



HPTN
HIV Prevention
Trials Network

The Role of Religious Involvement and Social and Behavioral Determinants of Antiretroviral Therapy (ART) Adherence

Results from HPTN 063

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- Early initiation and sustained antiretroviral therapy (ART) adherence among HIV-infected individuals can reduce sexual transmission of HIV in the population.
 - HPTN 052, ART reduces sexual transmission of HIV in serodiscordant couples > 96% (Cohen et al, 2012)
 - Individuals in KwaZulu-Natal, SA in community with high 30 – 40% of individuals on ART were 38% less likely to acquire HIV (Tanser et al, 2013)
- Worldwide, 84% of individuals identify with a religious group (Pew Research Center, 2012)

- Challenges remain in ART adherence
 - Age, Education, Health Care Access
 - Chronicity of disease
- Facilitators of ART adherence
 - Social support (MSPSS)
- Barriers of ART adherence
 - Excessive alcohol use (AUDIT)
- AIM 1
 - Investigate the relationship between religious service attendance and ART medication adherence.
- AIM 2
 - Investigate the relationships among religious service attendance, social support, and excessive alcohol use on ART medication adherence.

HPTN 063 longitudinal, observational study (n=749) HIV-infected individuals in HIV care in three countries:

Brazil, Thailand, Zambia



Religious service attendance:

How often do you attend religious services?
(range 1 = once per week to 6 = never)

Antiretroviral medication adherence:

- In the last three months, on average, how would you rate your ability to take all your antiretroviral drugs as your doctor prescribed? 1=poor to 5=excellent (ordinal)
- Plasma *HIV-RNA*

Country combined model:

- Effect modification by gender, religious tradition, and country
- Covariates: age, marital status, education and self-rated health

Country specific models:

- Effect modification by gender, tradition
- Covariates include education, self-rated health, and (age, marital status)

**GEE and GSEM; cluster by study visit
ordinal logistic link**

* Baseline, n (%)	Brazil n=263	Thailand n=300	Zambia n=186
Attend religious services (about once per week)	36 (13.69)	33 (11.00)	47 (25.27)
Gender			
Women	101 (38.40)	103 (34.33)	100 (53.76)
Other	2 (00.75)	77 (25.67)	NA
Religious Tradition			
Christianity	143 (54.37)	12 (04.00)	173 (93.01)
Other	70 (26.62)	288 (96.00)	4 (02.15)
ART adherence (good/very good/excellent)	156 (84.32)	243 (83.79)	163 (94.77)

Combined model: Religious service attendance

- Associated with lower ART likelihood. Stronger for **Other vs Christianity** (OR: 0.84; 95%CI [0.79, 0.89])
- Associated with higher ART likelihood. Stronger for **Thailand vs Brazil** (OR: 1.55; 95%CI [1.32, 1.82])

Site specific model: Brazil:

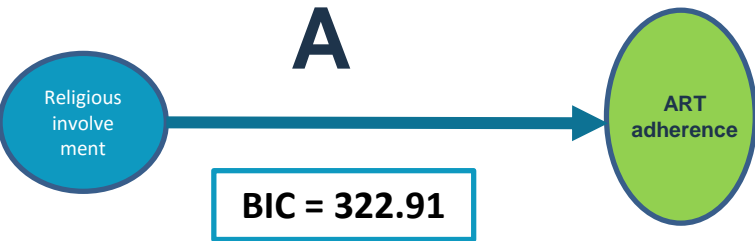
- Associated with lower ART likelihood. Stronger for **Other vs Christianity** (OR: 0.72; 95%CI [0.53, 0.98])
- Associated with lower ART likelihood. Stronger for **Women vs Men** (OR: 0.79; 95%CI [0.66, 0.96])

Site specific model: Thailand:

- Associated with higher ART likelihood. Stronger for **Other gender vs Men** (OR: 1.79; 95%CI [1.07, 3.45])

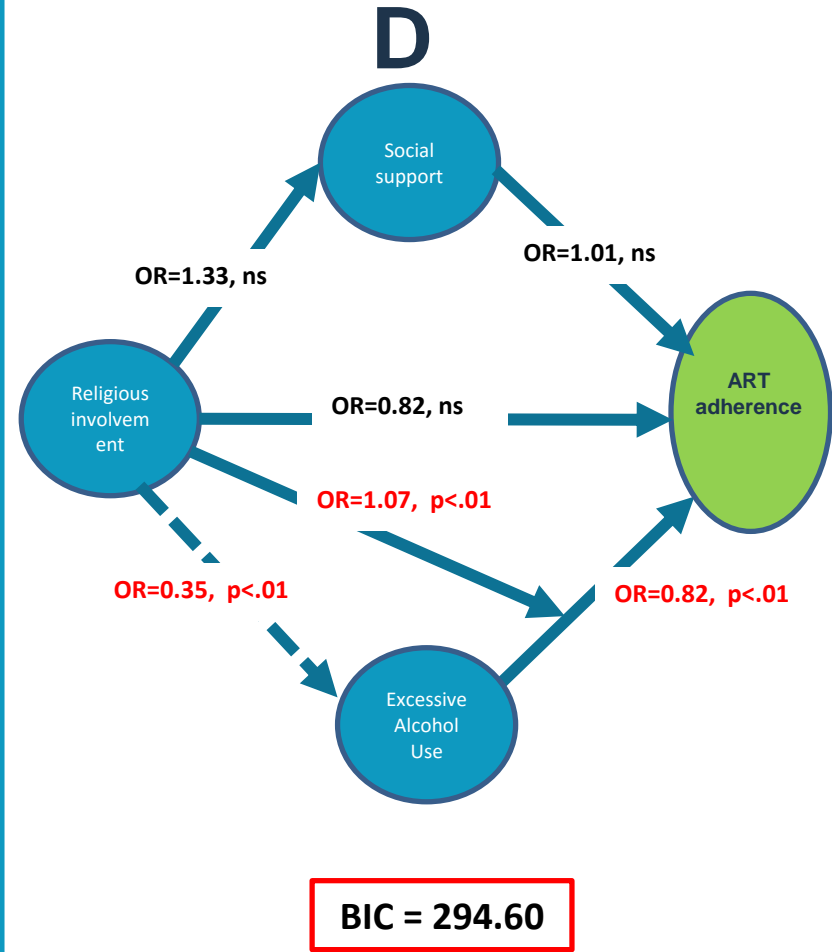
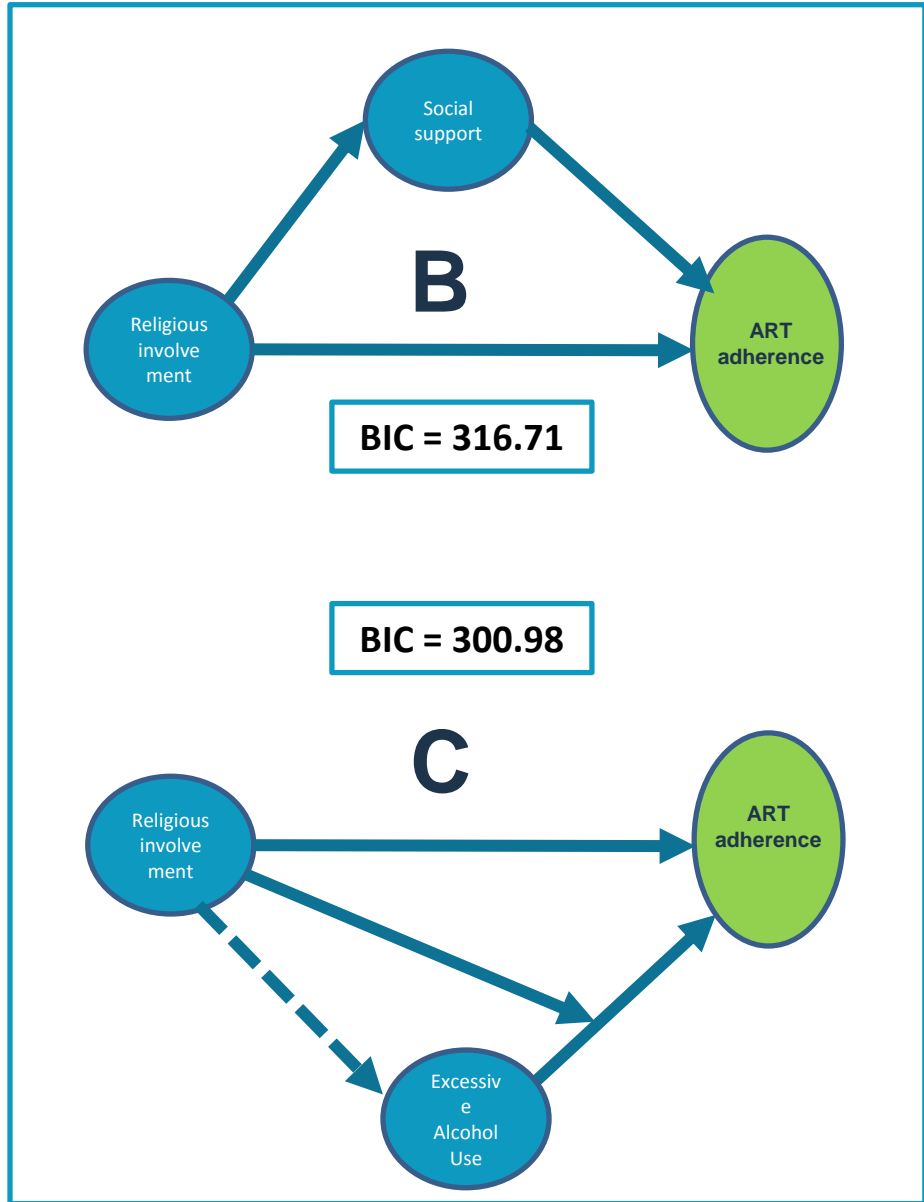
In Zambia, religious attendance statistically unrelated to ART adherence

Results, cont'd



Arrows represent paths from religious attendance to the outcome. **B** is mediating path, **C** is moderating path **D** is pathways combined.

BIC: Bayesian Information Criterion used to assess relative model fit with the data. Lower means stronger fit to the data.



Implications

- Religious service attendance associated with ART adherence, but the direction of association is modified by gender and by religious tradition.
- Country specific as well as subgroup focus may be necessary.
- Religious attendance buffers excessive alcohol use to impact ART adherence.

Limitations

- Crude proxy for the religious experience, limited knowledge about other domains (e.g., prayer, spirituality).
- Support for biological marker of adherence (HIV-RNA), limited sample size.

Strengths

- Strong study design, longitudinal association, close to real-world setting.
- Examination of mechanisms/indirect-effects pathways contribute to literature.

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