

The impact of disclosure on adherence in HIV-infected adolescents in Botswana: a longitudinal study

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Introduction

“Disclosure”

- Informing a child/adolescent of his/her HIV status

Children receiving HIV treatment often aren't told they are HIV-infected until well into adolescence

Impact of disclosure on adherence unclear



Qualitative Studies

“I had to tell her about her condition and that is when she had the courage of taking (the medicine)”¹

“...(disclosure) helped because even when she gets tired of drugs then she remembers that it is good to take the drug and she takes it...you cannot tell a child to take drugs everyday when she does not know for what reason.”²

¹Vreeman et al., AIDS Patient Care ST 2010

²Bikaako-Kajura et al., AIDS Behav. 2006

Cross-sectional Studies

Mixed results comparing disclosed to non-disclosed
(N=8)

- 5-better adherence among disclosed
- 3-no difference in adherence

One study assessed pill count adherence at 6 & 12 months post-disclosure (N=67)

	Before disclosure	After disclosure 6 months	<i>p</i> -value*	After disclosure 12 months	<i>p</i> -value*
% Adherence by pill count	<u>98 (94–100)</u>	<u>99.4 (95–100)</u>	0.75	<u>99.4 (95.8–100)</u>	0.85
Number (%) of children with adherence by pill count <95%	12/43 (27.9%)	9/37 (24%)	0.72	10/48 (20%)	0.43
CD4% (<i>n</i> = 67)	24 (19–30)	27 (20–31)	0.02	26 (21–31)	0.01
CD4, cells/mm ³ (<i>n</i> = 67)	615 (444–829)	684 (432–888)	0.09	628 (453–898)	0.29
Number (%) of children with HIV-RNA <50 copies/ml	81/95 (85%)	50/64 (78%)	0.91	77/93 (83%)	0.53

Note: *When compared with data before HIV disclosure.

Sirikum et al. AIDS Care. 2014

Study aim

To examine the impact of disclosure on adherence in HIV infected adolescents in Botswana enrolled in a longitudinal adherence study

Study Design

Prospective cohort study

- Quarterly study visits

Setting

- Gaborone, Botswana
- Botswana-Baylor Children's Clinical Centre of Excellence

Population

- 300 HIV infected adolescents ages 10-19
- All cART-experienced



Variables

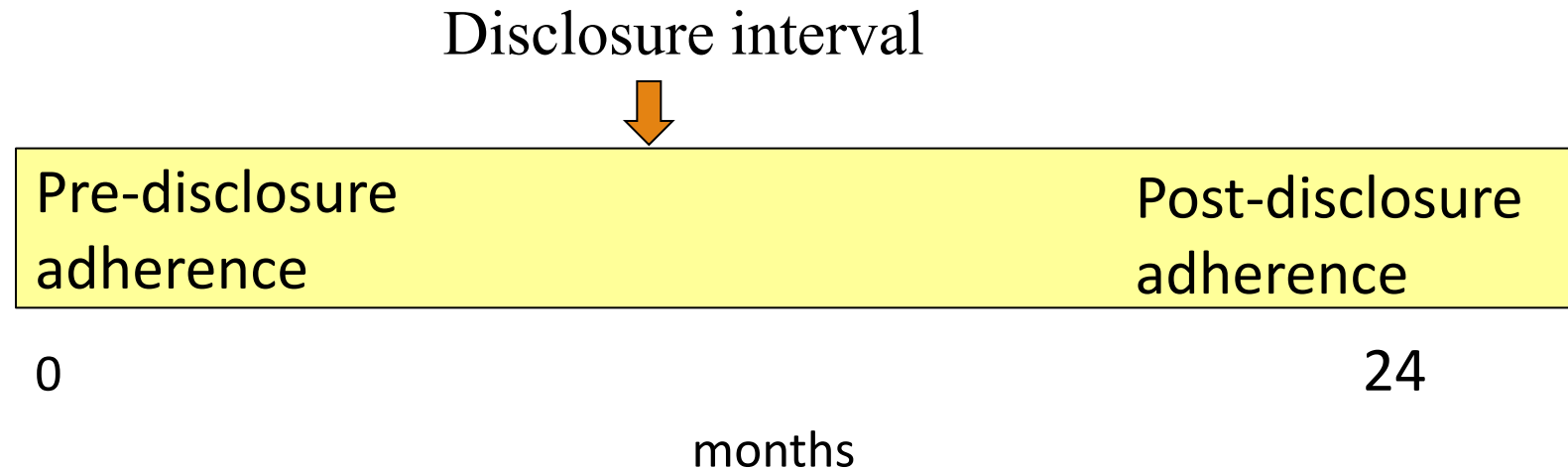
Exposure: Disclosure

- Baseline: Does the adolescent know his/her HIV status?
- Visits: Has the subject newly learned his/her HIV status?
 - Disclosure interval

Outcome: Adherence

- Medication event monitoring system (MEMS)
 - Continuous- percentage adherence

Analysis



- Segmented general linearized mixed model
- Adherence = $\beta_0 + \beta_1 \cdot \text{time} + \beta_2 \cdot \text{disclosure} + \beta_3 \cdot \text{time} \cdot \text{disclosure}$
 - Pre-disclosure: $Y = \beta_0 + \beta_1 \cdot \text{time}$
 - Post-disclosure: $Y = (\beta_0 + \beta_2) + (\beta_1 + \beta_3) \cdot \text{time}$
- Control for age

Results (N=300)

Baseline disclosure - 65%

Age	Number of adolescents	Disclosure rate (%)
≥ 16	66	100
13-15	87	85
10-12	41	31

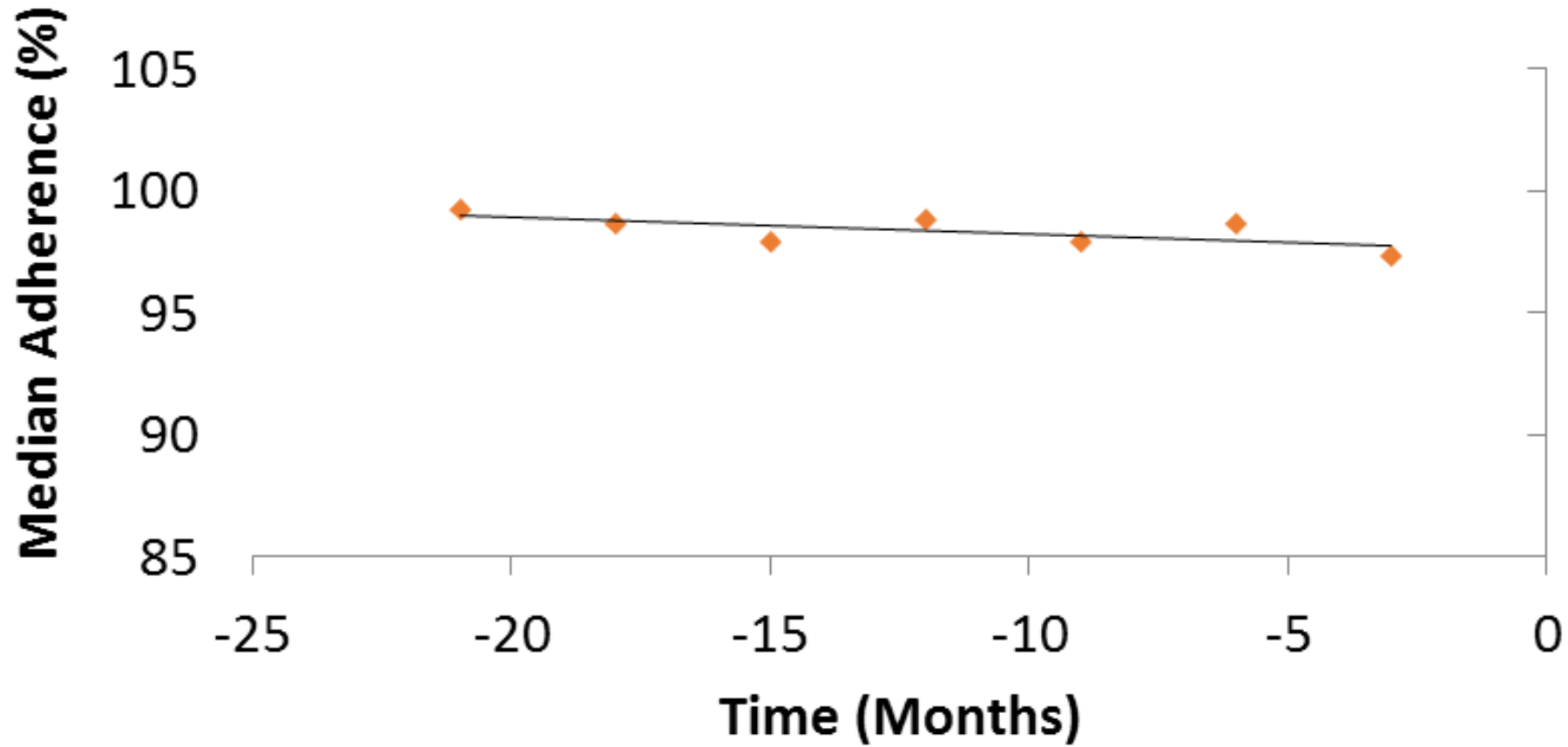
74 cases of incident disclosure

Median age = 12.2 yrs (IQR 11.6-12.9)

Age at disclosure = 13.1 yrs (IQR 12.4-13.7, range 10.9-16.1)

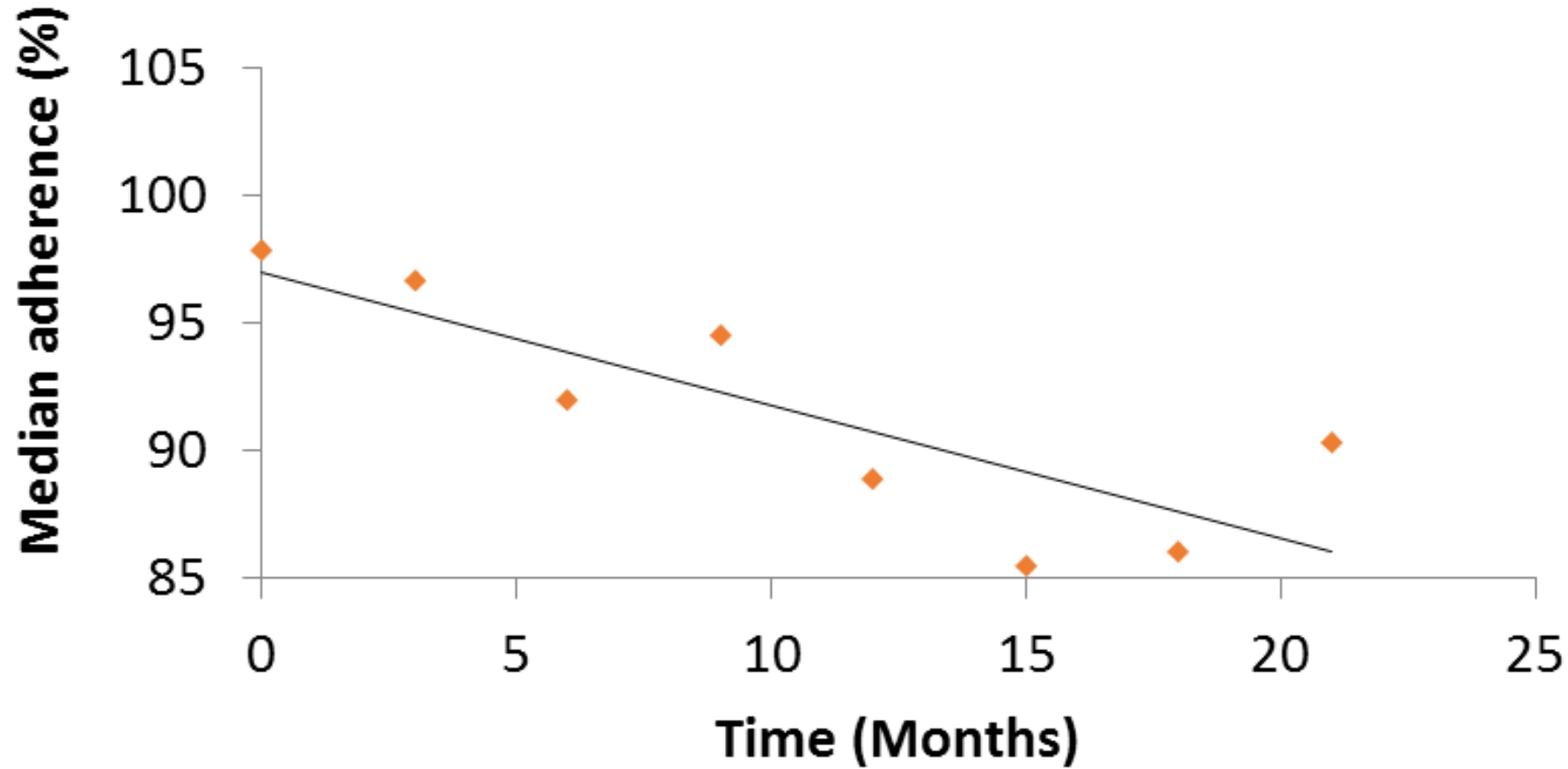
Characteristics of Incident Disclosed (N=74)	Median (IQR)
Age-years	12.2 (11.6-12.9)
Age at diagnosis-years	4.8 (2.60-7.2)
Time on medication-years	7.1 (4.6-8.6)
Recent CD4 cell counts- cells/mm ³	883 (651-1059)
	Number (%)
Female	32 (43.2%)
Baseline WHO Clinical Status	
Stage 4	5 (6.8%)
Stage 3	10 (13.5%)
Stage 2	34 (46.0%)
Stage 1	25 (33.8%)

Change in median adherence predisclosure



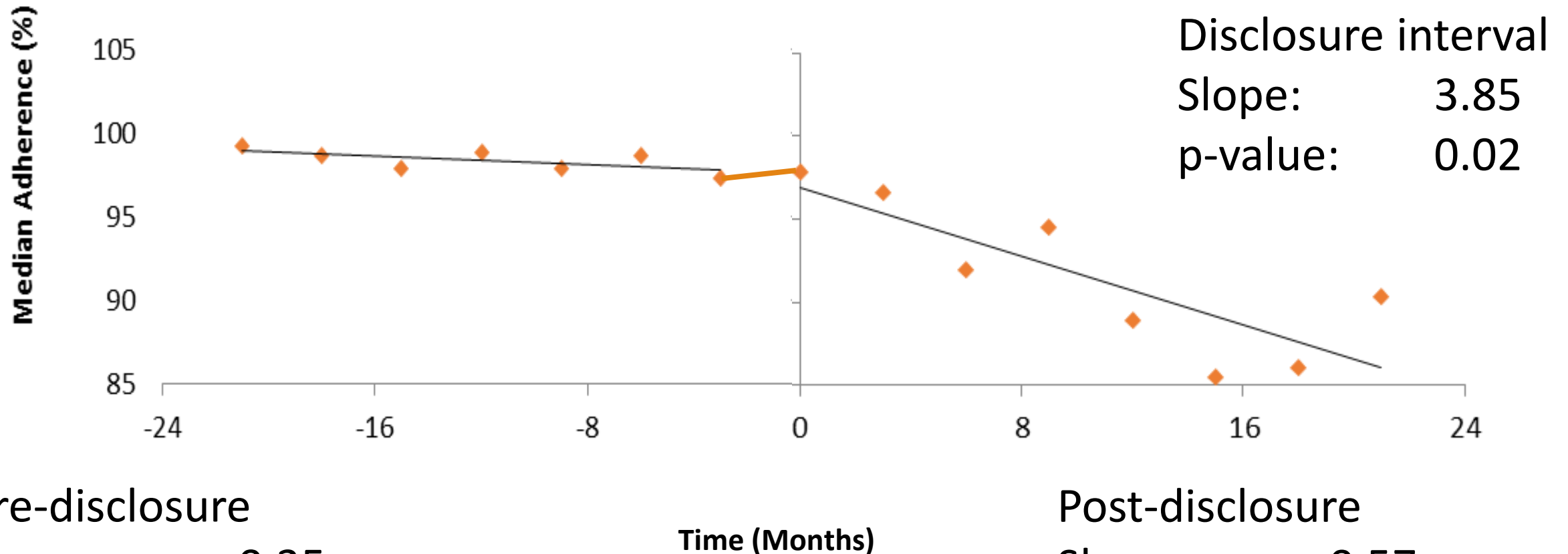
Slope: -0.35
p-value: 0.06

Change in median adherence postdisclosure



Slope: -0.57
p-value: 0.02

Change in median adherence over time (Disclosure: Time = 0)



Pre-disclosure
Slope: -0.35
p-value: 0.06

Post-disclosure
Slope: -0.57
p-value: 0.02

Discussion

There is a statistically significant increase in adherence during the disclosure interval

- Likely too small to have clinical effect

Post-disclosure

- Adherence levels decline at a faster rate
- Data suggest need for intensified adherence support post-disclosure

Strengths

- Longitudinal adherence observations
- MEMS-objective
- Controlled for age
- Generalizable to SSA countries

Limitations

- Misclassification bias?
- Only observed >10 year olds

Conclusion

- Brief increase in adherence around the time of disclosure in adolescents in Botswana
- More rapid decline in adherence after the immediate post-disclosure period
- Findings highlight the importance of post-disclosure adherence support for adolescents

Acknowledgements

Study Participants

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