



HPTN

HIV Prevention
Trials Network

The Role of Non-Injection Substance Use in Depression, ART Adherence, and Viral Load among Men Living with HIV (HPTN 063)

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Substance Use and HIV Management

- Substance use ↑ HIV transmission risk among PLH
 - Sexual risk; mental health; access and adherence; HIV replication
- Gaps: 1. Substance use profiles of PLH internationally
 - 2. TasP in PLH substance users

Study Aims

1. Characterize substance use, ART adherence, depression & viral load among HIV+ men in Thailand and Brazil
2. To elucidate the association between substance use, ART adherence / depression, & undetectable viral load (VL)

Methods

- **HPTN 063 Data**

- HIV+ men Thailand (HM=93, MSM=66) & Brazil (HM=52, MSM=78)

- **Measures**

- **Substance use:**

- Stimulants & Cannabis: # days used in past 3 months
- Alcohol Use: AUDIT score \geq # is Harmful/Hazardous drinking
- Poly-substance Use – # of substances used past 3 months

- **ART Adherence**: Ability (\geq good-Thailand) & Yes/No (Brazil)

- **Depression**: CES-D scale score \geq 16

- **Viral Load**: Undetectable using country-specific criteria

- **Statistical Analysis**

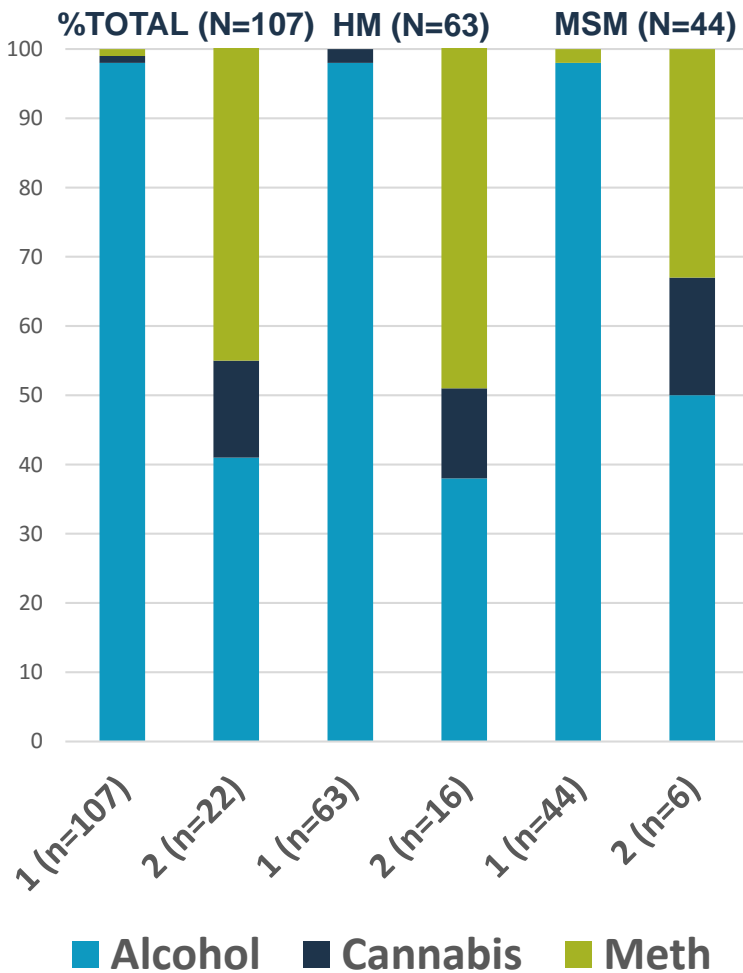
- Generalized Mixed Effects Models (Logistic)

- ART Adherence/Depression mediate effect of substance use on VL

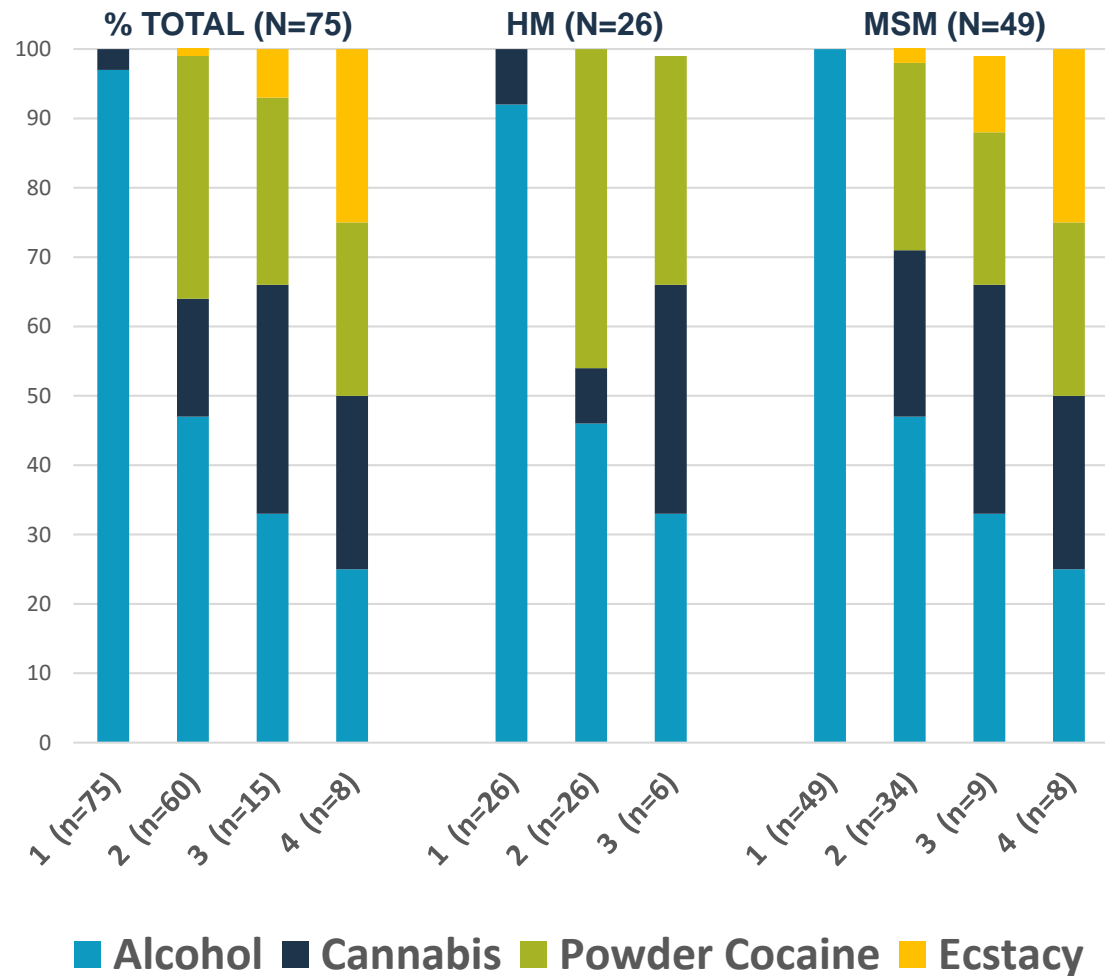
- Stratified by country & Sub-group (MSM vs. Heterosexual)

AIM 1: Substance Use

THAILAND

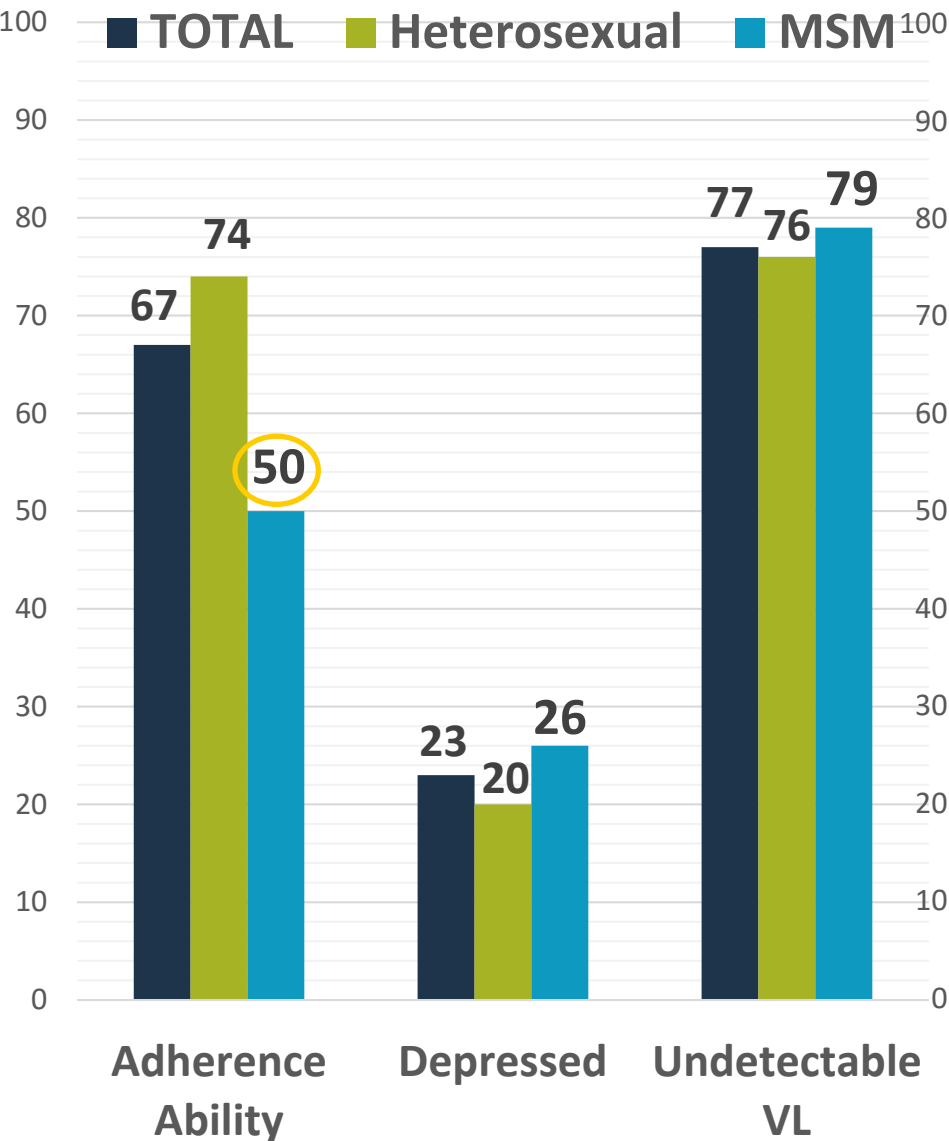


BRAZIL

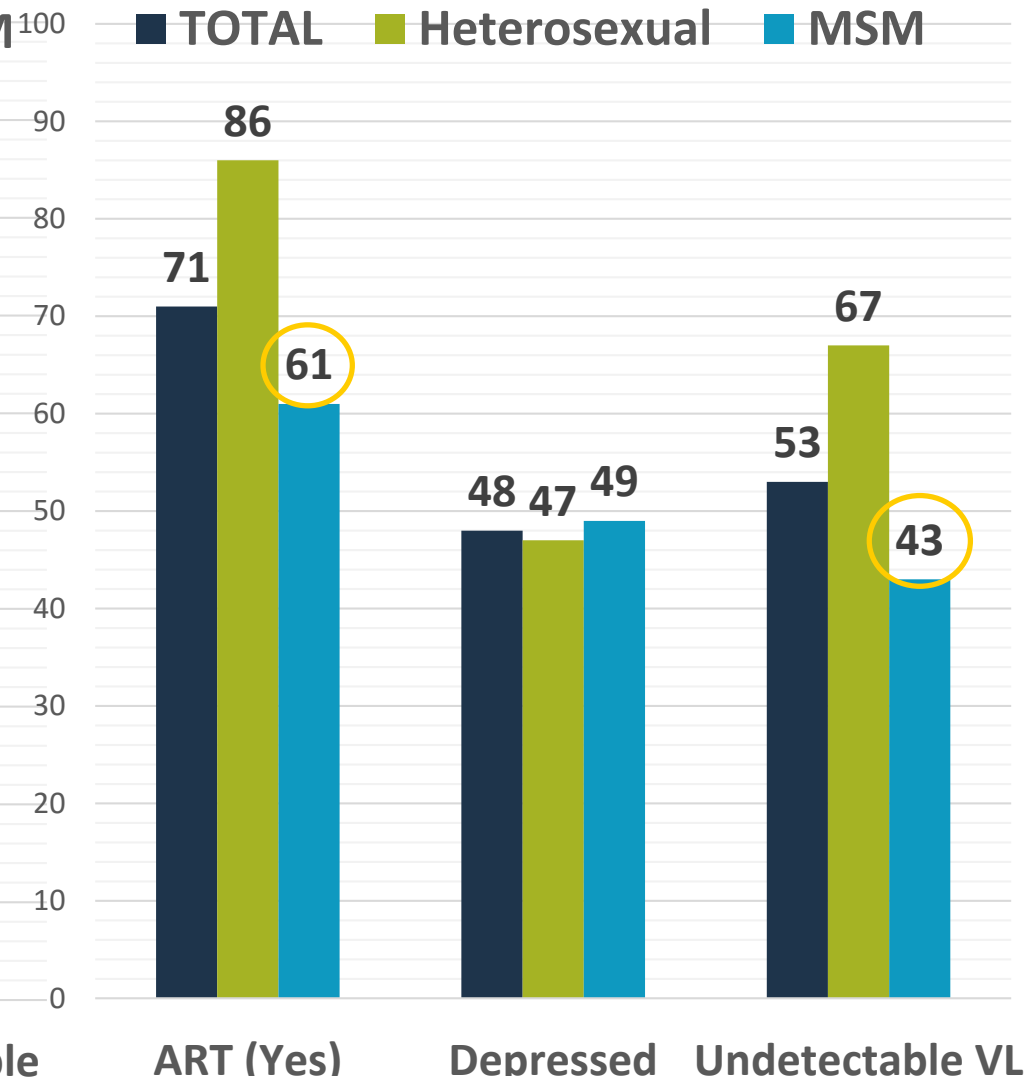


AIM 1: ART Adherence, Depression, Viral Load

Thailand



Brazil



AIM 2A: GENERALIZED MIXED EFFECTS MODELS OF SUBSTANCE USE ON ADHERENCE & VIRAL LOAD

Substance Use	THAILAND				BRAZIL			
	ART Adherence Ability (≥ Good)		Undetectable Viral Load*		Took ART In Past 3 Months		Undetectable Viral Load*‡	
	HM (n=93)	MSM (n=66)	HM (n=93)	MSM (n=66)	HM (n=52)	MSM (n=78)	HM (n=52)	MSM (n=78)
Stimulants	0.95 (0.89 - 1.03)	0.86 (0.50 - 1.50)	0.92 (0.83 - 1.02)	0.97 (0.35 - 2.69)	0.97 (0.92 - 1.02)	1.00 (0.96 - 1.04)	0.99 (0.93 - 1.04)	0.99 (0.95 - 1.03)
Marijuana	-	-	-	-	1.01 (0.96 - 1.07)	1.00 (0.97 - 1.02)	0.98 (0.94 - 1.02)	1.00 (0.97 - 1.03)
Alcohol Abuse	0.83 (0.39 - 1.78)	0.47 (0.19 - 1.17)	0.90 (0.33 - 2.47)	0.97 (0.29 - 3.18)	0.24 (0.05 - 1.25)	0.59 (0.21 - 1.68)	0.56 (0.16 - 1.95)	0.34 (0.13 - 0.88)
# Substances (yes/no)	0.84 (0.43 - 1.61)	0.76 (0.38 - 1.53)	0.50 (0.20 - 1.25)	1.31 (0.47 - 3.66)	0.27 (0.09 - 0.80)	0.64 (0.36 - 1.16)	0.83 (0.35 - 1.98)	1.23 (0.67 - 2.26)

* Adjusted for adherence; ‡ Only among ART users; No significant sub-group

AIM 2B: GENERALIZED MIXED EFFECTS MODELS OF SUBSTANCE USE ON DEPRESSION & VIRAL LOAD

Substance Use	THAILAND				BRAZIL			
	Depression (C-ESD ≥ 12)		Undetectable Viral Load*		Depression (C-ESD ≥ 12)		Undetectable Viral Load*	
	HM (n=93)	MSM (n=66)	HM (n=93)	MSM (n=66)	HM (n=52)	MSM (n=78)	HM (n=52)	MSM (n=78)
Stimulants	1.05 (0.96 - 1.15)	1.30 (0.76 - 2.24)	0.91 (0.82 - 1.02)	0.87 (0.31 - 2.44)	1.00 (0.97 - 1.05)	1.01 (0.99 - 1.04)	0.97 (0.92 - 1.03)	1.00 (0.96 - 1.03)
Marijuana	-	-	-	-	1.00 (0.97 - 1.04)	1.02 (1.00 - 1.04)	0.98 (0.93 - 1.03)	1.00 (0.97 - 1.02)
Alcohol Abuse	1.09 (0.52 - 2.27)	3.33 (1.44 - 7.69)‡	0.87 (0.32 - 2.37)	0.79 (0.23 - 2.02)	1.82 (0.63 - 5.23)	0.69 (0.34 - 1.41)	0.38 (0.11 - 1.36)	0.34 (0.14 - 0.82)
# Substances (yes/no)	1.65 (0.84 - 3.26)	1.48 (0.76 - 2.90)	0.48 (0.19 - 1.18)	1.23 (0.43 - 3.52)	1.27 (0.68 - 2.36)	1.27 (0.84 - 1.92)	0.46 (0.19 - 1.12)	0.89 (0.52 - 1.54)

* Adjusted for depression; ‡Significant differences between HM & MSM

Study Implications

- Context matters – variability by site
- TasP may be feasible among substance users in international settings
- HIV risk reduction interventions need to focus on PLH with drug & alcohol use disorders
- Tailor HIV interventions in international settings for:
 - MSM with alcohol use disorders
 - Heterosexual men who are polysubstance

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