Predictors and correlates of adherence to combination antiretroviral therapy (cART): meta-analysis

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Rijnstate

Background

Insight in predictors/correlates of non-adherence to cART:

- Enable health care providers to tailor their care to patients most in need.
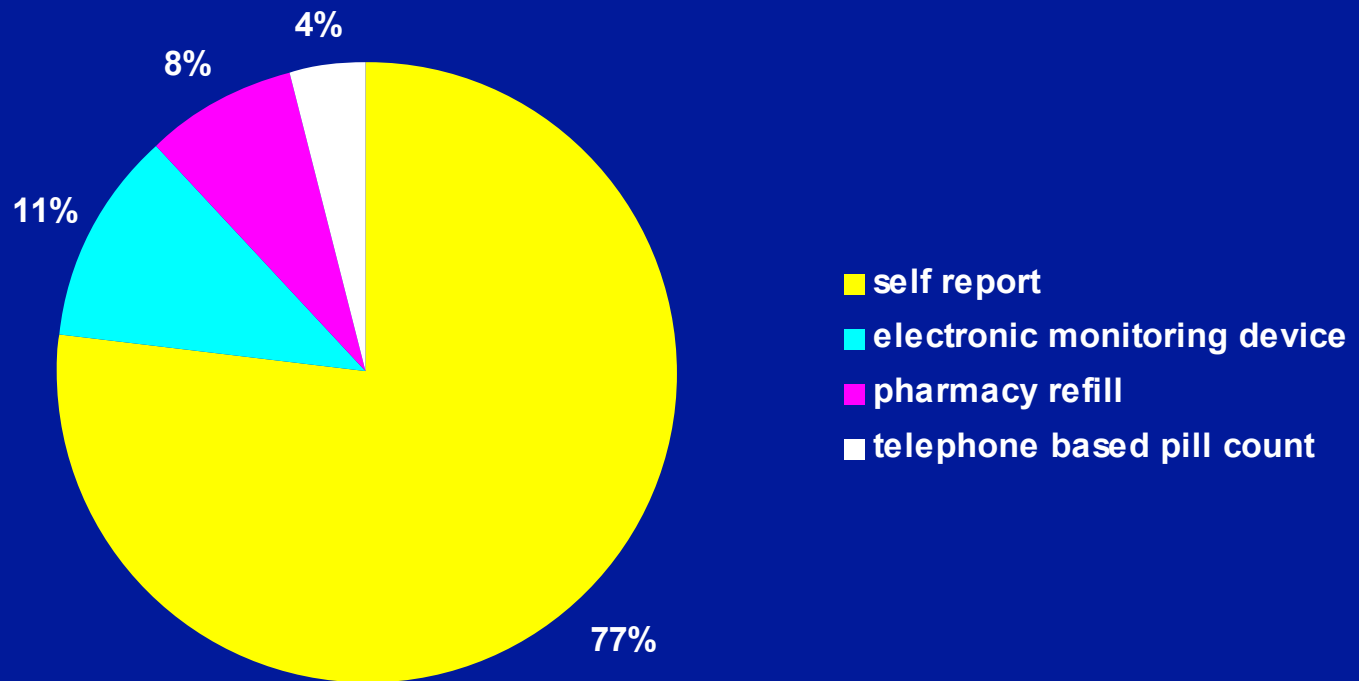- Guide targets for development of adherence enhancing interventions.

Objectives

- **To review current evidence on predictors/correlates of adherence to cART.**

- **To aggregate findings into quantitative estimates (effect sizes) of their impact on adherence**

- **To assess the impact of study design features on effect sizes**
  - **(adherence assessment method, study design, countries' Human Development Index (HDI)).**

Methods

- PubMed search
- Common effect size: d
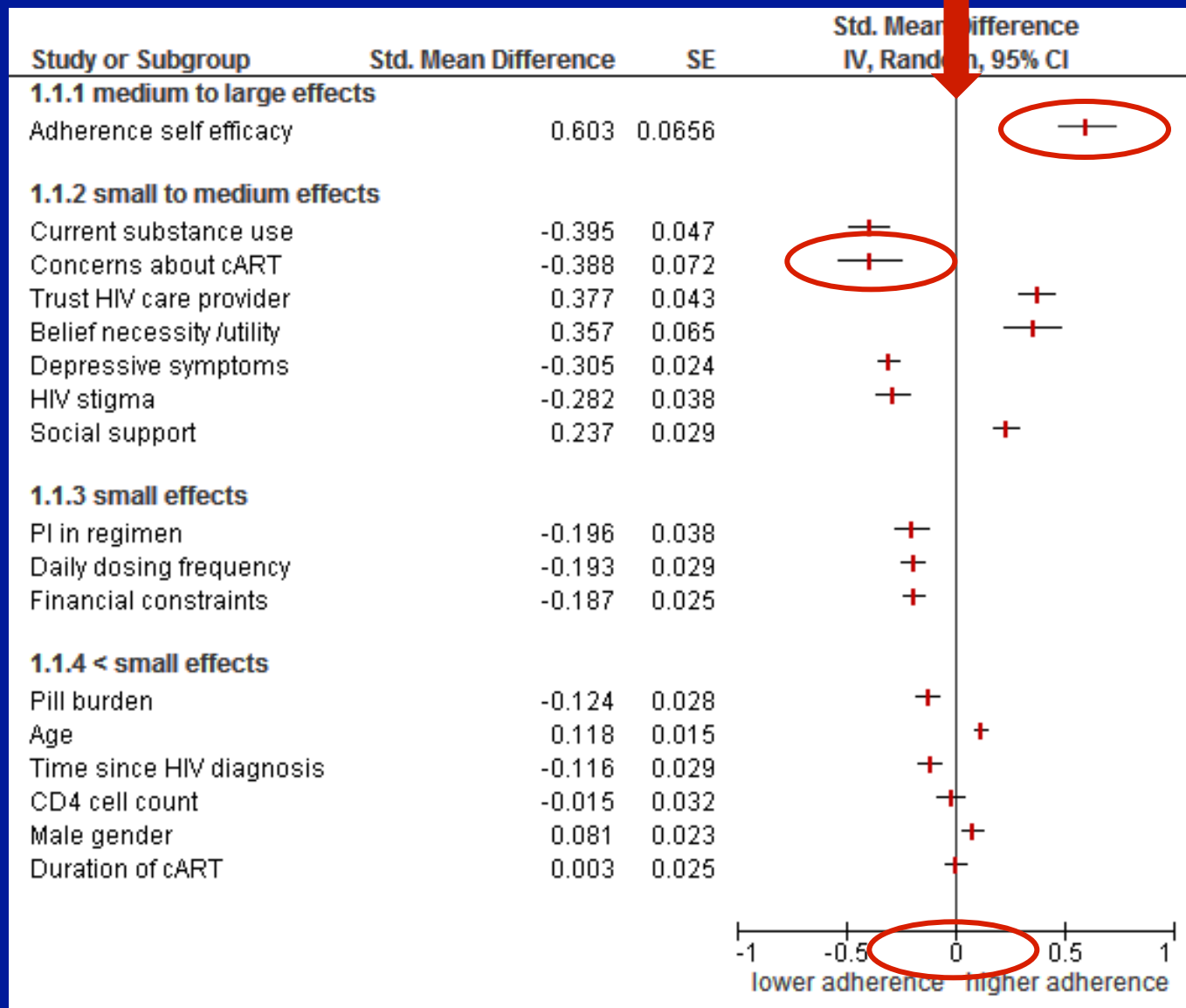 - (0.20 small, 0.50 medium, 0.80 large)
- Random effect models with inverse variance weights to pool effect sizes
- Mixed-effects meta regression
- Comprehensive Meta Analysis Version 2

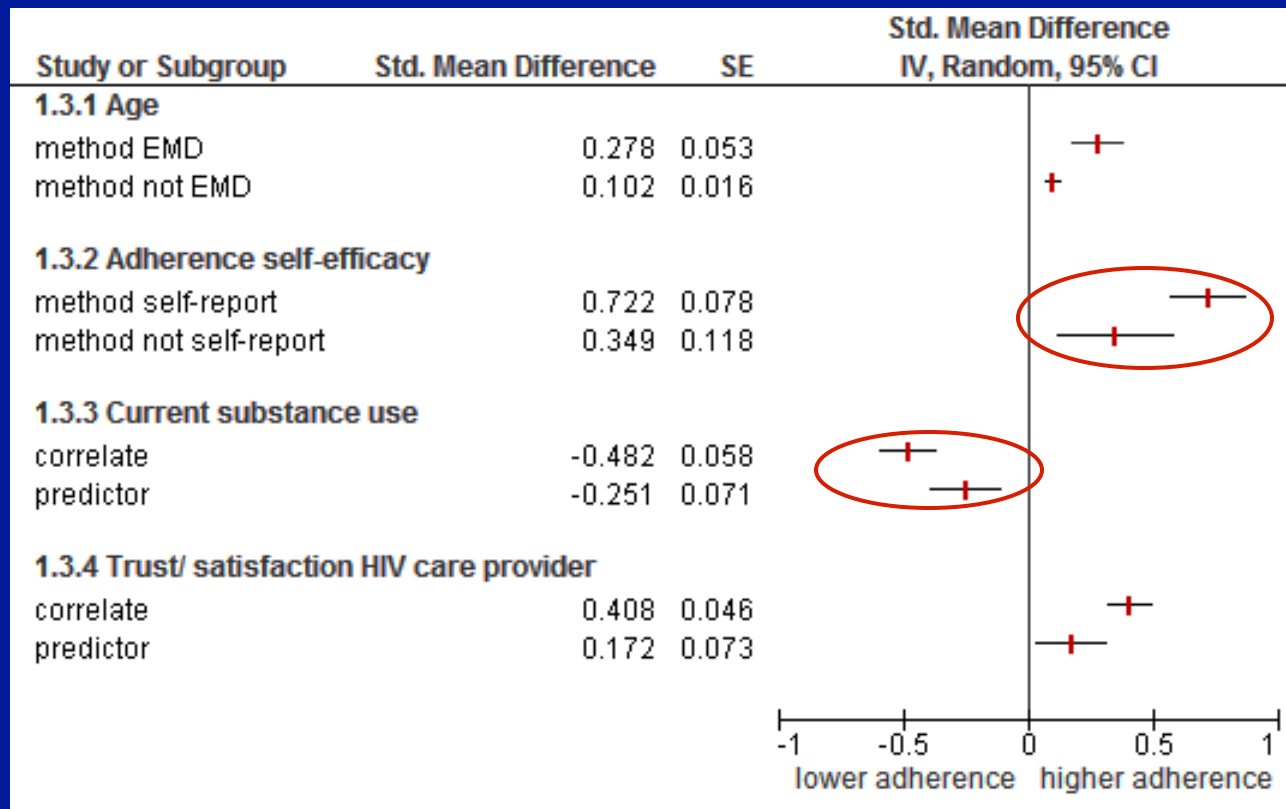**Included 207 studies**
Patients: 103.836

Adherence assessment method

4%

8%

11%

77%

- ■ self report
- ■ electronic monitoring device
- ■ pharmacy refill
- ■ telephone based pill count

Predictors/correlates of adherence to ART

Study or Subgroup	Std. Mean Difference	SE	Std. Mean Difference IV, Random, 95% CI
1.1.1 medium to large effects			
Adherence self efficacy	0.603	0.0656	
1.1.2 small to medium effects			
Current substance use	-0.395	0.047	
Concerns about cART	-0.388	0.072	
Trust HIV care provider	0.377	0.043	
Belief necessity /utility	0.357	0.065	
Depressive symptoms	-0.305	0.024	
HIV stigma	-0.282	0.038	
Social support	0.237	0.029	
1.1.3 small effects			
PI in regimen	-0.196	0.038	
Daily dosing frequency	-0.193	0.029	
Financial constraints	-0.187	0.025	
1.1.4 < small effects			
Pill burden	-0.124	0.028	
Age	0.118	0.015	
Time since HIV diagnosis	-0.116	0.029	
CD4 cell count	-0.015	0.032	
Male gender	0.081	0.023	
Duration of cART	0.003	0.025	

-1   -0.5   0   0.5   1

lower adherence   higher adherence

Countries' Human Development Index as moderator of the predictor-adherence relationship
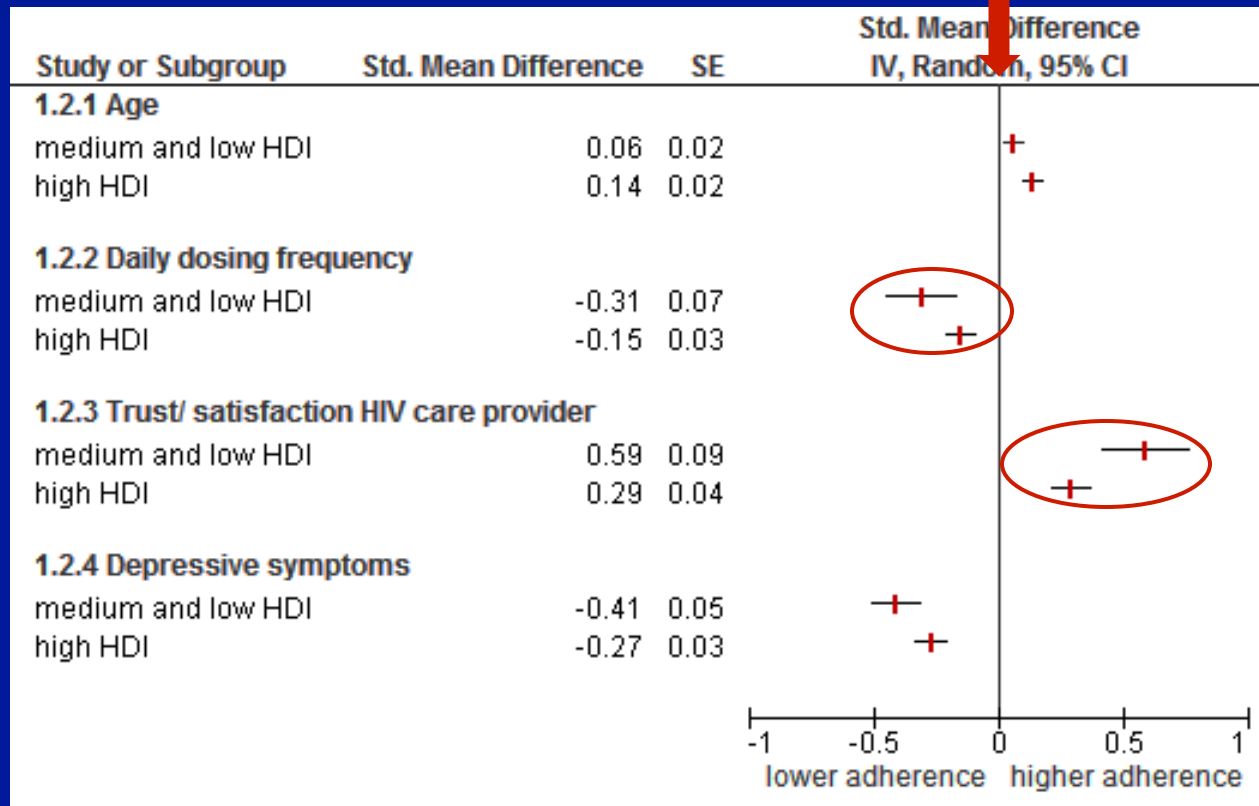
Adherence assessment method and study design as moderators of the predictor-adherence relationship

Study or Subgroup	Std. Mean Difference	SE	Std. Mean Difference IV, Random, 95% CI
1.3.1 Age			
method EMD	0.278	0.053	
method not EMD	0.102	0.016	
1.3.2 Adherence self-efficacy			
method self-report	0.722	0.078	
method not self-report	0.349	0.118	
1.3.3 Current substance use			
correlate	-0.482	0.058	
predictor	-0.251	0.071	
1.3.4 Trust/ satisfaction HIV care provider			
correlate	0.408	0.046	
predictor	0.172	0.073	

-1   -0.5   0   0.5   1
lower adherence   higher adherence

Results

Medium effects statistically significant	Small effects statistically significant	No effect
Beliefs in necessity / utility of cART ↑	Social support ↑	CD4 cell count
Trust / satisfaction health care provider ↑	Age, male gender, duration of HIV infection ↑↓	
Current substance use ↓	Daily dosing frequency, PI containing regimen, pill burden ↓	Duration of cART
Depressive symptoms ↓	Financial constraints ↓	
HIV stigma ↓		

Conclusions

- Adherence enhancing interventions should target psychological factors
- Simplification of cART regimens expected to have smaller albeit significant effects.
- Trust/satisfaction with health care provider more important influence in countries with low or medium HDI.

Predictors and correlates of adherence to combination antiretroviral therapy (ART) for chronic HIV infection: a meta-analysis

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