Depression moderates the ability of a social cognitive model to account for HIV risk behavior among HIV-infected MSM

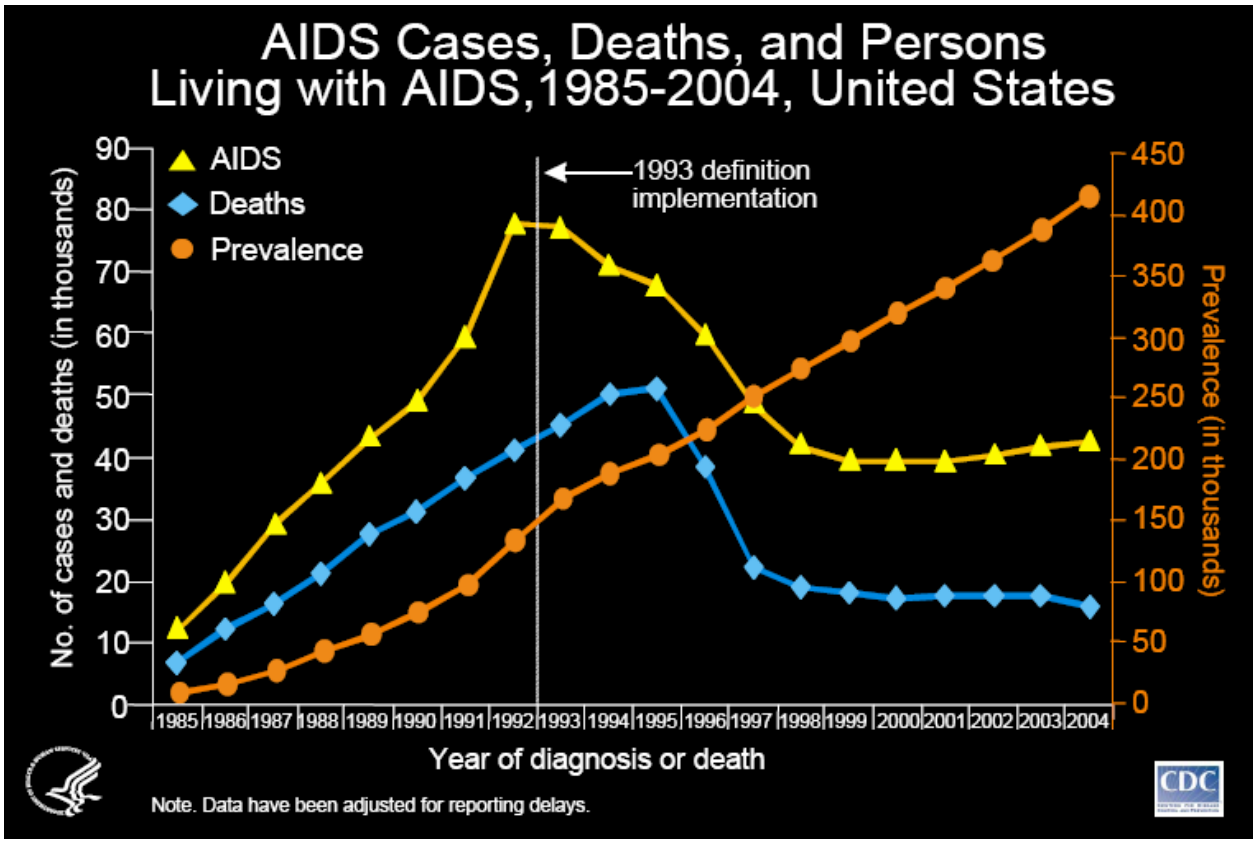
Steven A. Safren, Lara Traeger, Margie Skeer, Conall O'Cleirigh, Christina Meade, Charles Covahey, & Kenneth H. Mayer

HARVARD MEDICAL SCHOOL

MASSACHUSETTS GENERAL HOSPITAL

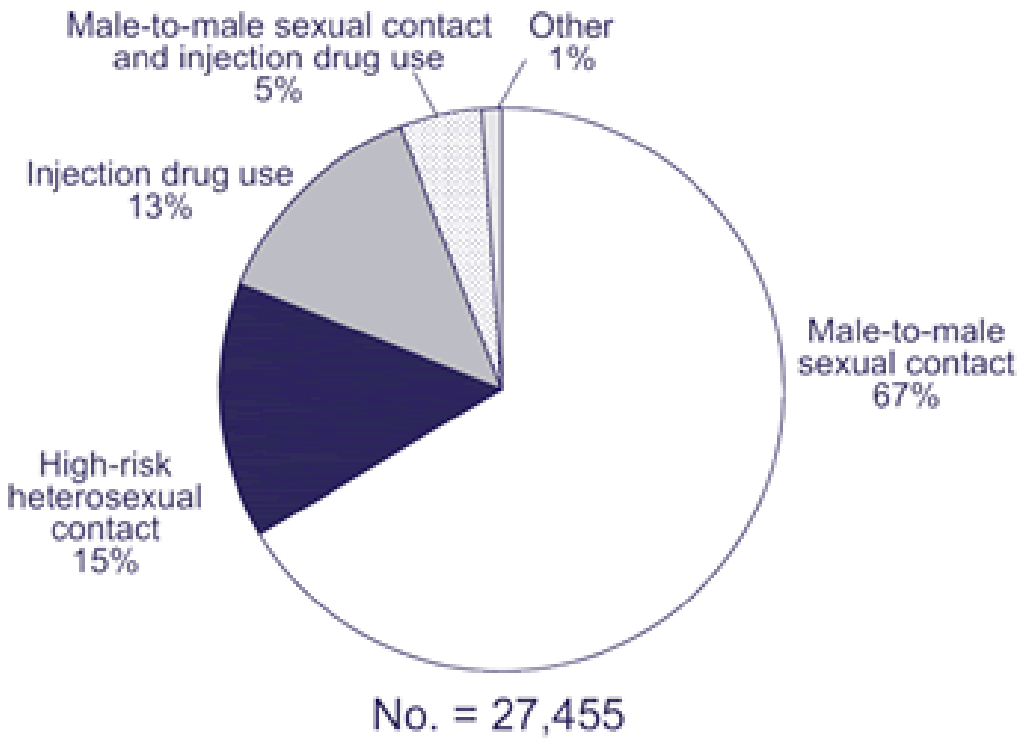
Fenway

Increases in HIV incidence and prevalence = Growing population of those infected with HIV



HIV Infections and MSM in 2005

- MSM represented 71% of new infections (depicted to the right)
- MSM represented 67% of individuals living with HIV/AIDS



CDC Fact Sheet: HIV/AIDS and Men Who Have Sex with Men (accessed 4/09)

Frequency of selected of DSM-IV conditions in HIV

Condition	% Screening Positive (95% CI)*	
	HCSUS (N=2864) HIV-infected	NHSDA (N=22181) Comparison
Major Depression	**36.0** (33.6-38.3)	7.6
Dysthymia	**26.5** (23.5-29.5)	---
Generalized Anxiety Disorder	**15.8** (14.0-17.7)	2.1
Panic Attack	**10.5** (8.0-13.0)	2.5
No drug use	**49.9** (46.0-53.71)	89.7
Marijuana use only/ no dependence	**12.1** (10.2-14.8)	---
Other drug use/ no dependence	**25.6** (22.1-29.1)	---
Drug dependence	**12.5** (10.2-14.8)	---

Bing et al., 2001; Archives of General Psychiatry

Crepaz et al (2006): Meta analysis of secondary prevention interventions

- Twelve trials
  - Published between June 02 to Dec 04
  - 11/12 were either exclusively or mostly men, 1 was exclusively women
  - Median length of time with HIV ranged from 2-6 years
- Outcomes
  - Significant reduction in unprotected sex (OR, .57; CI: .40-.82)
  - Significant reduction in STI acquisition (OR .20, CI: .05-.73)
  - No reduction seen for needle sharing

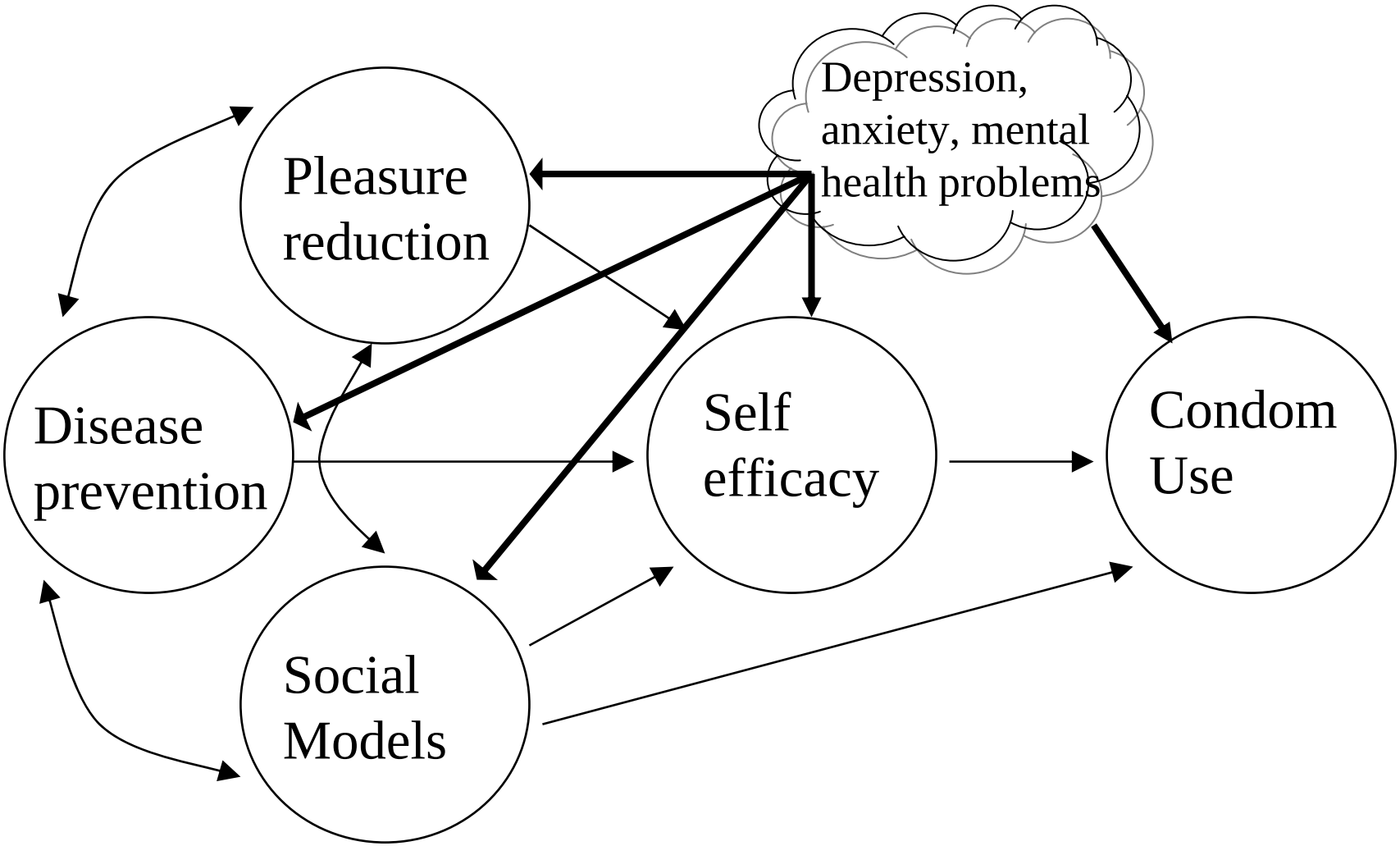
Crepaz et al., 2006, AIDS

Crepaz et al (2006): Meta analysis of secondary prevention interventions

- HOWEVER: of the 12 trials:
  - 5 had statistically significant results
  - 7 did **not** show statistically significant differences between control and intervention groups
  - "It is likely that those struggling with multiple health and social problems such as substance abuse, persistent mental illness…may benefit most from intensive interventions"

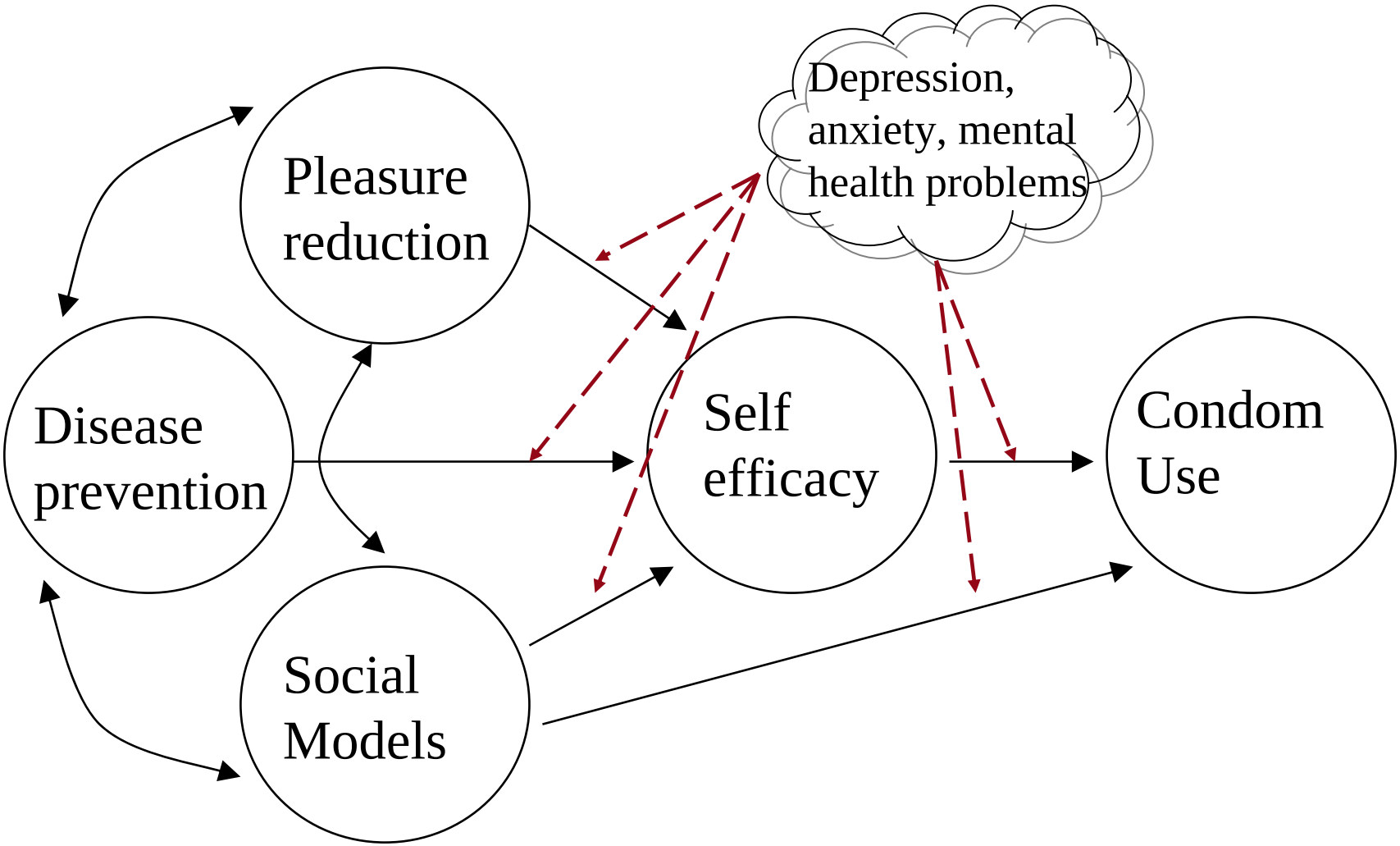
Crepaz et al., 2006, AIDS

Social Cognitive Model



Wulfert, Safren, et al., 1999; Journal of Applied Social Psychology

Social Cognitive Model



Wulfert, Safren, et al., 1999; Journal of Applied Social Psychology

Additional common models at the base of secondary prevention interventions: Mental health affects all of these variables

- Information, motivation, behavioral skills model (IMB; Fisher et al., 2006)
- Health Belief Model (Rosenstock, 1974): severity of disease, perceived susceptibility, and benefits and barriers to behavioral change
- Theory of Reasoned Action (Ajzen & Fishbein, 1980): health behavior determined by intentions, (which is dependent on attitudes, expected outcomes, and perceived importance) and norms
- AIDS Risk Reduction Model (AARM; Catania et al., 1990): labeling of high risk behavior, commitment to changing high-risk behavior, enactment of risk reduction behavior

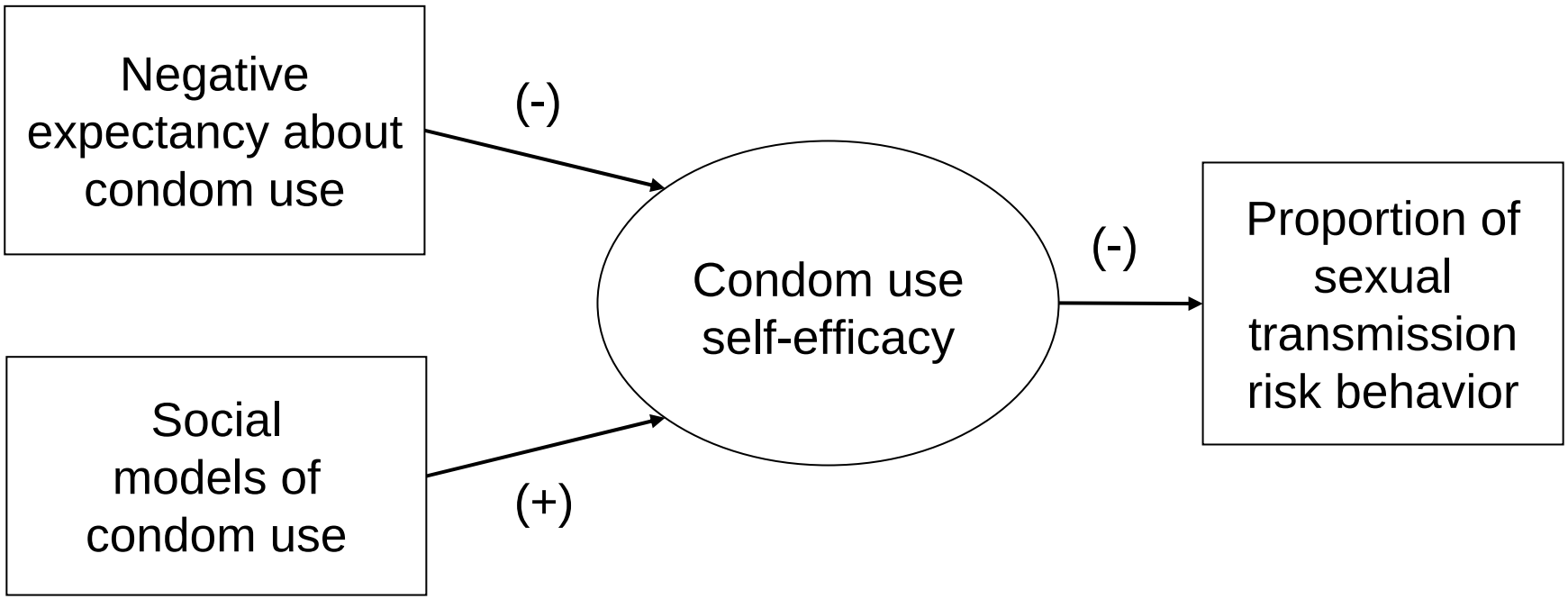
Current Study – Baseline Behavioral Assessment

- 403 (of 503 total) sexually active MSM in care at Fenway Community Health
- 76% White, 10% African-American, 8.3% Hispanic/Latino, 5% other
- Mean age = 41.6 yrs old
- Screening for one of two secondary prevention trials (NIMH, HRSA) between 2004-2007
- 45% less than college educated, 54.4% college degree

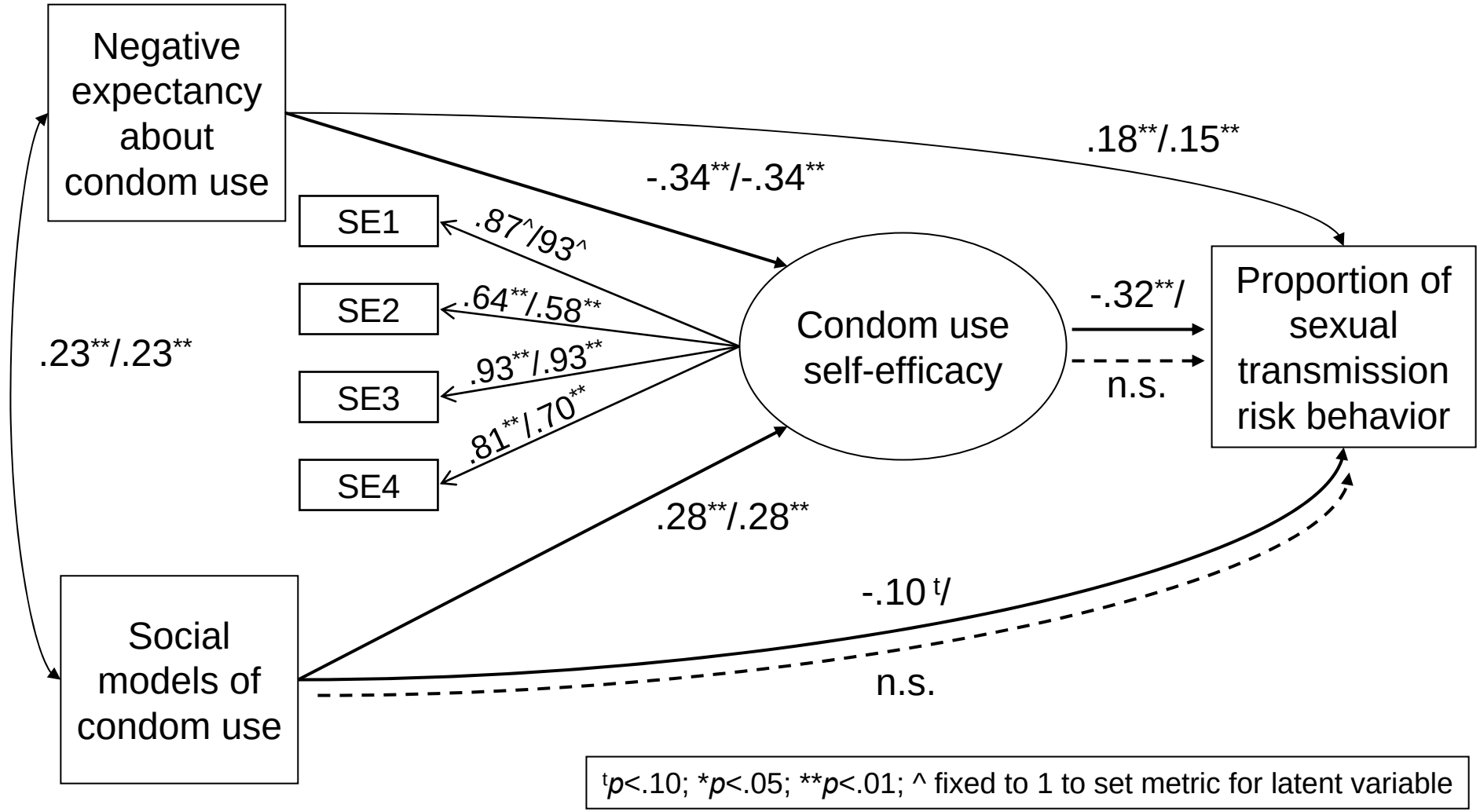
Audio Computerized Assessment System (ACASI)

- **Depression Screener:** PHQ-9 (Spitzer et al., 1999).
- **Social Cognitive Variables (Wulfert et al., 1999)**
  - **Self efficacy:** 4 items, re: condom use in increasingly difficult situations
  - **Negative expectations:** 1 item – Condoms make sex less enjoyable
  - **Social norms:** 1 item - degree to which perceive friends to use condoms
- **Transmission Risk Behavior (TRB):**
  - Of all anal sex episodes with HIV-negative or unknown status partners, the proportion when a condom was not used

Proposed Model



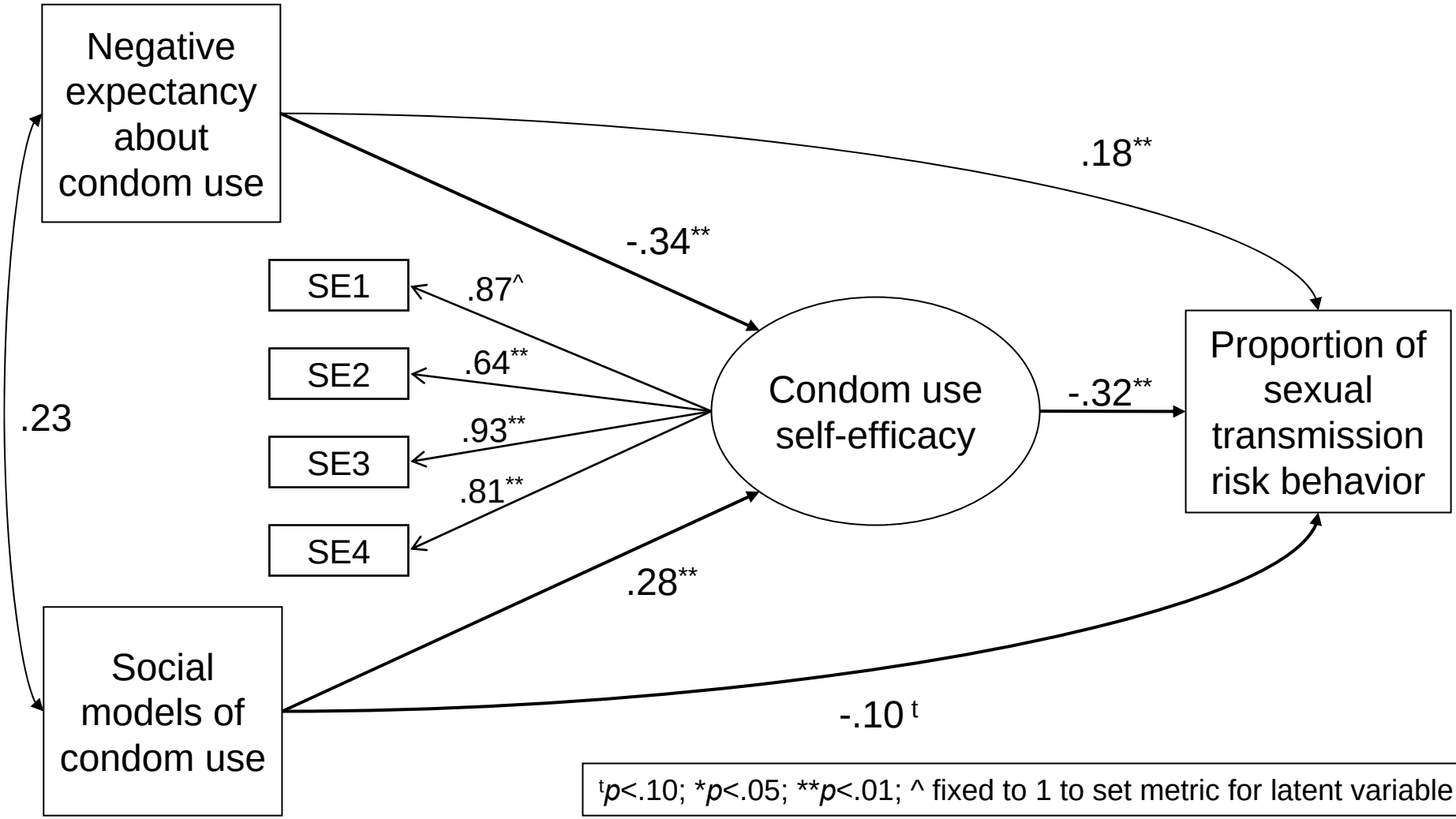
Path model for those who did not and who did screen in for Major Depressive Disorder



$^{t}p<.10$; $^{*}p<.05$; $^{**}p<.01$; ^ fixed to 1 to set metric for latent variable

R^2 for Proportion of Sexual TRB: Depression-negative (n=356)=20.3%, Depression-positive (n=47)=7.5%.
Model fit indices: $\chi^2(36)=30.55$, $p=.73$, CFI=1.00, RMSEA<.01, SRMR=.05

Path model for those who did not screen in for major depressive disorder



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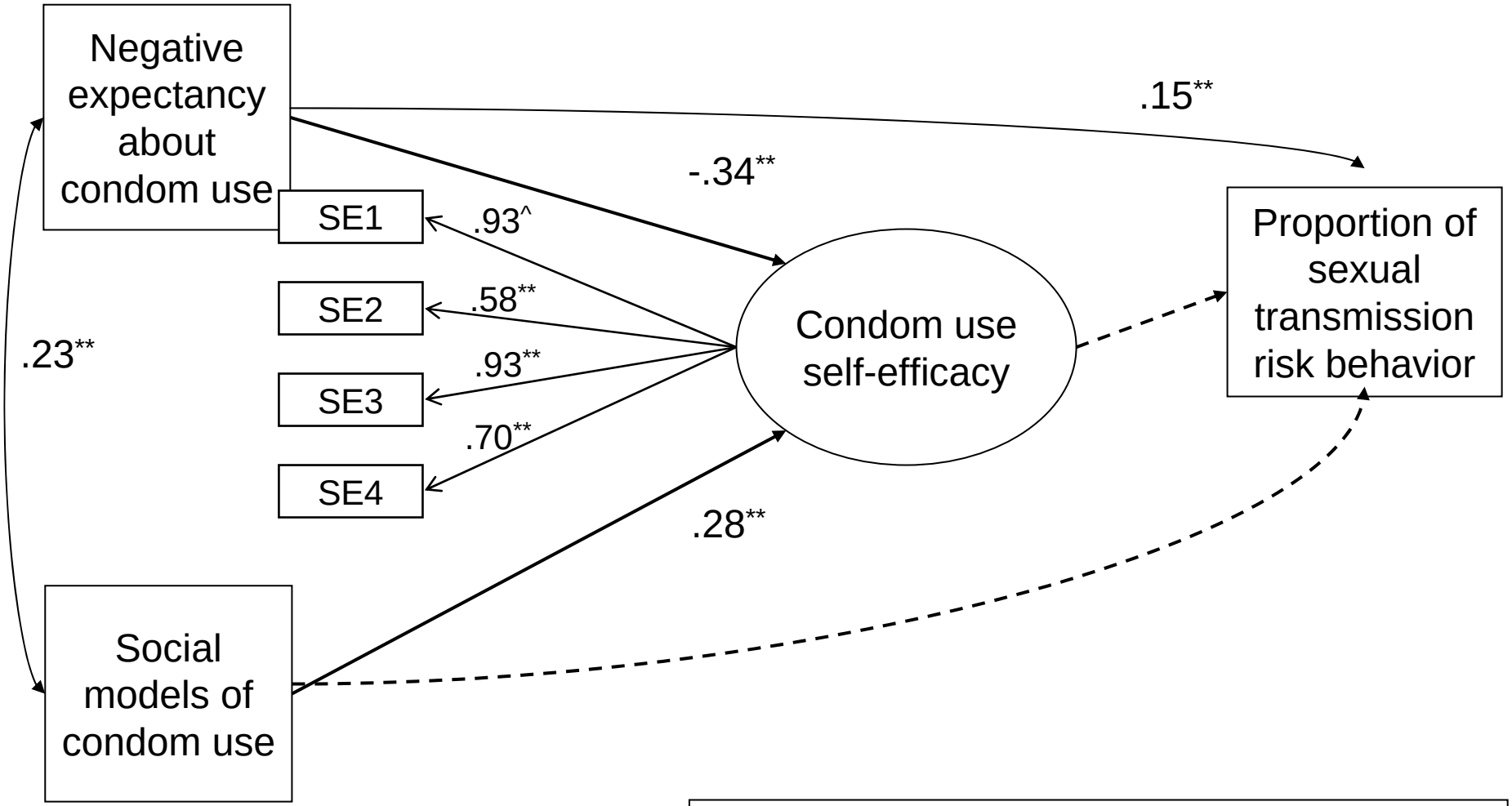
R^2 for Proportion of Sexual TRB (n=356)=20.3%

Participants who met criteria for MDD



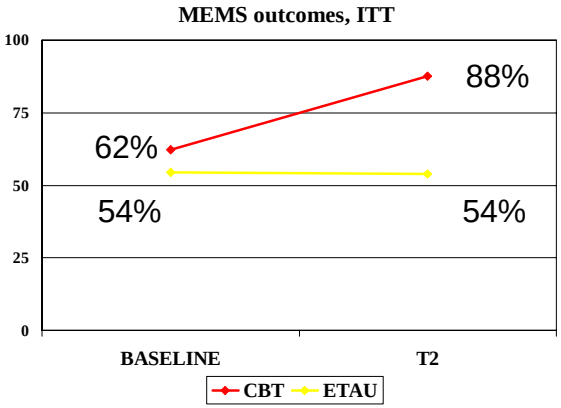
*p<.05; **p<.01; ^ fixed to 1 to set metric for latent variable

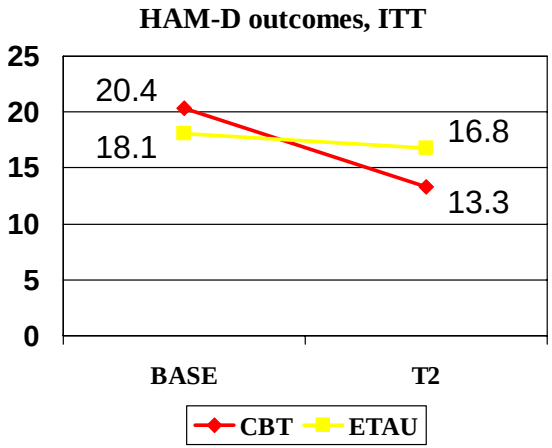
R^2 for Proportion of Sexual TRB (n=47)=7.5%.

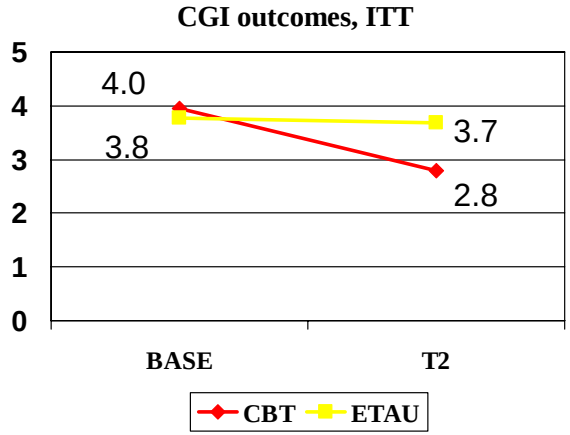
What does this data suggest?

- Social cognitive / health-psychology models to explain health behavior may be improved if they accounted for clinically significant psychological distress conditions
- This may be particularly important in HIV, where the prevalence of DSM-IV conditions is higher than the general population
- Mental health comorbidity in HIV is high, and even if it is not associated with risk taking, it still may be a moderator of response in psychosocial interventions to reduce TRB
- Secondary HIV prevention interventions (and possibly other self-care interventions for those with a medical illness) should account for mental health comorbidity to boost their effects

Example intervention:
CBT for adherence and depression in HIV







F(1,42) = 21.94, p< .0001, Cohen *d* = 1.0

F(1,42) = 6.32, p < .02, Cohen *d* = .82

F(1,42) = 9.68, p < .01, Cohen *d* = .91

- Significant acute improvement in adherence (MEMS) and depression in intent-to-treat analyses
- Similar pattern of results for completer analyses
- Those who “crossed-over” caught up
- Intervention-associated improvements were generally maintained at 6 and 12 months

Safren et al., 2009, Health Psychology
Note: effect size conventions .5 = medium, .8 = large, calculated with change scores

Work in progress

- Cognitive behavioral therapy for adherence and depression in diabetes (5R01MH078571) – application of treating depression and adherence for self-care for diabetes
- Efficacy of CBT for adherence and depression in HIV care settings (1R01MH084757)

THANK YOU

Funders: NIMH, HRSA, NIDA

Participants

Project Team