Economic Strengthening Intervention to Improve ART Adherence in HIV-infected Youths in Uganda

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Background

- Adolescents living with HIV (ALHIV) have low antiretroviral therapy (ART) adherence and poor treatment outcomes[1].



- Poverty is a major threat to adherence, yet many interventions do not address poverty as a strategy to improve adherence.
- We examined the impact of an economic empowerment intervention on ART adherence among ALHIV in Uganda.

Methods

- Data from *Suubi+Adherence* study, a longitudinal (2012-to date) cluster-randomized trial that examined the impact of an economic empowerment intervention on HIV treatment adherence among ALWHIV was used [2].
- Pill count data was available for 455 ALHIV, including 344 in the control and 111 in the intervention arms. aged 10 to 16 years from 39 health clinics in the greater Masaka region in Southern Uganda.
- The intervention consisted of a long-term child development account (CDA), four micro-enterprise workshops, and 12 mentorship and educational sessions.
- Adherence was measured using unannounced pill counts and we used mixed-effects logistic regression analysis to examine the effect of the intervention on ART adherence

Results

- The mean age was 12.6 years, and 58% were females. We did not find significant intervention main effects.
- There was a significant overall main effect for time, $\chi 2(5) = 234.01$, $p<0.001$ and a significant group-by-time interaction effects $\chi 2(5) = 45.41$, $p<0.001$.
- At the fourth (OR=1.61 (1.00 – 2.59),p=0.048) fifth (OR=1.68 (1.12 – 2.52), p=0.012) and sixth visits (OR=2.05 (1.41 – 3.00), p<0.001) , adherence in the intervention group was higher than that observed in the control group.

Table 1: Effect of the economic strengthening intervention on ART adherence among ALHIV in Uganda

Parameter	OR (95% CI)	P value
Group: $\chi^2(df)$	*1.79 (1)*	*0.183*
Control	1	
Intervention	0.95 (0.53 – 1.69)	0.851
Time (visits): $\chi^2(df)$	***234.01 (5)***	***<0.001***
First Visit	1	
Second visit	0.74 (0.40 – 1.36)	0.344
Third visit	0.40 (0.26 – 0.64)	<0.001
Fourth visit	0.35 (0.24 – 0.52)	<0.001
Fifth visit	0.31 (0.22 – 0.42)	<0.001
Sixth visit	0.27 (0.19 – 0.39)	<0.001
Group by Time interaction: $\chi^2(df)$	***45.41 (5)***	***<0.001***
First Visit	1	
Second visit x intervention	0.89 (0.40 – 1.97)	0.768
Third visit x intervention	1.92 (0.92 – 4.00)	0.080
Fourth visit x intervention	1.61 (1.00 – 2.59)	0.048
Fifth visit x intervention	1.68 (1.12 – 2.52)	0.012
Sixth visit x intervention	2.05 (1.41 – 3.00)	<0.001
Constant	3.92 (2.65 – 5.78)	<0.001
Random effects		
Clinic level ICC	0.019 (0.008 – 0.046)	
Participant ICC	0.043 (0.020 – 0.090)	
Number of participants	455	
Number of observations	2600	

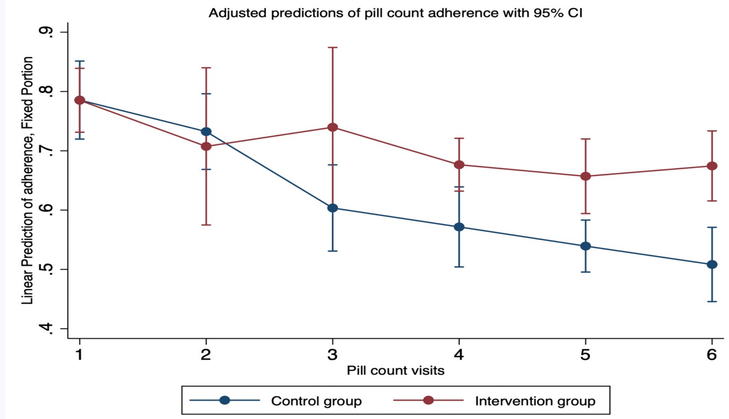


Figure 1: ART adherence among ALHIV in Southern Uganda.

Conclusions

- Our findings support the theory that economic strengthening interventions improve patient outcomes. Future programs should consider incorporating economic empowering components in care packages for ALHIV in resource-limited settings

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