



INCREASED SCREENING FOR ADOLESCENTS AT HIGH RISK OF ANTIRETROVIRAL NON-ADHERENCE

A short and simple evidence-based screening mechanism using the World Health Organization endorsed HEADSS assessment and the HEADSS+ questionnaire

KEY MESSAGES

This screening mechanism operates to identify adolescents at high risk of antiretroviral therapy (ART) non-adherence, and to inform effective and integrated HIV care.

It provides a simple method to identify adolescents who are very likely to need additional support to remain healthy.

Through integrating violence prevention, mental health, sexual health and family support into medical care, it helps reduce mortality amongst adolescents living with HIV.

This Brief summarises new evidence from a longitudinal 4 years, quantitative cohort study of 1046 adolescents living with HIV in South Africa. The research pinpoints the three components, within the widely used HEADSS assessment and HEADSS+ questionnaire, most associated with adolescents' non-adherence to ART. A screening checklist focused on these three components can be used by practitioners more frequently to assess adolescents in need of extra support for ART adherence. It provides a practical tool offering feasibility and scalability for high-burden health workers and systems. Finally, the identified risk components point to key areas for intervention which can deliver more impactful provision of integrated services.

HEADSS AND HEADSS+

The **HEADSS** (Home, Education/employment, peer group Activities, Drugs, Sexuality, and Suicide/depression) assessment was developed in the 1970s and refined in the early 2000s [3, 4], and is recommended by the World Health Organization for use as a structured assessment of general adolescent psychosocial risk and wellbeing [5]. It has been used extensively in sub-Saharan Africa with paediatric hospital populations [6, 7] and with adolescents living with HIV [8].

In 2017, Frontline AIDS adapted HEADSS to include assessments that were specific to adolescents living with HIV, creating the **HEADSS+** questionnaire. Both HEADSS and HEADSS+ are non-commercial, freely accessible and translated into multiple languages.

LOCATION

South Africa



THE NEED

Adolescents living with HIV are at substantially elevated risk of ART non-adherence, and consequent mortality and morbidity, as compared to other age groups [1]. There are many varied and interlinked aspects of adolescence which present complex adherence challenges for both adolescents and their treatment providers, extending well beyond the taking of tablets to the normative social, familial and psychological context of this life stage. In sub-Saharan Africa's high-burden, low-resource healthcare and community settings, providers need to know which adolescents will most benefit from additional support. Methods such as asking directly about adherence, pill-counting and electronic pill boxes are often inaccurate or unfeasible [2]. Assessments which are brief, simple and drawn from familiar tools that are adolescent-friendly, acceptable and adaptable to context are required. Through facilitating adherence to ART, feasible and focused assessment can transform shortened lives of sickness into excellent quality of life throughout many years of healthy functioning adulthood.

Our research identified the components most predictive for treatment non-adherence by adolescents living with HIV – three each from the HEADSS and HEADSS+ components.





METHODS

- Extracted clinical records and conducted interviews from 2014-2018 with 1046 adolescents (96% retention, 3.4% mortality) living with HIV, in 52 government clinics in South Africa's Eastern Cape, Gauteng, KwaZulu-Natal, Free State and North West Provinces [9].
- Interviews were administered in three rounds, through tablet-based questionnaires co-designed with an adolescent advisory group.
- From the cohort outcome indicators, we matched 33 constructs were matched to the HEADSS assessment and 36 constructs to the HEADSS+ questionnaire.† Findings were illustrated with logistic random-intercept regressions and predicted probabilities, and self-reported non-adherence was validated with viral load.

†The least absolute shrinkage and selection operator (Lasso) variable selection approach [10] was used, with a generalised linear mixed model, and a sensitivity check, treating observations as independent.

FINDINGS

- The three most predictive HEADSS components of non-adherence were: **emotional or physical violence exposure, depression symptoms, and being sexually active**. Adolescent ART non-adherence was 20.4% with none of these, rising to 55.6% with all three markers. (See Figure 1)
- The three most predictive HEADSS+ components of non-adherence were: **medication side-effects, low social support, and parents not knowing adolescent's HIV status**. Adolescent ART non-adherence was 21.6% with none of these, rising to 71.8% with all of them. (See Figure 2)
- There are close interlinkages between adolescents' social, familial, and sexual wellbeing and their capacity to maintain adherence to antiretrovirals and subsequent viral load suppression. Accumulation of stressors amplifies vulnerability to non-adherence, making these psychosocial factors instrumental in reliable assessment and responsive intervention.

Figure 1: HEADSS components most predictive of non-adherence.

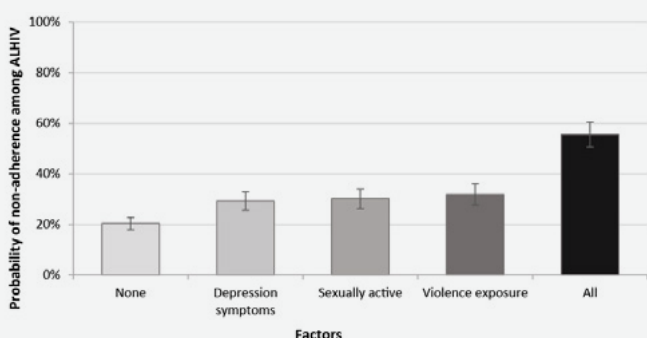
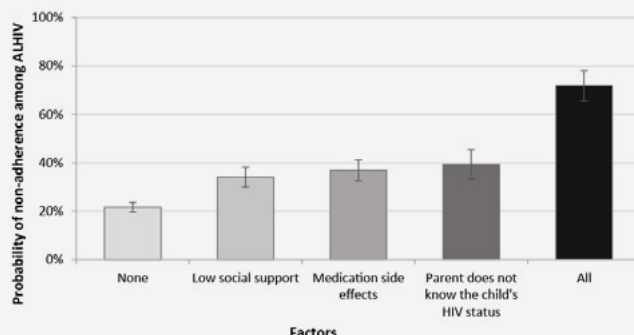


Figure 2: HEADSS+ components most predictive of non-adherence.



WHAT DOES THIS MEAN FOR PRACTICE

- ➔ More frequent screening of key components within two established person-centred checklists can improve timeliness in clinical and community settings to identify adolescents needing increased ART adherence support.
- ➔ More frequent screening using these key components could be done in multiple formats, such as: posters in clinics, self-administered digitally or on paper, through mobile phone or tablet-based communication particularly suited to COVID-remote delivery, accompanying mentoring or peer support [11].
- ➔ Healthcare workers need to be supported in how to ask these questions in relationship-building ways, and in facilitating effective referrals for needed services and support.
- ➔ This research also highlights areas for intervention and prevention of non-adherence, including side-effect management, violence prevention, mental health, sexual and reproductive health, economic support and boosting family support for a highly vulnerable population. This supports similar recent findings from South Africa [12-14], Uganda [15, 16] and Botswana [17].





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