Effectiveness Findings of a Large Multi-Site Study of Consumer-Operated Services (1998-2006)

Findings from the SAMHSA/CMHS
Consumer-Operated Service Program
Multisite Research Initiative

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Consumer-Operated Services: An Invocation

"Who then can so softly bind up the wound of another as he who has felt the same wound himself?"

– Thomas Jefferson

Introduction

- Over the past three decades peer-delivered services offered by and for persons with mental illness have
  - matured,
  - diversified,
  - increased in numbers across the United States

What is a COSP?

A consumer-operated service programs (COSP) is a peer-run program or service that is administratively controlled and operated by mental health consumers and emphasizes self-help as its operational approach

COSP Study Overview

- Research question
  - To what extent are consumer-operated programs effective as an adjunct to traditional mental health services in improving the outcomes of adults with serious mental illness?

COSP Study Overview

- Outcome domains
  - Employment, Empowerment, Housing, Service Satisfaction, Social Inclusion, Symptoms, Well-being
- Experimental design
  - Random assignment to one of two conditions
  - Traditional MH Services (TMHS) or TMHS+COSP
- Parallel cost study

Study Overview

- Participants
  - Persons 18+ with diagnosable mental / behavioral / emotional disorder and functional impairment
  - N = 1827 enrolled in study

Study Overview

- Eight program sites
  - CA, CT, FL, IL, ME, MO, PA, TN
- Three general program models
  - Drop-In (4 sites)
  - Mutual Support (2 sites)
  - Education/Advocacy (2 sites)

Study Overview

- One-year longitudinal follow-up
  - 4 measurement points: 0, 4, 8, 12 months
- Common interview protocol
- Logic Model
- Conventional RCT approach
  - Intent-to-treat analysis
  - Optimized, common *a priori* hypothesis

Primary Hypothesis

“Participants offered both traditional and consumer-operated services would show greater improvement in well-being over time than participants offered only traditional mental health services.”

Well-Being Outcome Rationale

- To develop a measure that was supported by theory
- Hypothesized to be most sensitive to primary COSP program effect
  - Short term outcome
    - Realization of participants that “We are not alone.”

Measure Development

- Started with 14 potential scale components
- Factor analysis:
  - 1 factor much more important than others
  - led to selection of 8 scales, chosen by theory and with loading of 0.5 or greater

Well-Being Composite Measure Components

- Total Herth Hope Index (Herth, 1991)
- Quality of Life Scale (QOL Interview excerpts, Lehman, 1983)
- Meaning of Life Framework Subscale (Life Regard Index, Battista and Almond, 1973)
- Subjective Social Inclusion Scale (QOL Interview excerpts, Lehman, 1983)

Well-Being Composite Measure Components

- Empowerment / Making Decisions Scale (Rogers et al., 1997)
- Personal Empowerment Scale (Segal et al., 1995)
- Recovery Assessment Scale (Corrigan et al., 1999)
- Social Acceptance Scale (Well-Being Project, Campbell and Schraiber, 1989)

Computation of Well-Being Measure

- Standardize each scale on mean / SD computed over all time points
- Reliability: Cronbach’s alpha of 0.88

Computation of Well-Being Measure

- Validity: correlations of included scales with
  - Symptoms (-0.4 to -0.5)
  - Excluded scales (-0.5 to 0.4)
- Relationship with prior use of COSP
  - Significantly related to any previous use, but not to use in the 4 months prior to baseline

Intent-to-treat (ITT) Analysis: Methodology

- Multi-level modeling, using SAS (PROC MIXED)
  - treating participant as fixed effect
  - incorporating auto-regressive covariance structure
  - time treated as linear (values of 0, 4, 8, and 12)
- Number of participants included in analysis = 1622
- Pooled test of primary hypothesis
  - as per randomized clinical trial model
  - followed by examination of patterns within sites and clusters of sites

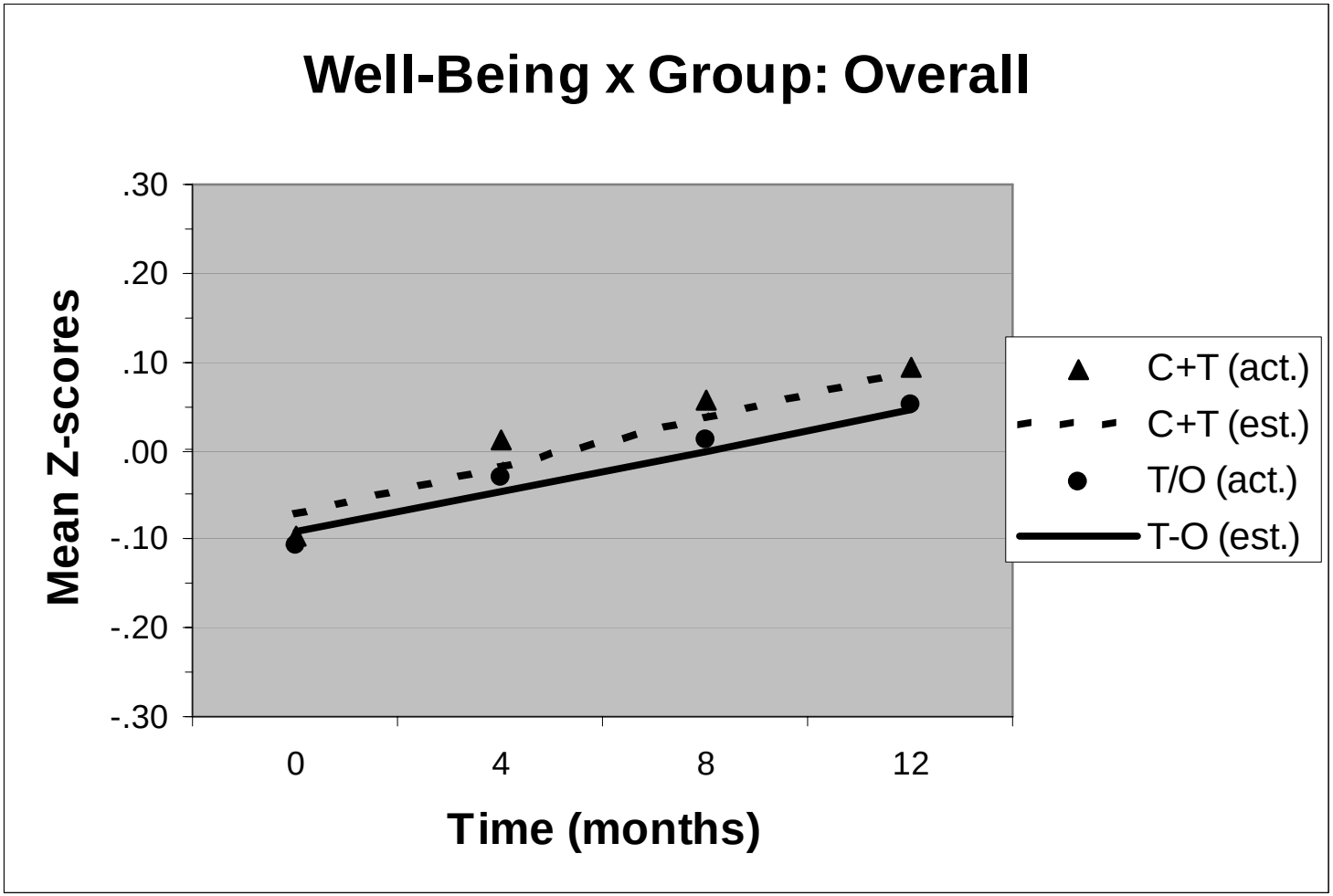
ITT Analysis: Primary Hypothesis

- Model estimated (Cluster as 2nd level):

  Well-being = Time + Group + Cluster + Participant + Time*Group + Cluster*Time + Cluster*Group + Cluster*Time*Group

- Time effect highly significant ($p < .0001$): overall increase in Well-Being for study participants
- Time*Group interaction (tests primary hypothesis) not significant ($p = 0.23$), but Cluster*Time*Group interaction significant ($p = 0.0066$)

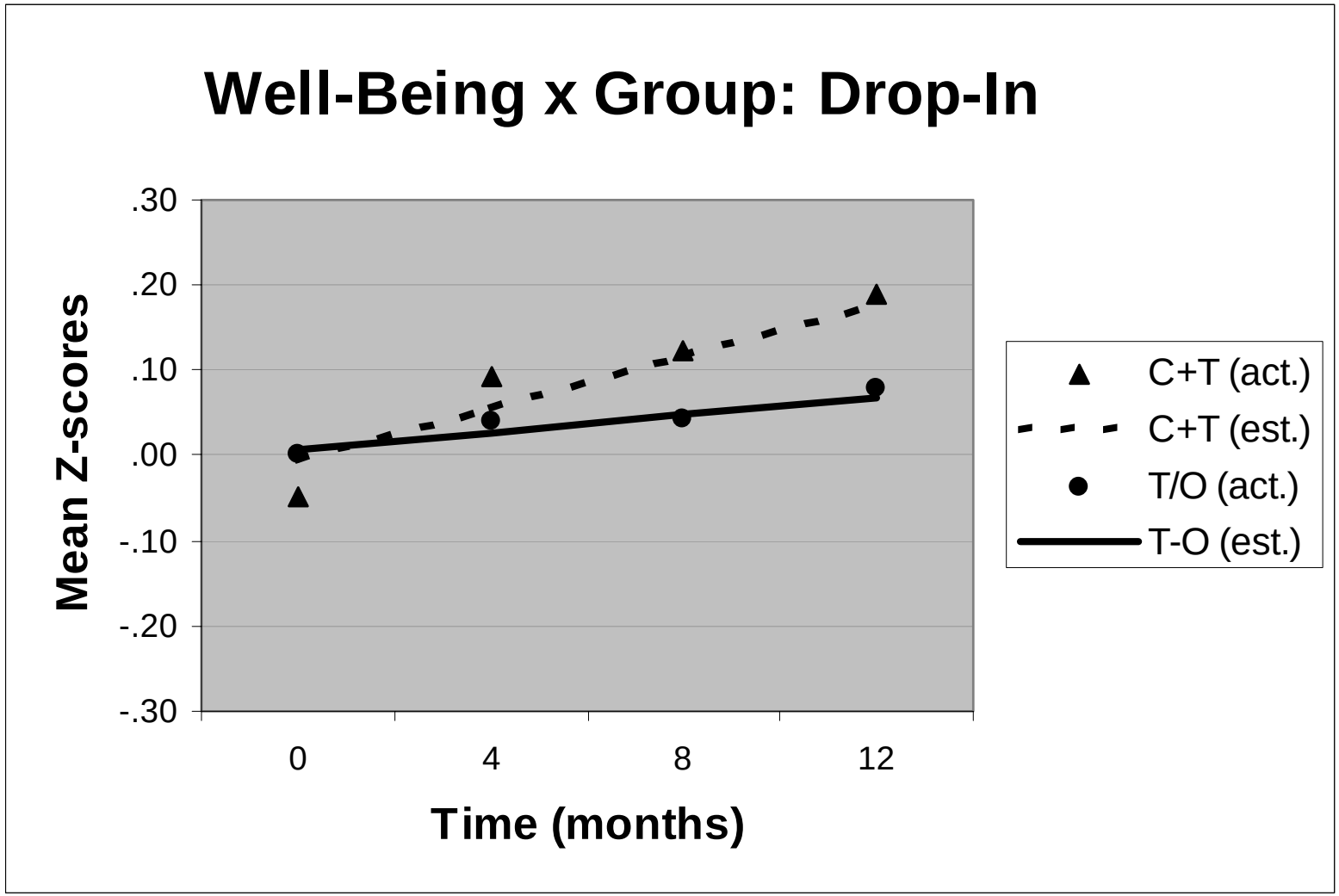
ITT Analysis:
Well-being Trend Over Time



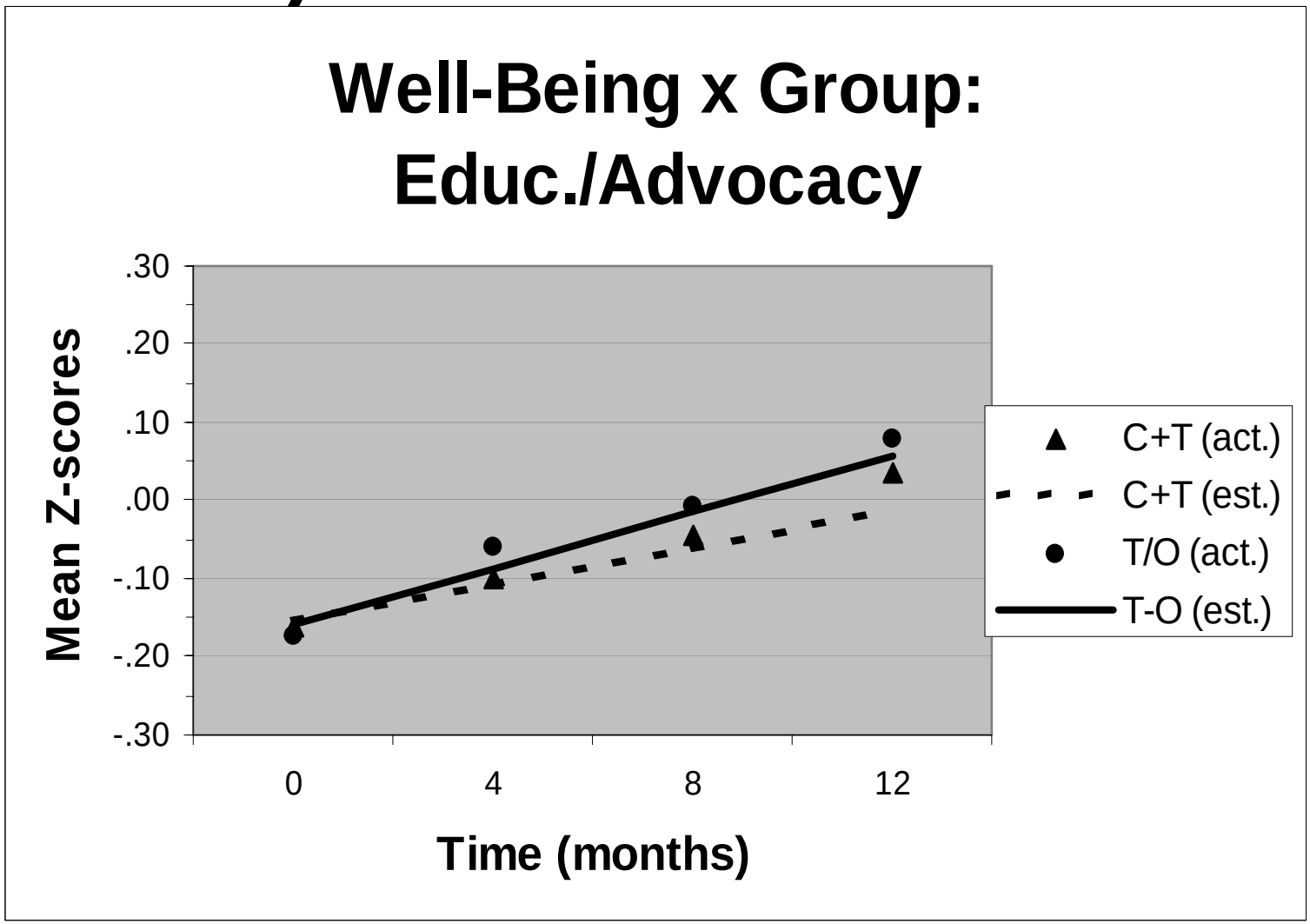
ITT Analysis: Findings by Cluster

- Drop-in Cluster: Time*Group interaction significant (p=.0017), and COSP group improved more
- Education / Advocacy Cluster: Time*Group interaction significant (p=.0188), but COSP group improved somewhat less
- Mutual Support Cluster: Time*Group interaction not significant

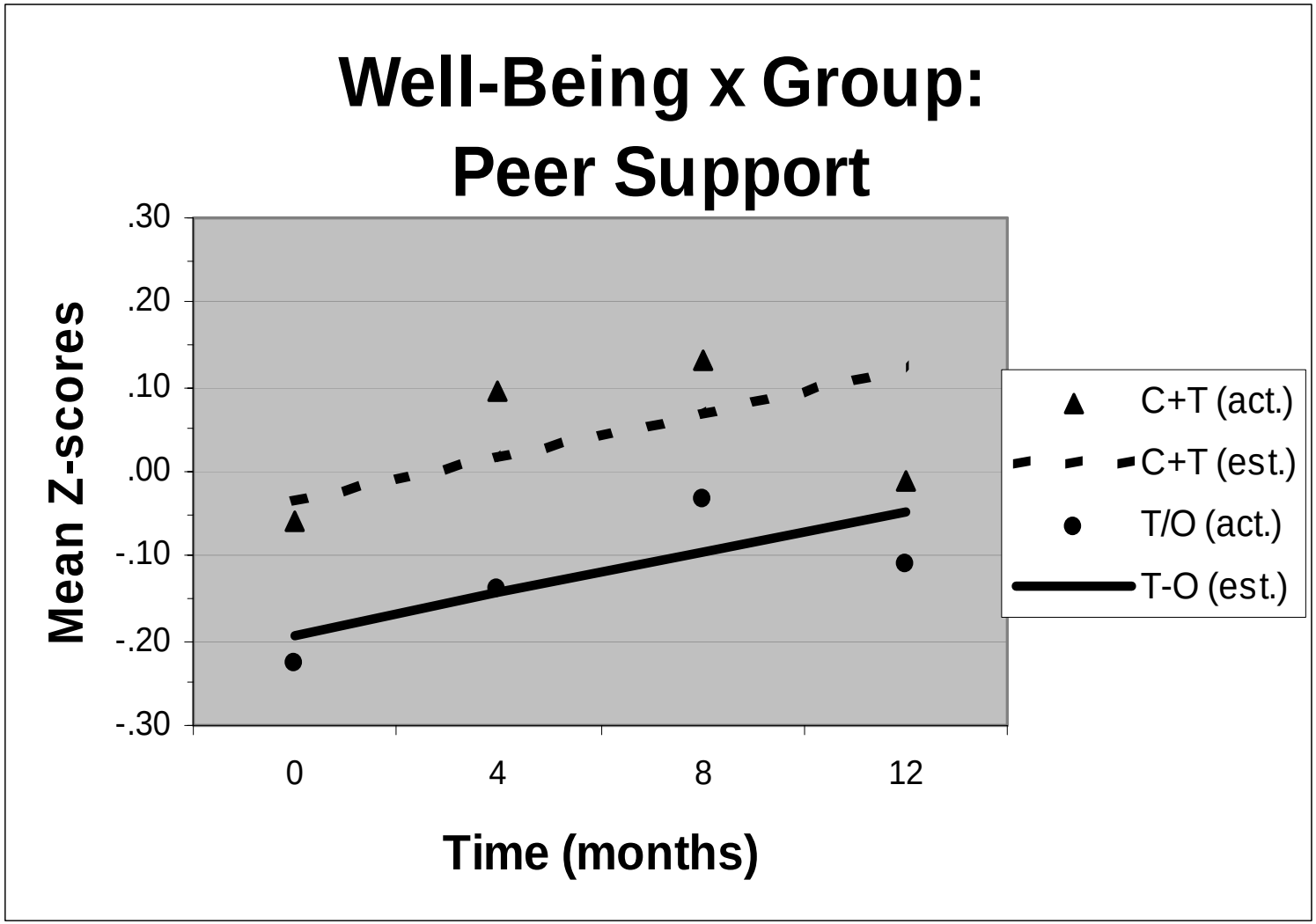
ITT Analysis: Well-being Trend (Clusters)



ITT Analysis: Well-being Trend (Clusters)



ITT Analysis: Well-being Trend (Clusters)



ITT Analysis: Site-level Findings

- Site*Time*Group interaction not significant at p=.05 in any cluster model, but some site-level results differed
- Site-level findings:
  - Drop-In: significant Time*Group interaction, associated with significantly greater COSP improvement in 2 sites
  - Education/ Advocacy: marginally significant Time*Group interaction, associated with slightly less COSP improvement in one site
  - Mutual Support: no significant Time*Group interactions

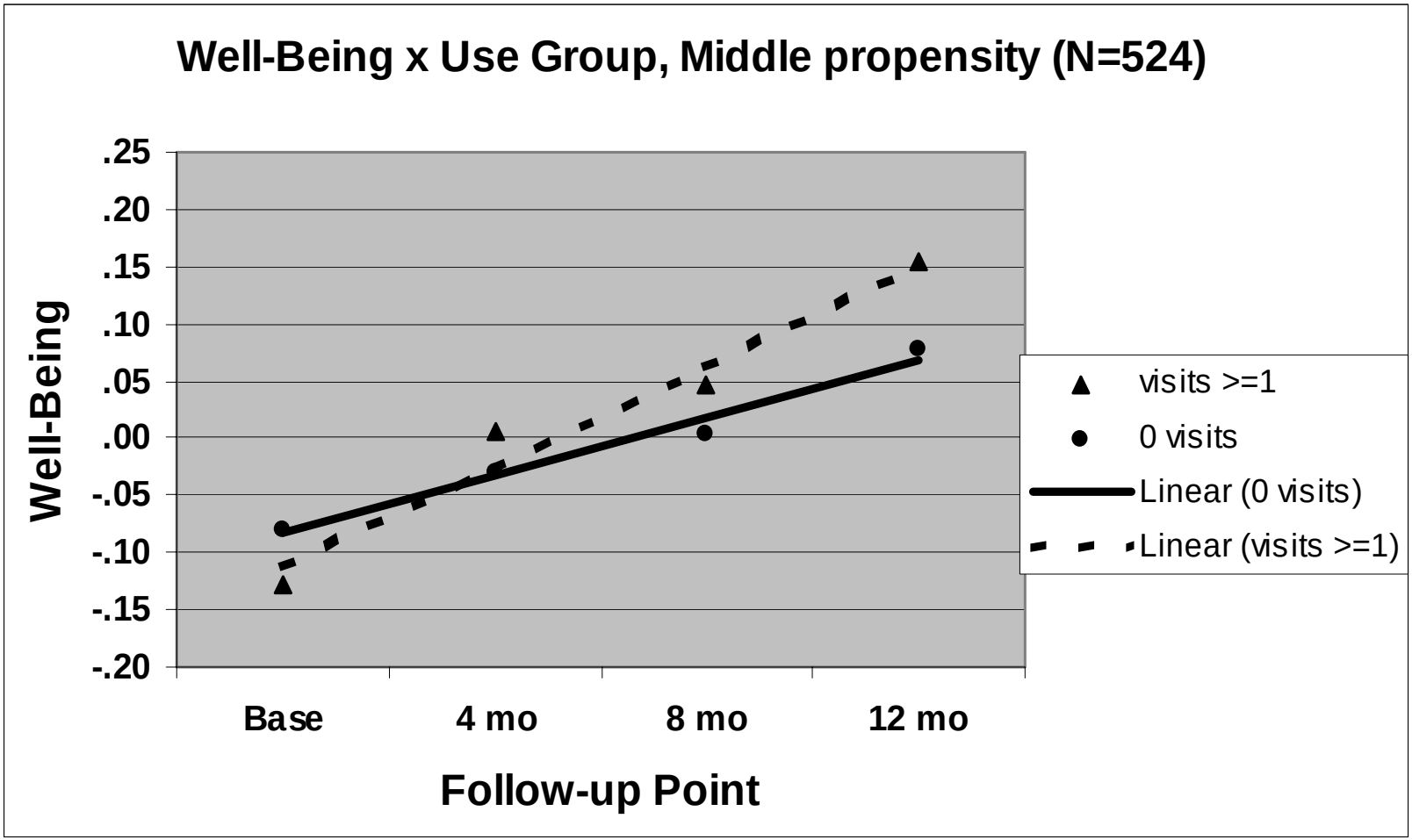
As-Treated Analyses: Methodology

- As-treated (AT) analyses must address potential for selection effects
- Significant crossover confirms likelihood of selection effects in this study
- Use of propensity scores to improve equivalence of comparison groups
- Engagement / utilization examined as presence-absence and by amount
- Power reduced at site level, but findings examined at site level for verification of pattern found at overall level

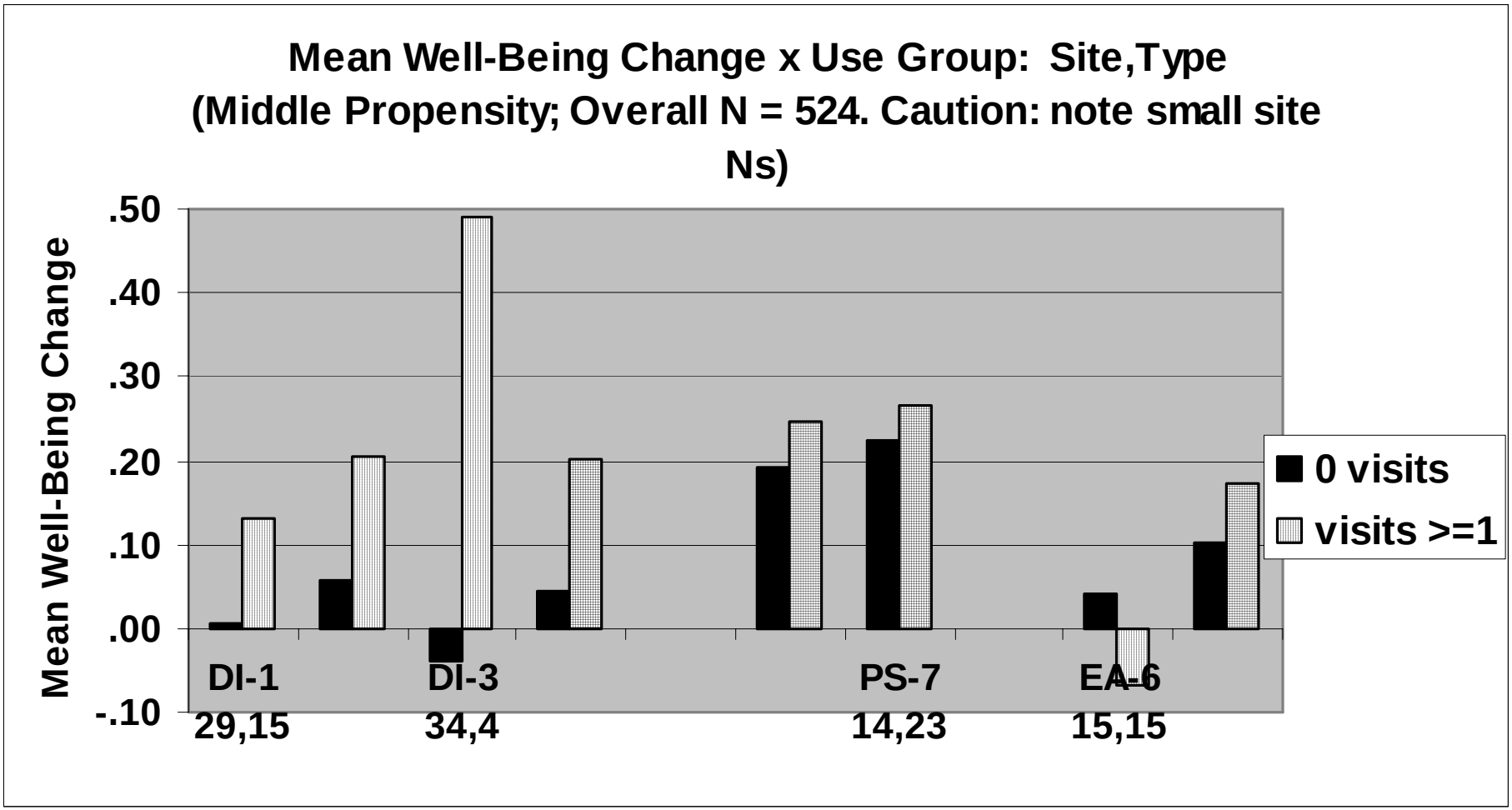
As-Treated Analyses: Findings

- Analyses using middle “propensity” group
  - Participants who were not likely predisposed either for or against use of COS
- Examined overall effect of at least minimal engagement (any use *vs.* no use)
- Significant Time*Group interaction, p = .042
- Greater increase in Well-Being among those who used COS, effect size = .302
- Pattern generally observed across sites, with varying strength

Well-Being Over Time *by* Use of COS (Any Use vs. No Use)



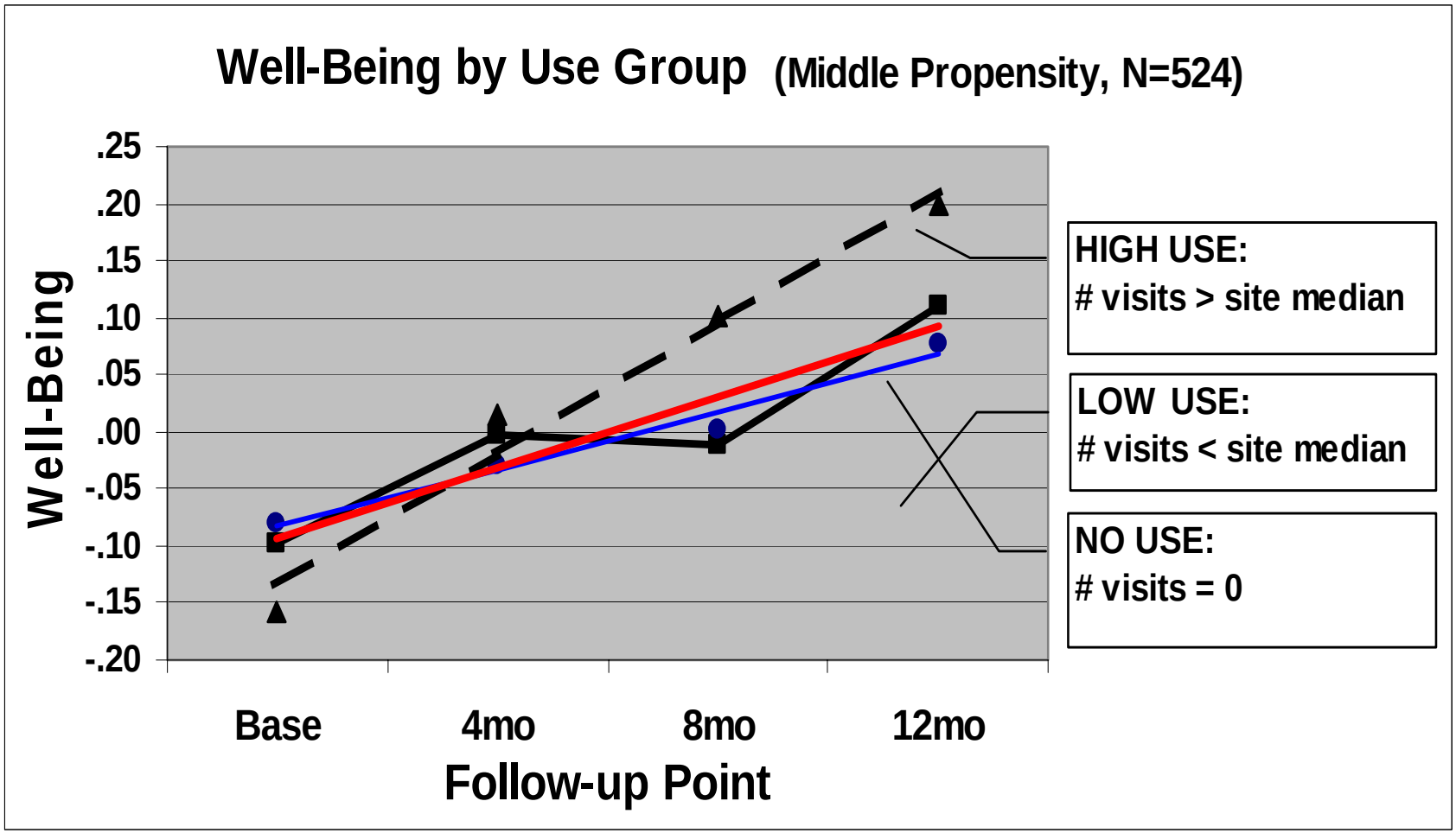
Mean Change in Well-Being *by* COS Use (Any Use vs. No Use, Site Level)



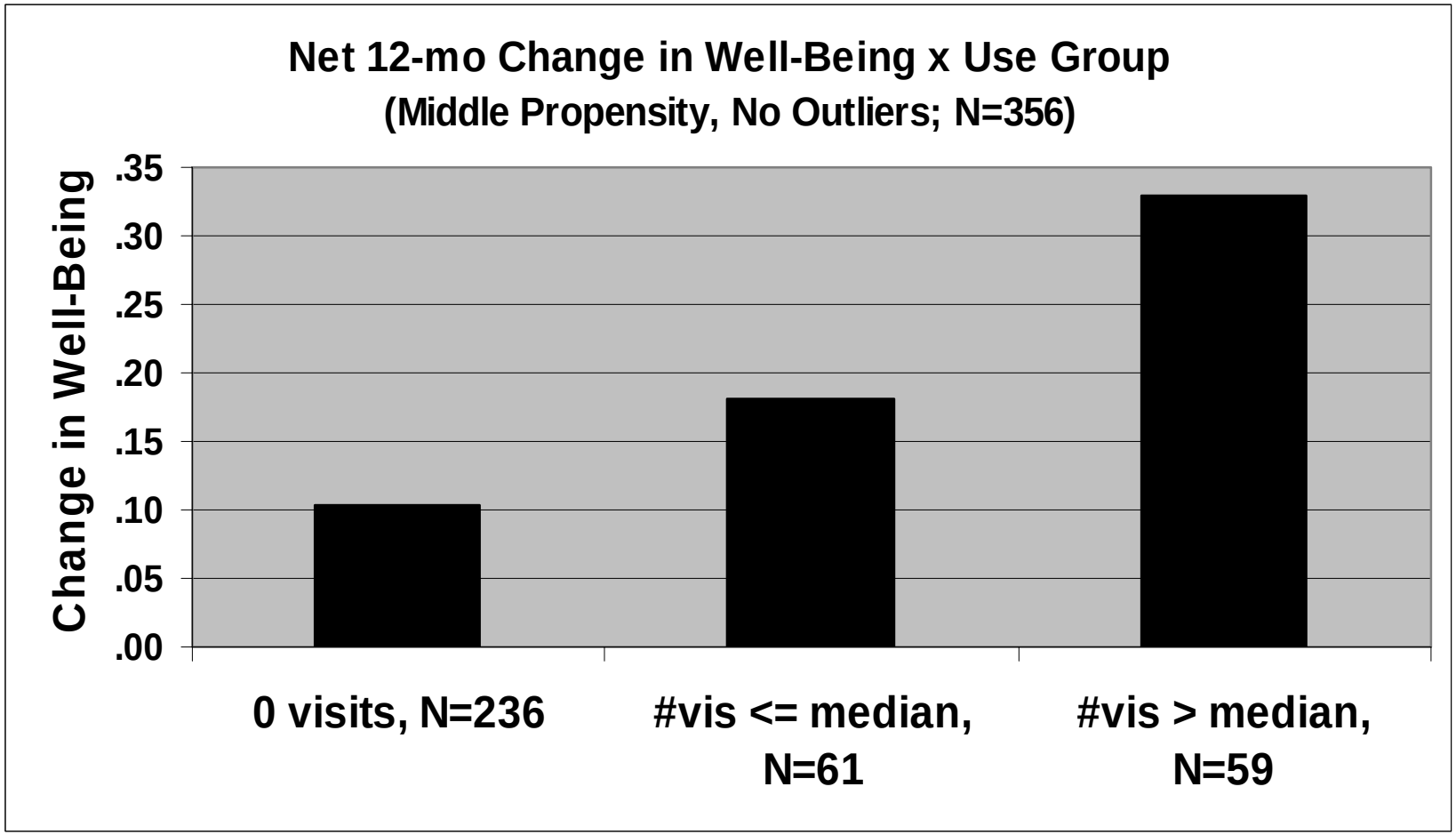
As-Treated Analyses: Findings

- Examined overall effect of level of use (High use *vs.* Low use *vs.* No use)
- Significant group effect, p = .017
- Greatest increase in Well-Being among those who used COS more
- Pattern generally observed across sites, with varying strength

Well-Being over Time *by* COS Use (High vs. Low vs. No Use)



Net Change in Well-Being *by* COS Use (High vs. Low vs. No Use)



COSP Effectiveness Findings: Summary

- Significant time effect: overall increase in well-being among study participants
- Significant small effect of COSP intervention in a subset of sites (ITT)
- More general positive effect when actual participation is taken into account (AT); greater use associated with greater increase in well-being
- Strong relationship between increase in well-being and recovery-oriented program features
- Findings not limited to one program model

Further Investigations

- Pending analyses
  - Other outcomes
  - Participant characteristics
- Integration of fidelity and outcome
  - What program features are associated with increase in Well-being?
    - Impact of program ingredients on intervention effect (correlations: experimental framework)
    - Relationship of program ingredients to program effects (correlations: observational framework)
    - Sensitivity testing for spurious revelation or obscuration

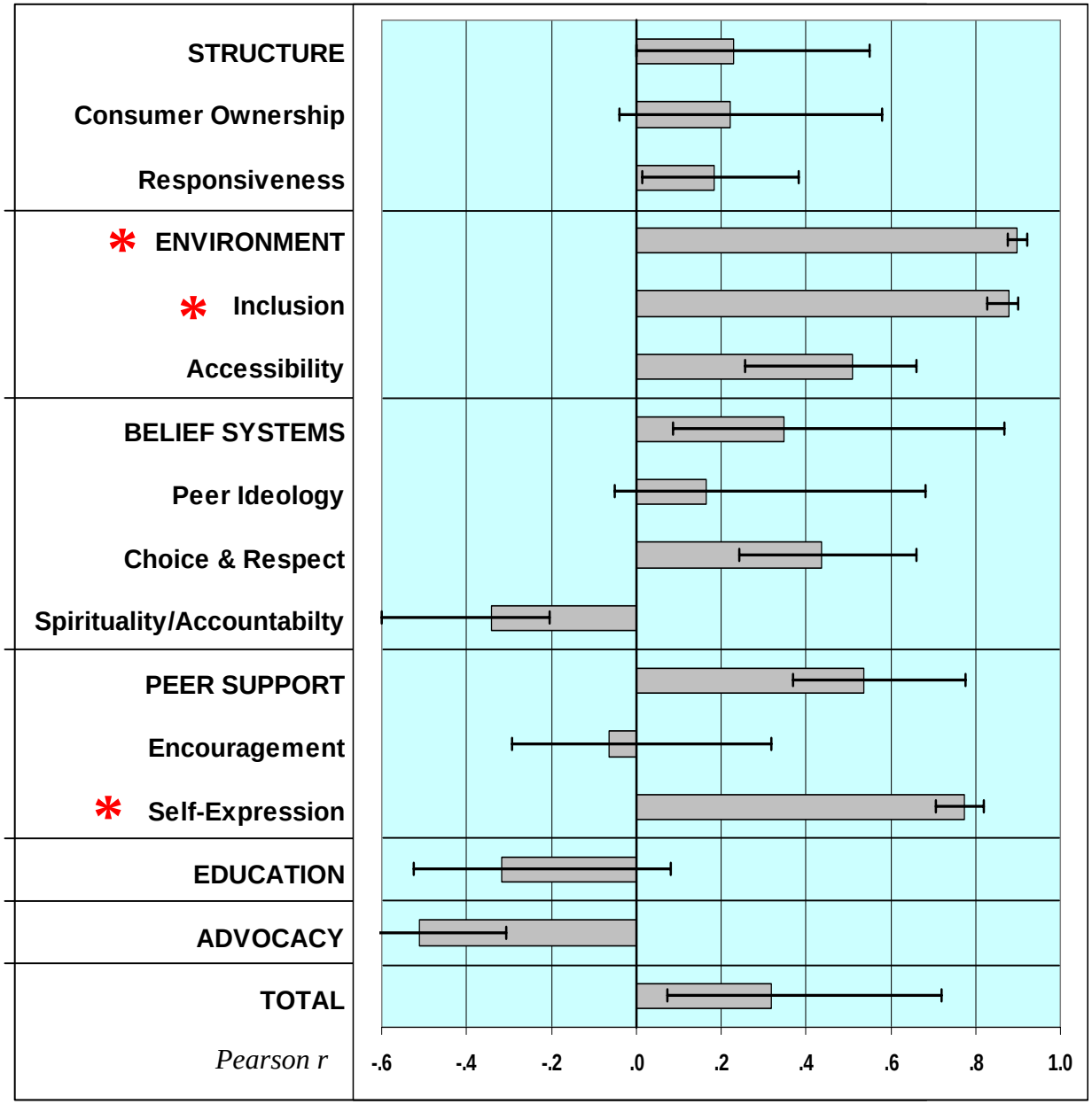
FIDELITY AND SITE EFFECT (ITT)

<u>Correlations</u>:

Difference in FACIT Scales *with* Difference in Well-being Change

(N = 8; Ranges = sensitivity tests)

*** *p* < .05**



Environment Subscale: "Inclusion" Variables

- Cost – services free of charge
- Program rules – ensure physical safety, developed by consumers
- Social environment – no hierarchy; sense of freedom and self-expression; warmth among participants and staff
- Sense of community – fellowship, mutual caring, and belonging
- Lack of coerciveness – choice, no threats or unwanted treatment; tolerance of harmless behavior

Peer Support Subscale: "Self-Expression" Variables

- Self-Expression subscale
  - Artistic Expression – opportunities for telling one's story in visual arts, music, poetry
  - Telling our stories – opportunities for sharing life experiences
- Closely associated variable
  - Formal peer support – structured groups for listening, empathy, compassion based on common experience

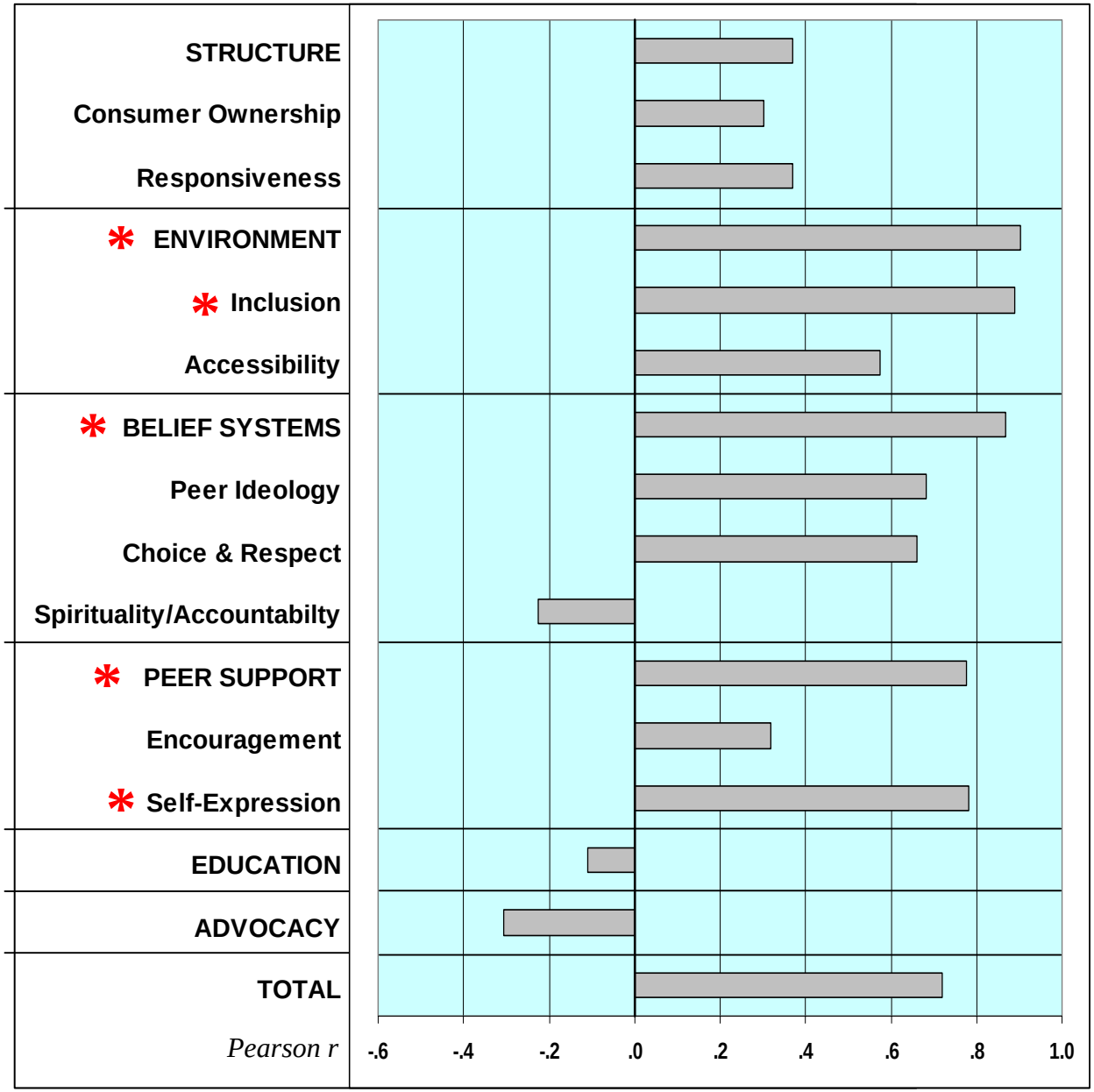
FIDELITY AND SITE EFFECT (ITT)

<u>Correlations</u>:

Difference in FACIT Scales *with* Difference in Well-being Change

(N = 7: One site omitted – outlier on FACIT difference pattern)

*** *p* < .05**



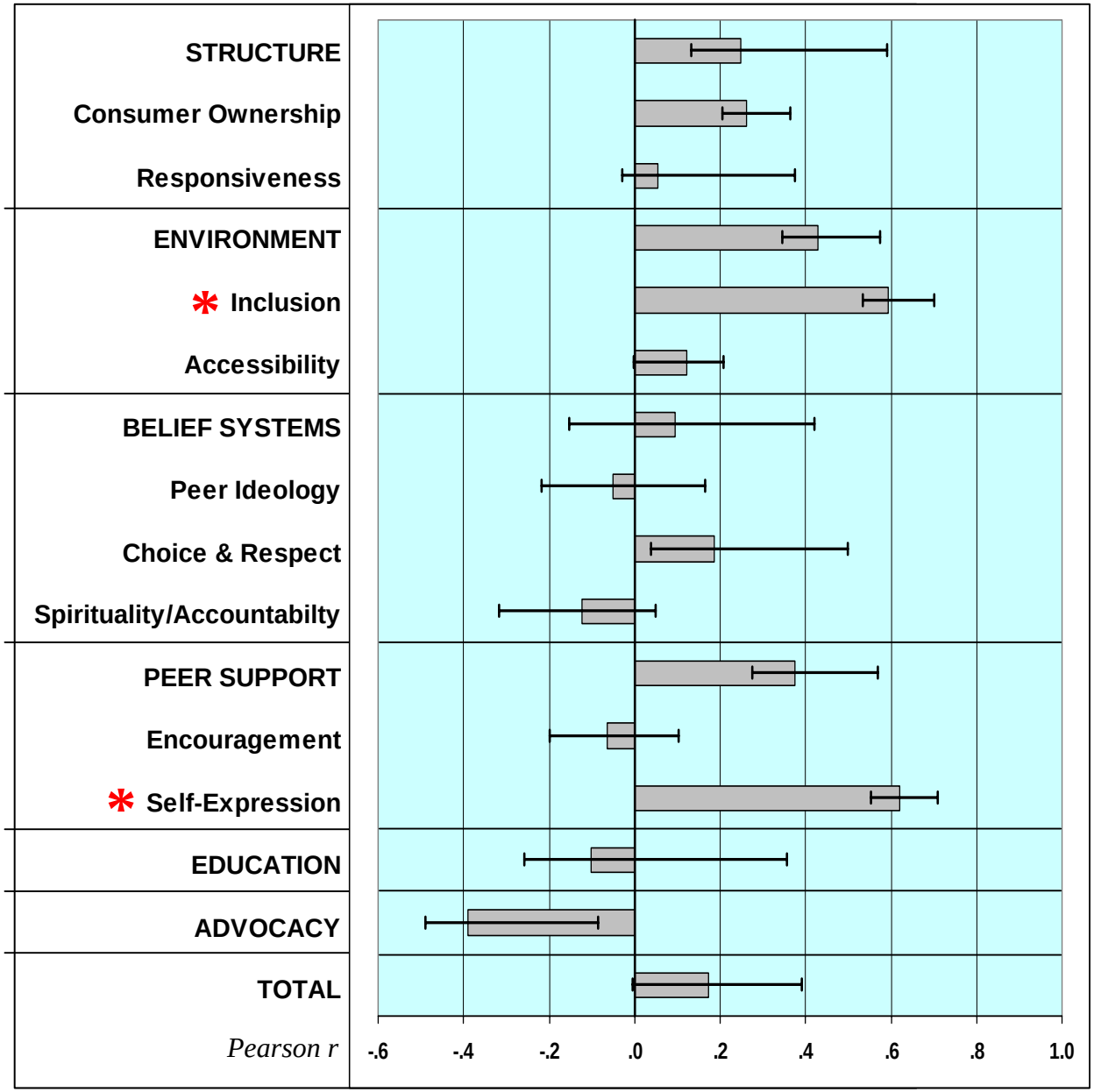
FIDELITY AND PROGRAM EFFECT (ITT)

Partial Correlations:

Adjusted FACIT Scales *with* Well-being Change, controlling for Condition

(N = 16; Ranges = sensitivity tests)

*** *p* < .05**



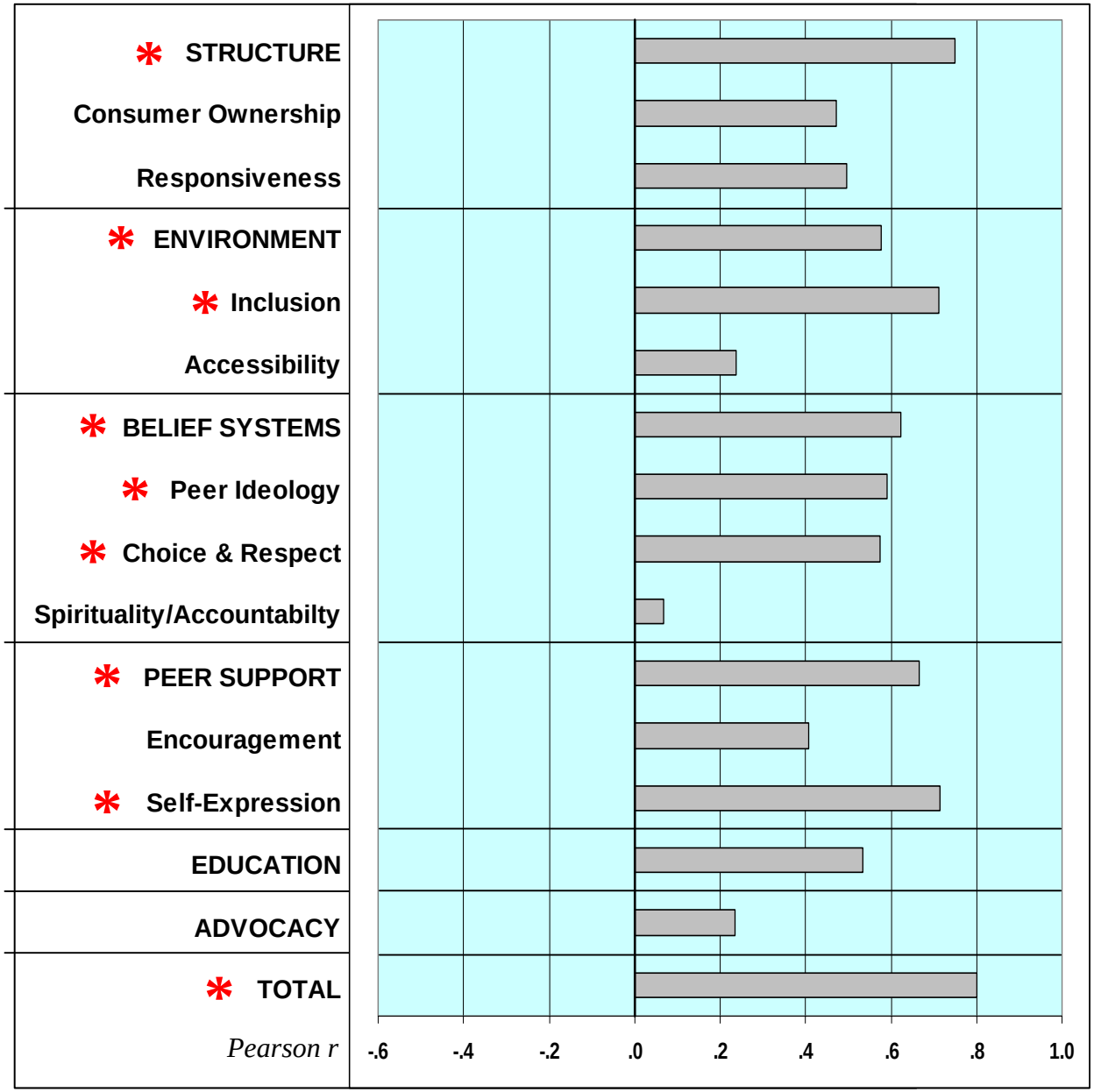
FIDELITY AND PROGRAM EFFECT (ITT)

Partial Correlations:

Adjusted FACIT Scales *with* Well-being Change, controlling for Condition

(N = 14: Two programs [1 COSP, 1 TMHS] with negative WB change omitted)

*** *p* < .05**



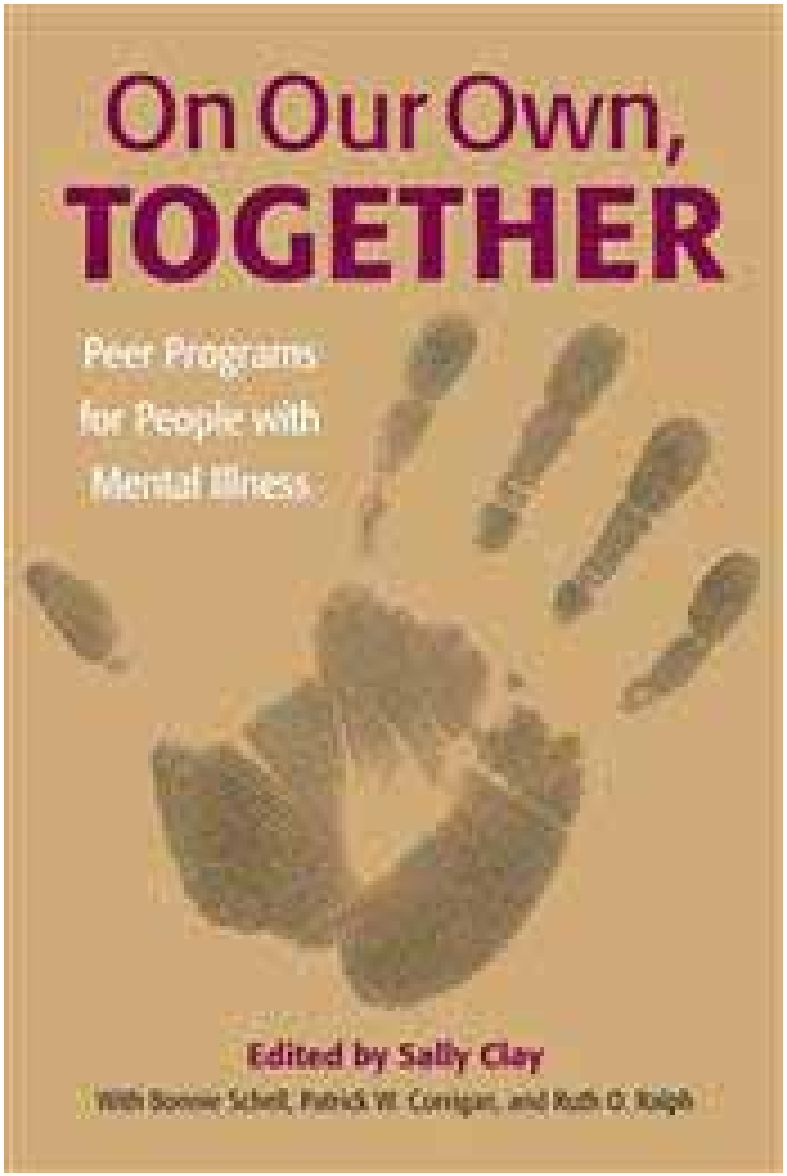
Conclusions:

- Evidence base for COS as discrete programs
  - Adding COS to traditional services adds incrementally to well-being
  - Participation and program elements make a difference
  - COS has begun to move from promising practice to EBP
- Evidence base for recovery theory
  - Program features specified for COS are related to increases in well-being independent of setting
  - Program features link COS to more general evidence base on change

Conclusions:

- Stronger basis for commitment to recovery–oriented services
  - Particular program features contribute to recovery and are effective within various settings
- Further support for bringing peer-run services into the mental health service fold
  - Findings supplement New Freedom Commission recommendation 2.2 – adding leverage for advocates of peer-run programs
  - COS should be recognized and included as such within the service continuum
  - COS should have appropriate fiscal and organizational support

COSP-Related Book



- **On Our Own, Together Peer Programs for People with Mental Illness**
  - **Edited by Sally Clay, with Bonnie Schell, Pat Corrigan, Ruth Ralph**

Features programs that participated in COSP

- **Vanderbilt University Press**

http://www.vanderbiltuniversitypress.com/bookdetail.asp? book_id=3969

COSP-MRI Investigators & Scientific Contributors*

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* Partial list