

# Attitudes toward the impact of HIV treatment on transmission

## risk among newly diagnosed MSM in New York City

Jessica MacFarlane<sup>1,2</sup>, Laurie Abler<sup>1</sup>, Melissa Watt<sup>1</sup>, Nate Hansen<sup>3</sup>, Patrick Wilson<sup>2</sup>, Anya Drabkin<sup>4</sup>, Arlene Kochman<sup>2</sup>, Allyson DeLorenzo<sup>2</sup>, Gal Mayer<sup>5</sup>, Kathleen Sikkema<sup>4</sup>

<sup>1</sup> Duke Global Health Institute, Durham, NC, <sup>2</sup> Department of Sociomedical Sciences, Mailman School of Public Health, Columbia University, New York NY, <sup>3</sup> Department of Health Promotion and Behavior, College of Public Health, University of Georgia, Athens, GA, <sup>4</sup> Department of Psychology & Neuroscience, Duke University, Durham, NC, <sup>5</sup> Callen-Lorde Community Health Center, New York, NY



### Background

- Treatment-related attitudes: reduced concern about HIV infection and transmissibility due to antiretroviral therapy (ART).<sup>1-3</sup>
  - “treatment optimism”
- Treatment-related attitudes have grown increasingly prevalent since the advent of ART,<sup>1</sup> and may reduce motivation to engage in safer sex practices.
- These attitudes are associated with sexual risk behavior, particularly unprotected anal intercourse (UAI), among MSM.<sup>2,3</sup>
- Treatment-related attitudes have been examined among MSM,<sup>3</sup> and more recently among HIV+ MSM on ART,<sup>4</sup> but never in a newly HIV-diagnosed sample of MSM.
- Understanding these attitudes among newly-diagnosed MSM may help us to shape norms around safer sex and more effectively promote primary HIV prevention at the time of HIV diagnosis.

### Study Aims

- Describe treatment-related attitudes among newly HIV-diagnosed MSM
- Identify factors associated with risky treatment-related attitudes
- Examine the relationship between treatment-related attitudes and engagement in unprotected anal intercourse (UAI)



### Sample & Procedures

102 HIV-infected men were recruited from a large LGBT Community Health Center in New York City. Participants were eligible if they had been diagnosed with HIV in the past 3 months, had unprotected anal intercourse (UAI) with a male partner in the 3 months prior to HIV diagnosis, and could complete study procedures in English. Three months after HIV diagnosis, participants completed a computerized survey and an interview-administered assessment of sexual behavior.

### Measures

**Treatment-related Attitudes.** Participants indicated how much they agree with 13 statements (Table 2) regarding the impact of HIV treatment on transmission risk. Response choices ranged from 0 (strongly disagree) to 4 (strongly agree). ( $\alpha=.88$ )

**Sexual Behavior:** Timeline Follow-Back<sup>5</sup> calendar-based tool. Participants indicated the number of sexual partners and sexual intercourse occasions (protected/unprotected) during the 3 months following their HIV diagnosis.

**Depressive Symptoms:** Center for Epidemiologic Studies Depression Scale (CES-D).<sup>6</sup> Participants indicated how often they experienced depressive symptoms in the past week. Scores range from 0 to 60. A score of 32 or higher indicates elevated depressive symptoms. ( $\alpha=.92$ )

**Substance Use.** The 10-item Drug Abuse Screening Test (DAST-10)<sup>7</sup> assessed drug use in the past year. Scores range from 0 to 10. A score of 3 indicates problematic drug use. ( $\alpha=.67$ ) The Alcohol Use Disorders Identification Test (AUDIT)<sup>8</sup> assessed alcohol use. Scores range from 0 to 40. A score of 8 indicates hazardous alcohol use.<sup>8</sup> ( $\alpha=.88$ )

### Results

Table 1. Description of the Sample (n=102)

	N	%		N	%
<b>Age</b>			<b>Employment Status</b>		
Mean(SD)	32.25	(8.8)	Working	62	60.8
Range	19-60		Disability/Unemployed	34	33.4
	N	%	Student	6	5.9
<b>Gender</b>			<b>Income</b>		
Male	98	96.1	≤ \$30,000	74	73.3
Transgender	4	3.9	> \$30,000	27	26.7
<b>Race</b>			<b>On ART</b>	28	27.5
White	38	37.3	<b>Mental Health</b>		
Hispanic/Latino	30	29.4	Elevated Depression	49	48.5
AA/Black	15	14.7	<b>Substance Use</b>		
Mixed Race	10	9.8	Hazardous Drinking	31	30.4
Asian	6	5.9	Problematic drug use	23	22.5
Other	3	2.9	<b>Sexual Behavior</b>		
<b>Sexual Orientation</b>			Any partners	90	88.2
Gay/Homosexual	97	95.1	# partners	4.3(5.6)	1-30
Bisexual	2	2	# HIV+ partners	1.1(2.3)	0-13
Straight/Heterosexual	3	2.9	# HIV-/UK partners	3.6(5.2)	0-30
<b>Education</b>			Any UAI	55	53.9
Less than college	51	50	# UAI occasions	17.8(23.4)	1-92
College degree or more	51	50	# UAI with HIV+	13.7(23.4)	0-92
			# UAI with HIV-/UK	4.1(9.4)	0-50

Table 2. Items of the Treatment-Related Attitudes Scale and Percent Endorsed (Agree or Strongly Agree) by Sample (n=102)

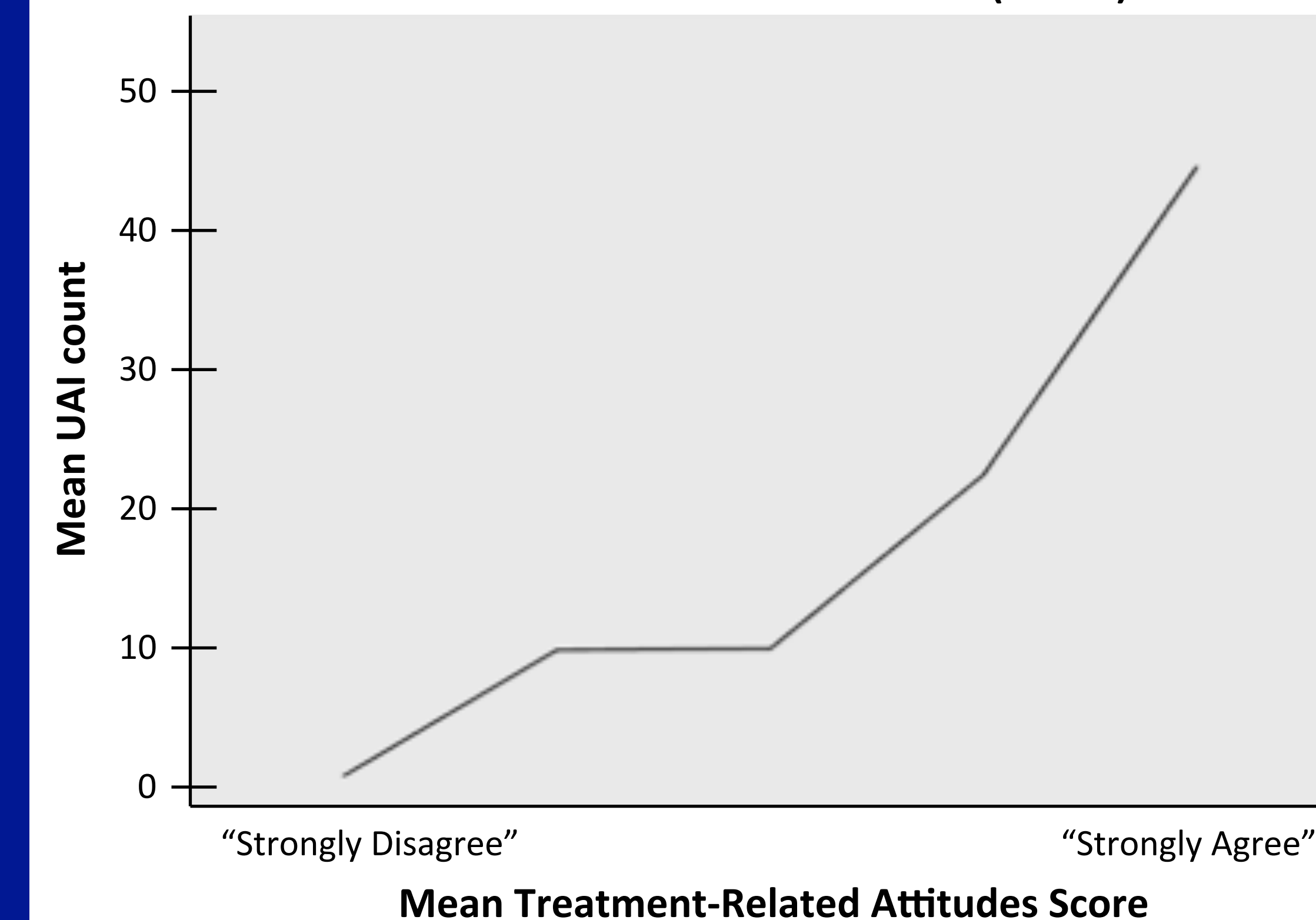
Percent Endorsed	Item
10.7%	1. Safer sex is as important now as ever.
22.6%	2. New medical treatments for HIV/AIDS make safer sex less important than it was.
11.0%	3. If someone is HIV-positive but taking new medications that reduce viral load, safer sex isn't important.
13.2%	4. I practice safer sex less often since new medical treatments for HIV/AIDS came along.
29.0%	5. If a cure for AIDS were announced, I would stop practicing safer sex.
18.1%	6. The new AIDS combination drugs make me less anxious about unprotected sex.
25.0%	7. An HIV-positive man whose level of virus in the blood has become undetectable is unlikely to transmit HIV to his partner.
24.0%	8. It would be more difficult for an HIV-positive person to infect his partner through unsafe sex if he is taking the new drug combination treatments.
15.9%	9. I am less concerned about having anal sex without a condom now that new drug combination treatments are available.
35.6%	10. By taking the new drug combinations, an HIV-positive man decreases the chances that he will infect his partners with HIV.
13.9%	11. I am a lot less worried about sexual "slipping" now that treatments may be given after unprotected sex.
15.0%	12. I am more comfortable having semen in my mouth now that combination drug treatments are available.
5.0%	13. Consistent safer sex is less important now that drug combinations may help prevent infection after someone has been exposed to HIV.

Table 3. Factors predicting Treatment-Related Attitudes (n=102)

	Univariate linear regression		Multivariate linear regression <sup>a</sup>	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Age	0.201	<.05	0.165	NS
Race (Ref: non-White)	0.294	<.01	0.17	NS
Education (Ref: No college degree)	0.31	<.01	0.218	<.05
Employment (Ref: Unemployed)	0.11	NS	0.104	NS
Depression	0.209	<.05	0.171	NS
Drug problems	0.229	<.05	0.111	NS

<sup>a</sup> Adjusted  $R^2 = .174$ ;  $F = 4.5$ ,  $p < .001$  <sup>b</sup> NS: *p* value is not significant

Figure 1. Linear representation of relationship between mean Treatment-Related Attitudes score and UAI count (n=102)



### Analysis

Aim 1: descriptive analyses examined the proportion of the sample that endorsed agreement with each treatment-related attitudes item. Aim 2: linear regression examined univariate associations between predictors (demographics, depression, substance use) and treatment-related attitudes. All demographics and other variables associated with the outcome at  $p \leq .10$  were included in the final multivariate model. Aim 3: negative binomial regression examined treatment-related attitude score as a predictor of UAI occasions. All analyses were conducted in SPSS 20.

### Conclusions

This sample of newly-diagnosed MSM reported low levels of risky treatment-related attitudes. Riskier attitudes were significantly associated with a greater count of unprotected anal intercourse (UAI), which may reflect risk compensation practices among individuals with risky attitudes. Higher education predicted riskier attitudes; we speculate that men with more education may have greater access to prevention knowledge and resources, easing their fear of transmission risk. Our findings reinforce the need to address treatment-related attitudes in HIV-focused interventions for both primary and secondary HIV prevention. Future research should examine longitudinal changes in treatment-related attitudes among HIV-infected MSM, including the impact of ART use on attitudes.

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### Contact

Jessica MacFarlane  
jm3980@columbia.edu