

## Abstract

**Introduction/background:** Adherence is defined as taking medications correctly according to prescription. Poor adherence to ART has become a problem leading to poor viral suppression. Poor viral suppression is a major cause of treatment failure and death among patients taking ART.

**Main objective:** This study assessed factors associated with poor adherence among patients receiving ART in rural Kalungu Uganda and evaluated the independent predictors of poor adherence.

**Methodology:** Data on socio-demographic and behavioral factors, ART adherence, clinical features, baseline and 6monthly viral loads (VL) and CD4 counts (CD4) were obtained on patients receiving ART in a rural HIV cohort. Participants initiated on first line ART, received ART adherence counseling monthly during ART refill visits and during the quarterly routine visits. Adherence was measured by both pill counts and self-reports. Adherence of <95% was regarded as poor. Cox proportional hazards models were used to estimate the crude rates of poor adherence for categories of explanatory variables. Independent predictors of poor adherence were obtained by fitting cox proportional hazard models using a conceptual framework.

**Results:** 316 participants accrued 1036 person years at risk (pyar) and 106 (34%) had poor adherence (rate 10.1 per 100 pyar). The independent predictors of poor adherence were; age; the rate of poor adherence reduced by; 53% from age-group 30-40 to age-group <30 years (adjusted (a) HR=0.47, 95% CI 0.29 – 0.79, P=0.002), 55% from age-group 40-50 years to age-group 30 years (AHR 0.45 95% CI 0.25 - 0.79 P=0.002), and 43% from age-group > 50 years to age-group 30 years (AHR 0.56 95% CI 0.27-1.14 P=0.002).

There was weak evidence that having two or more sexual partners exposed participants to a threefold rate of poor adherence compared to having no partner (AHR 2.99 95%CI 0.95 – 8.80 P=0.06) and having a partner conferred a 2 fold rate of poor adherence compared to not having a partner(AHR 1.83 95%CI 0.83 – 4.09 P=0.06)

**Conclusion and recommendations:** Special adherence counseling methods should be adopted for young patients and participants with multiple sexual partners to maintain these patients on first line ART regimen for as long as possible. More qualitative studies should be done to explore causes of poor adherence on first-line ART.