Social Support, Depression and Treatment Adherence Among Type 2 Diabetes Patients

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Background

- Treatment nonadherence is common:
  - ½ of adults with diabetes have HbA1c above 7.0%

    Shaya et al., 2010

  - Suboptimal rates of adherence
    - 65% to 85% among type 2 diabetes patients   Rubin, 2005
    - Only 1/3 of patients are adherent > 90% of days over 1 year

      Donnan et al., 2002

- Nonadherence has been associated with :
  - Hyperglycemia, hypertension, and dyslipidemia
  - Increased risk for hospitalization and mortality

    Ho et et al., 2006

Background

- Social support is associated with better adherence

  DiMatteo,2004

- Depression associated with poorer adherence

  Gonzalez et al., 2008

- Support and depression are negatively related

  Cohen & Wills, 1985

- Interaction predicting adherence has not been examined

Purpose

- To examine:

  1) interrelationships among social support, depression, and diabetic medication adherence.

  2) evidence for a moderating role of depression in explaining the relationship between social support and diabetic medication adherence.

Methods

- Participants
  - Massachusetts General Hospital and affiliated primary care practices throughout Boston, MA.
- Inclusion Criteria:
  - Type 2 Diabetes
  - Between the ages of 18 and 70
  - Taking oral medication or insulin to treat diabetes
- Exclusion Criteria:
  - Cognitive condition
    - e.g., psychosis, mental retardation, dementia

Measures

- Questionnaires:
    - **Social Support Questionnaire-Short Form (SSQSR)** (Sarason et al., 1987).
        - **Number of social supports and perceived satisfaction with social support**
    - **Depression Symptom Severity. The Montgomery-Asberg Depression Rating Scale (MADRS)** (Montgomery & Asberg, 1979)
    - **Medication Adherence: Diabetes Self-Care Behaviors: The Summary of Diabetes Self-Care Activities (SDSCA)**
        (Toobert et al., 2000).

Demographics

Characteristic	
N	147
Age, mean (SD)	56 (9.3)
Male	57%
White	79%
Married	56%
Education (years)	14.49 (3.4)
HbA1c	8.3(1.6)
# of Diabetes Related Complications	0.5 (0.5)
Prescribed Insulin Therapy	50%
# of Medications Prescribed	7.7 (3.8)

Means and standard deviations of the depression, social support, and medication adherence.

Variable	Mean	SD
Depression	21.4	9.9
# of Supports	3.02	2.16
Support Sat	4.33	1.33
Medication Adherence	6.10	1.6

Quantitative Analyses

	Depression (r)	p value
Number of Supports	-.17	.058
Support Satisfaction	-.14	.09

Moderating role of depression in the relationship between number of social supports and medication adherence

N = 129

| Variable	R	R^2	ΔR^2	ΔF	β	p
1. # of Supports	.058	.003	.003	.43	-.058	.51
2. Depression,	.19	.035	.03	4.1	-.18	.045
# of Supports					-.09	.32
3. Depression x # of Supports	.24	.056	.02	2.9	-.15	.09

Moderating role of depression in the relationship between perceived social support and medication adherence
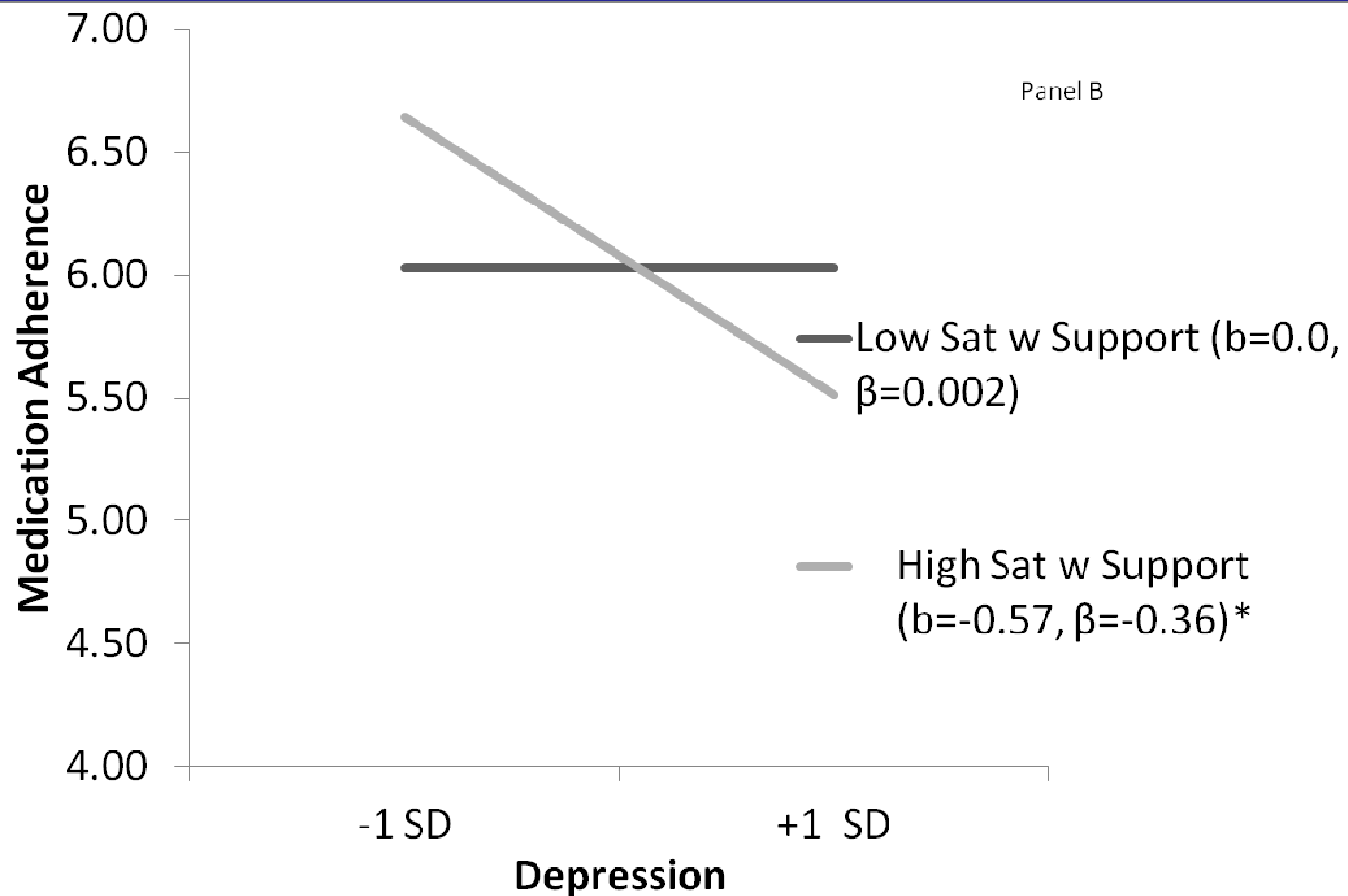
Variable p	R	R2	ΔR2	ΔF	β	
N = 146						
1. Support Sat	.02	.000	.000	.04	.016	.85
2. Depression, Support Sat	.16	.03	.03	3.7	-.16 -.006	.056 .938
3. Depression x Support Sat	.25	.06	.04	5.6	-.195	.02*

*p < .05

Post-hoc Probing Analysis
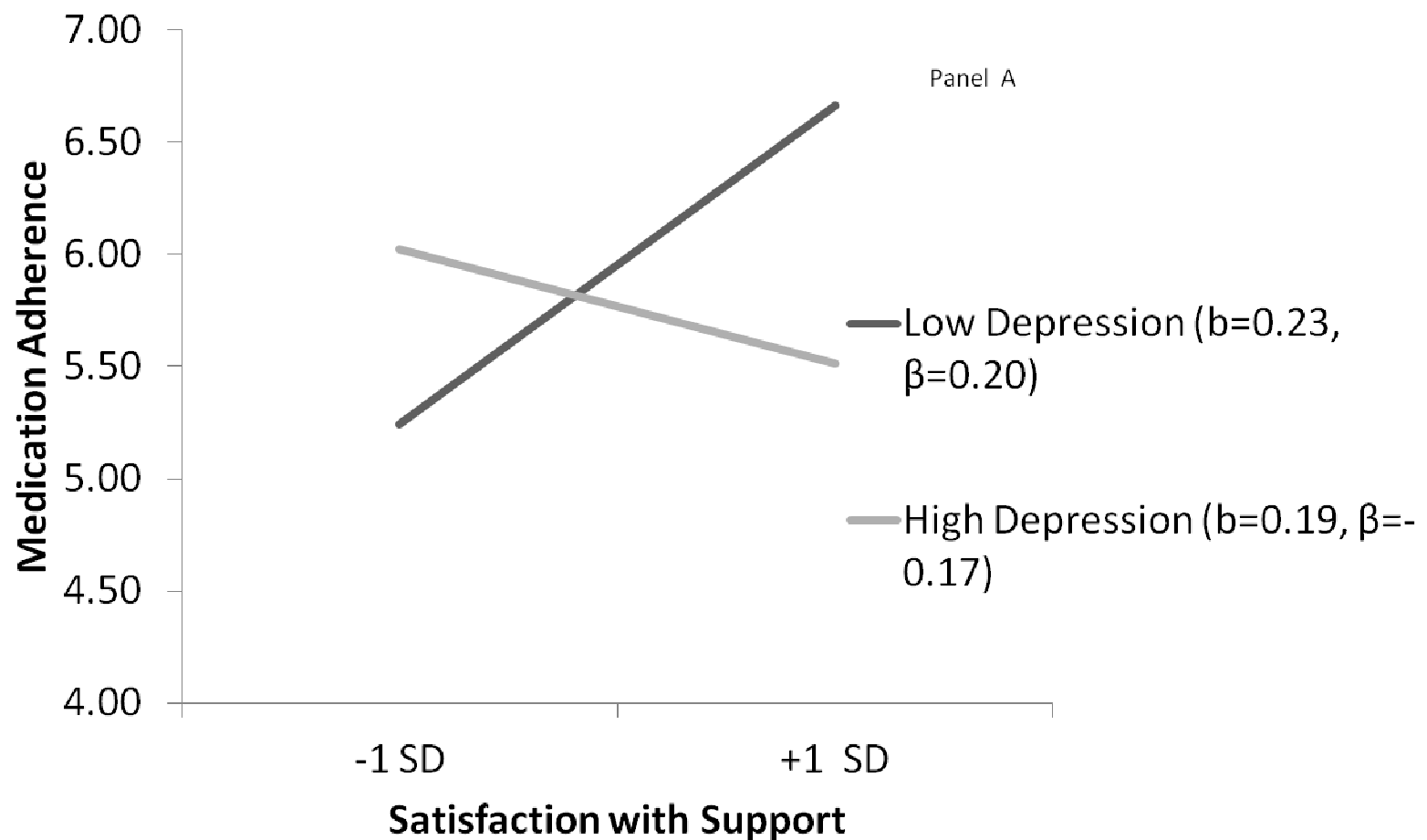
Post-hoc Probing Analysis

Conclusions

- Significant interaction between depression and social support in relation to adherence
  - No evidence of a synergistic effect
  - Depression was not related to adherence at low levels of support
  - Depression effect was most pronounced at *high* levels of support

- Addressing depression at low levels of social support may have little effect on adherence

- Need to consider the interplay between support and depression in adherence intervention research and clinical care

Questions?

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