

Development of a Tool to Assess HIV Prevention Readiness of Adolescent Girls Young Women in South Africa and Zimbabwe

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BACKGROUND

Hypothesis: Higher scores on the HIV Prevention Readiness Measure (HPRM) will be associated with better PrEP adherence among African adolescent girls and young women (AGYW).

- Qualitative studies among women in Africa indicate that the reasons for low adherence of PrEP are multifaceted (e.g., fear of disclosure of PrEP use, stigma, social support, and medication and institutional distrust.)
- A reliable, valid, comprehensive low-cost tool would be valuable to HIV prevention providers to assess PrEP readiness of AGYW and need adherence support.
- HPRM was adapted from the validated HIV *treatment* readiness measure (HTRM) developed for youth ages 13-24 years living with HIV infection in the U.S.

METHODS

In the HPTN 082 open-label oral PrEP demonstration study in Cape Town and Johannesburg, South Africa; and Harare, Zimbabwe, 451 AGYW ages 16-25 were administered the 25-item HPRM. The components included connection with care (5 items), medication beliefs (11 items), disclosure (4 items), and support (housing, general and PrEP support, 5 items).

- Exploratory factor analysis (EFA) using polychoric correlation, scale reliability, and predictive validity were performed on data from 315 participants who accepted PrEP and responded to all items.
- Predictive value of HPRM scores on PrEP adherence was assessed using tenofovir-diphosphate (TFV-DP) concentrations in dried blood spots (DBS), as a *continuous* measure and *dichotomized* as high PrEP adherence (≥ 700 fmol/punch). *Persistent* adherence was defined as high PrEP adherence at both months 3 and 6.

HPRM score and the individual factors (self-efficacy, PrEP disclosure and social support) predicted higher DBS concentrations at month 3.

PrEP disclosure also predicted higher odds of persistent adherence at months 3 and 6.

TABLE 1. HPRM score and the individual factors as predictors of PrEP adherence (DBS TFV-DP) at 3 months and persistent adherence at months 3 and 6.

	Odds of High Adherence (month 3)		DBS Concentration (month 3)		Odds of Persistent High Adherence (month 3 and 6)	
	OR (95% CI)	P-value	fmol/punch (95% CI)	P-value	OR (95% CI)	P-value
HPRM score	1.41 (0.85, 2.35)	0.181	122 (33, 211)	0.007	1.59 (0.85, 2.97)	0.144
Self Efficacy	1.34 (0.81, 2.23)	0.260	109 (24, 193)	0.012	1.38 (0.75, 2.56)	0.303
PrEP Disclosure	1.37 (1.00, 1.86)	0.047	72 (22, 122)	0.005	1.53 (1.04, 2.23)	0.030
Social support	1.16 (0.82, 1.63)	0.399	63 (6, 120)	0.031	1.27 (0.84, 1.94)	0.256

RESULTS

- Exploratory factor analysis yielded 3-factor solution with 23 items explaining 46% of the variance.
 - Self-efficacy (16 items), PrEP disclosure (4 items), and social support (3 items).
- HPRM score and the individual factors demonstrated good reliability. Cronbach's alpha ranged from 0.71 to 0.92.
- HPRM score and the three factors were predictive of increased DBS concentration (continuous outcome).
- PrEP disclosure was significantly predictive of persistent adherence (OR 1.53, 95% CI: 1.04 to 2.23).

CONCLUSIONS

- The HPRM score and the three factors individually demonstrated good reliability among AGYW in youth-friendly adolescent clinic settings in Southern Africa and Zimbabwe.
- The HPRM has the potential for routine use more broadly across the world as a low-cost, low administrative burden tool to assess HIV prevention readiness in settings where PrEP adherence is a challenge for adolescents.
- PrEP disclosure association with persistent adherence suggests that interventions supporting disclosure to trusted others may increase adherence.
- Future work will replicate and expand self-efficacy and social-support factors after item revision. Validity assessment will continue among vulnerable adolescent populations where HIV incidence is high and PrEP use is low.

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