Time to Antiretroviral Treatment Initiation and Factors associated to Same Day Initiation in the West Region of Cameroon

Fabrice Djouma Nembot^{1*}, Frankline Sevidzem Wirsiy², Edouard Katayi Tshimwanga¹, Claude Ngwayu Nkfusai³, Mboh Khan Eveline¹, Ismaila Esa¹, Walters Kum¹, Agbornkwai Nyenty Agbor⁴, Jerome Ateudjieu⁵ ¹Cameroon Baptist Convention Health Services, Bamenda, Cameroon ²Pfizer Scholar One Young World (OYW), 10 Queen Street Place, London, United Kingdom ³Department of Public Health, School of Nursing and Public Health, University of Kwa-Zulu Natal, Durban, South Africa

⁴*Family Health International 360*

⁵Department of Public Health, University of Dschang, Cameroon

Abstract

Same-day Antiretroviral Treatment (ART) initiation after a positive HIV test result is vital for faster viral suppression. This study assessed the time to ART initiation and factors associated to SDAI in the West region of Cameroon. This was a cross-sectional retrospective study. The data was extracted from registers and patients' medical records and analysed. The mean age of the 3053 participants was 36.9 (SD: 13.3), and 64.0% were female. A total of 2346 (76.8%) participants had initiated ART the same day of the diagnosis. Female gender (OR= 1.2; 95%CI:1.1-1.5), Tier 3 HF (OR= 1.3; 95%CI: 1-1.7), semi-urban facility's location (OR= 1.4; 95%CI: 1.1-1.7), periods of test January-March 2020 (OR= 2; 95%CI: 1.6-2.6), April- June 2020 (OR= 1.7; 95%CI: 1.3-2.2), and July- September 2020 (OR= 3.4; 95%CI: 2.5-4.6), index case testing entry point (OR= 1.6; 95%CI: 1.2-2.1), active occupational situation (OR= 1.3; 95%CI: 1-1.7), and good general status (OR= 1.3; 95%CI: 1.1-1.6) were independently associated to same day initiation. In addition to WHO stage 2 (OR= 0.6; 95%), tuberculosis (OR= 0.2; 95%CI: 0.1-0.5), inpatient (OR= 0.2; 95%CI: 0.1-0.4) and emergency entry point (OR=0.1; 95%CI: 0-0.2) were inversely associated to SDI. The ART initiation was timely for most clients in the West region of Cameroon, in alignment with the WHO recommendations. However, this was not the case among symptomatic, critically ill, and tuberculosis clients. This underscores the need for ongoing support, counselling, and continuous readiness assessment, as well as a strong linkage system for clients with delayed ART initiation.

Keywords: Antiretroviral Treatment (ART), Cameroon, Factors, Same-day initiation, West Region.

Introduction

HIV/AIDS is a significant public health threat, and the World Health Organization (WHO) strongly recommends rapid ART initiation on the same day of HIV diagnosis after ensuring the patient's readiness/willingness to start ART immediately [1]. Progress made with ART accessibility and availability leads to people living with HIV (PLHIV) to live longer; changing HIV infection into a manageable chronic disease as well as reducing onward HIV transmission and the number of people dying of AIDS [2, 3]. Thus, to start ART immediately after the HIV diagnosis is confirmed is strongly recommended for all HIV-infected individuals regardless of their CD4 cell count level and clinical stage, as stipulated in the WHO universal test and treat (UTT) strategy [4, 5]. In

Accepted: 28.01.2022

Received: 14.04.2022 Published on: 30.06.2022 *Corresponding Author : nembotfabrice2009@yahoo.fr

December 2016, the Cameroon Ministry of Public Health, in collaboration with WHO, updated its HIV guidelines to align with the strategy of test and treat all. SDAI may be a key approach in reaching the updated UNAIDS targets for 2030 i.e., aim for 95% of those living with HIV to know their status, 95% of those who know their status to be on treatment, and 95% of those on treatment to be virally suppressed [2]. While the previous 90-90-90 targets for 2020 were met by some countries, they were not met globally, including Cameroon [6, 7]. The goals of fewer than 500,000 annual new infections and 500,000 AIDS-related deaths were also not insight in 2019, with an estimated 1.7 million new infections and 600,000 AIDS-related deaths. Other benefits of same-day or rapid ART initiation immediately after a confirmed HIV positive result are faster viral suppression and halting further sexual transmission of HIV, which decreases HIV-related morbidity and mortality [8, 9].

Despite such benefits of SDAI, delayed ART initiation is common. Clients diagnosed HIV positive still miss timely ART initiation in many developing countries, including Cameroon [9, 10]. Determinants for delayed ART initiation have been identified to include stigma and fear of disclosure, prolonged adjustment periods, patient's choice, and transport costs due to distance from the health facility [11, 12]. Other factors associated with delayed ART uptake are fear of drug side effects, younger age, staff shortages, and long waiting times. Furthermore, there are factors that have been associated with same-day ART initiation, including believe in alternate healing systems and lower levels of education [13]. Although a significant amount of studies has been conducted about the barriers and facilitators to SDAI in other parts of Africa [14, 18]. there is a paucity of quantitative evidence in this regard in Cameroon. Hence, considering a large sample size, this study aimed to shed more light on the time to ART initiation and factors associated to the same day initiation in the West region of Cameroon.

Methods

Study Design

This was a cross-sectional retrospective survey based on medical records. The data of clients who newly tested HIV positive between October 2019 and September 2020 in 25 health facilities in the West region was extracted retrospectively from registers and clients' medical records and analysed.

Setting

The study was conducted in the West region of Cameroon. Bordered by the Northwest, Adamawa, Centre, Littoral, and Southwest regions, the West region, with an area of 14,000 km², is in the central-western portion of the Republic of Cameroon. The population of West region Cameroon estimated in 2021 at 2,136,430 [19] is constituted essentially of the Bamileke and the Bamum tribal groups. With the sociopolitical crisis in the Northwest and Southwest regions, the West region over the past four years many has received internally displaced populations.



Figure 1. Divisions of West Cameroon

The population density is high. However, it is unevenly distributed over the divisions, with the Mifi division (where the regional capital Bafoussam is found) having high density and the Noun division having the less density (Figure 1).

The health system in the region is led by the regional delegation of public health supervising the health districts, and each health district has under its responsibility a number of health areas. In total, the region has 20 health districts and 202 health areas. To provide health care to its population, the region has in total of 623 [19] health facilities which range from the public, private, or confessional sectors. Alongside the conventional health facilities, the region has a large network of traditional health care practitioners. Among the 623 health facilities functioning in the region, 189 (30.33%) are providing care and treatment to HIV positive people under the technical support of the Regional Technical Group or the fight against AIDS with the support of technical and financial partners like the Global fund, the US President Emergency Fund for Aids Relief, The WHO, UNICEF. etc.

HIV is one of the major public health concerns in the region, with an estimated 34,000 PLHIV. The HIV data reported in DHIS2 by the health facilities show that 7,144 HIV-positive clients were newly identified, and 5,135 (72%) initiated ART in 2020, giving a total of 27,995 PLHIV on ART at the end of 2020 in the West region. In the same year, the 25 health facilities included in this study contributed to 72% of HIV cases identified, 80% of those newly initiated on ART, and 89% of the total clients on ART in the region.

Health Facilities

The health facilities purposively selected for the study were the 25 first HIV care and treatment structures in terms of the number of clients on ART, accounting for at least 80% of PLHIV on ART in the West region. These health facilities were tiered based on the number of PLHIV on ART; Tier 1 Health facilities (T1HF) had > 2000 PLHIV on ART, and Tier 2 health facilities (T2 HF) had 1001 to 2000 PLHIV on ART. Tier 3 health facilities (T3 HF) had 500 to 1000, and Tier 4 health facilities (T4 HF) had < 500 PLHIV on ART.

Participants

All the newly identified HIV adults ages 20 year and above from October 2019 to September 2020 in the 25 selected health facilities were eligible to participate in the study. However,

children 0 to 19 years were excluded from the analysis because of missing information in incomplete data.

Data Collection and Analysis

The data sources were the HIV testing/linkage registers and the patient's medical records (files). Trained data clerks collected the data consisting of sociodemographic, clinical, and health facilities' characteristics from the health facilities' HIV testing/linkage registers and from patients' medical records using the DAMA software. DAMA is the electronical version of all HIV care and treatment-related data collection tools, including the clients' medical file. The data was afterward extracted in Excel and then exported into SPSS version 24 for analysis. The dependent variable was time to initiation (SDAI, initiation from 1 to days, initiation from 8 days and above), while the sociodemographic, clinical, and health facility characteristics were independent variables. Descriptive statistics were used to evaluate distributions of all study variables and to generate summary statistics, including means, standard deviations, frequencies, and percentages. In the bivariate analysis, we assessed the crude association using each independent variable with the outcome variables (SDAI, 1 to 7 days initiation, above 7 days initiation), and those variables with a p-value less than 0.25 included in the multivariate logistic regression model. Finally, a statistical association was declared using an adjusted odds ratio (AOR) with 95% confidence interval (CI) at p-value less than 0.05.

Ethical Considerations

Patients' records were anonymized and deidentified prior to analysis. The administrative authorization was obtained from the West Regional Delegation of public health, and the study protocol was approved by the Cameroon Baptist Convention Health Board Institutional Review Board (IRB study number: IRB2021-48).

Results

Description of Participants

From the 3797 clients initiated on ART, 3053 (80.4%) were included into the analysis. Among the 744 participants not included in the analysis, 162 (21.8%) were children less than 19 years old, and for 582 (78.2%) participants, the medical charts have not been found (Figure 2). The mean age of the participants was 36.9 (SD: 13.3), and 1954 (64.0%) were female.

The socio-demographic, behavioural, and clinical characteristics of participants presented on Table 1 show that about 77,3% of participants were on care in public facilities, 24,1%; 32,5%; 20,4%; and 23,0% were in Tiers 1, Tiers 2, Tiers 3, and Tiers 4 facilities respectively. A total of 875 (28,7%) participants were identified in out patients department, 688 (22,5%) were identified through index case testing, and the majority (60,7%) of participants were at stage 1 according to the WHO clinical stage.



Figure 2. Flow Diagram of HIV-Positive Clients Initiated on ART from October 2019 to September 2020 in 25 High Volume ART Clinics in the West region of Cameroon

Time to ART initiation

The mean time to ART initiation was 1.61 (SD 7.7) days. A total of 2346 (76.8%) participants had initiated ART on the same day of the diagnosis, 552 (18.1%) had initiated ART

between 1 and 7 days from the day of diagnosis, and 155 (5.1%) had initiated ART after 8 and more days from the day of diagnosis. In total, 2898 (94.9%) of those included in the time to initiation analysis started ART within 7 days of HIV diagnosis as indicated on Figure 3.



Figure 3. Time from HIV test to Antiretroviral Treatment Initiation of Clients in 25 High Volume ART Clinics in the West Region of cameroon from October 2019 to September 2020

Factors Associated to Same day ART Initiation

The univariate analysis (Table 2) showed that the following factors were positively associated to same day initiation: female gender (OR = 1.3; 95% CI: 1.1-1.5), T3 HF (OR = 1.3; 95% CI: 1-1.6), T2 HF (OR = 1.4; 95% CI: 1.1-1.8), facilities located in semi-urban area (OR = 1.6; 95% CI: 1.3-1.9), period of test January-March 2020 (OR = 2; 95% CI: 1.6-2.6), period of test April- June 2020 (OR = 1.9; 95% CI: 1.5-2.5), July- September 2020 (OR = 3.5; 95% CI: 2.7-4.6), index case testing entry point (OR = 1.9; 95% CI: 1.5-2.5), community entry point (OR = 1.7; 95% CI: 1.4-2.2), active occupational situation (OR = 1.3; 95% CI: 1-1.7), and good general status (OR = 1.4; 95% CI: 1.2-1.7). Moreover, the following factors were negatively associated with same day initiation: tuberculosis entry point (OR = 0.1; 95% CI: 0.1-0.4), in patient entry point (OR = 0.2; 95% CI: 0.2-0.4), emergency entry point (OR = 0.1; 95% CI: 0-0.2), WHO stage 2 (OR = 0.5; 95% CI: 0.3-0.7), stage 3 (OR = 0.3; 95% CI: 0.2-0.5), and stage 4 (OR = 0.1; 95% CI: 0-0.8), discordant couple unknown (OR = 0.7; 95% CI: 0.6-0.9), opportunistic infection (OR = 0.5; 95% CI: 0.4-0.6), and tuberculosis (OR = 0.3; 95% CI: 0.2-0.4).

In the multivariate analysis (Table 2), female gender (OR = 1.2; 95% CI: 1.1-1.5), T3 HF (OR = 1.3; 95% CI: 1-1.7), semi-urban facilities (OR = 1.4; 95% CI: 1.1-1.7), periods of test January-March 2020 (OR = 2; 95% CI: 1.6-2.6), test April- June 2020 (OR = 1.7; 95% CI: 1.3-2.2), and July- September 2020 (OR = 3.4; 95% CI: 2.5-4.6), index case testing entry point (OR = 1.6; 95% CI: 1.2-2.1), active occupational situation (OR = 1.3; 95% CI: 1-1.7), and good general status (OR = 1.3; 95% CI: 1.1-1.6) were independently associated to same day initiation while tuberculosis entry point (OR = 0.2; 95% CI: 0.1-0.5), in patient entry point (OR = 0.2; 95% CI: 0.1-0.4), emergency entry point (OR = 0.1; 95% CI: 0-0.2), WHO stage 2 (OR = 0.6; 95% CI: 0.4-0.9) and stage 4 (OR = 0.1; 95% CI: 0-0.8) were inversely associated to same day initiation.

Table 1. Socio-demographics, Clinical and Behavioral Characteristics of HIV-Positive Clients Initiated onAntiretroviral Therapy from October 2019 to September 2020 in the 25 High Volume Clinics in the West

Characteristic (N = 3053)	Frequency	Percentages	
Age groups			
19-24 years	322	10,5%	
25+ years	2731	89,5%	
Female gender			
Female	1954	64,0%	
Male	1099	36,0%	
Facility type			
Public	2361	77,3%	
Private	337	11,0%	
Faith base	355	11,6%	
Facility volume (number of clients on ART*)			
Tiers 4	737	24,1%	
Tiers 3	992	32,5%	
Tiers 2	622	20,4%	
Tiers 1	702	23,0%	
Facility location			

Region of Cameroon

Urban	718	23,5%
Semi-urban	2335	76,5%
Period of Test		
October-December 2019	526	17,2%
January-March 2020	1065	34,9%
April-June 2020	750	24,6%
July-September 2020	712	23,3%
Entry Points		
Out Patient	875	28,7%
Index Testing	688	22,5%
Community	970	31,8%
Voluntary counseling and testing	183	6,0%
Tuberculosis	22	0,7%
In Patient	99	3,2%
Emergency Department	29	0,9%
Antenatal Care	72	2,4%
Maternity	11	0,4%
Not Documented	101	3,3%
WHO Clinical Stage	·	
Stage 1	1854	60,7%
Stage 2	151	4,9%
Stage 3	48	1,6%
Stage 4	6	0,2%
Not documented	994	32,6%
Occupation		
Job less	383	12,5%
Active	2559	83,8%
Retired	25	0,8%
Not Documented	86	2,8%
Marital status		
Bachelor	836	27,4%
Concubine	432	14,2%
Married monogamous	917	30,0%
Married polygamous	266	8,7%
Divorced	176	5,8%
Widow	349	11,4%
Not Documented	77	2,5%
Level of study		
Non scalarized	233	7,6%
Primary	1238	40,6%
Secondary	1270	41,6%
University	208	6,8%
Not Documented	104	3,4%
Sexual orientation		

Heterosexual	2890	94,7%
Homosexual	13	0,4%
Bisexual	25	0,8%
Not Documented	125	4,1%
Shared serological status		
Yes	1793	58,7%
No	1260	41,3%
Shared serological status with particular	rtner	1
Yes	1145	37,5%
No	1908	62,5%
Partner status		
Unknown	2104	68,9%
Positive	640	21,0%
Negative	309	10,1%
Sero-discordant couple		
Unknown	2013	65,9%
Yes	319	10,4%
No	721	23,6%
Systematic use of condoms	1	1
Yes	536	17,6%
No	2517	82,4%
Number of sexual partners durin	g the last 12 m	onths
0	355	11,6%
1	1860	60,9%
>1	493	16,1%
Not documented	345	11,3%
Opportunistic infection	I	I
Yes	211	6,9%
No	2842	93,1%
STIs		
Yes	147	4,8%
No	2906	95,2%
Tuberculosis	1	1
Yes	75	2,5%
No	2978	97,5%
Blood hypertension	1	1
Yes	42	1,4%
No	3011	98,6%
Hepatitis	1	1
Yes	16	0,5%
No	3037	99,5%
Alcohol	1	1
Yes	1525	50,0%
No	1528	50,0%

Тоbacco			
Yes	191	6,3%	
No	2862	93,7%	
General Status			
Good	2171	71,1%	
Altered	882	28,9%	
Key Population			
Yes	185	6,1%	
No	2868	93,9%	
* Antiretroviral Therapy			

Table 2. Univariate and Multivariate Analysis of Factors Association to Same day Antiretroviral Treatment Initiation of Clients who started HIV Care from October 2019 to September 2020 in the 25 high Volume Clinics

Characteristic (N=3053)	Same day	1+ day ART*	Unadjusted Analysis	
	ART* initiation	initiation	Crude OR [95%CI]	р
Female gender	1530 (65.2)	424 (60)	1.3 [1.1-1.5]	0.01
Facility volume				
Tiers 4	550 (23.4)	187 (26.4)	1	
Tiers 3	786 (33.5)	206 (29.1)	1.3 [1-1.6]	0.02
Tiers 2	502 (21.4)	120 (17)	1.4 [1.1-1.8]	0.01
Tiers 1	508 (21.7)	194 (27.4)	0.9 [0.7-1.1]	0.33
Semi-urban facility	1843 (78.6)	492 (69.6)	1.6 [1.3-1.9]	<0.01
location				
Period of Test				
October-December 2019	332 (14.2)	194 (27.4)	1	
January-March 2020	827 (35.3)	238 (33.7)	2 [1.6-2.6]	<0.01
April-June 2020	577 (24.6)	173 (24.5)	1.9 [1.5-2.5]	<0.01
July-September 2020	610 (26)	102 (14.4)	3.5 [2.7-4.6]	<0.01
Entry Points				-
Out Patient	642 (27.4)	233 (33)	1	
Index Testing	580 (24.7)	108 (15.3)	1.9 [1.5-2.5]	<0.01
Community	801 (34.1)	169 (23.9)	1.7 [1.4-2.2]	<0.01
Voluntary counseling and	143 (6.1)	40 (5.7)	1.3 [0.9-1.9]	0.18
testing				
Tuberculosis	6 (0.3)	16 (2.3)	0.1 [0.1-0.4]	<0.01
In Patient	40 (1.7)	59 (8.3)	0.2 [0.2-0.4]	<0.01
Emergency Department	4 (0.2)	25 (3.5)	0.1 [0-0.2]	<0.01
Antenatal Care	54 (2.3)	18 (2.5)	1.1 [0.6-1.9]	0.76
Not Documented	70 (3)	31 (4.4)	0.8 [0.5-1.3]	0.39
WHO Clinical Stage				
Stage 1	1447 (61.7)	407 (57.6)	1	
Stage 2	94 (4)	57 (8.1)	0.5 [0.3-0.7]	<0.01
Stage 3	25 (1.1)	23 (3.3)	0.3 [0.2-0.5]	<0.01
Stage 4	2 (0.1)	4 (0.6)	0.1 [0-0.8]	0.02

in the West Region of Cameroon

Not documented	778 (33.2)	216 (30.6)	1 [0.8-1.2]	0.89
Occupation				
Job less	278 (11.8)	105 (14.9)	1	-
Active	1982 (84.5)	577 (81.6)	1.3 [1-1.7]	0.04
Retired	16 (0.7)	9 (1.3)	0.7 [0.3-1.6]	0.36
Not Documented	70 (3)	16 (2.3)	1.7 [0.9-3]	0.09
Unknown	1519 (64.7)	494 (69.9)	0.7 [0.6-0.9]	<0.01
Yes	242 (10.3)	77 (10.9)	0.7 [0.5-1]	0.05
No	585 (24.9)	136 (19.2)	1	
Opportunistic infection	137 (5.8)	74 (10.5)	0.5 [0.4-0.6]	<0.01
STIs	115 (4.9)	32 (4.5)	1.1 [0.7-1.6]	0.68
Tuberculosis	37 (1.6)	38 (5.4)	0.3 [0.2-0.4]	<0.01
General Status				
Good	1709 (72.8)	462 (65.3)	1.4 [1.2-1.7]	<0.01
Altered	637 (27.2)	245 (34.7)	1	-
* ART: Anti-Retroviral Treatment				

Discussion

Our Study showed that a good proportion (76.8%) of newly diagnosed HIV-positive clients started ART on the same day of HIV diagnosis and a higher proportion (94.9%) started within 7 days of diagnosis in the West region of Cameroon. This is in line with WHO recommendations for rapid ART initiation, including same-day initiation. SDAI has been reported to be acceptable to the vast majority of clients assessed in studies, including randomized trials (98-99%) [20]. We noted that 23.2% of participants didn't initiate ART on the same day, which is more than twice higher compared to a study conducted in Zambia [21] in which major reasons for declining SDAI were overcrowded clinics and fear of blame from friends and family members. Uptake of SDAI is thought to be less consistent in low- and middle-income settings like the West region of Cameroon, where the study was not a randomized trial. A study of routine data in Zimbabwean hospitals demonstrated SDAI in 65% of newly HIV diagnosed patients [22], which is a bit lower than the findings in our study. However, the uptake of SDAI in our study was higher compared to other similar studies conducted in Ethiopia, 41% [3], and in South Africa, 54% [17]. The high uptake of SDAI in the West region of Cameroon compared to findings from other countries is explained by the fact that the study took place during a period when Cameroon, with the support of its technical and financial partners, is fast-tracking the UTT and SDAI as part national recommendations so as to reach the three 95 global goals in the West region of Cameroon by 2022 ending. Other observational studies highlighted a higher proportion of PLHIV initiating ART on the same day of diagnosis but at the same raising concern about retention [17, 23].

This study established that uptake of SDAI is positively associated to the female gender, health facilities with 500 to 1000 clients on ART (T3 HF), period of testing from January to September, index case testing entry point, active occupational situation, and good general status contrary to another study in South Africa that found that the number of sexual partners, the HIV status of the partner, and knowledge of UTT were the factors that influenced SDI [23]. The association of SDAI to the female gender noted in our study was equally reported in a study in South Africa [17].

However, another study in Ethiopia [24] found a similar uptake of SDAI for both male

and female. A different study in Ethiopia observed that uptake of SDAI was more likely in health centers compared to bigger hospitals [3]. Health centers can be comparable to T3 HF in our study, where uptake of SDAI was more likely compared to non-T3 HF. This can be explained by the complexity of patient flow in bigger health facilities (T2 and T1), as well as long waiting time, and shortage of staff in T4 HF. Clients identified as HIV positive through index testing are more likely to initiate ART the same day of diagnosis because of strong counseling and support system before testing and obvious exposure to a case. A study by [25] in Nigeria showed a 92% SDAI uptake among infected contact of index cases. Similar to our finding other studies [3, 17, 24] have shown that asymptomatic WHO clinical Stage 1 HIV positive clients were more likely to start ART on the same day compared to those with an altered general status, critically ill or with advanced disease who need to be stabilized prior to ART initiation. One of the factors that was inversely associated to same-day initiation in this study included tuberculosis entry point and tuberculosis, which concords with findings of the RapIT trial in South Africa, identifying that the most common reason for delaying SDAI was the need for TB treatment or confirmation of TB [26]. We didn't find any study establishing any correlation between time to initiation and with period of HIV testing in the course of the year. On the other hand.

The limitation of this study is that this was a retrospective chart review-based analysis, and due to missing information, incomplete data, and

References

[1] WHO. WHO publishes new clinical and service delivery recommendations for HIV prevention, treatment, and care [Internet]. 2021 [cited 2021 Nov 16]. Available from: https://www.who.int/news/item/17-03-2021-whopublishes-new-clinical-recommendations-on-hivprevention-infant-diagnosis-antiretroviral-therapyabsence of medical files, some eligible clients, notably children 0 to 19 years, were excluded from the analysis.

Moreover, the analysis done didn't disaggregate the study population in all population types like, Key populations, pregnant women, incarcerated populations etc. so as to establish the uptake of SDAI per population type. Therefore, the observations made in this study cannot be generalized to all population types of especially children and adolescents, key and other priority populations like prisoners in whom uptake of HIV services is lower across the three 95's cascade compared to the general population.

Conclusions

This analysis of SDAI showed that the west region of Cameroon is on track with the second 95, as evidenced by the good and high proportion of clients who initiated ART on the same day and within 7 days, respectively. However, there is a need to put a system in place and to do further analysis to ensure this time to initiation is reflected across all categories of health facilities, patients, and population types.

Competing Interests

The authors declare no competing interests.

Acknowledgements

We sincerely thank all the staff of the health facilities where the data collection was done. We also thank the administrative authorities of the West region of Cameroon, who gave their approval for the implementation of this research.

initiation-and-monitoring.

[2] PEPFAR CSH gov D last updated: Global HIV/AIDS Overview [Internet]. HIV.gov. 2021 [cited 2021 Nov 16]. Available from: https://www.hiv.gov/federal-response/pepfar-globalaids/global-hiv-aids-overview.

[3] Moges NA, Adesina OA, Okunlola MA, Berhane Y. Same-day antiretroviral treatment (ART) initiation and associated factors among HIV positive people in Northwest Ethiopia: baseline characteristics of a prospective cohort. *Arch Public Health*. 2020 Dec;78(1):1–13.

[4] Hayes R, Sabapathy K, Fidler S. Universal Testing and Treatment as an HIV Prevention Strategy: Research Questions and Methods. Curr HIV Res. 2011 Sep;9(6):429–45.

[5] Bayisa L, Abera T, Mulisa D, Mosisa G, Mosisa A, Tolosa T, et al. Time to Antiretroviral Therapy Initiation and Its Predictors Among Newly Diagnosed HIV-Positive People in Nekemte Town, Western Ethiopia: Claim of Universal Test and Treat HIVAIDS - Res Palliat Care. 2021 Oct 9;13:959–72.
[6] Marsh K, Eaton JW, Mahy M, Sabin K, Autenrieth CS, Wanyeki I, et al. Global, regional and country-level 90–90–90 estimates for 2018: assessing progress towards the 2020 target. AIDS Lond Engl. 2019 Dec 15;33(Suppl 3):S213–26.

[7] Bain LE, Nkoke C, Noubiap JJN. UNAIDS 90– 90–90 targets to end the AIDS epidemic by 2020 are not realistic: comment on "Can the UNAIDS 90–90– 90 target be achieved? A systematic analysis of national HIV treatment cascades." *BMJ Glob Health*. 2017 Mar 7;2(2):e000227.

[8] Antela A, Rivero A, Llibre JM, Moreno S, the RET Group. Redefining therapeutic success in HIV patients: an expert view. J Antimicrob Chemother. 2021 Oct 1;76(10):2501–18.

[9] The INSIGHT START Study Group. Initiation of Antiretroviral Therapy in Early Asymptomatic HIV Infection. *N Engl J Med.* 2015 Aug 27;373(9):795–807.

[10] Ingabire PM, Semitala F, Kamya MR, Nakanjako D. Delayed Antiretroviral Therapy (ART) Initiation among Hospitalized Adults in a Resource-Limited Settings: A Challenge to the Global Target of ART for 90 of HIV-Infected Individuals. AIDS Res Treat. 2019 Apr 1;2019:e1832152.

[11] Ahmed S, Autrey J, Katz IT, Fox MP, Rosen S, Onoya D, et al. Why do people living with HIV not initiate treatment? A systematic review of qualitative evidence from low- and middle-income countries. Soc Sci Med. 2018 Sep 1;213:72–84.

[12] Maughan-Brown B, Harrison A, Galárraga O, Kuo C, Smith P, Bekker L-G, et al. Factors affecting

linkage to HIV care and ART initiation following referral for ART by a mobile health clinic in South Africa: evidence from a multimethod study. J Behav Med. 2019 Oct;42(5):883–97.

[13] Moges NA, Adesina OA, Okunlola MA, Berhane Y. Barriers and Facilitators of Same-Day Antiretroviral Therapy Initiation Among People Newly Diagnosed with HIV in Ethiopia: Qualitative Study Using the Transtheoretical Model of Behavioral Change. *J Multidiscip Healthc*. 2020 Dec 2;13:1801–15.

[14] MacPherson P, Lalloo DG, Webb EL, Maheswaran H, Choko AT, Makombe SD, et al. Effect of Optional Home Initiation of HIV Care Following HIV Self-testing on Antiretroviral Therapy Initiation Among Adults in Malawi: A Randomized Clinical Trial. *JAMA*. 2014 Jul 23;312(4):372–9.

[15] Scott NA, Maskew M, Fong RM, Olson IE, Brennan AT, Fox MP, et al. Patient Perspectives of Quality of the Same-Day Antiretroviral Therapy Initiation Process in Gauteng Province, South Africa: Qualitative Dominant Mixed-Methods Analysis of the SLATE II Trial. Patient - Patient-Centered Outcomes Res. 2021 Mar 1;14(2):175–86.

[16] Mbeya Munkhondya TE, Smyth RM, Lavender T. Facilitators and barriers to retention in care under universal antiretroviral therapy (Option B+) for the Prevention of Mother to Child Transmission of HIV (PMTCT): A narrative review. *Int J Afr Nurs Sci.* 2021 Jan 1;15:100372.

[17] Lilian RR, Rees K, McIntyre JA, Struthers HE, Peters RPH. Same-day antiretroviral therapy initiation for HIV-infected adults in South Africa: Analysis of routine data. *PLOS ONE*. 2020 Jan 14;15(1):e0227572.

[18] Nhassengo P, Cataldo F, Magaço A, Hoffman RM, Nerua L, Saide M, et al. Barriers and facilitators to the uptake of Test and Treat in Mozambique: A qualitative study on patient and provider perceptions. *PLoS ONE*. 2018 Dec 26;13(12):e0205919.

[19] National Data Reporting software. Population Statistics. 2021.

[20] Boyd M, Boffito M, Castagna A, Estrada V. Rapid initiation of antiretroviral therapy at HIV diagnosis: definition, process, knowledge gaps. HIV Med. 2019;20(S1):3-11.

[21] Pry J, Chipungu J, Smith HJ, Bolton Moore C, Mutale J, Duran-Frigola M, et al. Patient-reported reasons for declining same-day antiretroviral therapy initiation in routine HIV care settings in Lusaka, Zambia: results from a mixed-effects regression analysis. *J Int AIDS Soc.* 2020 Jul;23(7):e25560.

[22] Rufu A, Chitimbire VTS, Nzou C, Timire C, Owiti P, Harries AD, et al. Implementation of the "Test and Treat" policy for newly diagnosed people living with HIV in Zimbabwe in 2017. *Public Health Action.* 2018 Sep 21;8(3):145–50.

[23] Factors Influencing Rapid Antiretroviral Therapy Initiation at Four eThekwini Clinics, KwaZulu-Natal, South Africa | SpringerLink [Internet]. [cited 2021 Dec 15]. Available from: https://link.springer.com/article/10.1007/s10461-021-03530-3. [24] Ahmed I, Demissie M, Worku A, Gugsa S, Berhane Y. Effectiveness of same-day antiretroviral therapy initiation in retention outcomes among people living with human immunodeficiency virus in Ethiopia: empirical evidence. *BMC Public Health*. 2020 Nov 26;20(1):1802.

[25] Katbi M, Adegboye A, Adedoyin A, Yunusa F, Kayode G, Bello M, et al. Effect of clients Strategic Index Case Testing on community-based detection of HIV infections (STRICT study). *Int J Infect D* is IJID Off Publ Int Soc Infect Dis. 2018 Sep;74:54–60.

[26]Rosen S, Maskew M, Fox MP, Nyoni C, Mongwenyana C, Malete G, et al. Initiating Antiretroviral Therapy for HIV at a Patient's First Clinic Visit: The RapIT Randomized Controlled Trial. PLoS Med. 2016 May;13(5):e1002015.