

Psychosocial and Structural Factors Associated with Viral Non-Suppression among Adolescents and Young People Living with HIV Receiving Antiretroviral Therapy in Kinshasa, Democratic Republic of the Congo

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How to cite this paper: Mwanyimi, P.B.P., Pembi, F.P., Kafinga, E.L. and Masandi, A.M. (2026) Psychosocial and Structural Factors Associated with Viral Non-Suppression among Adolescents and Young People Living with HIV Receiving Antiretroviral Therapy in Kinshasa, Democratic Republic of the Congo. *World Journal of AIDS*, 16, 86-100.

<https://doi.org/10.4236/wja.2026.163007>

Received: May 28, 2026

Accepted: September 5, 2026

Published: September 8, 2026

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Abstract

Background: Viral non-suppression remains a major challenge among adolescents and young people living with HIV despite the expansion of access to antiretroviral therapy (ART). Evidence on the psychosocial and structural factors influencing virological outcomes remains limited in the Democratic Republic of the Congo. This study aimed to identify the psychosocial and structural factors associated with viral non-suppression among adolescents and young people living with HIV receiving care at Kalembelembe Pediatric Hospital in Kinshasa. **Methods:** A cross-sectional analytical study was conducted from January to December 2025 among adolescents and young people aged 10 - 24 years living with HIV and receiving ART at Kalembelembe Pediatric Hospital. A total of 397 participants who met the eligibility criteria, representing all eligible patients during the study period, were included. Data were collected from medical records and a standardized questionnaire. Viral non-suppression was defined as a viral load ≥ 1000 copies/mL, in accordance with World Health Organization recommendations. Factors associated with viral non-suppression were identified using multivariable logistic regression and are presented as adjusted odds ratios (aORs) with 95% confidence intervals (95% CIs). **Results:** A total of 397 adolescents and young people were included. The mean age was 17.9 ± 3.8 years, and 57.4% were female. The prevalence of viral non-suppression was 33.5%. After adjustment, treatment interruptions (aOR = 2.47; 95% CI: 1.48 - 4.11; $p < 0.001$), missed clinic appointments (aOR =

1.96; 95% CI: 1.11 - 3.44; $p = 0.020$), low family support (aOR = 1.79; 95% CI: 1.06 - 3.01; $p = 0.029$), and depressive symptoms (PHQ-9 score ≥ 10) (aOR = 1.88; 95% CI: 1.10 - 3.19; $p = 0.021$) were independently associated with viral non-suppression. **Conclusion:** Viral non-suppression remains common among adolescents and young people living with HIV receiving ART in Kinshasa. Poor treatment adherence, low family support, and depressive symptoms were the main factors independently associated with viral non-suppression. Strengthening psychosocial support, routine screening for depressive symptoms, family-centered interventions, and strategies to improve retention in care may contribute to sustained viral suppression in this population.

Keywords

HIV, Adolescents, Young People, Viral Load, Viral Suppression, Antiretroviral Therapy, Treatment Adherence, Depressive Symptoms, Family Support, Kinshasa, Democratic Republic of the Congo

1. Introduction

The scale-up of antiretroviral therapy (ART) has profoundly improved the prognosis of people living with HIV by substantially reducing morbidity, mortality, and the risk of HIV transmission. Sustained viral suppression is now recognized as the primary indicator of treatment effectiveness and a central objective of HIV control programs, in line with the recommendations of the World Health Organization (WHO) and the global targets established by the Joint United Nations Programme on HIV/AIDS [1] [2]. Despite these achievements, adolescents and young people continue to experience lower rates of viral suppression than adults. This increased vulnerability is partly attributable to the profound biological, psychological, and social changes that characterize adolescence, which may compromise treatment adherence, retention in care, and ultimately the achievement of sustained viral suppression.

Poor viral suppression among adolescents living with HIV results from a complex interplay of clinical, behavioral, psychosocial, and structural factors. Treatment interruptions, poor adherence to antiretroviral therapy, missed clinic appointments, limited family support, HIV-related stigma, and depressive symptoms have consistently been identified as major determinants in the literature. A systematic review by Chem *et al.* demonstrated that psychosocial factors exert a substantial influence on ART adherence among adolescents in sub-Saharan Africa [3]. Similarly, Filiatreau *et al.* reported a significant association between depressive symptoms, poor treatment adherence, and persistent detectable viral load [4]. More recently, the meta-analysis by Mosha *et al.* confirmed that treatment interruptions, missed clinic appointments, and psychosocial challenges remain the leading factors associated with viral non-suppression among adolescents living with HIV in sub-Saharan Africa [5].

Structural barriers also contribute significantly to the treatment challenges experienced by this population. Economic hardship, transportation costs, long distances to health facilities, interruptions in medication supply, and the limited availability of adolescent-friendly HIV services hinder continuity of care and retention in treatment programs. Recent studies conducted in Tanzania and South Africa have shown that these structural constraints, combined with psychosocial vulnerabilities, substantially reduce the likelihood of achieving sustained viral suppression among adolescents receiving ART [6] [7].

In the Democratic Republic of the Congo (DRC), adolescents living with HIV continue to face numerous challenges that may compromise treatment effectiveness. However, the available evidence has focused primarily on programmatic indicators of HIV care, while the psychosocial and structural determinants of viral non-suppression remain poorly documented. A recent study conducted in Lubumbashi by Mukuku *et al.* found that a considerable proportion of children and adolescents receiving ART had unsuppressed viral loads, mainly because of poor treatment adherence, inadequate family support, and organizational challenges in patient follow-up [8]. These findings underscore the need for additional evidence from other referral centers to improve understanding of the determinants of viral suppression within the Congolese context.

Kalembelembe Pediatric Hospital is one of the country's leading referral centers for the care of children, adolescents, and young people living with HIV. Identifying the factors associated with viral non-suppression in this population will help determine the key modifiable determinants and inform the development of targeted interventions aimed at strengthening treatment adherence, psychosocial support, and retention in HIV care.

Therefore, this study aimed to identify the psychosocial and structural factors associated with viral non-suppression among adolescents and young people living with HIV receiving antiretroviral therapy at Kalembelembe Pediatric Hospital in Kinshasa, Democratic Republic of the Congo.

2. Methods

2.1. Study Design and Period

This was an analytical cross-sectional observational study conducted from January to December 2025 at Kalembelembe Pediatric Hospital in Kinshasa, Democratic Republic of the Congo (DRC). The study aimed to identify the psychosocial and structural factors associated with viral non-suppression among adolescents and young people living with HIV receiving antiretroviral therapy (ART).

2.2. Study Setting

The study was conducted at Kalembelembe Pediatric Hospital, a national referral center for the care of children, adolescents, and young people living with HIV in the Democratic Republic of the Congo. The hospital provides comprehensive HIV care, including clinical follow-up, ART delivery, routine viral load monitoring,

and psychosocial support delivered by a multidisciplinary healthcare team.

2.3. Study Population

The hospital database contained records of 6032 children, adolescents, and young people living with HIV registered between January 2015 and December 2025. During the study period, 842 patients remained actively enrolled in HIV care. After applying the age eligibility criterion (10 - 24 years), 521 medical records were reviewed for eligibility. Of these, 124 were excluded, mainly because of the absence of a recent viral load result, incomplete medical records, or transfer to another healthcare facility. Ultimately, 397 adolescents and young people met the inclusion criteria and were enrolled consecutively using an exhaustive recruitment approach. The participant selection process is illustrated in **Figure 1**.

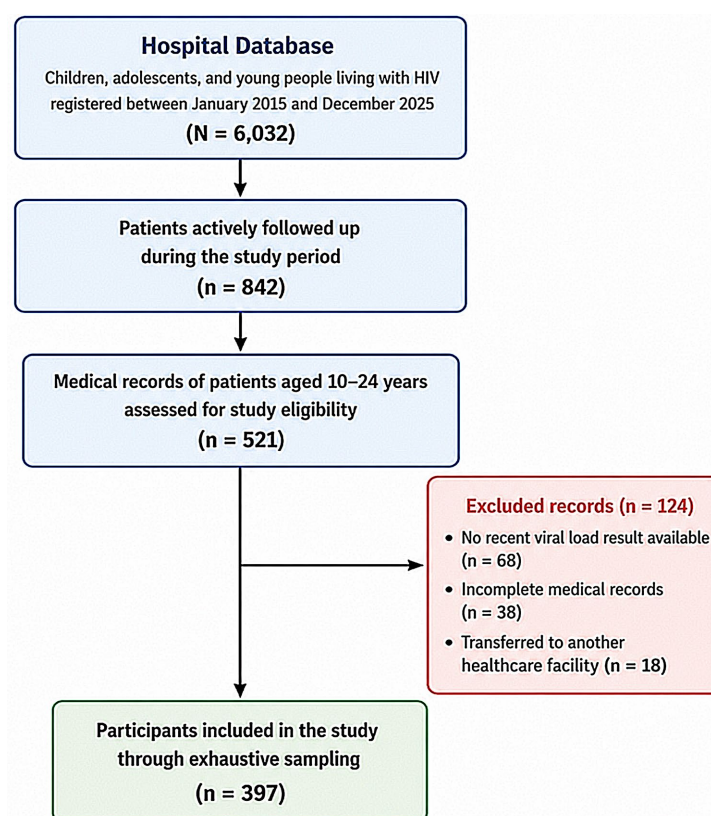


Figure 1. Flow diagram of study participants.

2.4. Eligibility Criteria

Inclusion Criteria

Participants were eligible if they:

- were aged 10 - 24 years;
- were living with HIV;
- had been receiving ART for at least six months;
- had a documented viral load result obtained within the 12 months preceding data collection; and

- provided written informed consent or, for participants younger than 18 years, had written informed consent provided by a parent or legal guardian.

Exclusion Criteria

The following participants were excluded:

- patients without a documented viral load result during the 12 months preceding data collection;
- patients with incomplete or unusable medical records;
- patients recently transferred to or from another HIV care facility; and
- adolescents who were absent during the data collection period or who had cognitive impairment preventing questionnaire administration.

2.5. Participant Recruitment

All adolescents and young people who met the eligibility criteria during the study period were included. An exhaustive recruitment strategy was adopted to enroll every eligible patient receiving care at Kalembelembe Pediatric Hospital. No sampling procedure was performed. This approach minimized selection bias and ensured that the study population accurately reflected the target population.

2.6. Study Variables

2.6.1. Dependent Variable

The primary outcome was viral non-suppression, defined as a viral load of ≥ 1000 copies/mL, in accordance with the World Health Organization (WHO) recommendations. The outcome was based on the most recent viral load measurement documented within the 12 months preceding data collection.

2.6.2. Independent Variables

Independent variables included:

- Sociodemographic characteristics: age, sex, educational level, and family situation;
- Clinical characteristics: duration of ART, treatment interruptions, missed clinic appointments, and clinical suspicion of antiretroviral drug resistance;
- Psychosocial factors: family support, perceived HIV-related stigma, HIV status disclosure, depressive symptoms, participation in peer support groups, and substance use; and
- Structural factors: accessibility of HIV care, financial difficulties, transportation costs, availability of antiretroviral drugs, and perceived quality of healthcare services.

Depressive symptoms were assessed using the Patient Health Questionnaire-9 (PHQ-9) [9], with a score of ≥ 10 indicating moderate-to-severe depressive symptoms. Family support was assessed using an adapted version of the Multidimensional Scale of Perceived Social Support (MSPSS).

2.7. Data Collection

Data were collected from medical records, HIV clinic registers, and a structured

questionnaire administered by trained research assistants. Clinical information, including the most recent viral load result, was extracted from patients' medical records, whereas psychosocial information was obtained during routine follow-up visits through face-to-face interviews. Only viral load measurements performed within the 12 months preceding data collection were considered for analysis.

2.8. Data Collection Procedures and Quality Assurance

The questionnaire was developed based on the existing literature and adapted to the local context. It was reviewed by experts for content validity and pilot-tested before implementation. Data collectors received standardized training on study procedures before data collection. Completed questionnaires were reviewed daily to verify completeness and internal consistency before data entry.

2.9. Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 25 (IBM Corp., Armonk, NY, USA). Categorical variables were summarized using frequencies and percentages, whereas continuous variables were described using means and standard deviations (SD).

Associations between independent variables and viral non-suppression were assessed using the Pearson chi-square test or Fisher's exact test, as appropriate. Crude odds ratios (ORs) and their 95% confidence intervals (95% CIs) were calculated.

Variables with a p -value < 0.20 in the bivariate analysis, together with variables considered clinically relevant, were entered into a multivariable logistic regression model to identify factors independently associated with viral non-suppression. Multicollinearity among independent variables was assessed using the Variance Inflation Factor (VIF), while model calibration was evaluated using the Hosmer–Lemeshow goodness-of-fit test [10]. Results are presented as adjusted odds ratios (aORs) with corresponding 95% confidence intervals. Statistical significance was set at $p < 0.05$. Analyses were restricted to complete cases, and no imputation of missing data was performed.

2.10. Ethical Considerations

The study protocol was approved by the appropriate Institutional Ethics Committee and authorized by the administration of Kalembelembe Pediatric Hospital. Written informed consent was obtained from all adult participants and from the parents or legal guardians of participants younger than 18 years, together with participants' assent where applicable. Participant anonymity and the confidentiality of all collected data were maintained throughout the study.

3. Results

3.1. Sociodemographic Characteristics of the Participants

A total of 397 adolescents and young people living with HIV were included in the

study. The participant selection process is illustrated in **Figure 1**. The sociodemographic characteristics of the participants are summarized in **Table 1**. The 15 - 19-year age group was the most represented (44.3%), followed by those aged 20 - 24 years (32.5%) and 10 - 14 years (23.2%). The mean age was 17.9 ± 3.8 years. Female participants accounted for 57.4% of the study population. Most participants had attained secondary education (65.2%). Regarding family circumstances, 47.4% were living with a single parent, while 26.7% were orphans.

Table 1. Sociodemographic characteristics of the participants (n = 397).

Variables	Frequency (n)	Percentage (%)
Age group (years)		
10 - 14	92	23.2
15 - 19	176	44.3
20 - 24	129	32.5
Sex		
Female	228	57.4
Male	169	42.6
Educational level		
Primary	74	18.6
Secondary	259	65.2
Higher education	64	16.1
Family situation		
Living with both parents	103	25.9
Living with one parent	188	47.4
Orphan	106	26.7

3.2. Clinical Characteristics of the Participants

The clinical characteristics of the participants are presented in **Table 2**. More than two-fifths of the adolescents and young people (41.6%) had been receiving antiretroviral therapy for more than five years, while 41.1% had been on treatment for two to five years and 17.4% for less than two years.

A history of treatment interruption was reported by 30.5% of participants. Regarding clinical follow-up, 37.0% had not missed any clinic appointments during the previous 12 months, 41.3% had missed one or two appointments, and 21.7% had missed three or more appointments.

3.3. Psychosocial, Structural, and Additional Characteristics

The psychosocial and structural characteristics of the participants are presented in **Table 3**. More than half of the participants (55.2%) reported experiencing HIV-related stigma, whereas 39.3% reported low family support. Moderate-to-severe

Table 2. Clinical characteristics of the participants (n = 397).

Variables	Frequency (n)	Percentage (%)
Duration of antiretroviral therapy		
<2 years	69	17.4
2 - 5 years	163	41.1
>5 years	165	41.6
History of treatment interruption		
Yes	121	30.5
No	276	69.5
Missed clinic appointments during the previous 12 months		
None	147	37.0
1 - 2	164	41.3
≥3	86	21.7

Table 3. Psychosocial and structural characteristics of the participants (n = 397).

Variables	Frequency (n)	Percentage (%)
Family support		
Adequate	241	60.7
Low	156	39.3
Participation in a peer support group		
Yes	138	34.8
No	259	65.2
Perceived HIV-related stigma		
Yes	219	55.2
No	178	44.8
Depressive symptoms (PHQ-9 ≥ 10)		
Yes	132	33.2
No	265	66.8
Financial difficulties related to HIV care	201	50.6
Transportation difficulties	173	43.6
Previous antiretroviral drug stock-out	91	22.9
Substance use	108	27.2
Low socioeconomic status	214	53.9
Clinical suspicion of antiretroviral drug resistance	49	12.3

depressive symptoms (PHQ-9 score ≥10) were observed in 33.2% of participants. Participation in a peer support group was reported by 34.8% of the adolescents

and young people.

Regarding structural factors, 50.6% of participants reported financial difficulties related to HIV care, and 43.6% reported transportation challenges in accessing healthcare services. Previous interruptions in the supply of antiretroviral medications were reported by 22.9% of participants.

In addition, 27.2% of participants reported substance use, 53.9% belonged to households with low socioeconomic status, and 12.3% had a clinical suspicion of antiretroviral drug resistance.

3.4. Prevalence of Viral Non-Suppression

The prevalence of viral non-suppression was 33.5% (133/397), whereas 66.5% (264/397) of participants achieved viral suppression (viral load < 1000 copies/mL), according to the World Health Organization recommendations (**Table 4**).

Table 4. Prevalence of viral suppression and viral non-suppression (N = 397).

Virological status	Frequency (n)	Percentage (%)
Viral suppression (<1000 copies/mL)	264	66.5
Viral non-suppression ($\geq$ 1000 copies/mL)	133	33.5

3.5. Bivariate Analysis of Factors Associated with Viral Non-Suppression

The results of the bivariate analysis are presented in **Table 5**. Treatment interruptions (OR = 2.68; 95% CI: 1.71 - 4.20; $p < 0.001$), missed clinic appointments (OR = 2.31; 95% CI: 1.42 - 3.77; $p = 0.001$), low family support (OR = 1.94; 95% CI: 1.23 - 3.04; $p = 0.004$), and moderate-to-severe depressive symptoms (PHQ-9 $\geq$ 10) (OR = 2.03; 95% CI: 1.29 - 3.18; $p = 0.002$) were significantly associated with viral non-suppression.

Table 5. Bivariate analysis of factors associated with viral non-suppression.

Variables	Crude OR	95% CI	p-value
Treatment interruption	2.68	1.71 - 4.20	<0.001
≥ 3 missed clinic appointments	2.31	1.42 - 3.77	0.001
Low family support	1.94	1.23 - 3.04	0.004
Depressive symptoms (PHQ-9 $\geq$ 10)	2.03	1.29 - 3.18	0.002
Perceived HIV-related stigma	1.63	1.05 - 2.54	0.028
Financial difficulties	1.54	1.00 - 2.37	0.047
Substance use	1.72	1.03 - 2.87	0.036
Low socioeconomic status	1.59	1.01 - 2.51	0.043
Clinical suspicion of treatment resistance	2.94	1.51 - 5.70	0.001
Participation in a peer support group	0.78	0.49 - 1.23	0.284

Significant associations were also observed for perceived HIV-related stigma (OR = 1.63; 95% CI: 1.05 - 2.54; $p = 0.028$), financial difficulties related to HIV care (OR = 1.54; 95% CI: 1.00 - 2.37; $p = 0.047$), substance use (OR = 1.72; 95% CI: 1.03 - 2.87; $p = 0.036$), low socioeconomic status (OR = 1.59; 95% CI: 1.01 - 2.51; $p = 0.043$), and clinical suspicion of antiretroviral drug resistance (OR = 2.94; 95% CI: 1.51 - 5.70; $p = 0.001$). Participation in a peer support group was not significantly associated with viral non-suppression ($p = 0.284$).

3.6. Multivariable Analysis of Factors Associated with Viral Non-Suppression

Variables associated with viral non-suppression in the bivariate analysis, together with those considered clinically relevant, were included in a multivariable logistic regression model in **Table 6**. After adjustment for potential confounding factors, treatment interruptions (aOR = 2.47; 95% CI: 1.48 - 4.11; $p < 0.001$), missed clinic appointments (aOR = 1.96; 95% CI: 1.11 - 3.44; $p = 0.020$), low family support (aOR = 1.79; 95% CI: 1.06 - 3.01; $p = 0.029$), and moderate-to-severe depressive symptoms (PHQ-9 ≥ 10) (aOR = 1.88; 95% CI: 1.10 - 3.19; $p = 0.021$) remained independently associated with viral non-suppression.

The final model demonstrated good calibration (Hosmer–Lemeshow goodness-of-fit test: $p = 0.64$). None of the other variables retained an independent association with viral non-suppression after adjustment.

Table 6. Final multivariable logistic regression model of factors associated with viral non-suppression.

Variables	Adjusted OR (aOR)	95% CI	p-value
Treatment interruption	2.47	1.48 - 4.11	<0.001
≥ 3 missed clinic appointments	1.96	1.11 - 3.44	0.020
Low family support	1.79	1.06 - 3.01	0.029
Depressive symptoms (PHQ-9 ≥ 10)	1.88	1.10 - 3.19	0.021
Perceived HIV-related stigma	1.39	0.84 - 2.30	0.188
Financial difficulties	1.27	0.77 - 2.08	0.344
Substance use	1.41	0.81 - 2.45	0.217

The variables low socioeconomic status and clinical suspicion of antiretroviral drug resistance were entered into the initial multivariable model but were not retained in the final model following the variable selection procedure.

4. Discussion

The present study aimed to identify the psychosocial and structural factors associated with viral non-suppression among adolescents and young people living with HIV receiving care at Kalembelembe Pediatric Hospital. Approximately one-third of the participants (33.5%) had unsuppressed viral load despite receiving antiretroviral therapy. After adjustment, treatment interruptions, missed clinic

appointments, low family support, and depressive symptoms remained independently associated with viral non-suppression. These findings highlight that virological outcomes among adolescents depend not only on access to antiretroviral therapy but also on behavioral, psychosocial, and organizational factors that influence treatment adherence and continuity of care.

The prevalence of viral non-suppression observed in this study is consistent with findings reported in several countries across sub-Saharan Africa. In the Democratic Republic of the Congo, Mukuku *et al.* reported a substantial proportion of children and adolescents receiving ART with unsuppressed viral loads [8]. Similar findings have also been reported in Tanzania, Kenya, and South Africa, where adolescents continue to exhibit poorer virological outcomes than adults despite improvements in access to treatment [6]. The persistence of high rates of viral non-suppression may be explained by the fact that the challenges faced by adolescents extend beyond biomedical considerations and reflect the complexity of this transitional stage of life, characterized by increasing autonomy, considerable psychosocial challenges, and often unstable treatment adherence [1] [2].

Treatment interruption was the strongest independent predictor of viral non-suppression. This finding is consistent with those reported by Mukuku *et al.*, Quaker *et al.*, and several recent systematic reviews [6] [8]. From a biological perspective, even brief interruptions in ART allow rapid viral rebound and increase the risk of developing antiretroviral drug resistance, thereby compromising sustained viral suppression. These findings reinforce the importance of optimizing treatment adherence as a primary objective of HIV care programs for adolescents and young people.

Missed clinic appointments also remained independently associated with viral non-suppression. This association likely reflects poor retention in care, which is widely recognized as a fundamental determinant of successful HIV treatment. Regular clinic visits not only ensure timely medication refills but also facilitate laboratory monitoring, early identification of adherence problems, and reinforcement of adherence counseling. Similar findings have been reported in Tanzania and Nigeria, where adolescent-friendly models of HIV care significantly improved retention in care and viral suppression rates [6] [11].

Low family support emerged as another independent determinant of viral non-suppression. This finding underscores the pivotal role of families in supporting adolescents living with HIV throughout their treatment journey. Parents and caregivers contribute by reminding adolescents to take their medications, accompanying them to clinic visits, and providing the emotional support necessary to sustain treatment adherence. Conversely, inadequate family support may increase the likelihood of treatment interruptions and loss to follow-up. This interpretation is consistent with findings reported in the Democratic Republic of the Congo by Mukuku *et al.* and with the conclusions of Munyayi *et al.*, who advocated for strengthening family-centered interventions to improve treatment outcomes among adolescents living with HIV [8] [12].

Depressive symptoms also remained independently associated with viral non-suppression. Adolescents experiencing depression are more likely to have poor adherence, disengage from care, and interrupt treatment. This relationship has been consistently documented in the literature [13]-[15]. The use of the Patient Health Questionnaire-9 (PHQ-9), an internationally validated screening instrument for depressive symptoms, further strengthens the validity of this finding. These results support recent recommendations from the World Health Organization and UNAIDS advocating the routine integration of mental health screening and management into HIV care programs for adolescents and young people living with HIV.

In contrast, perceived HIV-related stigma, financial difficulties, and substance use were no longer significantly associated with viral non-suppression after multivariable adjustment. The loss of statistical significance suggests that these factors may exert indirect effects by influencing treatment adherence, retention in care, or family support rather than directly affecting virological outcomes. Similar observations have been reported in several recent African studies, which indicate that psychosocial determinants frequently influence viral suppression through health-related behaviors rather than through direct biological pathways [11] [16] [17].

Beyond identifying risk factors, this study has important implications for HIV programs in the Democratic Republic of the Congo. The findings support the implementation of multidimensional interventions that combine strategies to strengthen treatment adherence, improve retention in care, actively engage families, routinely screen for depressive symptoms, and expand adolescent-friendly HIV services tailored to the specific needs of adolescents and young people living with HIV. Such an approach is consistent with recent WHO and UNAIDS recommendations aimed at accelerating progress toward global viral suppression targets among vulnerable populations.

Strengths and Limitations

This study has several strengths. These include the exhaustive inclusion of all eligible participants at a national HIV referral center, the use of an objective biological outcome (viral load) as the primary endpoint, the application of standardized instruments to assess moderate-to-severe depressive symptoms (PHQ-9) and perceived social support, and the use of multivariable logistic regression to control for potential confounding factors.

Nevertheless, several limitations should be acknowledged. First, the cross-sectional design precludes establishing causal relationships between the identified factors and viral non-suppression. Second, because the study was conducted at a single referral center, the generalizability of the findings to other settings may be limited. Third, the psychosocial variables were self-reported and therefore may be subject to recall bias and social desirability bias. Finally, the possibility of residual confounding due to unmeasured variables cannot be completely excluded.

5. Conclusions

This study found a high prevalence of viral non-suppression (33.5%) among adolescents and young people living with HIV receiving antiretroviral therapy at Kalembelembe Pediatric Hospital. Treatment interruptions, missed clinic appointments, low family support, and depressive symptoms were identified as the main factors independently associated with viral non-suppression.

These findings indicate that achieving viral suppression among adolescents depends not only on the availability of antiretroviral therapy but also on psychosocial, familial, and organizational factors that influence treatment adherence and continuity of care. They underscore the need to strengthen adolescent-centered interventions that integrate psychosocial support, routine screening for depressive symptoms, prevention of treatment interruptions, and strategies to improve retention in HIV care.

In a context where evidence on adolescents living with HIV remains limited in the Democratic Republic of the Congo, this study provides important data that may help inform national HIV policies and clinical care programs. Nevertheless, multicenter longitudinal studies are needed to confirm these findings and to further elucidate the evolving psychosocial and structural determinants of viral suppression among adolescents and young people living with HIV.

Author Contributions

All authors made substantial contributions to the conception and design of the study, the development of the methodology, data collection, data management and analysis, interpretation of the findings, and the drafting and critical revision of the manuscript. All authors read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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