



Body Mass Index Moderates Treatment Outcomes in Mindfulness Based Cognitive Therapy

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1. Introduction

- Mindfulness-based interventions are increasingly being used in the treatment of refractory depression, a major public health challenge (Luppino et al. 2010).
- Studies suggest that several amongst patient populations who need these interventions are likely also struggling with weight and nutritional issues (Sipe et al. 2012).



- Data is limited on how baseline patient factors such as Body Mass Index (BMI) moderate treatment outcomes in mindfulness based interventions.



Mindfulness-Based Cognitive Therapy (MBCT) is a therapeutic intervention designed to prevent relapsing depression. It has been shown to affect functional connectivity among brain regions and neuro-hormonal pathways involved in depression (Williams et al. 2000).

2. Methods

Randomized Control Trial

Subjects: 52 English-speaking adults (18-65) with recurrent depression.
→ 29 Randomized to MBCT, 23 to waitlist control.

Intervention: 8-wk MBCT intervention (8 weekly 2.5 hr in-class sessions + 1 day retreat)

Outcome measures: EEG monitored sleep study, and pre/post- in-lab assessments w/ neuropsychological battery tests and treatment questionnaires.

MBCT (n=29)

Follow up assessment (n=27)

3 month follow up

6 month follow up

12 month follow up

Waitlist (n=22)

Follow up assessment (n=18)

MBCT

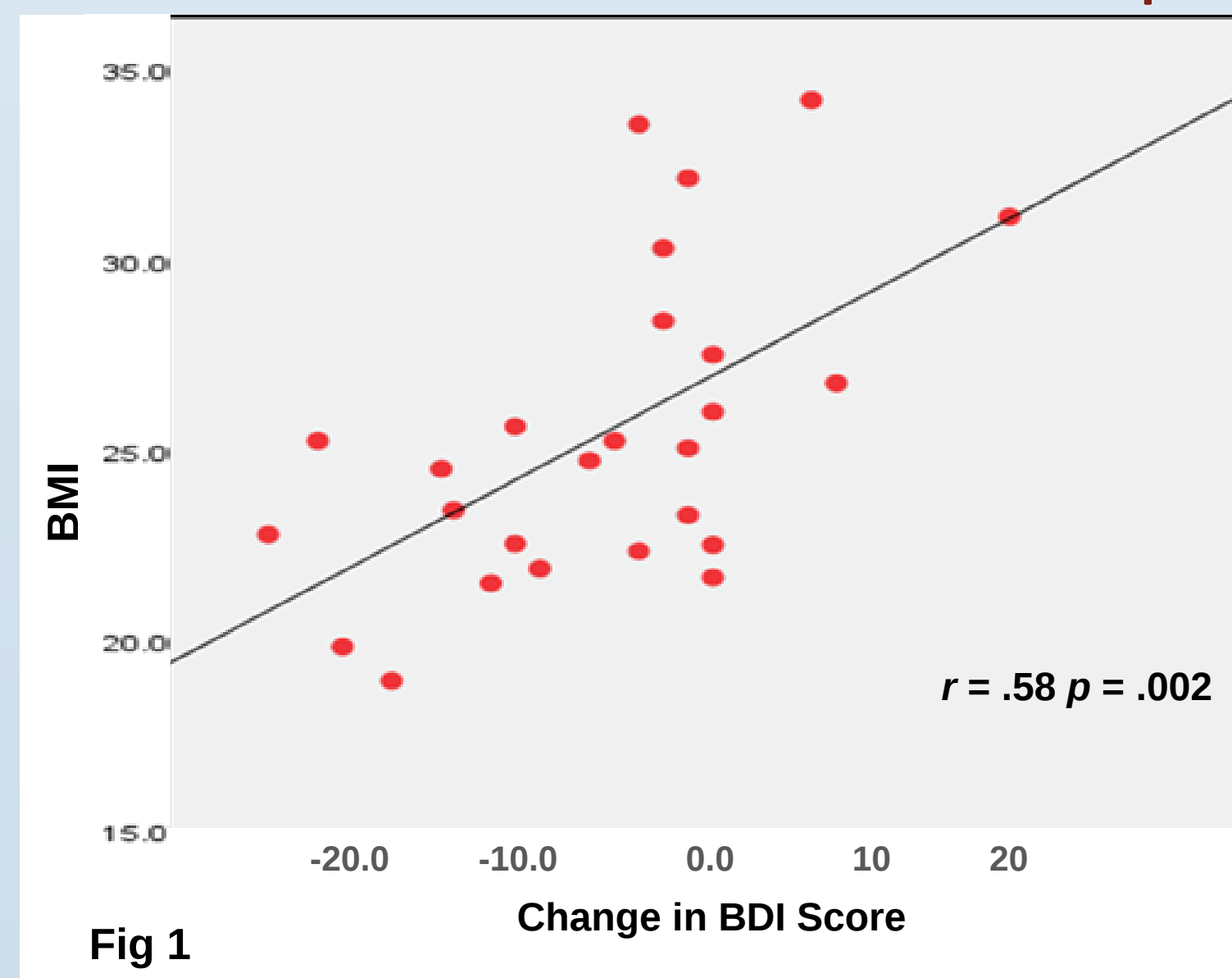
3 month follow up

6 month follow up

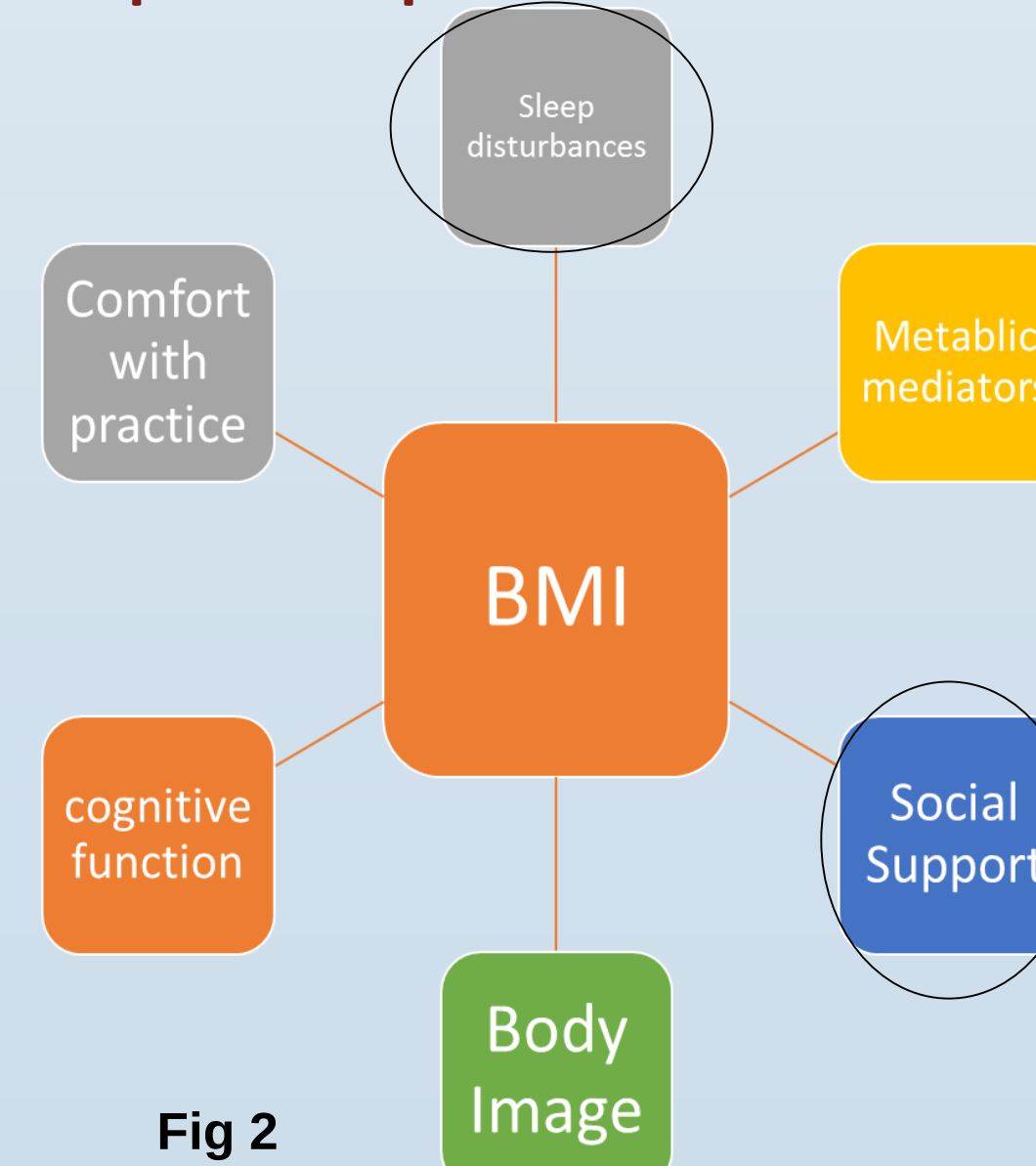
12 month follow up

3. Results

Low BMI correlates with improved depression post MBCT



High BMI was associated with either no benefit or worsening of depression (Fig 1). BMI may be linked to MBCT treatment outcomes by different social and biological mediators (Fig 2).



4. Gender Specific Effects

In men, BMI primarily mediated depression treatment outcomes through effects on sleep quality.

BMI is correlated with increased micro-arousals during sleep ($r = .51, p = 0.013$). In men, increased sleep micro-arousals is associated with less improvement in depression index scores pre to post MBCT ($r = 0.312, p = 0.1$). Sleep micro-arousals was associated with poor executive functioning and poor emotional regulation as measured by neuropsychological tests and mood questionnaires pre and post MBCT.



In women, BMI mediated depression treatment outcomes primarily through effects on Social Support.

BMI is negatively correlated with coping with emotional social support ($r = .284, p = 0.03$) and overall friendship support ($r = .220, p = 0.01$). Both emotional social support and friendship support independently correlated with changes in depression levels after MBCT (both $ps < 0.05$).



5. Discussion

This data documents significant gender specific associations between BMI and mindfulness-based intervention treatment outcomes for depression. Specifically, high BMI was associated with either no benefit or worsening of depression. Understanding how patient baseline factors affect MBCT treatment outcomes will lead towards better targeted treatment approaches for specific patient populations.

References

1. Sipe et al. "Mindfulness-based cognitive therapy: theory and practice." *Canadian Journal Of Psychiatry* 57.2 (2012): 63.
2. Luppino et al. "Overweight, obesity, and depression: a systematic review and meta-analysis of longitudinal studies." *Archives of General Psychiatry* 67.3 (2010): 220-229.

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