

Self-efficacy and Adherence to Antiretroviral Therapy (ART) in HIV-infected Patients in New York City (NYC): Findings from the Medical Monitoring Project (MMP)

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Background

High levels of adherence to antiretroviral therapy (ART) are required for effective suppression of HIV viral load, which predicts outcomes of therapy such as increase in CD4 counts, and prevents HIV drug resistance.¹ Low levels of adherence to ART have been shown to be associated with viral resistance, opportunistic infections, and hospitalizations.² Despite the success of ART in the treatment of HIV, adherence remains an issue. Studies have shown that efforts aimed at building self-efficacy may improve and maintain adherence to ART.³

Our objective was to examine the prevalence of dosing adherence and whether self-efficacy is associated with ART adherence.

Methodology

MMP is a national study of HIV-infected persons receiving outpatient medical care for HIV that monitors health behaviors, clinical outcomes, and HIV-related health and social service needs through structured interviews and medical record abstractions. MMP uses a 3-stage clustered sampling design to produce nationally representative estimates. Adherence was defined as no missed doses in the past 3 consecutive days prior to the date of interview. The data collection year was for 2012.

1st stage - Local Areas



- 23 areas selected (16 states, 6 cities, and 1 US territory)
- Probability of selection is proportional to size (PPS) (# of reported living AIDS cases in 2002)
- Includes >80% of US AIDS cases in 2002

2nd stage - Providers



- Deliver HIV medical care
- Monitor CD4 count, viral load
- Prescribe antiretroviral therapy (ART)
- Probability of selection is proportional to size (facilities with higher patient loads are more likely to be selected)

3rd stage - Patients



- Randomly sampled
- HIV-infected
- ≥ 18 years of age
- Received HIV medical care at facility 1/1 – 4/30 in a given cycle year
- Participation was voluntary; \$40 incentive (MetroCard, cash, or Visa Card)

Statistical Analysis

Analyses were restricted to those who are currently on ART (n = 422).

Associations between adherence and relevant variables, based on the findings of previously published research, were examined through the estimation of odds ratios (OR) and 95% confidence intervals (CI) using logistic regression models.

Analyses were conducted using SAS 9.2 (Cary, NC, USA).

Results

		ADHERENCE		
	N (%)	YES N (%)	NO N (%)	OR OR (95% CI)
Race				
Black	220 (52.1%)	182 (82.7%)	38 (17.3%)	1.9 (0.6, 6.7)
White	31 (7.4%)	28 (90.3%)	3 (9.7%)	ref
Hispanic	158 (37.4%)	142 (89.9%)	16 (10.1%)	1.1 (0.3, 3.9)
Other	13 (3.1)	12 (92.3%)	1 (7.8%)	0.8 (0.1, 8.3)
Gender				
Male	253 (60.1%)	221 (87.4%)	32 (12.6%)	ref
Female	162 (38.5%)	137 (84.6%)	25 (15.4%)	1.3 (0.7, 2.2)
Trans	6 (1.4%)	5 (83.3%)	1 (16.7)	1.4 (0.2, 12.2)
Age				
18-29	31 (7.4%)	25 (80.7%)	6 (19.3%)	ref
30-30	52 (12.4%)	47 (90.4%)	5 (9.6%)	0.4 (0.1, 1.6)
40-49	148 (35.3%)	128 (86.5%)	20 (13.5%)	0.7 (0.2, 1.8)
50+	188 (44.9%)	162 (86.2)	26 (13.8%)	0.7 (0.3, 1.8)
Education				
≤ High School	264 (62.9%)	229 (86.7%)	35 (13.3%)	ref
> High School	156 (37.1%)	133 (85.3%)	23 (14.7%)	0.9 (0.5, 1.6)
Sexual Orientation				
Gay	105 (25.0%)	90 (85.7%)	15 (14.3%)	1.1 (0.6, 2.1)
Straight	289 (68.8%)	251 (86.9%)	38 (13.1%)	ref
Bisexual	26 (6.2%)	21 (80.8%)	5 (19.2%)	1.6 (0.6, 4.4)
Self-Efficacy				
Not at all sure	10 (2.4%)	7 (70.0%)	3 (30.0%)	ref
Somewhat sure	19 (4.5%)	11 (57.9%)	8 (42.1%)	1.7 (0.3, 8.7)
Very Sure	105 (24.9%)	83 (79.0%)	22 (21.0%)	1.6 (0.4, 6.8)
Extremely Sure	288 (68.3%)	263 (91.3%)	25 (8.7%)	4.5 (1.1, 18.5)
Total	422	364 (86.3%)	58 (13.7%)	

Results

- Approximately 1 in 7 (13.7%) HIV-infected individuals in this NYC sample did not use ART consistently in the 3 days prior to the interview.
- Those who reported being extremely confident that they would be able to take all or most of their medication as directed compared to those who were not at all sure were less likely to be non-adherent (91.3% vs 70.0% OR=4.5, 95% CI=1.1-18.5).

Limitations

- Adherence measure is only for the last 3 days; may be lower if measured over a longer period of time
- Self-report; possible social desirability bias
- Complex survey sample

Conclusion

Future research should examine barriers to adherence among those who are not confident in adhering to their medication and how those barriers can be reduced through self-efficacy skills building as well as identifying other factors, such as drug use and homelessness, that may lower self-efficacy.

Literature Cited

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