Depression, anxiety and viral suppression among adolescents and young adults in 9 African countries

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BACKGROUND

- Adolescents and young adults living with HIV (ALHIV) have the lowest viral suppression of all age groups.
- Depression and anxiety may undermine treatment outcomes yet have not been systematically assessed among ALHIV in Africa at scale.
- Using population-representative data, we estimated the prevalence of depressive and anxiety symptoms among ALHIV and their association with viral non-suppression.

METHODS

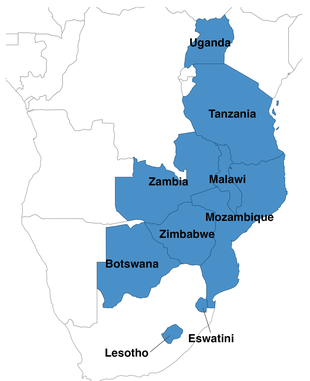
Data Source

Nationally representative data were collected from 2019-2023 from 9 population-based household surveys (including biomarkers):

- *Botswana AIDS Impact Survey V (BAIS V 2021)*
- *Population-based HIV Impact Assessment surveys (PHIAs) in Eswatini (2021), Lesotho (2020), Malawi (2021), Mozambique (2021), Tanzania (2023), Uganda (2021), Zambia (2021), Zimbabwe (2020)*

Sample and Target Population

- This analysis included 1821 individuals aged 15-24 years who consented and tested HIV-1 sero-positive in their survey blood samples.
- This represents a population of 964,075 individuals living with HIV in the nine countries in Southern and Eastern Africa.



	Study Sample	Target Population
Botswana	157	14,293 (1%)
Eswatini	250	16,999 (2%)
Lesotho	248	21,350 (2%)
Malawi	201	81,381 (8%)
Mozambique	244	329,637 (34%)
Tanzania	112	111,989 (12%)
Uganda	163	164,726 (17%)
Zambia	200	104,501 (11%)
Zimbabwe	246	119,201 (12%)
Total N	**1821**	**964, 075** (100%)

Exposures

- Depressive symptoms: PHQ-2 (score range 0–6); positive screen defined as >2.
- Anxiety symptoms: GAD-2 (score range 0–6); positive screen defined as >2.

Outcomes

- Detectable viral load (viral load >200 copies/mL).

Statistical Method

- We restricted to ALHIV on ART and applied survey-weighted log-binomial regressions to estimate adjusted prevalence ratios (aPRs) with 95% confidence intervals. Adjusted for age, sex, urbanicity, and marital status, and accounting for the complex survey design.

Depressive symptoms were strongly associated with viral non-suppression in adolescents and young adults living with HIV and receiving treatment in African settings, supporting integration of mental health screening into HIV care.

RESULTS

- Of 964,075 adolescents and young adults living with HIV, 73% were female, 34% aged 15-19, and 57% lived in rural areas. Overall, 8.9% (95% CI: 7.0-11.2%) screened positive for mental health symptoms.
- 5% reported depressive symptoms, and 6% reported anxiety symptoms.
- Prevalences of depressive and anxiety symptoms were higher among females than males and varied by age groups (Figure 1).

- 63% of ALHIV (n=608,124) were receiving antiretroviral treatment.
- Among those receiving treatment, overall prevalence of having detectable viral load was 20%. Prevalence of detectable viral load was 17% among those without mental distress, 20% among those reported anxiety symptoms, and 43% among those reported depressive symptoms.
- Depressive symptoms were associated with detectable viral load (aPR=2.6, 95% CI 1.6–4.1). Anxiety symptoms showed no independent association with detectable viral load (aPR=1.2, 95% CI 0.5-2.6) (Table 1).

	Detectable Viral Load (>200 copies/ml)	
Exposure	Prevalence	aPR (95% CI)
No Symptoms	17% (15–22%)	1.0 (ref)
Anxiety Symptoms	20% (0–33%)	1.2 (0.5–2.6)
Depression Symptoms	43% (12–76%)	**2.6 (1.6–4.1)**

Table 1. *Weighted prevalence ratios for detectable viral load by anxiety and depressive symptoms among ALHIV receiving antiretroviral treatment (n = 608,124)*

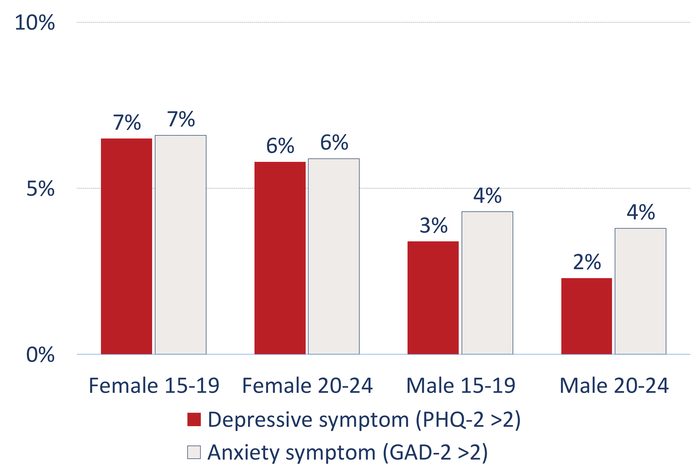


Figure 1. *Weighted prevalence of depressive and anxiety symptoms among ALHIV by age group and sex (n= 964,075)*

CONCLUSIONS

- Depressive symptoms were strongly associated with viral non-suppression among ALHIV.
- Findings support integration of mental health screening into adolescent HIV care.
- Further research to develop integrated interventions to address mental health needs and poor HIV outcomes for youth could be beneficial.

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