Effects of Cognitive Behavioral Treatment for Insomnia (CBT-I) on Insomnia, Depression and Fatigue in Patients with Multiple Sclerosis (MS)

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ABSTRACT

The prevalence of sleep disorders among patients with Multiple Sclerosis (MS) is high. According to a recent survey of approximately 7,700 individuals with MS, over half (56%) reported sleep disturbances, including insomnia[1]. Insomnia, or difficulties with initiating or maintaining sleep, is linked with deleterious effects on both physical and mental health. Several studies have demonstrated significant relationships among insomnia, fatigue and depression for people with MS[2,3,4,5,6]. To date, there is no research that examines the effects of psychotherapeutic treatment that targets sleep disorders within this population. This study sought to evaluate the effects of Cognitive Behavioral Therapy for Insomnia (CBT-I) for patients with MS. In accordance with the literature that links insomnia with higher rates of depression and fatigue within this population, this study examined the effects of CBT-I on individuals' experiences of insomnia, depression and fatigue. **FINDINGS:** Overall, patients reported improvement with regards to insomnia, fatigue, and depression following CBT-I. Total sleep time also increased. Despite overall improvement, symptoms of fatigue, insomnia and depression persisted, at varying levels, for a majority of patients. **CONCLUSIONS:** This information may foster further research and promotion of CBT-I as an effective clinical intervention for individuals with MS who report symptoms of insomnia. Given the considerable overlap of experience of insomnia, depression and fatigue for people with MS, CBT-I may also be helpful in identifying areas which may require additional clinical intervention for persistent symptoms of depression and fatigue.

INTRODUCTION

Individuals with MS are at an increased risk for depression, in comparison to the general population, with estimates ranging from 26-51%. Depression has been shown to worsen with sleep disturbances and sleep disturbances are often exacerbated by depression[2].

Fatigue is also a symptom that is significant for most people with MS and one that worsens with depression and sleep problems[6,7].

Studies show that CBT is an effective form of treatment for both depression and fatigue for individuals with MS[8,9]. In one study, psychotherapy that targeted depression resulted in a reduction of insomnia for people with MS[8]. However, half of the participants continued to endorse some level of insomnia, indicating a need for focused treatment of insomnia, beyond the treatment of psychological distress.

CBT-I may be conducted on an individual or group basis over an average of 4-8 sessions. It targets specific behaviors and thoughts related to sleep and has been shown to be a successful, cost-effective treatment for insomnia, with both short and long term results[10]. Research has also demonstrated that CBT-I is linked to lower levels of depression within the general population[11]. **Table 1** provides an overview of the components of CBT-I.

METHODS

A retrospective outcome data analysis was conducted for patients with Multiple Sclerosis (MS) who participated in individual or group CBT-I at the Sleep Disorders Center at the Cleveland Clinic Foundation (CCF) between January 2008-December 2013.

The clinical sample consisted of 11 individuals, 10 females and 1 male, who ranged in age from 36-69 (M=52, **SD** = 11). 8 patients identified as White and 3 patients identified as African American. The total number of visits ranged from 2-16 (M = 8, SD = 4.8).

Self-reported Total Sleep Time (TST) as well as scores from the following self-report measures, Patient Health Questionnaire (PHQ-9), Fatigue Severity Scale (FSS) and Insomnia Severity Index (ISI), were used to assess depression, fatigue and insomnia, respectively, at pre- and post-treatment intervals.

Improvement was defined by an increase in TST and decreases in PHQ-9, FSS and ISI scores.

Worsening of symptoms was defined by a decrease in TST and increases in PHQ-9, FSS and ISI scores

RESULTS

Overall, patients reported improvement across all domains. **Figure 1** provides an overview of pre and post intervention reports of TST, depression, fatigue and insomnia.

A majority of patients (73%) reported an increase in TST. Patients reported overall improvement in TST of 1.25 hours (SD = 3.0).

A large proportion of patients (60%) reported a reduction in fatigue (M = 1.9, SD = 3.75). However, all patients continue to endorse a clinical level of fatigue as measured by the FSS.

Half of the patients reported improvement with regards to depression (M = 1.2, SD = 6.4). Moreover, these patients also reported an overall decrease in severity of their depression.

The majority of patients (86%) reported improvement with regards to their insomnia. 43% reported a reduction in the overall severity of insomnia. **Figure 2** provides changes in severity of symptoms for depression and insomnia.

Select patients reported improvement with regards to some symptoms, but with no change or worsening of others.

Table 1 - Components of CBT-I

Stimulus Control - go to bed only when sleepy, limit activities in bed to sleep and sex, get out of bed at the same time every morning, get out of bed if not sleeping for more than 15-20 minutes.

Sleep Hygiene – focus on environment and behaviors that precede sleep (e.g. limit caffeine, alcohol, no computer or TV in bed)

Sleep Restriction - First, Time In Bed is restricted to the Total Sleep Time; Increase or decrease TIB weekly by only 20-30 min; Increase TIB if SE >90%; Decrease TIB if SE <80%

Relaxation Training

Cognitive Therapy

Figure 1 CBT-I Outcomes

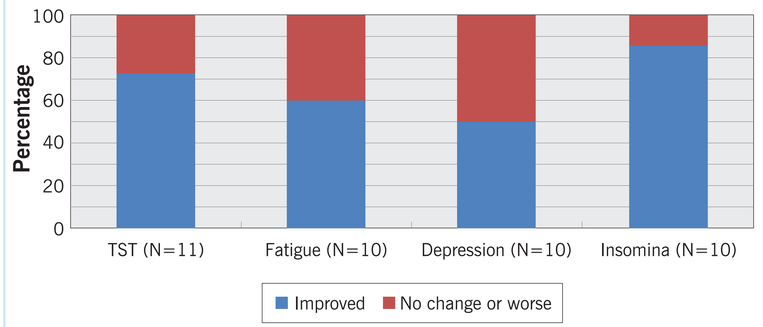
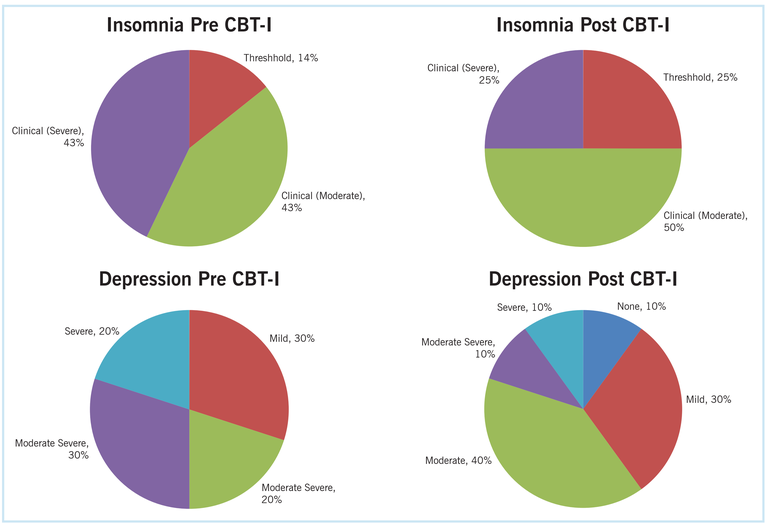


Figure 2



CONCLUSIONS

The results of this retrospective analysis indicate that CBT-I is an effective, targeted intervention for people with MS who suffer from insomnia. In addition, the results indicate that CBT-I is also effective in reducing self-reported experiences of depression and fatigue.

This analysis demonstrates that CBT-I may also be helpful in determining whether there is a need for additional clinical interventions for patients. For example, although treatment of insomnia resulted in improvement of fatigue in many cases, all patients continue to endorse clinical levels of fatigue. In another instance, despite a reduction in the severity of insomnia and depression, one patient reported a worsening of fatigue. Another patient reported a reduction in fatigue, but worsening of depression and an increase in total sleep time. In these cases, CBT-I resulted in relieving certain symptoms, while highlighting areas that may warrant further treatment, including behavioral and pharmacological treatments for depression as well as fatigue management.

Further research, particularly with larger sample sizes, is also needed to further assess effectiveness of CBT-I for patients with MS.

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