

## ORIGINAL ARTICLE

# Sub-optimal satisfaction of people living with HIV and AIDS regarding their care in Burkina Faso, West Africa

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**Abstract.** People living with HIV (PLHIV) satisfaction regarding to care could play an important role in the elimination of HIV epidemic by 2030. We assessed Burkina Faso PLHIV satisfaction regarding to their care, and identified its associated factors. A representative nationwide cross-sectional study was performed in 2021-2022 in 30 HIV/AIDS care sites. PLHIV aged at least 18 years, receiving ART for six months or plus were included. Individual and structural data were collected using a questionnaire administered by trained investigators. Satisfaction with HIV/AIDS care was explored using six components (reception, waiting time to medical visit, care environment, sharing updated information on HIV/AIDS, answering to PLHIV questions, and providing tailored care and advice to PLHIV needs). Factors associated with satisfaction were identified using logistic regressions. 448 PLHIV were considered in this analysis. Median age was 46 years. Overall satisfaction regarding to care was 40,8% (95% confidence interval 95% CI 36.2-45.6). Specifically, it was 90.6, 54.9, 85.3, 75.7, 90.8, and 93.3% regarding to reception, waiting time, care environment, sharing updated information, answering to PLHIV questions, and providing tailored care and advice to PLHIV needs, respectively. Attending to medical visits in community-based organization

(CBO) and private clinics (adjusted odds ratio aOR 1.82, 95% CI 1.14-2.93, P<0.001), as well as in tertiary hospitals (aOR 2.37, 95% CI 1.45-3.87, P=0.001) were positively associated with PLHIV satisfaction. Burkina Faso PLHIV are generally unsatisfied with care. HIV national authorities should promote HIV care in CBO clinics model in the delivery of HIV services in others public sites.

## Introduction

Human Immunodeficiency Virus (HIV) epidemic remains a major public health issue in Burkina Faso despite substantial progress in the national riposte. In 2020, 96,000 [78 000-12,000] people were living with HIV or AIDS (PLHIV) including 9,100 children aged 0 to 14 years. The HIV prevalence in general population aged 15 to 49 years was 0,7% [0,6-0,9]. However, the epidemic is concentrated in two key populations (i.e. female sex workers-FSW-, and Men who have sex with Men-MSM-), among whom prevalences are ranged between 6 to 27% (1-3).

PLHIV satisfaction regarding to their care and others delivered services is determinant in their decision to enroll and perform their medical visits in HIV care site (4-7). Satisfaction of patients with care refers to their expectations and perceptions regarding to the episode of care. Authors are consistent to collect the self-reported experiences of patients for the assessment of patients' satisfaction (8-11). In general, it can be performed using qualitative approaches based on semi-structured individual interviews and focus group discussions, and/or quantitative approaches based on the administration of questionnaire (12-14). Hence, patients' satisfaction with care is a multidimensional construction related on different aspects of service delivery and outcomes (i.e.,

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care providers' prestation including reception and communication, effectiveness and safety of care, access to care including costs) (8,15,16).

Since 2021, the Joint United Nations Programme on HIV/AIDS (UNAIDS) set ambitious targets for 2025 which will contribute to the elimination of HIV epidemic by 2030 (17). However, the achievement of this goal in West African countries including Burkina Faso could be hindered by low rates of patients' retention in HIV care programs, which vary between 30% at month 12 and 75% at ten years after antiretroviral treatment (ART) initiation. PLHIV who are not retained in care are both men and women, key populations, as well as those who did not initiate ART. Importantly, they could constitute a potential source of HIV transmission to their sexual partners (18-24). Many authors explored the determinants of PLHIV low retention in HIV programs. They highlighted structural barriers (i.e. stigma, discrimination, food insecurity, lower quality of care) as well as individual (i.e., being male, younger age, lower socio-economic status, lower baseline CD4+ cell count, higher mobility) (5,18-21,25). The satisfaction of PLHIV in regard with care also played an important role in the retention in care (4,6). In Anambra state in Nigeria, there was a strong association between good retention in HIV care and patients' satisfaction (4). In South Africa, authors recommended better communication and understanding between patients and care providers to facilitate greater patient satisfaction and retention in HIV care (6).

A previous study on PLHIV satisfaction has been conducted in 2015 in Burkina Faso in urban setting in Bobo-Dioulasso Dafra hospital district. The authors found an overall satisfaction of patients of 58.5%. They also recommended to the hospital staff to reduce the waiting time to medical visit, and to healthcare providers to improve courtesy and confidentiality (26). Although these findings were interesting, they were not generalizable to all PLHIV as well as to Burkina Faso rural settings. In addition, those data have been published eight years ago and are needed to update.

In our study in which we performed a nationwide representative sampling, we aimed to assess the satisfaction of PLHIV regarding to their care and the associated factors. Our findings will help recommending to country decision makers for better care dispensation in HIV care sites. That will probably help to reach the goal HIV/AIDS epidemic elimination by 2030.

## Materials and methods

**Burkina Faso health system and HIV care organization.** Burkina Faso health system has a pyramidal organization. The first level includes both public and non-public healthcare facilities in all the country. They are the first gate for entry in the health system, and provide primary care, less complex curative services, preventive and health promotion services. The public healthcare facilities are called «Centres de Santé et de Promotion Sociale (CSPS)» and «Centre Médical avec Antenne Chirurgicale (CMA)». The latter are also called hospitals district. The non-public healthcare facilities include Community-Based Organizations (CBO) clinics also called community-based clinics, which deliver not for profit healthcare services (free of charge), and private clinics. These latter provide fee-based healthcare services. The second

level includes regional hospitals called «Centre Hospitalier Régional (CHR)». They receive referred patients from the first level healthcare facilities, and provide more specialized care. The third level includes university hospitals called «Centre Hospitalier Universitaire (CHU)». They are on the top of the pyramid and receive the most complicated cases of illness. Moreover, they include research, teaching and training of medical and pharmacist doctors (27).

Delivery of HIV care and others HIV related services (i.e., HIV screening and prevention, the enrolment of the follow-up of outpatient PLHIV) can be performed in all the healthcare facilities in the three levels of the health system. The management of PLHIV with advanced disease are performed in the healthcare facilities of both second and third levels. All these are thereafter called 'HIV care sites'.

**Study design, populations and sampling.** We performed a representative nationwide cross-sectional study between July 2021 and March 2022 in 30 of 125 HIV care sites. These included 95 public sites, 23 community-based clinics, and 7 private clinics.

All outpatient PLHIV consenting to participate to the study, aged 18 years or older, receiving ART at least for six months were eligible. The study sample was selected using a two-stage sampling. In the first stage, we randomly selected the 30 HIV care sites as follows: i) 23 public sites, ii) 5 community-based clinics, and iii) 2 private clinics. In the second stage, eligible PLHIV who came for their follow-up visits in one of the 30 HIV care sites were randomly selected, and considered for the study. We excluded PLHIV who had an obvious disability which could prevent them to understand or complete the questionnaire (i.e., mental disorder). The sample size was calculated using the following Schwartz formula.

$$N = \frac{(U\alpha)^2 \times P \times (1 - P)}{e^2}$$

N: sample size

$\alpha$ : level of significance

$U\alpha$ : read in the table of the Central Limit Theorem

P: proportion of the outcome (i.e., PLHIV satisfaction with care);

e: precision

Based on the study conducted in Dafra Hospital (Bobo Dioulasso, Burkina Faso) by Drabo *et al* (26) in which the overall PLHIV satisfaction was 58.4%, and considering the level of significance and the precision of 5%, we calculated a minimum sample size of 373. If considering 20% as the potential refusal rate to participate, the final sample size was 448.

**Data collection and study variables.** Data were collected using a standardized face to face electronic questionnaires. They were administered by trained investigators.

PLHIV satisfaction regarding to care was the dependent variable. It was constructed based on the following six components: i) reception in HIV care center, ii) waiting time to medical visit, iii) environment for care (exploring confidentiality and discretion), iv) sharing of updated information on HIV/AIDS by care providers, v) answering to PLHIV questions, and vi) providing tailored care and advice to PLHIV needs. Each question for exploring each of the six

components of PLHIV satisfaction with care had five options for the response: excellent, very good, good, fairly good, and not good. The satisfaction with care was constructed as a binary variable: i) 1 corresponding to yes or satisfied when the participant had given one of the following responses to each of the six questions «excellent, or very good, or good», ii) 0 corresponding to no or unsatisfied when the participant had given one of the following responses to each of the six questions «fairly good, or not good».

The independent variables included individual information: i) socio-demographic characteristics: age, gender, education, marital status, occupation, residence, type of population, ii) clinical, biological, and therapeutic characteristics: WHO clinical staging, comorbidity, time to ART initiation, ART protocol, switch of ART protocol; and structural information: transportation difficulties, family support; type of HIV care site, level of the HIV care site in the pyramid organization.

*Statistical analysis.* First, we described the characteristics of study participants. Quantitative variables were described using the median and the interquartile range (IQR). Qualitative variables were described using the absolute and relative frequencies. Second, we described the PLHIV satisfaction regarding to care. It was defined as the proportion of PLHIV who were satisfied with their care (i.e., the number of satisfied PLHIV divided by the number of PLHIV who answered the question). We described the overall satisfaction and each component which contributed to build it. The 95% confidence intervals (CIs) of the satisfaction rates of PLHIV were computed using the binomial method. Third, we identified associated factors with satisfaction with care using logistic regression models. All variables associated with satisfaction with  $P < .20$  in univariate analyses were included in the complete multivariate model. A backward procedure was used to determine the final model. The goodness of fit of models was assessed using the Hosmer-Lemeshow test.

For all calculations, statistical significance was defined at  $P < .05$ . All statistical analyses were performed using Stata software (version 15; Stata Corp LP, College Station, TX). Figures were performed using Excel software (version 2021).

*Ethical considerations.* The study protocol as well as the study collection tool were approved by the national ethic committee of Burkina Faso (CERS N° 2021-11-261). All participants provided written informed consent. Illiterate participants benefited from the information note translation in their maternal tongue by a person that they chose. Anonymity as well as confidentiality were respected during all the study steps (data collection, analysis, and diffusion).

## Results

*Characteristics of the study participants.* A total of 448 PLHIV were included in the study. Of those, 442 (98.7%) were from the general population, and 6 (1.3%) were MSM or FSW. Median age was 46 years (IQR 40-54). More than three quarters ( $n=351$ , 78.3%) were female. PLHIV characteristics are shown in Table I. Two hundred and twenty-four (50.0%) PLHIV never attended to school. The majority ( $n=247$ , 55.1%) were married. Of these, 161 (35.9%) lived in monogamy, and

86 (19.2%) were in polygamy. More than a quarter ( $n=125$ , 27.9%) of PLHIV were unemployed, 41 (9.1%) were salaried employees in the public or private sector, 114 (26.4%) were traders or gold diggers. A large majority of PLHIV ( $n=368$ , 82.1%) reported living in urban areas. More than two thirds of them ( $n=314$ , 70.1%) discovered their HIV status during curative care, including 267 (59.6%) during an intercurrent disease, and 47 (10.5%) during an antenatal consultation.

When discovering the HIV status, two third of study participants ( $n=284$ , 63.4%) were at WHO clinical stage 1, 148 (33%) were at WHO stage 2, and 16 (3.6%) at WHO stage 3. Two hundred and fifty (56.6%) PLHIV initiated ART the same day, 256 (57.1%) within 7 days, (i.e., rapid ART initiation), and 279 (62.3%) within a month. Two hundred and sixty-two (58.5%) were under ART-based Dolutegravir (DTG). Two third ( $n=291$ , 65%) of PLHIV switched the ART protocol at least once. Fifty-one (11.4%) PLHIV reported at least one comorbidity.

Of the 448 PLHIV, 195 (43.5%) reported transportation difficulties (i.e., for moving to the HIV care site). The main reasons were the lack of money for paying the travel transport, and the high distance between home to HIV care site. Almost a quarter ( $n=107$ , 23.9%) benefited from family support (e.g., psychological or financial). A large majority of PLHIV ( $n=360$ , 80.4%) were followed in public care sites, 82 (18.3%) in community-based clinics, and 6 (1.3%) in private clinics. More than half ( $n=248$ , 55.3%) were followed in the first level of the health system, 72 (16.1%) in the secondary level, and 128 (28.3%) in the third level.

*Satisfaction of PLHIV regarding to their care.* Overall PLHIV satisfaction regarding to care was 40.8% (95%CI 36.2-45.6). Specifically, 406 (90.6%) PLHIV were satisfied with the reception in the care sites, 246 (54.9%) with the waiting time before benefiting from medical visits, and 382 (85.3%) with the care environment. Three-quarters ( $n=339$ , 75.8%) of the PLHIV were satisfied with the sharing of updated information on HIV AIDS by care providers, 407 (90.8%) with the responses to their questions, and 418 (93.3%) with the tailored care and advice to their needs (Fig. 1). Overall PLHIV satisfaction regarding to care was significantly higher in community-based and private clinics than in public care sites (53.4% vs. 37.8%;  $P=0.011$ ).

*Factors associated with PLHIV satisfaction.* In univariate analysis, satisfaction regarding to care was significantly higher in PLHIV aged 46 years or older (odds ratio [OR] 1.40, 95% CI 0.95-2.05,  $P=0.078$ ) than in those aged 18 to 45 years (Table II). It was also higher in PLHIV who were living in couple in polygamic household (OR 1.65, 95% CI 0.99-2.75,  $P=0.053$ ) than in those who were living alone (i.e., single, divorced, widowed, or separated), and in PLHIV who benefited from the switch of their ART protocol (OR 1.58, 95% CI 1.06-2.37,  $P=0.025$ ). Moreover, satisfaction with care was significantly higher in PLHIV who attended HIV care visits in community-based or private clinics (OR 1.89, 95% CI 1.18-3.02,  $P=0.008$ ) than those in HIV public healthcare sites. It was also high in PLHIV who attended HIV care visits in tertiary hospitals (OR 1.56, 95% CI 1.02-2.41,  $P=0.042$ ). However, satisfaction with care was significantly lower in educated PLHIV (i.e., at least secondary

Table I. Characteristics of study participants (N=448).

Characteristics	n	%
Age in years (median, IQR)	46	40-54
18-29	33	7.4
30-49	239	53.3
≥50	176	39.3
Gender		
Female	351	78.3
Male	97	21.7
Education level		
None/koranic school	224	50.0
Primary school	119	26.6
Secondary school or plus	105	23.4
Marital status		
In polygamic couple	86	19.2
En monogamic couple	161	35.9
Divorced/separated	30	6.7
Sinle	63	14.1
Widowed	108	24.1
Occupation		
Unemployed	125	27.9
Student	10	2.2
Salaries (public/private)	41	9.2
Trader	108	24.1
Farmer	64	14.3
Gold digger	6	1.3
Other	94	21.0
Place of residence		
Urban	368	82.1
Rural	80	17.9
Type of population		
General population	442	1.3
Key population (MSM, FSW)	6	98.7
Circumstances of HIV discovery		
Volunteer	125	27.9
Disease	267	59.6
Antenal visits	47	10.5
Other	9	2.0
WHO HIV stage		
1	284	63.4
2	148	33.0
3	16	3.6
Time to ART initiation (days)		
Same day	250	56.6
0-7	256	57.1
0-30	279	62.3
ART protocol		
ABC/3TC/DTG	10	2.4
ABC/3TC/EFV	2	0.5
AZT/3TC/DTG	2	0.5
AZT/3TC/EFV	2	0.5
AZT/3TC/LPV/r	1	0.2
AZT/3TC/NVP	9	2.2

Table I. Continued.

Characteristics	n	%
DTG/3TC/FTC	7	1.7
TDF/3TC/DTG	252	61.6
TDF/3TC/EFV	112	27.5
TDF/3TC/FTC	8	2.0
TDF/3TC/NVP	3	0.7
TDF/AZT/NVP	1	0.2
Switch of ART protocol		
Yes	291	65.0
No	157	35.0
Comorbidity		
Yes	51	11.4
No	397	88.6
Other treatment		
Yes	56	12.5
No	392	87.5
Transportation difficulties		
Yes	195	43.5
No	253	56.5
Family support		
Yes	107	23.9
No	341	76.1
Type of HIV care site		
Public	360	80.4
Private clinic	6	1.3
CBO clinic	82	18.3
Level of care site in health system		
Primary (CSPS)	5	1.1
Primary (CMA)	243	54.2
Secondary (CHR)	72	16.1
Tertiary (CHU)	128	28.6

ABC, abacavir; AZT, zidovudine; DTG, dolutegravir; EFV, efavirenz; FTC, emtricitabine; LPV/r, Lopinavir/Ritonavir; NVP, nevirapine; TDF, tenofovir disoproxil fumarate; 3TC, lamivudine; ART, anti-retroviral treatment; CBO, community-based organization; CHU, centre hospitalier universitaire; CHR, centre hospitalier régional; CMA, centre médical avec antenne chirurgicale; CSPS, centre de santé et de promotion sociale; HIV, human immunodeficiency virus; IQR, Interquartile range; WHO, World Health Organization.

school) (OR 0.63, 95% CI 0.39-1.03, P=0.065) than in those who had never been to school. It was also lower in PLHIV who were at WHO clinical stage 3 at the enrolment in care, (OR 0.45, 95% CI 0.14-1.43, P=0.175) than in those at WHO clinical stage 1.

In multivariate analysis, satisfaction with care was positively associated with older age (adjusted odds ratio [aOR] 1.51, 95% CI 1.02-2.23, P=0.041), attending to medical visits in community-based or private clinics (aOR 2.98, 95% CI 1.73-5.13, P<0.001), and attending to medical visits in tertiary hospitals (ORa 2.37, 95% CI 1.45-3.87, P=0.001). By contrast

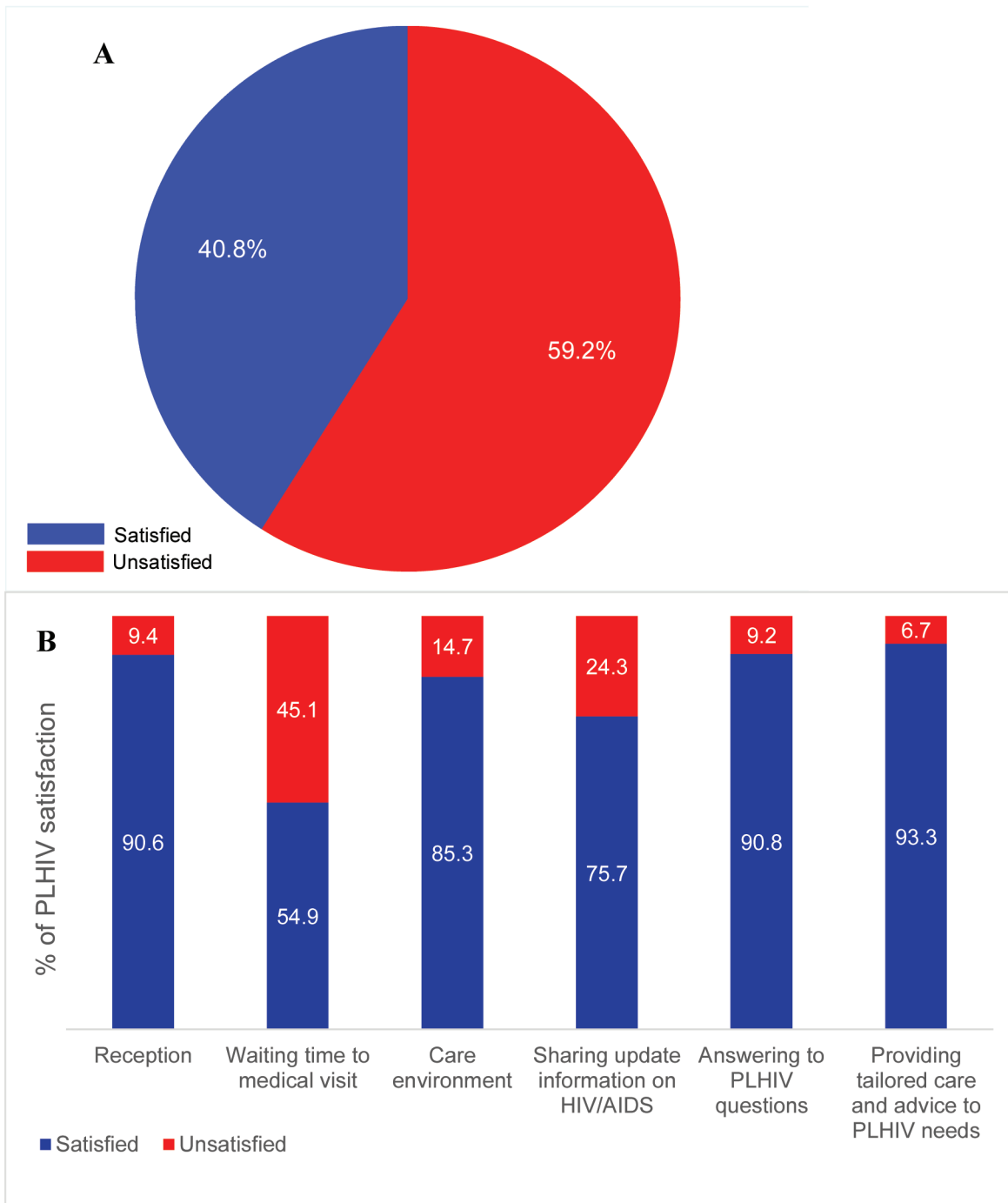


Figure 1. Overall satisfaction (A) and per component (B) of people living with HIV/AIDS regarding their care in 2021 in Burkina Faso.

it was negatively associated with being well-educated (ORa 0.56, 95% CI 0.33-0.93, P=0.025).

**Discussion**

This representative nationwide study conducted in outpatient PLHIV living in Burkina Faso highlighted that overall, the satisfaction with care is low. Two components of that satisfaction including the waiting time to medical visits, and the sharing of updated information on HIV AIDS by care providers were specifically suboptimal. Moreover, attending to medical visits in community-based or private clinics, and in

tertiary hospitals were positively associated with satisfaction with care.

The overall PLHIV satisfaction with care was 40.8%. Our figure is lower than that (58.4%) found by Drabo *et al* (2015) eight years ago in Bobo Dioulasso (26). It is also lower than Olowookere *et al* (2012) result who showed that 77% of PLHIV were satisfied with their care in Nigeria (28). Although the former study has been performed in a single urban hospital, and the fact that the latter study was located in Central Africa in Nigeria, with probably sociocultural differences with Burkina Faso, it is worth noting that our figure is alarming and unexpectedly low. It reflects the point of view of PLHIV and

Table II. Burkina Faso people living with HIV/AIDS satisfaction regarding to care and associated factors, N=448 (logistic regression models).

Characteristics	Satisfied with care N=183		Univariate analysis			Multivariate analysis		
	n	(%)	OR	(95% CI)	<i>P</i>	aOR	(95% CI)	<i>P</i>
<b>Gender</b>								
Female	147	80.3	1					
Male	36	19.7	0.82	(0.51-1.30)	0.398			
<b>Age (years)</b>								
≤46	86	47.0	1			1		
>46	97	53.0	1.40	(0.96-2.05)	0.078	1.51	(1.02-2.23)	0.041
<b>Education level</b>								
None	92	50.3	1			1		
Primary school/koranic school	57	31.5	1.03	(0.66-1.59)	0.906	1.08	(0.69-1.70)	0.737
Secondary school or plus	34	18.6	0.63	(0.39-1.03)	0.065	0.56	(0.33-0.93)	0.025
<b>Marital status</b>								
Single/divorced/separated/widowed	78	42.6	1					
Monogamy	61	33.3	0.96	(0.63-1.47)	0.858			
Polygamy	44	24.0	1.65	(0.99-2.75)	0.053			
<b>Place of residence</b>								
Rural	34	42.5	1					
Urban	149	40.5	0.92	(0.56-1.50)	0.740			
<b>Circumstances of HIV discovery</b>								
Volunteer	55	30.1	1					
Disease	106	57.9	0.84	(0.55-1.29)	0.420			
Antenatal visits	18	9.8	0.79	(0.40-1.57)	0.501			
Others	4	2.2	1.02	(0.26-3.97)	0.979			
<b>WHO HIV stage</b>								
1	121	66.1	1					
2	58	31.7	0.87	(0.58-1.30)	0.494			
3	4	2.2	0.5	(0.14-1.43)	0.175			
<b>Rapid ART initiation</b>								
No	79	43.2	1					
Yes	104	56.8	1.02	(0.70-1.49)	0.912			
<b>Switch of ART protocol</b>								
No	53	33.8	1					
Yes	130	44.7	1.58	(1.06-2.37)	0.025			
<b>Comorbidity</b>								
No	164	89.6	1					
Yes	19	10.4	0.84	(0.46-1.53)	0.580			
<b>Other treatment</b>								
No	159	86.9	1					
Yes	24	13.1	1.10	(0.62-1.94)	0.744			
<b>Difficulties in moving to HIV care site</b>								
No	109	59.6	1					
Yes	74	40.4	0.81	(0.55-1.18)	0.273			
<b>Family support</b>								
No	145	79.2	1					
Yes	38	20.8	0.74	(0.47-1.17)	0.199			
<b>Type of HIV care site</b>								
Public	136	74.3	1			1		
CBO clinics/private clinics	47	25.7	1.89	(1.18-3.02)	0.008	2.98	(1.73-5.13)	<0.001

Table II. Continued.

Characteristics	Satisfied with care N=183		Univariate analysis			Multivariate analysis		
	n	(%)	OR	(95% CI)	P	aOR	(95% CI)	P
Level of care site in health system								
Primary (CSPS & CMA)	93	50.8	1			1		
Secondary (CHR)	28	15.3	1.06	(0.62-1.82)	0.831	1.53	(0.85-2.74)	
Tertiary (CHU)	62	33.9	1.56	(1.02-2.41)	0.042	2.37	(1.45-3.87)	0.001

aOR, adjusted odds ratio; CBO, community-based organization; CI, confidence interval; CHU, centre hospitalier universitaire; CHR, centre hospitalier régional; CMA, centre médical avec antenne chirurgicale; CSPS, centre de santé et de promotion sociale; HIV, human immunodeficiency virus; IQR, Interquartile range; WHO, World Health Organization.

suggests to HIV national authorities for paying a special attention to services delivered in HIV care sites. Indeed, if Burkina wants to achieve the goal of HIV elimination it will have i) to strengthen the HIV care aspects which are well done (reception, care environment including confidentiality, care providers prestations), ii) to operate great corrections regarding the two following aspects in the delivery of HIV services: the waiting time to medical visits, and the sharing of updated information on HIV AIDS by care providers.

The long waiting time of PLHIV before benefiting from medical visits has already been identified by many authors as an important reason in African PLHIV dissatisfaction with care (26,28-30). In Burkina Faso, this could be due in part to the unbalance situation between a great number of PLHIV attending in HIV care sites and the limited numbers of human health resources (i.e., physicians, pharmacist, midwives). Indeed since 2015, the country is facing to a socio-political crisis including terrorism and guns attacks especially in rural areas. This has negative impact on health system organization, and also results forcibly displaced populations including PLHIV towards urban cities. Although Burkina Faso in part of the nationwide decentralization in HIV care has already adopted the World Health Organization (WHO) guidelines on task shifting in HIV care, the present findings underscore the need to strengthen and to adapt the implementation of this health policy. As reminding, it consists to strengthen paramedics (nurses, midwives), as well as other community-based healthcare providers capacities for the prescription of ART and the follow-up of PLHIV (31). Studies have indeed shown that task shifting in HIV care has positive effect on the quality of life of PLHIV, is useful for decentralization and access to ARV treatment, and can help reducing patient waiting lists (32,33). Another reason which could explain the long waiting list of patients in HIV care sites is related to local organizational constraints. Indeed, some care sites are not yet equipped with electronic and automatic reminders or appointment scheduling, that then hinder an optimal medical visits organization. Burkina Faso subscribed for the WHO recommendations on differentiated service delivery for HIV (34,35), which aim to improve the access to and quality of prevention, testing, treatment and care services for PLHIV. The revision of the implementation of this health policy by HIV national authorities is needed. It

should probably help addressing a lot of concerns including the patient long waiting time.

Another point of PLHIV dissatisfaction was the lack in sharing updated information on HIV/AIDS by care providers. This result could be interpreted as a need for PLHIV to have more discussion on different concerns with care providers, or the lack of ability of these latter to discuss some subjects. Hence, this point merits further research such as semi-structured interviews and focus group discussions with PLHIV as well as care providers.

PLHIV satisfaction with care was significantly higher in community-based and private clinics than in public ones. By comparison, it is different to Umeokonkwo *et al* (2018) findings in Anambra State in Nigeria, where they found better satisfaction in public hospitals (4). Our result can be explained by the role and the history of CBO in the HIV riposte in Burkina Faso. Indeed, these civil society organizations were created by PLHIV since the peak of the national epidemic (i.e., in the 1990s), and were then involved in national fight against HIV and AIDS for three decades. The CBO clinics first offered non clinic support (e.g., social and psychological assistances), then expanded their services, that allowing them to become comprehensive HIV healthcare facilities. Their specificity is the use of trained PLHIV, usually called peer educators or mediators, in the staff of clinics. These play important roles such as the interface between healthcare providers and patients, and then facilitate the delivering of care and services. This model of care is favourable to reducing health facility related stigma, discrimination, as well as self-stigmatization. It is also favour to the elimination of HIV epidemic by 2030 (36-38).

Attending to medical visits in tertiary hospitals was positively associated with PLHIV satisfaction with care. This result is not really surprising. Indeed, the follow-up of outpatient PLHIV in tertiary hospitals is performed in specialized care sites called 'hôpital du jour'. These have similar organization with CBO clinics. As those, they included community human resources (i.e., peer educators and mediators) in the staff of care providers. Hence, this result corroborates the later and highlights the added value to set a multidisciplinary approach in PLHIV care.

The main limitation in our study is that we only used quantitative approach using questionnaire for collecting information.

Indeed, this appeared not sufficient for better understanding some findings (i.e., sharing updated information on HIV/AIDS by care providers, associations between satisfaction with care and older age, as well as well-education). Moreover, the fact of collecting information with study participants using the face-to-face technic may have led to social desirability bias, especially when considering questions for assessing the healthcare providers performance. However, the study has also some strengths. First, it is to our knowledge the first nationwide representative study on PLHIV satisfaction regarding to care. Hence, it provides the possibility to draw reliable conclusions. Second, we found interesting results, which could be useful in the current context in the fight against HIV, and then contribute to the HIV epidemic elimination by 2030.

## Conclusions

PLHIV in Burkina Faso are generally not satisfied with their care. The waiting time to medical visits, and the sharing of updated information on HIV AIDS by care providers need to be improved. HIV national decision makers should promote the model of HIV care in CBO clinics in others public HIV care sites, strengthen and adapt the implementation of task shifting as well as differentiated service delivery in HIV care.

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## Availability of data and material

Data and materials are available by the authors.

## Contributions

SO, administration of the project; SO, TTED, writing of original version of the manuscript; SO, LGBS, conceptualization; TTED, data analysis; ID, DLD, IR, BPCY, LGBS, validation of the final version of the manuscript; MS, investigation; MS, FBS, PALK, reviewing the manuscript. IR, FBS, PALK, supervision of fieldwork; LGBS, methods. All the authors approved the final version to be published.

## Ethical approval and consent to participate

The study protocol as well as the study collection tool were approved by the national ethic committee of Burkina Faso (CERS N° 2021-11-261).

## Informed consent

All participants provided written informed consent. Illiterate participants benefited from the information note translation in their maternal tongue by a person that they chose.

## Conflict of interest

The authors declare no potential conflict of interest.

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