



# Depression and Psychological Experience of Adolescents Living with HIV in Ouagadougou, Burkina Faso

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## ABSTRACT

**Introduction:** People living with HIV infection are more likely to experience mental health issues than their HIV negative. High prevalence of depression has been reported among people living with HIV in Africa varies from 12% to 60%. Furthermore, little is known about the mental health status of adolescents living with HIV. In 2014, the World Health Organization's global adolescent health report revealed that depression was the leading cause of illness and disability among adolescents. In most cases, painful life experience explains mental health disorders.

**Objectives:** The objective was to describe the psychological experience and depression in Adolescents Living With HIV (ALHIV) in the pediatric departments of CHU Yalgado Ouedraogo (CHUYO) and Saint Camille Hospital (HOSCO), Ouagadougou.

**Materials and methods:** A cross-sectional study was done, based on a survey and analysis of ALHIV medical records in pediatric wards at CHUYO and HOSCO from 4<sup>th</sup> November to 17<sup>th</sup> December 2020.

**Results:** A total of 100 adolescents were included. Among them 55% were females; sex ratio=0.88. The mean age was 15.9 years (extremes 10 and 17 years). A quarter of adolescents (22%) dropped out of school. The feeling of being different from their uninfected peers was noted in 43%. The mean age of adolescents at the disclosure of HIV serostatus was 13.5 years. Depression was noted in 59% of them. Depression was significantly associated with the place of residence (p-value=0.03), having friends (p-value=0.02), and the profile of the caregiver (p-value=0.001).

**Conclusion:** A considerable large number of adolescents living with HIV have depression. Most of them have a difficult life experience. Specific interventions are needed to alleviate depression, considering its impact in these adolescents.

**Keywords:** HIV; Adolescence; Depression; Mental health; Infection

## INTRODUCTION

Mental health disorders in people living with HIV are often overlooked in Sub-Saharan Africa [1]. In Adolescents Living with HIV (ALHIV) for whom the infection exacerbates mental health disorders, the situation can be dramatic [2]. For most of them, HIV infection remains a taboo in the family making it even more difficult for them to build their identity. Depleted in their self-image, most adolescents feel compelled to keep their condition secret even to their close friends and family members [3]. Disclosure of HIV serostatus can lead to loss of self-esteem and other behavioral disorders especially in adolescents who have been living with the infection since childhood [4]. In addition, parental overprotection can be very strenuous to handle [5]. Thus, any restrictions in regard

to holiday trips, sports activities and many other social events can generate conflicts, opposition and transgression.

The World Health Organization report on the health of adolescents reveals that depression is the leading cause of morbidity in adolescents [6]. In Burkina Faso, routine screening for depression in HIV-infected adolescents is not common due to health provider's insufficient expertise in mental health care. A study in Kenya which included 562 ALHIV found a depression rate of 18.9% [7]. The relationship between depression and HIV infection seems to be bidirectional, one aggravating the other: depression would lead to a rapid progression to AIDS related diseases [8,9]. The aim of this study is to contribute in improving mental health care in adolescents living with HIV in Burkina Faso.

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## MATERIALS AND METHODS

The study was conducted in medical units dedicated to HIV infected children and adolescents at the Yalgado Ouedraogo University Hospital and the Saint Camille Hospital in Ouagadougou.

Data was collected by a trained pediatrician during routine medical visits, using a well-structured questionnaire and medical records. To assess depression, the French version of the self-assessment scale "Child Depression Inventory" (CDI) was used in children aged 7 to 17 years. The self-assessment scale and questionnaire were filled by adolescents themselves when they were able to read and understand it. For others, the questionnaire was translated into the language they understood.

Adolescents living with HIV were included according to the following criteria: age between 10-17 years, aware of their HIV serostatus and free from any severe language disorders or cognitive impairment. Informed consent was obtained from the adolescent and the legal caregiver.

Patients were enrolled from 4<sup>th</sup> November to 17<sup>th</sup> December 2020. The dependent variables were symptoms of depression and adolescents' feelings about their illness. The independent variables were sociodemographic characteristics, clinical characteristics and viral load.

Mean values were presented with their standard deviations. Qualitative variables were compared using the chi-square test and Fisher's exact test when necessary. Quantitative variables were compared using the Student test. Variables which, at the end of the univariate analysis, were significantly associated with depression were introduced into a multiple logistic regression model. Odds Ratios (OR) and 95% Confidence Intervals (95% CI) were calculated to determine the strength of the association between the dependent variable (depression) and the independent variables. The associations between the variables were considered statistically significant at the probability threshold of 0.05.

### Ethical considerations

Written and verbal informed consent was obtained from each

participant and the legal caregiver. All adolescents diagnosed with moderate or severe mental health disorders were referred to the mental health clinic at the CHU Yalgado Ouedraogo.

## RESULTS

### Sample description

One hundred adolescents (60 at HOSCO and 40 at CHUYO) were included; 55% of the populations were girls. The mean age was  $15.94 \pm 1.29$  years. Three quarters were aged between 16 and 17 years old. Majority of adolescents (86%) had been in care for more than 10 years (mean 12.5 years; extremes 3 and 17 years). The mean age at the disclosure of HIV serostatus was 13.52 years. HIV infection was perinatally acquired in all of them.

Most patients (89%) lived in urban areas. The socio-economic conditions were poor in 43% and 60% were orphans of at least one parent. In addition, one in ten orphans had a caregiver other than a family member, five were in foster families and four were homeless.

Twenty two adolescents had dropped out of school and were currently employed. Moreover, half of the 87 adolescents who had school problems mentioned the disease burden as the main reason for school failure determined in Table 1.

### Frequency of depressive symptoms

Depression was diagnosed in 59% of ALHIV, and 40% were girls. The proportion of ALHIV older than 15 years of age, with depressive symptoms was 63.5%. Moderate to severe depression was observed in 27% of patient's in Table 2.

Adolescents who had depression were frequently from rural areas, and were often orphan of both parents. In addition, they had regularly a caregiver other than the biological parent, had no friends and felt that they were different from their HIV negative peers observed in Table 3.

**Three factors were significantly associated with depression in multivariate analysis:** Not having a biological parent as a caregiver, not having friends, and living in rural areas observed in Table 4.

**Table 1:** Characteristics of HIV infected adolescents at CHU Yalgado Ouedraogo and Saint Camille hospital from 4<sup>th</sup> November to 17<sup>th</sup> December 2020 (N=100).

	n
<b>Adolescent's age (years) at the time parents passed away</b>	
<b>Father</b>	
≤ 5	31
[6-12]	5
≥ 12	10
<b>Mother</b>	
≤ 5	19
06-Dec	7
≥ 12	7
<b>Person in charge</b>	
Mother	31
Both parents	19
Uncle/Aunty	18
Father	14
Others*	18

Education level/Professional activity		
Secondary		61
Professional activity		22
Primary		15
High school		2
School problems (n=87)		
Repeat a class		65
Dropped out		19
Exclusion		3
Disease perception		
I feel different from others		45
I am stigmatised/rejected		17
I feel ashamed living with the disease		32
I worry about my sentimental life		59
Consumption of psycho actives substances		
Alcohol		13
Others ( tobacco, cannabis , tramadol)		6
Age at disclosure of HIV seropositivity $\geq$ 12 years		87
Viral load unsuppressed		46

Note: \*Grandparents (5), Brother (2), Step mother (1)

**Table 2:** Severity and frequency of depressive symptoms in HIV infected adolescents at CHU Yalgado Ouedraogo and Saint Camille hospital from 4<sup>th</sup> November to 17<sup>th</sup> December 2020.

	n
Severity of depression (n=59)	
Mild	32
Moderate	15
Severe	12
Suicidal ideation	
I think of committing suicide but I won't attempt it	17
I want to end my life	4
I never think of committing suicide	79
Perceptions of academic performance	
I am performing poorly in subjects which I once excelled	29
My academic results are not as good as they used to be	51
My academic results are quite good	20

**Table 3:** HIV infected adolescents characteristics based on the presence of depression at CHU Yalgado Ouedraogo and Saint Camille hospital from 4<sup>th</sup> November to 17<sup>th</sup> December 2020.

	Depression		P-value	Total N(%)
	Absent n(%)	Present n (%)		
<b>Age (years)</b>			0.12	
≤ 15	14 (53.8)	12 (46.2)		26(26)
>15	27 (36.5)	47 (63.5)		74(76)
<b>Sex</b>			0.82	
Male	19(42.2)	26(57.8)		45(45)
Female	22(40)	33(60)		55(55)
<b>Place of residence</b>			0.003	
Rural	1(9.1)	10(90.9)		11(11)
Semi Urban	1(14.3)	6(85.7)		7(7)
Urban	39(47.6)	43(52.4)		82(82)
<b>Orphan</b>			0.015	
No	6(31.6)	13(68.4)		19(19)
Orphan of one parent	12(29.3)	29(70.7)		41(41)

Orphan of both parents	23(59)	16(41)		39(39)
<b>Caregiver</b>			0.001	
Father or /and mother	34(53.1)	30(46.9)		64(64)
Other	7(19.4)	29(80.6)		36(36)
<b>Having friends</b>			0.017	
No	1(14.6)	6(85.7)		7(7)
Yes	40(43)	53(57)		93(93)
<b>Feeling different from HIV-peers</b>			0.004	
Yes	11(25.6)	32(74.4)		43(43)
No	25(55.6)	20(44.4)		45(45)
Indifferent	6(50,0)	6(50.0)		12(12)
<b>Viral load</b>			0.395	
Suppressed	23(45.1)	28(54.9)		51(51)
Unsuppressed	18(36.7)	31(63.3)		49(49)
<b>ART Adherence</b>			0.04	
Adequate	30(49.2)	31(50.8)		61(61)
Poor	11(28.2)	28(71.8)		39(39)
<b>School problems</b>			0.12	
No	12(54.5)	10(45.5)		22(22)
Yes	3(23.1)	10(76.9)		13(13)

**Table 4:** Factors associated with depression in ALHIV at CHU YO and HOSCO: Multivariate analysis.

	Depression		OR (IC95%)	P value
	Present	Absent		
<b>Caregiver</b>				0.001
Father or /and mother	34(53.1)	30(46.9)		
Other	7(19.4)	29(80.6)	8.3(2.4-28.5)	
<b>Having friends</b>				0.026
No	1(14.6)	6(85.7)		
Yes	40(43)	53(57)	0.1(0.0-0.6)	
<b>ART Adherence</b>				0.28
adequate	30(49.2)	31(50.8)		
Poor	11(28.2)	28(71.8)	1.92(0.6-6.4)	
<b>Feeling different from HIV-peers</b>				0.063
Yes	11(25.6)	32(74.4)		
No	25(55.6)	20(44.4)	0.25(0.1-1.1)	
<b>Place of residence</b>				
Rural	1(9.1)	10(90.9)		0.03
Semi Urban/Urban	1(14.3)	6(85.7)	0.07(0.0-0.4)	
<b>Orphan</b>				
No	6(31.6)	13(68.4)		
Orphan of one or both parents	12(29.3)	29(70.7)	1.77(0.5-6.2)	0.4

## DISCUSSION

The prevalence of depressive symptoms was considerable high in this population of adolescents living with HIV. The majority of them lived in difficult conditions characterized by poverty and the death of a parent. Many of them dropped out of school, abused psychoactive substances and had poor ARV adherence.

This situation reflects the condition of most adolescents living with HIV in the world and specifically in sub-Saharan Africa [10]. Kemigisha in Uganda found that 52.1% of ALHIV had lost at least one parent while Abebe in Ethiopia found higher rates of 69% [2,11]. Substance abuse and alcohol consumption can have a negative impact on treatment cascade [12]. In addition, frequent

changes of caregivers, and limited access to health care, explain insufficient preparation for HIV disclosure and late disclosure. HIV disclosure is a very important step in ALHIV's life and should ideally be done around the age of 10-12 years in order to limit harmful reactions after this age. In most cases in our study (87%), disclosure was done after 12 years. HIV serostatus disclosure in children is generally slow in sub-Saharan Africa [13]. The reasons for late disclosure are among others, fear of traumatizing the child, fear that the family secret will be disclosed, mother feeling guilty and insufficiently trained health providers. One of the consequences of late disclosure is mistrust of caregivers and health providers, leading to poor ARV adherence and even treatment abandonment. Poor treatment adherence in adolescents can be the expression of psychological pain or a strong desire to forget the disease in everyday life.

The prevalence of depression was very high in our study. Our results corroborate those of other researches on adults and adolescents living with HIV infection [14-16]. However, lower rates have been published in other parts of Africa with different population characteristics and different type of tools used to assess depression [11,17]. Comparative studies confirm that HIV infected people are significantly more depressed than uninfected ones, hence the recommendation for systematic screening for depression in people living with HIV [18]. Insufficient screening for depression in our setting is due to a lack of mental health specialists and screening tools adapted to our social environment but also popular belief that mental health care is not a priority.

We did not find any significant difference between boys and girls with regard to the presence of depressive symptoms, contrary to recent publications where depression seemed to be more frequent in girls [7,19]. Indeed, social pressures such as engaging in an arranged marriage, in risky sexual relations or undesired pregnancy can increase the risk of depression in girls.

Adolescents over 15 years old were more depressed compared to those under 15 years old. Similar results have been reported in other parts of the world [7,11,16]. However, in multivariate analysis, age did not seem significantly associated with depression, nor did other factors such as being orphan, feeling different from uninfected peers or poor ART adherence.

It is not surprising that a loss of a parent (most likely to AIDS-related diseases) is difficult to bear and could lead to depression. As stated by Freeman, people who had lost a loved one to AIDS related diseases were more likely to present mental health issues [20].

A recent study conducted in South Africa in 1060 ALHIV reported that internalized stigma (keeping the feeling of stigmatization to oneself) was even associated ( $p < 0.001$ ) with depression [21]. This is consistent with studies conducted in other countries [22,23]. HIV positive young people tend to develop an increased sense of isolation, poor self-esteem which could lead to psychological distress. However, in multivariate analysis, feeling different from other HIV negative peers was not associated with depression on our study.

In multivariate analysis, poor antiretroviral adherence was not associated with depressive symptoms. Our results are different from those of Abebe in Ethiopia who found that infected young people with poor treatment adherence were 1.73 times more likely to develop depression than those with good ART adherence (OR=1.73; 95% CI:1.13-2.64) [1,11]. Moreover, poor ART

adherence leads to drug resistance, resulting in decreased viral load suppression [24,25], this will also increase the likelihood that the patient will transmit the disease [26]. Therefore, implementing systematic screening for depression in adolescent could enable this high-risk population to get mental health support they need and avoid the long-term risks associated with depression.

A significant association was identified between depression and the place of residence, having friends and the profile of the caregiver. Whatmore, the majority of adolescents living in rural (90.9%) areas were depressed compared to only 52.4% of those who lived in urban areas. Kemigisha in Uganda found that longer transport time to a health clinic was associated with a higher prevalence of depression [7]. Similar findings have been reported in South Africa, whereas a study showed that people living within 6 km of a clinic had significantly lower rates of depression than those who lived 15 km or more [27]. This could be related to the increased burden of attending clinics with long travel times in rural areas. Teenagers who have to travel a greater distance to get to the hospital have financial stress due to the cost of travelling, absences from school or workplace. Therefore, health care facilities and groups developing interventions for adolescents living with HIV/AIDS should be aware of the association between high prevalence of depression and the burden of long journeys to health facilities. In addition, lack of pediatric HIV/AIDS care in rural areas and persistence of stigmatization is still a challenge in Burkina Faso. Finally, several studies have shown that poverty is associated with negative mental health outcomes, particularly in populations with other health conditions (malnutrition, anemia, malaria) [28-30]. This is also the case in rural areas in Burkina Faso.

In the proportion of adolescents without friends, a statistically significant relationship was noted between not having friends and depression in our study. Having a friend represented both moral and social support for adolescents living with HIV and this prevent isolation, rejection and loss of self-esteem.

As for the adolescent caregiver, depression symptomatology was more noticeable in adolescents not living with their father or mother. The susceptibility for an adolescent not living with his father or mother to have depression was eight times higher than that of living with biological parents. This situation highlights the importance of parental support whether social or financial in adolescents living with HIV. In Abebe's study, HIV infected young people who had moderate to low social support were more likely to develop depression compared to those who had strong social support [11]. Young people living with HIV who do not have close family ties are unable to seek care and may experience an increase in their depression symptoms [16]. Moreover, poor social support can lead to risky behaviors such as the use of psychoactive substances, engaging in risky sexual relationship or poor ART adherence.

## CONCLUSION

The interpretation of our results should take into account some of the limits. Firstly, although widely used in various backgrounds, the rating scale used for depression in this study is based on the statements of adolescents interviewed. Also, translating the assessment tool into the local language might have influenced the adolescent's response. Secondly, the sampling design might have introduced a selection bias; the short study period did not allow us to assess all adolescents followed in the two clinics. Lastly, assessment of depression disorders in HIV infected persons can be strongly influenced by various manifestations of HIV infection.

High prevalence of depression in adolescents living with HIV in our setting calls for specific interventions. Mental health support needs to be reinforced in adolescents especially those living with HIV since childhood.

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