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Original Research Article

Socio-demographic, economic and behavioral determinants of loss to follow-up status among human immunodeficiency virus-infected patients in southern Benin in 2020

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ABSTRACT

Background: The recurrence of cases lost to follow-up constitutes a major concern for human immunodeficiency virus (HIV) care programs, particularly in Africa. The present study was carried out to determine the economic and socio-behavioral factors associated with the status of loss to follow-up among HIV-infected patients followed at the Suru Lere Zonal Teaching Hospital Center in Benin.
Methods: This was a case-control study carried out with 41 cases selected for convenience and 82 controls retained according to a reasoned choice. Matching was done on the variables age (±5 years), sex and year of initiation of treatment. The data collected using questionnaires and counting sheets then entered using the Epi data 3.1 software were analyzed using the STATA 11 software. A multiple conditional logistic regression model at the 5% threshold was used to determine factors associated with "lost to follow-up" status.
Results: In the sample, the average age of the people surveyed was 41±9 years for both cases and controls and women were predominantly represented (63.41%). The factors associated with the status of loss to follow-up were the non-existence of a means of transport (p=0.008), the lack of nutritional support (p=0.01), incorrect knowledge about antiretroviral treatment such as "ARVs cure HIV/AIDS" (p=0.002) or "treatment can be stopped when you feel better" (p=0.014).
Conclusions: This study revealed the significant association of "lost to follow-up" status with socio-demographic, economic and behavioral factors among people on ARV treatment. These results will lead to better guide the care of these patients and improve the performance of the AIDS control program.

Keywords: Loss to follow-up,A factors, HIV, Benin, ARV treatment, Determinants

INTRODUCTION

Human immunodeficiency virus (HIV) infection remains a public health problem. It is among the leading causes of morbidity and mortality in the world, particularly in Sub-Saharan Africa.[1] According to the United Nations AIDS Organization (UNAIDS), sub-Saharan Africa had 25.6 million people living with HIV (PLHIV) in 2018.[2]

The advent since 1996 of highly active multitherapies (HAART) has transformed the fight against HIV infection because, with the access to these antiretroviral treatments (ART), HIV-positive people live better and longer and there is a significant reduction in morbidity and mortality.[3,4] This effectiveness of the therapeutic response is taken into account by the United Nations system which has retained the extension of antiretroviral treatment as an important element of the sustainable development goal

(SDG) aimed at ending and then reversing the epidemic. of AIDS by 2030.[5] To this end, the three 95 objectives set by UNAIDS and to be achieved by 2030 include "95% of all people living with HIV know their status", "95% of all HIV-positive people receive antiretroviral treatment", and "95% of all people on ARV should have viral suppression".[5]

Notwithstanding these actions and the resulting effective and growing programmatic coverage, many adults and children routinely drop out of care at different points in the treatment pathway and treatment gains fail to reach enough children and adolescents.[6] Cases of long-term treatment abandonment, also called "lost to follow-up" when they last three months or more, would be associated with several factors in particular those linked to living conditions, behaviors and the perception of patients or of their communities about the disease.[7,8]

In 2020, these abandonments or lost to follow-up were estimated at 6.65% in Benin.[9] During the same period, 2.9% of people living with HIV receiving treatment at the Suru Lere Zonal Teaching Hospital Center (CHUZ Suru Lere) were lost to follow-up. The persistence of this situation, which exposes patients and the community, could ultimately reduce the performance of the program and even the health system. To remedy this, and contribute to reaching the third 95%, it appears crucial to take into account the obstacles to continued compliance with treatment.

The present study was initiated to identify the determinants of abandonment of antiretroviral treatment by patients followed at the CHUZ Suru Lere in Cotonou in order to contribute to improving the effectiveness of treatment for beneficiaries and their communities.[4]

METHODS

Study framework

The Littoral department is one of the twelve departments of Benin. It is located in the south of the country with an estimated population of 692,000 inhabitants in 2020.

Several centers provide comprehensive care for PLHIV in the department. The prospective and advice information center (CIPEC) of the Atlantic and Littoral departments provides comprehensive care for people living with HIV within the CHUZ Suru Lere. This hospital, one of the first HIV treatment centers in Benin, served as the setting for this study.

Study design and population

This was a retrospective analytical case-control study carried out in May and July 2020. The study population, from which the cases and controls came, consisted of people living with HIV placed on antiretroviral treatment and followed at CHUZ Suru Lere. The cases were those "lost to follow-up" from this active line at CHUZ Suru Lere in 2020. The controls were patients from the active line who were never lost to follow-up and who met the matching criteria of age (±5 years), gender, year of initiation of treatment.

Inclusion criteria

Case

These are patients in the active queue, lost to follow-up then returned to the active queue in 2020 and who were aged 15 years or over.

Controls

These are patients in the active queue who have never interrupted their treatment for three months or more and who met the matching criteria of age (±5 years), sex and year of initiation of treatment.

Non-inclusion criterion

Patients who did not keep their appointment were not included in the study.

Sampling

Sampling methods and techniques

The sampling method used was the non-probability method. The cases were chosen for convenience and the controls were retained by reasoned choice.

Sample size

Of the 58 patients lost to follow-up and returned to the active queue identified, 41 patients who kept their appointment were included in the study as cases. Two matching controls were identified for each case. The total number of controls was 82. The overall sample size was 123.

Variables of the study

The dependent variable was "lost to follow-up" status; it provides information on the interruption of treatment for three months or more from the date of the appointment.

The independent or explanatory variables describe the factors.

Sociodemographic and economic factors

Sociodemographic and economic variables studied are age, sex, marital status, level of education, profession, religion, shared HIV status, status of member of an HIV+ support group, monthly income, cost of transportation, existence of means of transportation, financial support, support eating.

Behavioral factors linked to lifestyle habits and those linked to knowledge, beliefs and perceptions

These factors are tobacco consumption, alcohol consumption, recourse to traditional medicine, knowledge of the duration of treatment, beliefs such as "ARVs can cure", "stopping treatment when you feel better", improving of health, religious beliefs.

Data collection techniques and tools

The data collection techniques were the use of documents contained in the medical files of PLHIV and the questionnaire survey. The collection tools consisted of a processing sheet and a questionnaire.

Data analysis

The data were entered with Epi data 3.1 software and then analyzed with Stata 11.0 software. In addition to the calculations of proportions and averages to characterize the sample, a bivariate analysis was carried out followed, only for the variables significantly associated with the 20% threshold, by a multiple conditional logistic regression to identify the factors associated with the lost status of view. The significance level of the results was 5%.

Ethical considerations

Authorization was obtained from the departmental health directors of the Atlantic and Littoral regions. The head of the HIV care unit at CHUZ Suru Lere gave his agreement before the start of the collection. In accordance with Law No. 2010-40 of 08 December 2010 on the code of ethics and professional conduct for health research in the Republic of Benin, the protection of individuals was guaranteed during the study. The verbal, free and informed consent of the targeted subjects was obtained, and their anonymity was respected.

RESULTS

Description of the population

Among the 123 participants, women represented 63.41%. The mean age of the study population was 40.67±9.23 years. The majority reported not being a member of an HIV support group, i.e. 78.05% of cases compared to 50% of controls. More than two thirds of cases (68.29%) did not have means of transportation compared to 43.90% of controls. As for transport costs to get to the hospital, 70.73% of cases spent more than 1000 CFA francs (1.5 US dollars) compared to 32.93% of controls. 78.05% of cases declared that they had not received food aid compared to 47.56% of controls.

The cases who declared not to consume alcohol were 56.10% compared to 78.05% of controls. The use of traditional medicine was made by 11.38% of patients surveyed, or 23.83% among the cases and 3.66% among the controls. In the sample, 80.49% of cases and 24.39% of controls thought that "ARVs can cure HIV/AIDS". The cases who thought they "had healing thanks to their religious beliefs" were 65.85% compared to 75.61% of controls.

Half of the patients took more than 30 minutes to travel from home to hospital. Among them there were 78.05% cases compared to 35.37% controls (Table 1).

Determinants of loss to follow-up

Bivariate analysis

The comparison of the two groups "cases" and "controls" using the McNemar statistical test was made for all the variables of the study except the variables age and sex which had been used for the matching of cases to controls within the study sample (Table 2). This comparison allowed to note that neither the patients' level of study, nor their profession, nor their marital status were associated with abandoning treatment for at least three months. A low risk of loss to follow-up is noted in patients who have not reached a higher level of education compared to those who have achieved it. The high risks of loss to follow-up observed among traders (crude OR=2.56; 95% CI=0.15–43.48) and civil servants (crude OR=1.07; 95% CI=0.42–2, 72) compared to other job categories were not significant (p>0.05). The finding was the same for marital status because the lower level of risk in "single", "common-law" or "widowed" patients compared to "married" patients was not significant (p>0.5).

Practitioners of the Muslim religion had approximately eight times less risk of treatment abandonment compared to Christians (p<0.001). Patients practicing traditional religions had a 1.5 times higher risk, but this was not significant (crude OR=1.50; 95% CI=0.28–7.84). There was a significantly higher risk of treatment abandonment when the patient was not a member of a support group for people living with HIV (crude OR=3.55; 95% CI=1.50–8.37; p<0.001), did not have means of transportation (crude OR=2.75; 95% CI=1.25–6.05; p=0.01), the expense for transport to the health facility was 1,000 FCFA or more (crude OR=4.92; 95% CI=2.17–11.12; p<0.001). The absence of nutritional support was significantly determining in the occurrence of loss to follow-up of treatment (crude OR=3.92; 95% CI=1.66–9.24; p<0.001) unlike monthly income (crude OR=1.83; 95% CI=0.85–3.94; p=0.11) and the existence or not of financial support (p=0.49) which had no link with dropouts.

From the point of view of behavior and beliefs (Table 3), it was noted that alcohol consumption (crude OR=2.78; p=0.01) and recourse to traditional medicine (crude OR=9.65; p<0.001) increased the risk of dropping out of treatment for at least 3 months. The same was true for beliefs or perceptions such as "ARV can cure HIV" (crude OR=12.78; p<0.001), "you can stop treatment when you feel better" (crude OR=14, 66; p<0.001).

Table 1: Distribution of case and control patients under antiretroviral treatment according to their socio-demographic, economic and socio-behavioral characteristics in southern Benin in 2020 (number of cases n=41; number of controls n=123).

Variables	Case (n=41)		Controls (n=82)		Total	
	Number	%	Number	%	Number	%
Sociodemographic and economic characteristics						
Sex						
Male	15	36.59	30	36.59	45	36.59
Female	26	63.41	52	63.41	78	63.41
Education level						
None	08	19.51	10	12.20	18	14.63
Primary	10	24.39	20	24.39	30	24.39
Secondary	17	41.47	45	54.87	62	50.41
University	06	14.63	7	8.54	13	10.57
Occupation						
Official	10	24.39	24	29.27	34	27.64
Trader	16	39.02	41	50.00	57	46.34
Artisan	14	34.15	16	19.51	30	24 .39
Housewife	1	2.44	1	1.22	2	1.63
Status marital						
Married	20	48.77	36	43.90	56	45.53
Bachelor	02	4.88	08	9.76	10	8.13
Common-law	05	12.20	13	15.85	18	14.63
Divorce	10	24.39	15	18.29	25	20.33
Widower	04	9.76	10	12.20	14	11.38
Religion						
Christian	36	87.80	54	65.85	90	73.17
Muslim	02	4.88	25	30.49	27	21.95
Traditional	03	7.32	03	3.66	06	4.88
Monthly income (FCFA)						
<40000	20	48.78	28	34.15	48	39.02
≥40000	21	51.22	54	65.85	75	60.98
Existence of means of transport						
Yes	13	31.71	46	56.10	59	47.97
No	28	68.29	36	43.90	64	52.03
Transport fee (FCFA)						
<1000	12	29.27	55	67.07	67	54.47
≥1000	29	70.73	27	32.93	56	45.53
Financial support						
Yes	12	29.27	29	35.37	41	33.33
No	29	70.73	53	64.63	82	66.67
Support for eating						
Yes	09	21.95	43	52.44	52	42.28
No	32	78.05	39	47.56	71	57.72
Features socio-behavioral						
Sharing HIV status						
Yes	36	87.80	62	75.61	98	79.67
No	05	12.20	20	24.39	25	20.33
Member of a group of HIV+ support						
Yes	09	21.95	41	50.00	50	40.65
No	32	78.05	41	50.00	73	59.35
Consumption of the alcohol						
Yes	18	43.90	18	21.95	36	29.27
No	23	56.10	64	78.05	87	70.73

Continued.

Variables	Case (n=41)		Controls (n=82)		Total	
	Number	%	Number	%	Number	%
Consumption of tobacco						
Yes	03	7.32	01	1.22	04	3.25
No	38	92.68	81	98.78	119	98.78
Resort to traditional medicine						
Yes	11	26.83	03	3.66	14	11.38
No	30	73.17	79	96.34	109	88.62
Knowledge of treatment duration						
For life	27	65.85	74	90.24	101	82.11
Others	14	34.15	08	9.76	22	17.89
“ARV can cure the HIV”						
Yes	33	80.49	20	24.39	53	43.09
No	08	19.51	62	75.61	70	56.91
Improvement in the state of health						
Yes	33	80.49	76	92.68	109	88.62
No	08	19.51	06	7.32	14	11.38
Healing through religious beliefs						
Yes	27	65.85	62	75.61	89	72.36
No	14	34.15	20	24.39	24	27.64

Table 2: Bivariate analysis of sociodemographic and economic determinants of abandonment of antiretroviral treatment by people living with HIV in southern Benin in 2020.

Explanatory variables	Cases (n=41)	Controls (n=82)	Crude OR	95% CI	P value
	Number	Number			
Sex					1.00
Male	15	30	1		
Female	26	52	1	0.46–2.17	
Age			1	0.96–1.04	0.97
Education level					0.41
None	08	10	0.93	0.22–3.91	
Primary	10	20	0.58	0.15–2.20	
Secondary	17	45	0.44	0.13–1.50	
University	06	07	1		
Occupation					0.32
Official	10	24	1.07	0.42–2.72	
Trader	16	41	2.56	0.15–43.48	
Housewife	01	01	1		
Artisan	14	12	2.24	0.89–5.83	
Marital status					0.76
Married	20	36	1		
Celibate	02	08	0.45	0.08–2.32	
Common-law	05	13	0.69	0.22–2.22	
Divorced	10	15	1.20	0.45–3.16	
Widower	04	10	0.72	0.19–2.59	
Religion					0.00
Christian	36	54	1		
Muslim	02	25	0.12	0.26–0.54	
Traditional	03	03	1.50	0.28–7.84	
Monthly income					0.11
<40000	20	28	1.83	0.85–3.94	
≥40000	21	54	1		
Existence of means of transport					
Yes	13	46	1		0.01

Continued.

Explanatory variables	Cases (n=41)	Controls (n=82)	Crude OR	95% CI	P value
	Number	Number			
No	28	36	2.75	1.25–6.05	
Cost of transportation					0.00
<1000	12	55	1		
≥1000	29	27	4.92	2.17–11.12	
Financial support					0.49
Yes	12	29	1		
No	29	53	1.32	0.58–2.97	
Eating support					0.00
Yes	09	43	1		
No	32	39	3.92	1.66–9.24	

Table 3: Bivariate analysis of socio-behavioral determinants of abandonment of antiretroviral treatment by people living with HIV in southern Benin in 2020.

Explanatory variables	Cases (n=41)	Controls (n=82)	Crude OR	95% CI	P value
	Number	Number			
Sharing HIV status					0.12
Yes	36	62	1		
No	05	20	0.43	0.14–1.24	
Member of a group of support HIV+					0.00
Yes	09	41	1		
No	32	41	3.55	1.50–8.37	
Consumption of the alcohol					0.01
Yes	18	18	2.78	1.24–6.25	
No	23	64	1		
Consumption of tobacco					0.10
Yes	03	01	6.39	0.63–63.51	
No	38	81	1		
Resort to medicine traditional					0.00
Yes	11	03	9.65	2.51–37, 02	
No	30	79	1		
“ARV can cure the HIV”					0.00
Yes	33	20	12.78	5.08–32.1	
No	08	62	1		
Knowledge of the duration of treatment					0.00
For life	27	74	1		
Others	14	08	4.79	1.81–12.70	
Improvement of the state of health					0.05
Yes	33	76	1		
No	08	06	3.07	0.98–9.54	
Stopping treatment when she feels better					0.00
Yes	20	05	14.66	4.91–43.72	
No	21	77	1		
Healing through beliefs nuns					0.25
Yes	27	62	0.62	0.27–1.41	
No	14	20	1		

Table 4: Multivariate analysis of sociodemographic and economic factors associated with abandonment of antiretroviral treatment in southern Benin in 2020.

Explanatory variables	Case (n=41)	Controls (n=82)	Adjusted OR	95% CI	P value
	Number	Number			
Existence of a means of transport					
Yes	13	46	1		

Continued.

Explanatory variables	Case (n=41)	Controls (n=82)	Adjusted OR	95% CI	P value
	Number	Number			
No	28	36	13.50	1,998–91,232	0.008
Food support					
Yes	09	43	1		
No	32	39	12.93	1.853–90.32	0.010
"ARV can cure the HIV"					
Yes	33	20	23.84	3,099–183,467	0.002
No	08	62	1		
Stopping treatment when you feel better					
Yes	20	05	10.60	1,620–69,435	0.014
No	21	77	1		

Multivariate analysis

The final conditional logistic regression model showed that the variables associated with dropping out of treatment were the lack of means of transportation to get to care (adjusted OR=13.50; p=0.008), the lack of nutritional support (adjusted OR=12.93; p=0.01), erroneous beliefs about ARVs such as "ARVs can cure HIV" (adjusted OR=23.84; p=0.002) and "you can stop treatment when you feel better" (adjusted OR=10.60; p=0.014) (Table 4).

DISCUSSION

The study examined factors associated with loss to follow-up status at CHUZ Suru Lere in Benin, although the proportion of cases there was relatively lower than in other countries such as Ethiopia (9.1%).[10]

Sociodemographic, economic factors and lost-to-follow-up status

Socio-demographic factors

In the present study, the link between age and the status of lost to follow-up on the one hand as well as the link between sex and the status of lost to follow-up on the other hand could not be assessed; because, the matching of the targets two study groups being made on these two variables, the cases and the controls had these characteristics age and sex in common.

The link between the occurrence of loss to follow-up and age or sex varies according to the authors. Some studies, such as that carried out in Ethiopia, concluded that there was no link with sex.[10] Others, such as that carried out in Tanzania, mention a risk of loss to follow-up 1.20 times higher in men compared to women.[11,12] This finding indicates the vulnerability of male patients compared to females and the risk they could pose to the community in disease control. This situation could result from the egos of men who do not often ask for support and do not like to express their weakness and the little attention that the community often gives them "assuming them capable of defending themselves".

Unlike the present study which did not establish a link between loss to follow-up status and age, Alamu et al indicated that among people living with HIV who are on ARV treatment, those aged less than 35 years had almost twice the risk (aHR=1.96; 95% CI: 1.92-4.00) than the others.[10] All in all, both in Kenya and in Tanzania where the link between age and loss to follow-up status was reported, studies indicated that young age was a risk factor for stopping antiretroviral treatment.[13,14] In other words, the older the patient, the lower the risk of being lost to follow-up.

Patients who had educational levels below the upper level had a lower risk of loss to follow-up than those who had the higher level. This finding was similar to that of Burch et al who reported that the risk of loss to follow-up was higher in people with a higher level of education and those with none ($p<0.005$).[15] In Indonesia, it was noted that the low level of education generated a greater risk of loss to follow-up ($p=0.000$).[16]

The absence of a significant effect of marital status on the occurrence of loss to follow-up noted in this study is not the same as the findings of Drabo et al in Burkina Faso. They reported that "unmarried" patients were approximately 3 times or more likely to be lost to follow-up than others ($p<0.05$).[17,18] Single, widowed, and divorced patients should therefore receive more attention in the cohort under follow-up.

Economic factors

Patients who do not have means of transportation (crude OR=2.75; p=0.01) or whose each transport expense to the health facility was 1,000 FCFA or more (crude OR=4.92; $p<<0.001$) were often lost to follow-up. This influence of travel or its cost on retention in treatment has been variously addressed by the authors. The latter reported that the long distance is the cause of more loss to follow-up; because, notwithstanding that treatment is often free, there are financial expenses (for transport and others) and time which constitute indirect barriers to access and retention in care (>5 km versus <1 km: aHR=2.6; 95% CI=1.9-3.7 with $p<0.01$).[19] The threshold of this dissuasive or restrictive distance for patients can vary, up to 10 km or even 50 km, as can the importance of the effects on the situation of loss

to follow-up.[11,20,21] Paradoxically, Sutini et al noted that a short distance, less than or equal to 5 km, between the house and the health facility was at the origin of the status of loss to follow-up among people living with HIV in Semarang in Indonesia (p=0.009; OR=2.496).[16] If the transport expenses and the time required that a significant distance generates could justify the patient's behavior, with regard to cases of proximity, the cause could be stigma.

The association of the lack of means of transportation and the absence of food support with the status of loss to follow-up which is reported in this study is also supported by the results of several studies.[4,8,22] This finding highlights the need of a sufficient level of income for patients.

In this study, almost half of the cases had an income lower than the Guaranteed Interprofessional Minimum Salary (SMIG) in Benin estimated at 40,000 FCFA ($US 80) compared to almost a third of the patients among the controls. Although not significant, this difference in income induces a level of risk of loss to follow-up approximately twice as high in cases compared to controls. It could explain the non-existence of means s of transport, one of the consequences of which is the difficulty of getting to care. In the absence of food support and a stable income to eat adequately, the patient will be more inclined to choose non-compliance with treatment to reduce or avoid the side effects of ARVs, in particular the feeling of frequent hunger.

According to the loss to follow-up found in the study by Ba et al., the low financial income of people living with HIV is also one of the reasons for leaving care (p=0.04).[23] In both a cross-sectional and longitudinal study, Burch et al reported that socioeconomic disadvantage (measured by financial hardship, non-employment, unstable housing status, and lower educational attainment) was an important determinant of HIV treatment results in a context of free universal access to care (p<<0.0001).[15]

The effect of economic factors can also be noted through the professional status or employment of the patient. HIV patients interviewed about financial aid to access health services and the possibility of obtaining authorization to go to these health structures highlighted these parameters as constraints and a source of poor access to services, and an increase in loss to follow-up (p=0.000; OR=0.236).[16] The situation of loss of follow-up therefore appears to be a solution found by these patients to avoid repeated or long-term absences from work linked to stays in a healthcare environment (obtaining treatment, clinical and biological control, obtaining control results and others) and which usually lead to conflicts with employers and sometimes loss of employment.[24]

Montaner et al were more precise in indicating that 51% of unemployed patients are lost to follow-up (HR=1.51; 95% CI=1.34-2.00).[25] Lack of employment or self-employment would respectively generate more than 1.5 times and more than 7 times (aHR=13.9; 95% CI=2.81-69.06, p=0.001) of risk of being lost of view.[26]

Ammon et al. reported that in sub-Saharan Africa the lack of financial assistance constituted a risk factor for patients leaving the care system.[8] Poverty and the economic precariousness of populations have a significant effect on people's behavior, particularly with regard to care; which could justify the interest in financial assistance and the importance of its lack.[8]

Socio-behavioral factors

The link between shared serological status and loss to follow-up status, which could not be established in this study, is not often addressed by the authors. On the other hand, the effect of not belonging to an HIV patient support group which generated a risk of loss to follow-up almost 4 times higher (crude OR=3.55; 95% CI=1.50–8, 37; p<<0.005) among the targets studied is mentioned by several authors. This is the case of Burch et al who mentioned the significant influence of the strong support of the social network on the status lost to follow-up (p<0.005) and of Drabo et al who reported a reduction in the risk of being lost to follow-up in patients on ARV participating in associative activities (adjusted OR=0.06; p=0.0197) or participating in a social group.[12,15,17,27] In this work on compliance with antiretroviral treatment, Essomba et al noted that the increase in non-compliance with treatment by PLHIV patients was associated with the absence of psycho-social support (p=0.04).[28] The context of stigmatization of the disease which contributes to maintaining secrecy as well as the absence of visible symptoms do not facilitate the solicitation or obtaining of social assistance and the development of a social network of support for the patient.[24]

This protective or positive influence of psycho-social support, and more precisely of belonging or not to a social or support group, could be the result of the sharing of experience, of love, of mutual support which would help to endure and continue treatment. This influence was not established in this study, as most of the population surveyed, both cases and controls, were not part of PLHIV associations.

Some authors have highlighted the association between the increase in the number of people lost to follow-up with the lack of a stable sexual partner (p<0.005).[15] This influence of sexual behavior, which results from the marital status of the person lost to follow-up, is also reported by Mberi et al who observed that the patient who did not have a committed partner became lost to follow-up in almost 3 times the cases than the others (aHR=2.9; 95% CI=1.19-6.97; p=0.019).[26]

These various results established the significant influence of socio-demographic factors and economic factors, knowledge, and behavioral factors of individuals, particularly PLHIV, on their attitude towards the disease

and in relation to treatment. These factors can be reinforced by the low availability of caregivers, the organization of care, the low quality of the caregiver-patient relationship and the attitude of the community towards PLHIV.[24,29]

Knowledge and status of loss to follow-up

Lack of knowledge about ARV treatment was identified as a factor associated with loss to follow-up status. Indeed, patients who thought that ARVs could eliminate HIV and those who thought they could stop treatment when their state of health improved were at greater risk of leaving the treatment circuit. These results agree with those of a study carried out in Ivory Coast which showed that incorrect knowledge about HIV and treatment was associated with the exit of PLHIV from the treatment system.[22] Patients who did not know the reason for taking ARVs were at greater risk of being lost to follow-up.[8]

Limitations

Certain features of the study could impinge on its scope. This is the type of study which is "case controls" because with matching of cases and controls on the variables sex and age as well as the year of initiation of antiretroviral treatment, it was not possible to assess the influence of these variables on the phenomenon or status of loss to follow-up. The sample size of 82 patients including 41 cases, although because the phenomenon is uncommon, does not allow a systematic extrapolation of the results. The same applies to the study site because the study was carried out in a single hospital or unit providing care services for PLHIV then that there are other units in the country.

CONCLUSION

The phenomenon of loss to follow-up is an expression of the attitude of people living with HIV towards ARV treatment. At the CHUZ Suru-Léré, its occurrence is associated with several factors which are socio-demographic, economic and above all behavioral. The analysis revealed in this study that it is mainly a question of the existence of means of transport, food support as well as beliefs in relation to treatment such as "ARV treatment cures HIV" or even "you can stop treatment when you feel better. These links, most of which have been explored by other authors, indicate that these factors will need to be considered in all actions aimed at promoting adherence to antiretroviral treatment and strengthening the therapeutic performance of any control program. against HIV. Further studies are needed to explore factors not addressed by this study, including factors related to the clinical management of patients.

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REFERENCES

1. World Health Organization. Global Health Sector Strategy Projects, 2016–2021. 2015. Available at: https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_31-fr.pdf. Accessed on 24 September 2023.
2. ONUSIDA. Fact sheet — Latest statistics on the state of the AIDS epidemic. Available at: https://www.unaids.org/fr/resources/fact-sheet#:~:text=%C3%A9pid%C3%A9mie%20de%20sida-,Fiche%20d'information%20%E2%80%94%20Derni%C3%A8res%20statistiques%20sur%20l'%C3%A9tat,de%20l'%C3%A9pid%C3%A9mie%20de%20sida&text=39%20millions%20%5B33%2C1%20millions,infect%C3%A9es%20au%20VIH%20en%202022. Accessed on 24 September 2023.
3. Ministère de la santé. Rapport de suivi de la déclaration de politique sur le VIH/SIDA au Benin 2016. Bénin: MS. 2016. Available at: https://www.unaids.org/sites/default/files/BEN_narrative_report_2016.pdf. Accessed on 24 September 2023.
4. Touré A, Cissé D, Kadio KJO, Camara A, Traoré F, Delamou A, et al. Facteurs associés aux perdus de vue des patients sous traitement antirétroviral dans un centre de traitement ambulatoire du VIH à Conakry, Guinée. Revue d'Épidémiologie et de Santé Publique. 2018;10.
5. ONUSIDA. Stratégie mondiale de lutte contre le sida 2021-2026. Available at: https://www.unaids.org/sites/default/files/media_asset/global-AIDS-strategy-2021-2026_fr.pdf. Accessed on 24 September 2023.
6. World Health Organization. HIV and AIDS. Available at: http://www.who.int/mediacentre/ factsheets/fs360/fr. Accessed on 24 September 2023.
7. Cohen MS, Chen YQ, McCauley M, Gamble T, Hosseinipour MC, et al. Prevention of HIV-1 infection with early antiretroviral therapy. N Engl J Med. 2011;365(6):493-505.
8. Ammon N, Mason S, Corkery JM. Facteurs influençant l'adhésion au traitement antirétroviral chez les adolescents séropositifs pour le virus de l'immunodéficience humaine en Afrique subsaharienne: une revue systématique. Santé publique. 2018;157:20-31.
9. République du Bénin, CNLS-TP, ONUSIDA. Rapport sur le suivi mondial de la lutte contre le sida 2020. Available at: https://www.unaids.org/sites/default/files/country/documents/BEN_2019_countryreport.pdf. Accessed on 24 September 2023.
10. Gebremichael MA, Gurara MK, Weldehawaryat HN, Mengesha MM, Berbada DA. Predictors of Loss to Follow-Up among HIV-Infected Adults after Initiation of the First-Line Antiretroviral Therapy at Arba Minch

General Hospital, Southern Ethiopia: A 5-Year Retrospective Cohort Study. BioMed Res Int. 2021;8659372.
11. Kalinjuma AV, Glass TR, Weisser M, Myeya SJ, Kasuga B, Kisung'a Y, et al. Prospective assessment of loss to follow-up: incidence and associated factors in a cohort of HIV-positive adults in rural Tanzania. J Int AIDS Soc. 2020;23(3):e25460.
12. Ochieng-Ooko V, Ochieng D, Sidle JE, Holdsworth M, Wools-Kaloustian K. Influence of gender on loss to follow-up in a large HIV treatment programme in western Kenya. Bull World Health Organ. 2010;88:681-8.
13. Wekesa P, McLigeyo A, Owuor K. Mwangi J, Nganga E, Masamaro K. Factors associated with 36-month loss to follow-up and mortality outcomes among HIV-infected adults on antiretroviral therapy in MCentral Kenya. BMC Public Health. 2020;20:328.
14. Kalinjuma AV, Glass TR, Weisser M, Myeya SJ, Kasuga B, et al. Évaluation prospective de la perte de suivi: incidence et facteurs associés dans une cohorte d'adultes séropositifs dans les zones rurales de la Tanzanie. J Int AIDS Soc. 2020;23(3).
15. Burch LS, Smith CJ, Anderson J, Sherr L, Rodger AJ, O'Connell R, et al. Socioeconomic status and treatment outcomes for individuals with HIV on antiretroviral treatment in the UK: cross-sectional and longitudinal analyses. Lancet Public Health. 2016;1:e26-36.
16. Sutini S, Cahyati WH, Rahayu SR. Socio-demographic Factors Associated with Loss to Follow up Anti Retro Viral Therapy among People Living with HIV and AIDS in Semarang City. Public Health Perspectives J. 2020;5(3):186-93.
17. Drabo M, Coulibaly D S, Malle M, Gaudart J, Boyer S, Soumountera A. Facteurs associés au perdu de vue (PDV) chez les patients infectés par le VIH sous Traitement Antirétroviral (TARV) au Centre de Traitement Ambulatoire (CTA) de ONG Walé, Ségou, Mali. Mali Med. 2004;1-12.
18. Drabo M, Soumountéra A, Coulibaly DS, Mallé M, Gaudart J, Boyer S. Factors associated with loss to follow-up in HIV-infected patients, Ségou, Mali. Mali Med. 2021;XXXVI:21-6.
19. Hassan AS, Fielding KL, Thuo NM, Nabwera HM, Sanders EJ, James AB. Early Loss to Follow-up of Recently Diagnosed HIV-Infected Adults from Routine Pre-ART Care in a Rural District Hospital in Kenya: A Cohort Study. Trop Med Int Health. 2012;17(1):82-93.
20. Handayani L, Ahmad RA, Subronto, Yanri W. Faktor Risiko Loss to Follow up Terapi ARV Pada Pasien HIV Risk Factors for Loss to Follow up of Antiretroviral Therapy in HIV Patients. J Comm Med Public Health. 2017;33(4):173-80.
21. Shaweno T, Debebe S. When Are Patients Lost to Follow-up in Pre-Antiretroviral Therapy Care? A Retrospective Assessment of Patients in an Ethiopian Rural Hospital. Infect Dis Poverty. 2015;4(1):1-8.
22. Mbopi-Keou FX, Voundi EV, Kalla GC, Emah I, Angwafo F 3rd, Muna W. Factors influencing initiation of antiretroviral treatment for people living with HIV in approved HIV treatment centres of Bamenda and Bertoua in Cameroon. Pan Afr Med J. 2014;17:6.
23. Ba S, Ba N, Sembene L, Dia H, Ndiaye J, Dia N, Ndour C. Prévalence et facteurs associés à la non-rétention aux soins des personnes vivant avec le VIH (PVVIH) suivies dans un site de prise en charge décentralisé. Médecine et Maladies Infectieuses. 2020;50(6):S187.
24. Carillon S, Méchali D, Touré H, Traoré I, Petit V. La Production sociale des ruptures de suivi médical des personnes vivant avec le VIH. De l'identification des processus à l'œuvre vers le renouvellement des réponses apportées? L'exemple de Kayes au Mali. Working Paper du Ceped #17, Centre Population et Développement. 2011;10.
25. Montaner JS, Lima VD, Harrigan PR, Lourenço L, Yip B, Nosyk B, et al. Expansion of HAART coverage is associated with sustained decreases in HIV/AIDS morbidity, mortality and HIV transmission: the "HIV Treatment as Prevention" experience in a Canadian setting. PLoS One. 2014;9(2):e87872.
26. Mberi MN, Kuonza LR, Dube NM, Nattey C, Manda S, Summers R. Determinants of loss to follow-up in patients on antiretroviral treatment, South Africa, 2004–2012: a cohort study. BMC Health Serv Res. 2015;15:259.
27. Drabo M, Coulibaly D, Malle M, Gaudart J, Boyer S, Soumountera A, et al. Facteurs associés au perdu de vue (PDV) chez les patients infectés par le VIH sous Traitement Antirétroviral (TARV) au Centre de Traitement Ambulatoire (CTA) de ONG Walé, Ségou, Mali. Mali Medical. 2018;1.
28. Essomba EN, Adiogo D, Koum DC, Amang B, Lehman LG, Coppieters Y.. Factors associated with non-adherence of adults infected with HIV on antiretroviral therapy in a referral hospital in Douala. Pan Afr Med J. 2015;20:412.
29. Bognounou R, Kabore M, Diendéré A, Diallo I, Sagna Y, Guira O, et al Characteristics of the patients "lost to follow-up" and determining factors of loss to follow-up to patients living with HIV at Ouagadougou, Burkina Faso. Bull Soc Pathol Exot. 2015;108:197-200.

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