nurses, adherence counsellors, pharmacists, and some PLHIVs employed as treatment support specialists. The services offered to PLHIVs are done with the support of the Institute of Human Virology Nigeria (IHVN) the Implementing Partner for the Centre for Disease Control (CDC) in collaboration with the Government of Nigeria and other stakeholders.

A simple random sample was drawn from the sampling frame of People Living with HIV/AIDS attending the ARV clinic of the

University of Abuja Teaching Hospital who meet the inclusion criteria below.

1. They were Adults (>18 years of Age of both sexes) at the time of the study.
2. They have been on ARV for greater than or equal to 6 months.

Clients below the ages of 18 years and or less than 6 months on ARVs were excluded from the study.

The Yamane formula was used to calculate the sample size of 372 using the formula below. A 95% confidence interval and P = 0.5 was assumed for the equation.

$$n = \frac{N}{1 + N(e)^2}$$
$$n = \frac{5350}{1 + 5350(0.05)^2}$$
$$n = 372$$

where: n = sample size.

e is the level of precision [24]

Considering that some of the subjects might be lost due to incomplete data collection, a 10% attrition rate was considered in addition to the sample size; hence the sample size was adjusted to 410. Systematic random sampling was used to select participants from a sample frame of clinic attendance.

The instrument used for data collection was developed by the researcher based on an extensive literature search on self-care practices. The questionnaire was divided into 7 sections: Socio-Demography, Physical Self-care, Psychological Self-care, Emotional Self-care, Spiritual Self-care, Workplace / Professional Self-care, and Treatment Information.

Four Ad-hoc staff were trained on the data collection tool for the study and served in the capacity of study research assistants. The training centred on the objectives of the study, contents of the instrument, how to administer the instrument and as well as assist the illiterate respondents to fill appropriate responses.

Objectivity and confidentiality of information gathered were emphasized. They were required to adhere strictly to the contents of the instrument for data collection and chart abstraction. During each contact with clients, the research assistant introduced themselves, explained the purpose of the study and obtained written informed consent from willing participants. The questionnaire was self-administered largely but collaboratively filled for clients who experienced any difficulty or on request. Data collection spanned over 3 months against the three to four weeks initially proposed.

The Data analysis was done using the Statistical Package for social sciences (SPSS) version 25 computer software programme. Descriptive statistics including frequency, percentages, mean, standard deviation, correlation analysis, and chi-square test were used to present the data. Relevant associations were also accessed. All analysis was performed using the statistical package for social sciences (SPSS) version 25.0 computer software programme at a 95% confidence interval.

Results

Socio-demographic Characteristics (Table 1): Three hundred and seventy-one (371) of Four hundred and ten (410) PLHIV respondents consented to the study, giving a response rate of 90.5%. There were 238(64.2%) females and 133(35.8%) males. The ages of respondents were between 19 and 75 with most respondents within the age range of 38-47 years (42.3%), mean age was 43.65% (±9.04) years. Most respondents 274 (73.9%) were married, 279 (75.2%) were Christians and 82 (22.1%) were Moslems. 159 (42.9%) had completed secondary education, 126 (34%) were tertiary, 52 (14%) primary, 26 (7%) had no formal education, and 8 (2.2%) had completed post-graduate education.

Table 1. Demographic Characteristics of Respondents

Demographic Characteristics		Count	Column N %
Age Range at last Birthday	18 - 27 years	14	3.8%
	28 - 37 years	82	22.1%
	38 - 47 years	157	42.3%
	48 - 57 years	97	26.1%
	58 - 67 years	18	4.9%
	68 - 77 years	3	0.8%
Gender	Female	238	64.2%
	Male	133	35.8%
Ethnic Group	Others	154	41.5%
	Igbo	94	25.3%
	Hausa	83	22.4%
	Yoruba	40	10.8%
Marital Status	Married	274	73.9%
	Widowed	46	12.4%
	Single	42	11.3%
	Divorced	9	2.4%
Religion	Christianity	279	75.2%
	Islam	82	22.1%
	Traditional	10	2.7%
	Others	0	0.0%
Educational Level	Secondary Education	159	42.9%
	Tertiary Education	126	34.0%
	Primary Education	52	14.0%
	No Formal Education	26	7.0%
	Postgraduate Education	8	2.2%
Monthly Earnings	less than #20,000	57	15.4%
	#20,000 - #39,999	51	13.7%
	#40,000 - #59,999	123	33.2%
	#60,000 - #79,999	86	23.2%
	#80,000 - #99,999	35	9.4%
	#100,000 and above	19	5.1%
Occupation	Business Owner	90	24.3%
	Self Employed	54	14.6%
	Housewife	39	10.5%
	Civil Servant	35	9.4%
	Retired	24	6.5%
	Artisan	24	6.5%
	Unemployed	23	6.2%
	Agriprenuer	21	5.7%
	Others	19	5.1%
	Professional	15	4.0%
	Security Operative	14	3.8%
	Student	11	3.0%
	Clergy	2	0.5%

* Demographic characteristics of respondents (n = 371)

Five different sections of self-care practices among the respondents were evaluated. Each of the sections had a varying number of questions which were assigned equal weight scores, to sum up to a final score of 100 (100%) for each of the self-care aspects. For the physical self-care of participants, 38% of respondents were frequently engaged in various activities of physical self-care, 33.5% occasionally took care of their physical health, 16% rarely did anything about their physical self-care, 6.4% never cared to engage in physical self-care activities, while it had never occurred to 6.1% of respondents that physical self-care is needed (Table 2).

Psychological self-care assessment of participants revealed 31.5% of respondents were frequently engaged in various activities of psychological self-care, 34.8% occasionally took care of their psychological health, 16.8% rarely did anything about their physical self-care, 7.7% never cared to engage in psychological self-care activities, while it had never occurred to 9.2% of respondents that psychological self-care is needed (Table 3).

Emotional self-care assessment of participants revealed 43.3% of respondents were frequently engaged in various activities of emotional self-care, 33.4% occasionally took care of their emotional health, 14.9% rarely did anything about their emotional self-care, 4.1% never cared to engage in emotional self-care activities, while it had never occurred to 4.4% of respondents that emotional self-care is needed (Table 4).

Spiritual self-care assessment of participants revealed 44.6% of respondents were frequently engaged in various activities of spiritual self-care, 35.1% occasionally took care of their spiritual health, 12.7% rarely did anything about their spiritual self-care, 3.7% never cared to engage in spiritual self-care activities, while it had never occurred to 3.8% of respondents that spiritual self-care is needed (Table 5).

Workplace/Professional self-care assessment of participants revealed 44.4% of respondents were frequently engaged in various activities of professional self-care, 32.8% occasionally took care of their professional health, 12.0% rarely did anything about their professional self-care, 3.2% never cared to engage in professional self-care activities, while it had never occurred to 7.7% of respondents that professional self-care is needed (Table 6).

Table 2. Physical Self-care Description

	It Never Occurred to Me		Never		Rarely		Occasionally		Frequently		Total	
	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%
Eat Regularly	19	5.1%	17	4.6%	39	10.5%	86	23.2%	210	56.6%	371	100.0%
Eat healthy Food	26	7.0%	46	12.4%	53	14.3%	116	31.3%	130	35.0%	371	100.0%
Regular Exercise	24	6.5%	37	10.0%	121	32.6%	122	32.9%	67	18.1%	371	100.0%
Get Regular Medical Care for Prevention	8	2.2%	24	6.5%	53	14.3%	145	39.1%	141	38.0%	371	100.0%
Full Body Examination in the Past 18 months	66	17.8%	0	0.0%	0	0.0%	0	0.0%	305	82.2%	371	100.0%
Get Medical Care When Needed	16	4.3%	4	1.1%	26	7.0%	123	33.2%	202	54.4%	371	100.0%
Take time Off when Needed	16	4.3%	8	2.2%	43	11.6%	172	46.4%	132	35.6%	371	100.0%
Get Massages	27	7.3%	66	17.8%	90	24.3%	136	36.7%	52	14.0%	371	100.0%
Take Time to be Sexual with Self or Partner	29	7.8%	47	12.7%	61	16.4%	129	34.8%	105	28.3%	371	100.0%
Get Enough Sleep	8	2.2%	5	1.3%	41	11.1%	137	36.9%	180	48.5%	371	100.0%
Wear Cloths you Like	12	3.2%	9	2.4%	56	15.1%	132	35.6%	162	43.7%	371	100.0%
Take Vacations	8	2.2%	27	7.3%	88	23.7%	144	38.8%	104	28.0%	371	100.0%
Take day trips or mini vacations	17	4.6%	20	5.4%	76	20.5%	154	41.5%	104	28.0%	371	100.0%
Make Time Away from Telephones	41	11.1%	21	5.7%	84	22.6%	144	38.8%	81	21.8%	371	100.0%
Physical Selfcare Description Sub-Total	**317**	**6.1%**	**331**	**6.4%**	**831**	**16.0%**	**1740**	**33.5%**	**1975**	**38.0%**	**5194**	**100.0%**

* Physical Self-care Description

Table 3. Psychological Self-care Description

	It Never Occurred to Me		Never		Rarely		Occasionally		Frequently		Total	
	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%
Make Time for Self-Reflection	13	3.5%	6	1.6%	42	11.3%	142	38.3%	168	45.3%	371	100.0%
Have Personal Psychotherapist	207	55.8%	0	0.0%	0	0.0%	0	0.0%	164	44.2%	371	100.0%
Write in a Journal	17	4.6%	89	24.0%	97	26.1%	113	30.5%	55	14.8%	371	100.0%
Read Literature unrelated to work	19	5.1%	13	3.5%	54	14.6%	172	46.4%	113	30.5%	371	100.0%
Do Something at which you are not expert or in Charge	32	8.6%	41	11.1%	81	21.8%	136	36.7%	81	21.8%	371	100.0%
Decrease Stress in your Life	13	3.5%	53	14.3%	85	22.9%	129	34.8%	91	24.5%	371	100.0%
Let Others Know Different Aspects of You	25	6.7%	34	9.2%	63	17.0%	163	43.9%	86	23.2%	371	100.0%
Notice Your Inner Experience	6	1.6%	8	2.2%	64	17.3%	156	42.0%	137	36.9%	371	100.0%
Engage You Intelligence in a New Area	25	6.7%	22	5.9%	53	14.3%	144	38.8%	127	34.2%	371	100.0%
Practice Receiving from Others	20	5.4%	29	7.8%	74	19.9%	132	35.6%	116	31.3%	371	100.0%
Be Curious	6	1.6%	27	7.3%	67	18.1%	135	36.4%	136	36.7%	371	100.0%
Say NO to Extra Responsibilities Sometimes	27	7.3%	21	5.7%	67	18.1%	126	34.0%	130	35.0%	371	100.0%
Psychological Selfcare Description Sub-Total	**410**	**9.2%**	**343**	**7.7%**	**747**	**16.8%**	**1548**	**34.8%**	**1404**	**31.5%**	**4452**	**100.0%**

* Psychological Self-care Description

Table 4. Emotional Self-care Description

	It Never Occurred to Me		Never		Rarely		Occasionally		Frequently		Total	
	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%
Spend Time with Others whose Company you Enjoy	17	4.6%	12	3.2%	19	5.1%	109	29.4%	214	57.7%	371	100.0%
Stay In Contact with Important People in Your Life	17	4.6%	7	1.9%	18	4.9%	85	22.9%	244	65.8%	371	100.0%
Give Yourself Affirmation/Praise Self	21	5.7%	9	2.4%	39	10.5%	100	27.0%	202	54.4%	371	100.0%
Love Yourself	4	1.1%	5	1.3%	45	12.1%	76	20.5%	241	65.0%	371	100.0%
Re-read/Re-view Favourite books/Movies	26	7.0%	21	5.7%	80	21.6%	157	42.3%	87	23.5%	371	100.0%
Identify Comforting Activities, Objects, People, Relationship, Places and Seek them out	10	2.7%	24	6.5%	73	19.7%	178	48.0%	86	23.2%	371	100.0%
Allow Yourself to Cry	26	7.0%	31	8.4%	102	27.5%	137	36.9%	75	20.2%	371	100.0%
Find Things that Make you Laugh	23	6.2%	3	0.8%	37	10.0%	114	30.7%	194	52.3%	371	100.0%
Express your outrage in Social Action, Letters, and Donations, Marches, Protests	10	2.7%	38	10.2%	109	29.4%	164	44.2%	50	13.5%	371	100.0%
Play With Children	9	2.4%	1	0.3%	29	7.8%	120	32.3%	212	57.1%	371	100.0%
Emotional Selfcare Description Sub-Total	**163**	**4.4%**	**151**	**4.1%**	**551**	**14.9%**	**1240**	**33.4%**	**1605**	**43.3%**	**3710**	**100.0%**

*Emotional Self-care Description

Table 5. Spiritual Self-care Description

	It Never Occurred to Me		Never		Rarely		Occasionally		Frequently		Total	
	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%
Make Time for Reflection	11	3.0%	5	1.3%	35	9.4%	137	36.9%	183	49.3%	371	100.0%
Spend Time with Nature	11	3.0%	3	0.8%	63	17.0%	174	46.9%	120	32.3%	371	100.0%
Find a Spiritual Connection or Community	16	4.3%	12	3.2%	48	12.9%	109	29.4%	186	50.1%	371	100.0%
Be Open to Inspiration	8	2.2%	6	1.6%	60	16.2%	134	36.1%	163	43.9%	371	100.0%
Cherish Your Optimism and Hope	10	2.7%	2	0.5%	35	9.4%	135	36.4%	189	50.9%	371	100.0%
Be Aware of Non-Material Aspects of Life	16	4.3%	1	0.3%	49	13.2%	142	38.3%	163	43.9%	371	100.0%
Try at Times Not to Be in Charge or Be the Expert	20	5.4%	23	6.2%	38	10.2%	121	32.6%	169	45.6%	371	100.0%
Be Open to Not Knowing	8	2.2%	9	2.4%	56	15.1%	151	40.7%	147	39.6%	371	100.0%
Identify What is Meaningful to You and Notice Its Place in Your Life	18	4.9%	17	4.6%	41	11.1%	132	35.6%	163	43.9%	371	100.0%
Meditate	7	1.9%	11	3.0%	26	7.0%	129	34.8%	198	53.4%	371	100.0%
Pray	2	0.5%	14	3.8%	26	7.0%	98	26.4%	231	62.3%	371	100.0%
Sing	11	3.0%	35	9.4%	70	18.9%	112	30.2%	143	38.5%	371	100.0%
Spend Time with Children	18	4.9%	1	0.3%	26	7.0%	118	31.8%	208	56.1%	371	100.0%
Have Experience of Awe (Miracle, Reverence, Trepidation)	19	5.1%	49	13.2%	102	27.5%	100	27.0%	101	27.2%	371	100.0%
Contribute to Causes in Which You Believe	27	7.3%	17	4.6%	35	9.4%	149	40.2%	143	38.5%	371	100.0%
Read Inspirational Literature (talks, music, etc.)	24	6.5%	17	4.6%	42	11.3%	145	39.1%	143	38.5%	371	100.0%
Spiritual Selfcare Description Sub-total	**226**	**3.8%**	**222**	**3.7%**	**752**	**12.7%**	**2086**	**35.1%**	**2650**	**44.6%**	**5936**	**100.0%**

*Spiritual Self-care Description

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Table 6. Workplace/Professional Self-care Description

	It Never Occurred to Me		Never		Rarely		Occasionally		Frequently		Total	
	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%	Count	Row N%
Take a Break During the Workday	16	4.3%	5	1.3%	45	12.1%	142	38.3%	163	43.9%	371	100.0%
Take Time to Chart with Co-Workers	10	2.7%	1	0.3%	36	9.7%	160	43.1%	164	44.2%	371	100.0%
Make Quite Time to Complete Tasks	9	2.4%	3	0.8%	36	9.7%	136	36.7%	187	50.4%	371	100.0%
Identify Projects or Tasks that are Exciting and Rewarding	19	5.1%	8	2.2%	49	13.2%	110	29.6%	185	49.9%	371	100.0%
Set Limits with your Clients and Colleagues	21	5.7%	6	1.6%	47	12.7%	126	34.0%	171	46.1%	371	100.0%
Balance Your Caseload so that no one day or part of the day is "too much"	14	3.8%	15	4.0%	53	14.3%	128	34.5%	161	43.4%	371	100.0%
Arrange your Workspace so it is Comfortable and Comforting	14	3.8%	9	2.4%	35	9.4%	98	26.4%	215	58.0%	371	100.0%
Get Regular Supervision or Consultation	20	5.4%	4	1.1%	54	14.6%	162	43.7%	131	35.3%	371	100.0%
Negotiate for your Needs (benefits, pay raise)	27	7.3%	31	8.4%	71	19.1%	138	37.2%	104	28.0%	371	100.0%
Belong to a Peer Support Group	171	46.1%	0	0.0%	0	0.0%	0	0.0%	200	53.9%	371	100.0%

Develop a Non-Trauma Area of Professional Interest	30	8.1%	41	11.1%	75	20.2%	127	34.2%	98	26.4%	371	100.0%
Strive For balance within Your Work-life and Workday	14	3.8%	22	5.9%	43	11.6%	123	33.2%	169	45.6%	371	100.0%
Strive for Balance among Work, Family, Relationships, Play, and Rest	6	1.6%	10	2.7%	33	8.9%	130	35.0%	192	51.8%	371	100.0%
Workplace/Professional Selfcare Description Sub-Total	*371*	*7.7%*	*155*	*3.2%*	*577*	*12.0%*	*1580*	*32.8%*	*2140*	*44.4%*	*4823*	*100.0%*

* Workplace/Professional Self-care Description

The Total Matrixed Score (TMS) was calculated by getting an average of all scores for the various aspects of self-care (Physical, Psychological, Emotional, Spiritual, and Workplace/Professional). The matrixed total score varies from a minimum of 18.77 to a maximum of 92.28 (Range of 73.5, Mean = 75.6, Median = 76.9, Standard Deviation of 9.8) (Table 7).

The total matrixed score was further classified from letter A to F, with A being the best self-care, and F being the least. (Table 8).

Table 7. Matrixed Score Description

Matrixed Total Self-care Score		
N	Valid	371
	Missing	0
Mean		75.6
Median		76.9
Std. Deviation		9.8
Range		73.5
Minimum		18.8
Maximum		92.3

* Matrixed Score Description

Table 8. Grade of Total Matrixed Score

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	A (85 to 100%)	46	12.4	12.4	12.4
	B (75 to 84.99%)	184	49.6	49.6	62.0
	C (65 to 74.99%)	103	27.8	27.8	89.8
	D (55 to 64.99%)	17	4.6	4.6	94.3
	E (45 to 54.99%)	12	3.2	3.2	97.6
	F (</= 44.99%)	9	2.4	2.4	100.0
	Total	371	100.0	100.0	

* Grade of Total Matrixed Score

The lowest score across all the self-care groups (Physical, Psychological, Emotional, Spiritual, and Workplace/Professional) was in the Professional self-care at 16.9%, mean of 70.2%. Emotional and Spiritual self-care recorded a maximum score of 100% in at least one participant. The Mean was highest across all the self-care aspects in Spiritual Self-care 86.2%. The matrixed total self-care score mean is 75.6%, a minimum of 18.8%, a maximum of 92.3%, and a standard deviation of 9.8 (Table 9).

Treatment information retrieved from the study revealed that 194 (52.3%) of clients self-reported always keeping to appointments, 125 (33.7%) do so often, 37 (10%) occasionally keep appointments, while 13(3.5%) and 2 (0.5%)

rarely and never keep their appointments respectively. Reasons for missed appointment are distance 101 (27.2%), Personal 70 (18.9%), Not applicable/does not miss appointment 67 (18.1%), Not been released from work 54 (14.6%), forgetfulness and lack of time are 34 (9.2) and 27 (7.3%) respectively. 273 (73.6%) reported not missing the prescribed regimen, 75 (20.2%) miss a dose once a week, 3 (0.8%) missed doses several times a week, 19 (5.1%) misses a dose several times a month and 1(0.3%) client reported missing doses daily. Reasons for missed appointment include no missed doses (none) 138 (37.2%), personal reasons 97 (26.1%), forgetfulness 82 (22.1%), lack of time 25 (6.7%), others 20 (5.4%), work 6 (1.6%),

among others. Other treatments taken with the prescribed regimen include herbal products 17 (4.6%), nutritional supplements 84 (22.6%), others (paracetamol, antimalarial, Flagyl etc) 111 (29.9%), and 159 (42.9%) clients that do not take any other regimen from the prescribed ones. 306 (82.5%) reports never taking alcohol, 31 (8.4%) take once a month, 12 (3.2%) once a week, 19 (5.1%) several times a week, and 3 (0.8%) every day. Reasons for taking others (fever, body pains, diarrhoea) 53.4%, availability 12.9%, accessibility 5.9%, cheap 2.2%, personal 0.3%, other health reasons 0.3%. 82.5% of Clients reported never taking alcohol, 8.4% take once a month, 3.2% once a week, 5.1% several times a week and 0.8% every day (Table 10).

Table 9. Descriptive Statistics of the Self-care Groups and Matrixed Self-care Score

		% Physical Self-care Score	% Psychological Self-care Score	% Emotional Self-care Score	% Spiritual Self-care Score	% Workplace / Professional Self-care Score	Matrixed Total Self-care Score
N	Valid	371	371	371	371	371	**371**
	Missing	0	0	0	0	0	**0**
Mean		**73.2**	**70.5**	**81.4**	**82.6**	**70.2**	**75.6**
Median		75.7	71.7	84.0	83.8	72.3	**76.9**
Std. Deviation		11.3	10.8	12.7	12.0	10.9	**9.8**
Range		75.7	75.0	80.0	80.0	69.2	**73.5**
Minimum		18.6	18.3	20.0	20.0	16.9	**18.8**
Maximum		94.3	93.3	100.0	100.0	86.2	**92.3**

* Descriptive Statistics of the Self-care Groups and Matrixed Self-care Score

Table 10. Treatment Information (Respondent's Self-report)

		Count	Column N%
How Often do you Keep to Your Clinic Appointment	Never	2	0.5%
	Rarely	13	3.5%
	Occasionally	37	10.0%
	Often	125	33.7%
	Always	194	52.3%
Reasons for Missed Appointments	Distance	101	27.2%
	Personal	70	18.9%
	Not Applicable (No missed Appointments)	67	18.1%
	Work (Not Released Form Work)	54	14.6%
	Forgetfulness	34	9.2%
	Lack of Time	27	7.3%
	Others	16	4.3%
	Finance	1	0.3%
	Tired of taking it	1	0.3%
Number of Times Prescribed Drugs are Missed	Everyday	1	0.3%
	Several Times a Month	19	5.1%
	Several Times a Week	3	0.8%

	Once a Week	75	20.2%
	None	273	73.6%
Reasons for missing Prescribed Drugs	None (No missed dose)	138	37.2%
	Personal Reasons	97	26.1%
	Forgetfulness	82	22.1%
	Lack of Time	25	6.7%
	Others	20	5.4%
	Work	6	1.6%
	Ineffective Treatment	2	0.5%
	Travel	1	0.3%
	Perception / Believe of Healing	0	0.0%
Other Treatment Taken Along with Prescribed Drugs	None	159	42.9%
	Others (Paracetamol, Antimalaria, Flagyl etc.)	111	29.9%
	Nutritional Supplements	84	22.6%
	Herbal Products	17	4.6%
Reasons for Taking Other Treatment	Others (Fever, Body pains, Diarrhoea etc.)	198	53.4%
	Not Applicable (Does not take other medications)	93	25.1%
	Availability	48	12.9%
	Accessible	22	5.9%
	Cheaper	8	2.2%
	Personal	1	0.3%
	Health	1	0.3%
How Often is Alcohol Taken	Never	306	82.5%
	Once a Month	31	8.4%
	Once a Week	12	3.2%
	Several Times a Week	19	5.1%
	Everyday	3	0.8%

* Treatment Information (Respondent's Self-report)

A chart review was done for the respondents, and dates of scheduled and actual appointments were abstracted for 3 consecutive visits. The appointment interval/gap between the actual clinic visit and the scheduled appointment was done in days and classified into, clinic visits on or before the scheduled appointment, with 48 hours of a missed appointment, within a week of a missed appointment, less than or equal to 28days and greater than 28days. The average of 3 appointment intervals/gaps was used as the average appointment interval. The average appointment interval calculated for the respondents revealed that 152 (41.0%) of clients attend the clinic on or before scheduled appointments, 15 (4.0%) return to the clinic within 48 hours of a missed appointment, 29 (7.8%) return within a week of a missed appointment, 91 (24.5%) return to the clinic in less than or equal to 28days after a missed appointment and 84 (22.6) return greater than 28days (Table 11).

Table 11. Description of Appointment Interval/gap

Description	Greater than 28 days		Less than or Equal to 28 days		On or Before the Scheduled Appointment		Within 48 hours		Within One Week	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N%	Count	Row N %
Appointment Interval 1	19	5.1%	35	9.4%	265	71.4%	19	5.1%	33	8.9%
Appointment Interval 2	41	11.1%	45	12.1%	236	63.6%	20	5.4%	29	7.8%
Appointment Interval 3	39	10.5%	56	15.1%	230	62.0%	18	4.9%	28	7.5%
Average Appointment Interval	**84**	**22.6%**	**91**	**24.5%**	**152**	**41.0%**	**15**	**4.0%**	**29**	**7.8%**

Description of Appointment Interval/gap

The Mean of average appointment interval/gap for the study population/sample size is 17.3 days with a standard deviation of 36.6, however, this was affected by extremes of data by those greater than 28 days before returning after a missed appointment (Table 12).

Table 12. Descriptive Statistics of Average Appointment Gap

Average Appointment Gap		
N	Valid	371
	Missing	0
Mean		17.34
Median		5.00
Std. Deviation		36.592
Range		329
Minimum		-70
Maximum		259

* Descriptive Statistics of Average Appointment Gap

The following are important correlations found between Self-reported Treatment Information (How often an appointment is kept, Number of times prescribed drugs are missed, how often Alcohol is used), Average Appointment gap and Matrixed Self-care Score.

1. Correlation between How often you keep clinic appointments, and the number of times prescribed drugs are missed, Sig. (2-tailed) = 0.008.
2. Correlation between How often you keep clinic appointments and Average appointment gap Sig. (2-tailed) = 0.004.
3. Correlation between How often alcohol is taken, and Number of times prescribed drugs missed Sig. (2-tailed) = 0.006.
4. Correlation between Number of prescribed drugs missed and Average appointment gap Sig. (2-tailed) = 0.045.
5. Correlation between How often alcohol is taken and Matrixed total self-care score Sig. (2-tailed) = 0.002.

However, no correlation was found between Matrixed total self-care score and Average appointment gap Sig. (2-tailed) = 0.366 (Table 13).

Table 13. Correlations between Self-reported Treatment Information (How often an appointment is kept, Number of times prescribed drugs are missed, how often Alcohol is used), Average Appointment gap and Matrixed Self-care Score

		How Often do you Keep to Your Clinic Appointment	Number of Times Prescribed Drugs are Missed	How Often is Alcohol Taken	Average Appointment Gap	Matrixed Total Self-care Score
How Often do you Keep to Your Clinic Appointment	Pearson Correlation	1	.138**	-.053	-.149**	.001
	Sig. (2-tailed)		.008	.304	.004	.982
	N	371	371	371	371	371
Number of Times Prescribed Drugs are Missed	Pearson Correlation	.138**	1	-.141**	-.104*	-.072
	Sig. (2-tailed)	.008		.006	.045	.166
	N	371	371	371	371	371
How Often is Alcohol Taken	Pearson Correlation	-.053	-.141**	1	-.062	.161**
	Sig. (2-tailed)	.304	.006		.234	.002
	N	371	371	371	371	371
Average Appointment Gap	Pearson Correlation	-.149**	-.104*	-.062	1	-.047
	Sig. (2-tailed)	.004	.045	.234		.366
	N	371	371	371	371	371
Matrixed Total Self-care Score	Pearson Correlation	.001	-.072	.161**	-.047	1
	Sig. (2-tailed)	.982	.166	.002	.366	
	N	371	371	371	371	371

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

The previous and recent viral load results of clients in the study population were reviewed. The previous viral load suppression rate across the study participants was 94.9% (259 of 273), 94% of females/women (157 of 167) were suppressed and 96.2% of males/men (102 of 106) were suppressed, 26.4% (98) of the clients did not have a previous viral load result for evaluation. The recent viral load suppression rate across the study participants was 96% (356 of 371), 95% of females/women (226 of 238) were suppressed, and 97.7% of males/men (130 of 133) were suppressed. The suppression rate was lowest among the 18-27 years age group and 100% at both the 48-57 and 68-77years categories. Participants who had an average appointment interval greater than 28days had a suppression rate of 89.3%, those who returned within the week of missed appointment 89.7% suppression rate, while the suppression rate was significantly higher (99.3%) in those who came to the clinic on or before the scheduled appointment. However, a comparison of the grade of the total matrixed score and the recent viral suppression rate revealed Grades A, B, & C have 95.7%, 95.1% and 96.1% while grades D, E & F have 100% suppression rates respectively (Table 14).

The following are important correlations found between Previous & Recent Viral Load Results, Self-reported Treatment Information (How often an appointment is kept, Number of times prescribed drugs are missed, how often Alcohol is used), Average Appointment gap and Matrixed Self-care Score.

1. Correlation between previous viral load and average appointment gap Sig. (2-tailed) = 0.000.
2. Correlation between previous viral load and the number of times prescribed drugs are missed Sig. (2-tailed) = 0.002.
3. Correlation between previous viral load and how often the clients keep to clinic appointment Sig. (2-tailed) = 0.001
4. Correlation between How often you keep clinic appointments, and the number of times prescribed drugs are missed Sig. (2-tailed) = 0.008.
5. Correlation between How often you keep clinic appointments and Average appointment gap Sig. (2-tailed) = 0.004.
6. Correlation between Number of prescribed drugs missed and Average appointment gap Sig. (2-tailed) = 0.045.

However, no correlations were found between Matrixed total self-care score, and Recent and Previous Viral Load for clients in the study (Table 15).

Table 14. Description of Viral Load Suppression Patterns by Sex, Age range, Average Appointment Interval and Grade of Total Self-care Matrixed Score

			Missing VL		Suppressed		Unsuppressed		Total	
			Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Gender	Female	Recent Viral Load Suppression	0	0.0%	226	95.0%	12	5.0%	238	100.0%
	Male	Recent Viral Load Suppression	0	0.0%	130	97.7%	3	2.3%	133	100.0%
	Total	Recent Viral Load Suppression	0	0.0%	356	96.0%	15	4.0%	371	100.0%
Gender	Female	Previous Viral Load Suppression	71	29.8%	157	66.0%	10	4.2%	238	100.0%
	Male	Previous Viral Load Suppression	27	20.3%	102	76.7%	4	3.0%	133	100.0%
	Total	Previous Viral Load Suppression	98	26.4%	259	69.8%	14	3.8%	371	100.0%
Age Range at last Birthday	18 - 27 years	Recent Viral Load Suppression	0	0.0%	11	78.6%	3	21.4%	14	100.0%
	28 - 37 years	Recent Viral Load Suppression	0	0.0%	78	95.1%	4	4.9%	82	100.0%
	38 - 47 years	Recent Viral Load Suppression	0	0.0%	150	95.5%	7	4.5%	157	100.0%
	48 - 57 years	Recent Viral Load Suppression	0	0.0%	97	100.0%	0	0.0%	97	100.0%
	58 - 67 years	Recent Viral Load Suppression	0	0.0%	17	94.4%	1	5.6%	18	100.0%
	68 - 77 years	Recent Viral Load Suppression	0	0.0%	3	100.0%	0	0.0%	3	100.0%
Age Range at last Birthday	18 - 27 years	Previous Viral Load Suppression	5	35.7%	6	42.9%	3	21.4%	14	100.0%
	28 - 37 years	Previous Viral Load Suppression	29	35.4%	51	62.2%	2	2.4%	82	100.0%
	38 - 47 years	Previous Viral Load Suppression	40	25.5%	110	70.1%	7	4.5%	157	100.0%
	48 - 57 years	Previous Viral Load Suppression	22	22.7%	74	76.3%	1	1.0%	97	100.0%
	58 - 67 years	Previous Viral Load Suppression	2	11.1%	15	83.3%	1	5.6%	18	100.0%
	68 - 77 years	Previous Viral Load Suppression	0	0.0%	3	100.0%	0	0.0%	3	100.0%
Average Appointment Interval	> 28 days	Recent Viral Load Suppression	0	0.0%	75	89.3%	9	10.7%	84	100.0%
	≤ 28 days	Recent Viral Load Suppression	0	0.0%	90	98.9%	1	1.1%	91	100.0%
	On or Before Scheduled Appointment	Recent Viral Load Suppression	0	0.0%	151	99.3%	1	0.7%	152	100.0%
	≤ one Week	Recent Viral Load Suppression	0	0.0%	26	89.7%	3	10.3%	29	100.0%
	Within 48 hours	Recent Viral Load Suppression	0	0.0%	14	93.3%	1	6.7%	15	100.0%

Average Appointment Interval	> 28 days	Previous Viral Load Suppression	31	36.9%	48	57.1%	5	6.0%	84	100.0%
	≤ 28 days	Previous Viral Load Suppression	28	30.8%	58	63.7%	5	5.5%	91	100.0%
	On or Before Scheduled Appointment	Previous Viral Load Suppression	27	17.8%	123	80.9%	2	1.3%	152	100.0%
	≤ one Week	Previous Viral Load Suppression	4	13.8%	23	79.3%	2	6.9%	29	100.0%
	Within 48 hours	Previous Viral Load Suppression	8	53.3%	7	46.7%	0	0.0%	15	100.0%
Grade of Total Matrixed Score	A	Recent Viral Load Suppression	0	0.0%	44	95.7%	2	4.3%	46	100.0%
	B	Recent Viral Load Suppression	0	0.0%	175	95.1%	9	4.9%	184	100.0%
	C	Recent Viral Load Suppression	0	0.0%	99	96.1%	4	3.9%	103	100.0%
	D	Recent Viral Load Suppression	0	0.0%	17	100.0%	0	0.0%	17	100.0%
	E	Recent Viral Load Suppression	0	0.0%	12	100.0%	0	0.0%	12	100.0%
	F	Recent Viral Load Suppression	0	0.0%	9	100.0%	0	0.0%	9	100.0%
Grade of Total Matrixed Score	A	Previous Viral Load Suppression	3	6.5%	42	91.3%	1	2.2%	46	100.0%
	B	Previous Viral Load Suppression	55	29.9%	120	65.2%	9	4.9%	184	100.0%
	C	Previous Viral Load Suppression	33	32.0%	66	64.1%	4	3.9%	103	100.0%
	D	Previous Viral Load Suppression	5	29.4%	12	70.6%	0	0.0%	17	100.0%
	E	Previous Viral Load Suppression	1	8.3%	11	91.7%	0	0.0%	12	100.0%
	F	Previous Viral Load Suppression	1	11.1%	8	88.9%	0	0.0%	9	100.0%

* Description of Viral Load Suppression Patterns by Sex, Age range, Average Appointment Interval and Grade of Total Self-care Matrixed Score

Table 15. Correlations between Previous and Recent Viral load results, Self-reported Treatment Information (How often an appointment is kept, Number of times Prescribed drugs are missed, how often Alcohol is used), Average Appointment gap, and Matrixed Self-care Score

		Recent Viral Load Result (cc/ml)	Matrixed Total Self-care Score	Average Appointment Gap	How Often do you Keep to Your Clinic Appointment	Number of Times Prescribed Drugs are Missed	Previous Viral Load Result (cc/ml)
Recent Viral Load Result (cc/ml)	Pearson Correlation	1	.058	.077	.023	-.049	.018
	Sig. (2-tailed)		.267	.141	.653	.345	.763
	N	371	371	371	371	371	273
Matrixed Total Self-care Score	Pearson Correlation	.058	1	-.047	.001	-.072	.012
	Sig. (2-tailed)	.267		.366	.982	.166	.840
	N	371	371	371	371	371	273
Average Appointment Gap	Pearson Correlation	.077	-.047	1	-.149**	-.104*	.408**
	Sig. (2-tailed)	.141	.366		.004	.045	.000
	N	371	371	371	371	371	273
How Often do you Keep to Your Clinic Appointment	Pearson Correlation	.023	.001	-.149**	1	.138**	-.193**
	Sig. (2-tailed)	.653	.982	.004		.008	.001
	N	371	371	371	371	371	273
Number of Times Prescribed Drugs are Missed	Pearson Correlation	-.049	-.072	-.104*	.138**	1	-.190**
	Sig. (2-tailed)	.345	.166	.045	.008		.002
	N	371	371	371	371	371	273
Previous Viral Load Result (cc/ml)	Pearson Correlation	.018	.012	.408**	-.193**	-.190**	1
	Sig. (2-tailed)	.763	.840	.000	.001	.002	
	N	273	273	273	273	273	273

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed)

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Discussion

The different aspects of self-care reviewed in this study were not found in any single study among PLHIV (similar dimensions were found in studies evaluating other chronic illnesses like Diabetes and various cardiovascular diseases), however, various subthemes have been researched by different researchers. For example, the paper accessing nutrients intake and nutrient status of HIV seropositive patients attending the Clinic at Chulaimbo Sub-District, Kenya by Onyango, Mbagaya and Kakai [25] reviewed a core part of physical self-care (eating regularly and eating healthy food). However, other aspects of physical self-care reviewed include exercise, health-seeking behaviour, sexual health, and rest/relaxation habits.

Dallas and colleagues worked on the common elements in the self-management of HIV and other chronic illnesses (an integrative framework). In the review, although HIV/AIDS is widely recognized as a chronic disease in HIV care/medicine, it is often excluded from the chronic disease list outside the field. The article reviewed works of literature on chronic disease self-management to identify factors common across chronic diseases, highlighting HIV-specific challenges and then reviewed recent developments in self-management interventions for people living with HIV (PLH) and other chronic diseases. The integrated framework of common elements or tasks in chronic disease self-management outlined 14 elements in three broad categories namely physical health; psychological functioning; and social relationships [11].

The Physical self-care score of the participants in this study revealed 38% of respondents were frequently engaged in various activities of physical self-care, 33.5% occasionally took care of their physical health, 16% rarely did anything about their physical self-care, 6.4% never cared to engage in physical self-care activities, while it had never occurred to 6.1% of respondents that physical self-care is needed. Key areas of competence (the summation of Occasionally and Frequently tallies >75.6% = mean of matrixed total self-care score) include eating regularly (79.8%), getting regular medical care for prevention (77.1%) regular full body examination (82.2%), getting medical care when needed (87.6%), taking time off when needed (81.9%), wearing clothes they like (79.2%), and getting enough sleep (85.2%). On the contrary, 17.8% and 11.1% of respondents said it never occurred to them to have a regular/periodic full body examination and make time away from telephones respectively. More clients would need to be encouraged to increase the frequency of massages, time to be sexual with partner or self, and regular exercise.

The assessment of the psychological self-care score for the study participants revealed 31.5% of respondents were frequently engaged in various activities of psychological self-care, 34.8% occasionally took care of their psychological health, 16.8% rarely did anything about their physical self-care, 7.7% never cared to engage in psychological self-care activities, while it had never occurred to 9.2% of respondents that psychological self-care is needed. The study participants scored better (the summation of Occasionally and Frequently tallies >75.6%) in making time for reflection (83.6%), reading literature unrelated to work (76.8%), and noticing an inner experience i.e., listening to inner thoughts, judgements, beliefs, attitude, and feelings (79.0%). Most respondents need to be encouraged to cultivate the culture of writing in a journal, having a personal psychotherapist, doing something they are not an expert in and decreasing activities causing stress.

Emotional and Spiritual self-care scores ranked highest among the study participants with a matrixed total self-care score mean of 81.4 and 82.6% respectively and with both core aspects of self-care having a score of 100% in at least one of the study participants each. Most of the respondents responded positively to aspects of emotional self-care, however, sections requiring

improvement include, re-reading favourite books/movies, identifying comforting activities, allowing self to cry, and expressing outrage in socially acceptable manners. For Spiritual self-care, all sections were well-graced except for having an experience of awe.

Self-care practises related to Workplace/Professional health recorded the least mean score (70.2%) among the various core aspects of self-care that were accessed by the study. Areas requiring significant improvement are the negotiation of needs, belonging to a peer support group, and developing a non-trauma area of professional interest.

The weighted-mean score (WMS) of the core aspects of self-care practises among the study participants ranked in the following order, Spiritual (82.6%), Emotional (81.4%), Physical (73.2%), psychological (70.5%), and Workplace/Professional (70.2%). While the final Matrixed total self-care per participant ranged from 18.8% to 92.3%, and a mean score of 75.6%. While the WMS of the various core aspects of self-care are far above average suggesting that the PLHIVs attending the antiretroviral clinic of UATH have good self-care practices, the psychological and workplace self-care requires strengthening. This can be achieved by continuous counselling and monitoring of PLHIV by healthcare workers.

Most participants in the study reported always keeping to their scheduled appointments, however, only 78% (152 out of 194) of this claim was validated by the average appointment gap calculated. The most common reason for missing an appointment is the distance to the facility which accounts for 27.2% of missed appointments, another 18.9% had personal reasons for missing the scheduled appointment, and 14.6% were not released from work. Personal reasons and forgetfulness rank highest (26.1%, and 22.1% respectively) as reasons for missing prescribed drugs. 53.4% of other drugs used with prescribed ARVs are for other complaints like fever, body pains etc.

No association ($p > 0.05$) were found between the matrixed total self-care score and the average appointment gap. However, positive associations were found between Self-reported clinic appointments and frequency of missed doses of ARVs, self-reported clinic appointment and calculated average appointment gap, frequency of alcohol use and frequency of missed ARV doses, calculated average appointment gap and Frequency of missed ARV doses, Alcohol use and self-care.

The VL suppression rate for the recent VL of all the study participants was 96%, with the suppression rate slightly higher in males (97.7%) than females (95%). Using the more recent WHO classification 88.1% of clients had undetectable VL (<50cc/ml), 8.1% have low-level viraemia, and 3.8% are unsuppressed. Clients with low-level viraemia although suppressed will require enhanced adherence counselling and will be expected to have a repeat VL in 3months. The study shows a significant association ($p < 0.05$) between recent VL results and (the age of the participant, average appointment gap, number of prescribed ARVs missed, and self-report of clinic appointments). However, no association ($p > 0.05$) was found between the matrixed total self-care score and the recent or previous VL of participants in the study.

Certain limitations of this study need to be considered when interpreting the findings. Only PLHIVs attending the ARV clinic at the University of Abuja Teaching Hospital comprised the target population, as such the result cannot be generalized and may not represent other health institutions or the entire PLHIV population at large. The study design was cross-sectional; hence, causality cannot be established. The use of self-reported data is also prone to biases that could affect the reliability and validity of the findings. There could be recalled biases and self-presentation. The use of a standardized tool on HIV self-management for people living with HIV/AIDS may have provided more robust information on the self-

care practices of PLHIV. Another limitation of the study is that the period under review was coinciding with the Covid-19 pandemic which completely altered the formation of events. The pandemic had an adverse effect on how clients were able to keep to scheduled appointments due to the full lockdown that was implemented from March to May 2020 and the partial lockdown from May to September 2020. During the full lockdown, all sections of most hospitals were shut down for only essential/emergency services. There was a slow reopening of other non-emergency departments after the easing of restrictions. Most facilities at the time of writing this report still experienced a low turnout of patients compared to pre-covid days. Another factor affecting clinic attendance within the same year was the ENDSARs protest. Both Covid and ENDSAR's protests may affect the reliability of the calculated appointment gap for the period under review. The study also did not evaluate the sources of self-care information among the participants. The study did not also control VL results of clients returning to care (RTT) after being lost to follow-up (LTFU) of having a period of Interruption in Treatment (IIT). Another important variable not controlled for was the recent migration of all clients on the first-line regimen to TLD (Tenofovir-Lamivudine-Dolutegravir) which is also an important driver of improved VL suppression because of its improved efficiency/potency, more convenient to take (smaller pill and once a dose dosing), reduced side effects/drug-drug interactions, and its high genetic barrier.

Healthcare providers need to be aware and have their capacity built to provide continuous counselling and closer monitoring to enable PLHIVs to sustain adequate self-care management. It is also suggested that more awareness of Psychological and Workplace/Professional Self-care should be included in their health education/counselling to align with holistic healthcare provision goals. Although the study did not show any association between self-care practices and adherence (appointment gap) or viral load suppression, there may be a need to re-evaluate the study outside of significant environmental factors (Covid pandemic, and Nigeria ENDSARs Protest) that affected the entire country within the period under review.

Conclusion

The weighted matrix score (WMS) of the various core aspects of self-care is far above average suggesting that the PLHIVs attending the antiretroviral clinic of UATH have good self-care practices, however, the psychological and workplace self-care requires some level of strengthening. This can be achieved by continuous counselling and monitoring of PLHIV by healthcare workers. The study showed differences between self-report of keeping to an appointment and calculated average appointment gap (3 visits), and associations were found between the average appointment gap and the viral load of study participants.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Acknowledgement

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