

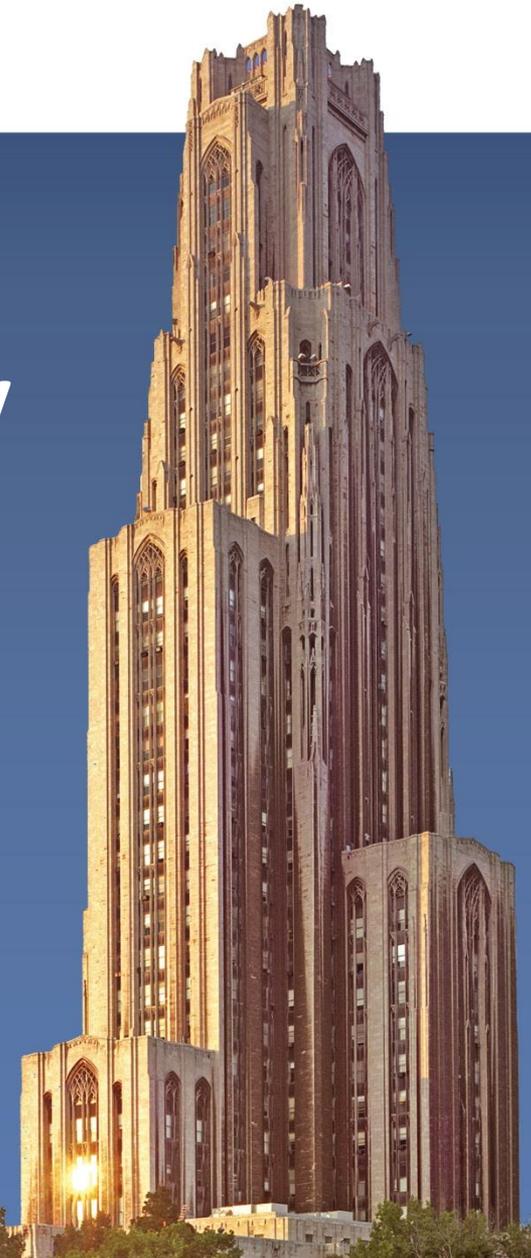


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# The Relationship of Co-Morbidities and Self-Efficacy in Regimen Management

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# Objectives

1. To examine the overall impact of the number of co-morbidities on self-efficacy in regimen management and potential mediating factors, across study populations
2. To examine study and/or population differences in the relationship between co-morbidities and self-efficacy

# Specific Aim

- To determine the influence of number of diagnoses (co-morbidities) on self-efficacy

# Sample

- The sample included the pooled subjects from the HABIT (n=167), 3M (n=91), and Concordance (n=73) studies – each of which focused upon medication adherence (n= 331)
- White 232 (70%)
- Female 210 (63%)
- Married/living with 189 (57%)
- Employed full or part-time 118 (35.5%)
- Age (range = 29-94)  $\underline{M} = 61.79_{\pm}11.47$ 
  - 62.7% <65yr; 37.3%  $\geq$ 65yr
- Years of Education (range = 8-30yr)  $\underline{M} = 14.55_{\pm}2.99$

# Measures

## Baseline Common Measures from 3 Studies

Measure	Range of Scores
Self-reported diagnosed conditions	1-23
Self-reported number of medications	1-24
SF36 Physical Component Scale (0-100)	7.7-64.2
SF36 Mental Component Scale (0-100)	13.2-70.7
Beck Depression Inventory II (0-63)	0-42
Chronic Disease Self-Efficacy Scale (1-10)	1.7-10

# Average Scores on Measures

N=290

Self-Efficacy	7.6 $\pm$ 1.7
# Diagnoses	7.6 $\pm$ 3.5
# Medications	7.6 $\pm$ 3.7
SF36-physical	42.7 $\pm$ 11.3
SF36-mental	47.0 $\pm$ 12.6
BDI II	11.7 $\pm$ 9.2

# Methods

- Data from the relevant variables at baseline were pooled to create one data set
- Pearson Product Moment Correlations between variables
- Regression Analysis

# Does the Number of Co-morbidities Affect Self-Efficacy?

YES                      As the number of conditions  
                                 increases, self-efficacy decreases.

$R^2 = .099$               But the variance accounted for is small (<1%)  
                                  $F = 35.455, df 1,321, p=.000$   
                                  $Beta = -.315, SE=.029, t=-5.954, p=.000, CI=-.231, -.116$

Number of diagnoses is moderated by age, such that  
> 65 years old is associated with higher self-efficacy than  
< 65 years old.

$Beta = .213, SE = .210, t= 3.966, p=.000, CI = .420-1.248$

# Does the Number of Medications Affect Self-Efficacy?

YES                      As the number of medications  
prescribed increases, self-efficacy decreases.

$R^2 = .019$

$F = 5.6, df 1,290, p=.019$

$Beta = -.138, SE=.031, t=-2.367, p=.019, CI = -.133,-.012$

The relationship is moderated by age such that >65 years old is associated with greater self-efficacy than <65 years old.

$Beta = .182, SE = .236, t=3.093, p=.002, CI= .266, 1.196$

# Does the Level of Physical Function (Physical Component Summary SF-36) Affect Self-Efficacy?

YES                      As the physical component summary declines,  
level of self-efficacy decreases.

$R^2 = .123$

$F = 44.644, df=1,318, p=.000$

$Beta = .351, SE=.009, t=6.682, p=.000, CI=.042,.076$

The relationship is moderated by age such that >65 years old is associated with higher self-efficacy than <65 years old.

$Beta = .158, SE=.209, t=2.962, p=.003, CI= .208, 1.032$

# Does Mental Health (Mental Component Summary SF-36) Affect Self-Efficacy?

YES As the mental component summary declines, self-efficacy declines.

$R^2 = .382$

$F = 196.904, df=1,318, p=.000$

$Beta = .618, SE=.007, t=14.032, p=.000, CI= .080, .107$

The relationship between mental component summary and self-efficacy is moderated by age, such that >65yo is associated with higher self-efficacy than <65yo,

$Beta=.002, SE=.185, t=.043, p=.043, CI=.356, .372$

And is further mediated by the interaction between race and number of co-morbidities.

$Beta= -.209, SE=.043, t=-2.039, p=.042, CI= -.170, -.003$

# Is The Mental Component Summary (SF-36) Associated With Depression (BDI)?

YES

The correlation between the MDS-SF36 and the BDI scores, measured concurrently, is  $r = -.736$ ,  $p = .000$

Thus, over 54% of the variance in the mental component summary scores can be accounted for by depression.

# Does Depression Affect Self-Efficacy?

YES

As depression increases, self-efficacy declines.

$R^2 = .365$

$F=184.184, df= 1,321, p=.000$

$Beta=-.604, SE=.009, t= -13.571, p=.000, CI= -.141, -.106$

The relationship between depression and self-efficacy is not moderated or mediated by any other measured variable or interaction term.

# Overall Model of the Relationship of Co-morbidities And Self-Efficacy

- Co-morbidities alone:  $R^2 = .113$
- Co-morbidities with mediators:  $R^2 = .539$ 
  - Physical component summary  $t = 4.855, p = .000$
  - Mental component summary  $t = 8.054, p = .000$
  - Depression  $t = -2.524, p = -.012$
- Not significant mediators/moderators:
  - Number of medications
  - Race
  - Gender
  - Age
  - Interactions between variables

# Implications for Translation of Adherence Interventions

- A significant body of work has demonstrated the relationship between self-efficacy and sustainability of a treatment regimen
- Our studies demonstrate that individuals with multiple co-morbidities, particularly those with poorer physical and/or mental health function including depression, are most likely to be at risk for low self-efficacy for treatment and disease management
- Studies are needed to demonstrate the strategies most likely to be effective in raising efficacy among such persons